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June 12, 2014
File No.: 240148.00723/14797

BY E-MAIL

British Columbia Utilities Commission
6th floor, 900 Howe Street
Vancouver, BC V6Z 2N3

Attention: Erica Hamilton
Commission Secretary

Dear Sirs/Mesdames:

Re: FortisBC Energy Inc. and FortisBC Inc. Applications for Approval of a Multi-Year Performance Based Ratemaking Plan for 2014 through 2018

The Companies Joint PBR Reply Submission

We enclose for filing in the above proceedings the electronic version of the Joint Reply Submission on behalf of FortisBC Energy Inc. ("FEI") and FortisBC Inc. ("FBC") on PBR Plan Design ("PBR Joint Submission") dated June 12, 2014.

Sixteen hard copies will follow by courier.

Yours truly,

FASKEN MARTINEAU DuMOULIN LLP

[original signed by Matthew Ghikas]

Matthew Ghikas

MTG/fxm
Enc

* Fasken Martineau DuMoulin LLP is a limited liability partnership and includes law corporations.

BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF THE UTILITIES COMMISSION ACT,

R.S.B.C. 1996, CHAPTER 473

AND

RE: FORTISBC ENERGY INC. AND FORTISBC INC.

APPLICATIONS FOR APPROVAL OF A MULTI-YEAR PERFORMANCE

BASED RATEMAKING PLAN FOR 2014 THROUGH 2018

JOINT REPLY SUBMISSION OF

FORTISBC ENERGY INC. AND FORTISBC INC.

ON PBR PLAN DESIGN

JUNE 12, 2014

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PART ONE: INTRODUCTION AND OVERVIEW

1. This joint Reply Submission (the "PBR Reply Submission") of FortisBC Energy Inc. ("FEI") and FortisBC Inc. ("FBC", and together with FEI, the "Companies", "FortisBC" or "FortisBC Utilities") responds to the main submissions of interveners that relate to the design of the proposed multi-year performance based ratemaking ("PBR") plan (the "PBR Plan").

A. INTRODUCTION

2. Although interveners like CEC, BCPSO and ICG pay lip-service to the concept of PBR, their assurances are unconvincing in light of their objections to fundamental elements of PBR. The Companies have been operating under PBR for more years than not over the past dozen or so years. FortisBC proposed returning to PBR in response to feedback and direction from the Commission[1] and based on FortisBC's own recognition of the potential benefits of PBR to all stakeholders. The evidentiary record before the Commission - which includes (a) evidence on the logic of PBR, (b) evidence of past success of PBR for FEI and FBC, (c) demonstration of the use of PBR as a ratemaking approach outside of British Columbia, and (d) support from Drs. Overcast and Lowry for PBR - amply demonstrates that PBR is an appropriate and beneficial ratemaking regime. Intervener objections to elements of the proposed PBR Plan do not impugn the concept of PBR generally. The focus of the Commission's inquiry should be on assessing the proposed PBR Plan against the statutory standard of just and reasonable rates, not on assessing the merits of PBR generally. FortisBC's proposal meets that standard.

3. These interveners alternatively seek to ensure that, if PBR is adopted, there will nonetheless be frequent, in-depth regulatory processes in which all aspects of FortisBC's decision making are scrutinized. The level of review advocated by these interveners under PBR is at least equal to the level of review that currently exists under cost of service ("COS") ratemaking, and the review would occur more frequently than it does today. There are two fundamental flaws with that approach.

[1] April 18, 2013 letter, Exhibit B-8, BPSO IR1.4.3, Attachment 4.3 and FEU 2012-2013 RRA Decision and Order G-44-12, p.40.

- First, the effectiveness of PBR is rooted in the use of a formula to free the utility to seek out ways to achieve savings for the mutual benefit of customers and the Companies. The formula-based approach dispenses with the need for such intensive regulation during the PBR term. Indeed, the light-handed regulation during the PBR term is a source of productivity and efficiency. The approach advocated by the interveners would negate much, if not all, of this benefit.

- Second, these interveners' rationale for advocating a process-intensive PBR (which, in reality, would hardly be a PBR at all) is suspect. They start with a "straw man" scenario in which the Companies have exaggerated base year costs with impunity, FortisBC would then respond to PBR incentives by cutting or deferring costs at the expense of customer service and asset integrity, and the Commission and stakeholders would be powerless to prevent it. In actuality, (i) the Commission has vetted the base year costs in great detail, both in the last RRAs and in this process, and will be determining the base year costs; (ii) the Commission has the capability to calibrate an I-X formula based on a comprehensive evidentiary record; (iii) the Commission will have the mechanisms available to it to identify and address service quality issues that might arise; (iv) FortisBC has neither the motivation, nor the audacity, to sacrifice service quality or asset integrity for short-term profit, and FortisBC's activities are guided by codes and professional obligations; and (v) in the next RRAs, the Commission will assess the reasonableness of FortisBC's forecasts coming out of PBR. These points have all been canvassed in FortisBC's initial submissions and demonstrate the fallacy of the interveners' starting premise.

4. In terms of the specific design elements of the proposed PBR Plan, interveners such as BCPSO and CEC have identified a litany of instances (according to CEC, 178 instances[2]) where they see "misalignment" of Company and customer interests. Leaving aside CEC's obvious hyperbole - it would be difficult for there to be 178 instances of "misalignment" when

[2] CEC Submission, para.1(e).

the Plan itself has nowhere close to 178 individual elements[3] - the Commission should reject the intervener submissions alleging "misalignment". FortisBC, when designing the PBR Plan, had recognized that its proposal had to be well-balanced for the PBR Plan to be approved. Despite interveners' assertions about "misalignment", FortisBC's proposed PBR Plan incorporates the key elements that had made the prior *negotiated* FEI and FBC PBR plans a success. The changes from the last approved PBR plans are limited in number and scope. FortisBC made these changes on a principled basis and has provided evidence to justify each one. Interveners are finding "misalignment", not only in the new elements, but also in the elements incorporated in the previous PBR plans and in regulatory constructs (like deferral accounts) that have long been accepted in BC under both COS and PBR. The fact that interveners do not like individual elements of the proposed PBR Plan, or do not want PBR at all, does not make the proposed PBR Plan unjust or unreasonable when the overall outcome is fair to all parties.

5. There is symmetry to the proposed PBR Plan design, both in terms of the elements retained from past PBR plans and the new elements. The proposed PBR Plan incorporates an X-Factor that will provide immediate benefits to customers and will pose a significant but reasonable challenge to the Companies. It guards against windfall gains and losses. It incorporates appropriate oversight that is commensurate with the logic of PBR and the mechanisms previously in place. The Commission retains the same mechanisms to enforce SQIs as it did under the previous PBRs. Overall, the proposed PBR Plan is just and reasonable and should be approved as proposed.

B. ORGANIZATION OF THE PBR REPLY SUBMISSION

6. This PBR Reply Submission is generally organized to correspond with the organization of FortisBC's initial PBR Submission.

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[3] FortisBC cannot find anywhere close to that number of instances where CEC has even referred to misalignment, and even then there is significant overlap in CEC's "misalignment" arguments. FortisBC would respectfully urge the Commission to take CEC's count with a healthy grain of salt.

7. We have determined that it would be most productive, particularly with CEC's submission, to focus on recurring themes and the main arguments on each element of the PBR Plan, rather than to provide a paragraph-by-paragraph response. While there are many instances where interveners have incorrectly described the terms of FortisBC's proposed PBR plan, we have only pointed out the most notable instances. The Companies' silence on particular matters raised by interveners should therefore not be construed as acceptance, and the Commission should reference FortisBC's PBR Submission and the Applications for an accurate description of the proposal.

PART TWO: APPROACH TO ASSESSING THE PBR PLAN

A. THE CASE FOR PBR IS COMPELLING

8. Interveners representing customers seem to collectively treat COS as the regulatory "gold standard" because it involves (i) detailed review of utility costs and (ii) rebasing (typically) every two years. They appear to assess PBR to be an inferior ratemaking model because it involves (i) less detailed review of utility costs during the PBR term and (ii) a longer period until rebasing, and the associated potential for the utility to achieve higher earnings. These intervener arguments beg the question of: *Why, if these features of PBR are so detrimental to customers, does PBR remain an accepted ratemaking model with these features being central to PBR plans adopted by this Commission (and endorsed after the fact) and by regulators in other jurisdictions?* The obvious answer is that PBR's less intensive cost review and a longer period until rebasing are fundamental to the values of productivity and efficiency that PBR delivers to utility customers and the utility. FortisBC elaborates below, making four points in response to specific intervener submissions:

(a) First, formula-based structures that provide the utility with an opportunity to share in savings achieved over the course of a longer term before rebasing inherently incent the utility to seek out incremental efficiencies.

(b) Second, the likelihood of achieving direct and indirect savings from a more streamlined regulatory process suited to the nature of PBR is supported by evidence and is intuitive.

(c) Third, the nature of PBR is such that an appropriate level of transparency can be achieved with less intensive regulatory process during the PBR term.

(d) Other arguments raised by interveners in opposition to PBR are also without merit.

(a) PBR Creates Appropriate Incentives and Improves Alignment of Interests

9. Interveners including CEC, ICG and BCPSO make a variety of submissions that can be grouped as being arguments that PBR misaligns interests by (i) providing windfalls to the utility, and (ii) harming customers by creating inappropriate incentives.[4] In support of their contention, these interveners emphasize the fact that FEI and FBC earned more than their approved ROEs during the last PBR Plans. They characterize the potential for the Companies to repeat this outcome as a shortcoming of PBR. CEC states, for instance, "the Utilities' interest in optimizing returns to the shareholder is in conflict with the customer interests and that the PBR regulatory approach to rate setting as proposed by the Utilities is fulfilling the Utility interest in optimizing return to the shareholder while being fundamentally misaligned with customer interests."[5] ICG characterizes the potential for the Companies to earn above the approved ROE under PBR as potentially making the "regulatory outcome for customers worse, not better".[6] FortisBC submits, for the reasons set out below, that the intervener submissions comprising this "windfall/inappropriate incentive" group of arguments are misconceived and fail to recognize immediate and long-term customer benefits.

The Experts Agree that PBR is Beneficial

10. Before addressing the specifics of the intervener submissions, it is worth contrasting their cynical views of PBR with those of Dr. Lowry, an expert relied upon by interveners and a defender of PBR in Canada. Here are some examples:

> The ability of multi-year rate plans to provide attrition relief without high regulatory cost or a weakening of performance incentives constitutes a remarkable advance in the "technology" of regulation.[7]
>
> ….

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4 See for example: CEC Submission, para.1(b) and (d). BCPSO similarly states at BCPSO Submission, para.5: "The Utilities' interest in optimizing returns to the shareholder is in conflict with customer interests, and the approach taken in the proposed PBR is designed to fulfill the Utility interest in optimizing return to the shareholder without giving significant consideration to customer interests." See also: ICG Submission, para.7

5 CEC Submission, para.6.

6 ICG Submission, para.7.

7 Exhibit B2-27, Evidence of Lowry, p.205.

> The mechanism used to escalate revenues (or rates) is one of the most important components of an ARP. Such mechanisms are substituted for rate cases as a means to adjust utility rates for trends in input prices, demand, and other external business conditions affecting utility earnings. This makes it possible to extend the period between rate cases without relaxing the just and reasonable standard for regulation. Performance incentives can be strengthened and regulatory cost trimmed. Operating risk can be reduced without weakening utility performance incentives.[8]
>
> ….
>
> However, frequent rate cases have several drawbacks. First, a rate case is a lengthy process that is expensive to all parties in the proceeding, and ultimately to customers. Utility performance incentives are weakened. Infrequent rate cases give senior managers more time to devote to the basic business of providing quality service cost-effectively. Regulators have more time to devote to other tasks as well.[9]

11. Dr. Lowry may disagree with Dr. Overcast on the mechanics of calculating TFP and determining an appropriate X-Factor, but it is clear from the above quotations that Dr. Lowry shares Dr. Overcast's and FortisBC's views when it comes to embracing the benefits of PBR. FortisBC submits that the Commission should look to the evidence, rather than the assertions of interveners, when it comes to evaluating the merits of returning to PBR.

The Potential for a Utility to Earn More than Approved ROE is Integral to PBR

12. Optimizing return is aligned with customer interests, contrary to the assertions of interveners. FortisBC can only achieve a higher return by reducing costs, and customers benefit from lower costs achieved without sacrificing service quality and asset integrity. This same dynamic exists under both COS and PBR, but PBR increases the degree of alignment. Under COS, FortisBC obtains 100% of the savings during the test period, and the customer obtains all the benefits upon rebasing. Under PBR, the customer receives: (i) an immediate benefit from the X-Factor (including stretch), irrespective of utility performance; (ii) an immediate benefit from sharing in savings above the formula amount; (iii) a larger pool of

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[8] Exhibit B2-27, Evidence of Lowry, p.87.

[9] Exhibit B2-27, Evidence of Lowry, p.188.

potential savings; and (iv) the full value of the lower cost trajectory over all future periods. In short, the ability of the utility to earn an incentive above the approved ROE is an integral element of PBR plans generally, and is not unique to FortisBC's proposal.

13. Regulators and stakeholders have previously recognized the role of an incentive to earn higher returns in achieving benefits for all stakeholders. For example:

- Stakeholders agreed to extend the 2004 FEI PBR Plan for an additional two years on the strength of the prior results, central among which were the higher utility earnings that had been shared equally with customers. The Commission approved the extension. It later confirmed in the 2012-2013 RRA Decision that the 2004 FEI PBR Plan had been beneficial to both customers and the Company, citing the magnitude of shared benefits.

- The AUC framed the PBR incentive as a means of emulating the competitive market (which, to state the obvious, has no regulated rate of return):

> One of the purposes of PBR is to start with cost of service-based rates and then sever the link between revenues and costs as a means of strengthening incentives for the companies to seek productivity improvements, and achieve lower costs than would otherwise be realized under cost of service regulation. PBR regulation allows regulated prices to change without a review of the company's costs, thereby lengthening regulatory lag. This better exposes the companies to the types of incentives faced by competitive firms. However, periodic review of the plans will be required. What the correct timing of a review will be and what the nature of the review should be will depend on the circumstances at the time.[10]

- The OEB has also recognized explicitly that to potential for the utility to earn higher returns is integral to PBR:

> PBR decouples the price (the distribution rate) that a distributor charges for its service from its cost. This is deliberate and is

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[10] AUC Decision 12-237,para.832

> designed to incent the behaviors described by the Board in 2000. This approach provides the opportunity for distributors to earn, and potentially exceed, the allowed rate of return on equity. It is not necessary, nor would it be appropriate, for ratebase to be re-calibrated annually."[11]

Potential to Earn Higher Returns is a Reward for Assuming Risk, Not a Windfall Gain

14. Interveners seek to portray any return over the approved ROE as a windfall gain to the utility. BCPSO, for instance, states that utilities "should not require a near-guarantee of earning above the allowed return in exchange for providing appropriate management as is being sought in the proposed PBR."[12] BCPSO alleges that FortisBC owes a fiduciary duty "to seek efficiencies" in any event.[13] This fiduciary duty/windfall argument is misconceived for two reasons.

15. First, BCPSO has cited no legal authority in support of any fiduciary duty to undertake efficiencies at the expense of earning a fair return. A fiduciary duty of the nature posited by BCPSO would be fundamentally at odds with the regulatory compact. The utility has a right to an opportunity to earn a fair return. Inherent in that right is recognition that the utility is not going to invest to achieve efficiencies if it cannot achieve pay-back on its investment. PBR increases the period during which pay-back must be achieved, and thus increases the available pool of potential savings.

16. Second, the potential for a utility to increase its ROE is neither a windfall, nor a "near guarantee" because the opportunity comes with additional risk of earning less than the allowed return. COS regulation can be viewed as a type of "cost plus" system of regulation, which allows the utility the opportunity to collect revenues to match its expected costs including the allowed return. The primary short-term risks under COS are a two-year forecast risk and the risk of prudently managing to budget. A PBR formula is set based on measured industry productivity, not FortisBC's own expected costs. The Companies must find sufficient

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[11] Exhibit B2-8, BCUC IR 3.12.2.1; OEB's Report (18th October, 2012) titled "Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach"

[12] BCPSO Submission, para.7.

[13] BCPSO Submission, para.34.

efficiency and productivity improvements to "beat" the industry productivity levels, plus a stretch factor, in order to achieve (let alone exceed) their allowed return. The additional earnings risk will be reasonable and symmetric so long as the elements of the PBR Plan (including the X and I-Factors) are designed to provide the utility with a reasonable opportunity to earn its return during the PBR period in light of its circumstances.

Cost Cutting is Efficient and Beneficial

17. BCPSO, CEC and ICG appear to perceive as a downside of PBR the potential for FortisBC to earn a higher return through departmental budget reductions. They distinguish between what they perceive to be true "efficiency gains" and "mere cost-cutting", portraying the latter as a distasteful concept inherently detrimental to customers under PBR. BCPSO states, for instance, that "it appears more likely that Fortis will simply reduce departmental budgets. This is, in part, because the Fortis plan does not distinguish between simple budget reductions and true efficiency gains."[14] BCPSO adds that "The major flaw in the model appears to be its inability to distinguish between efficiency gains and mere cost cutting."[15] Interveners' opposition to cost cutting under PBR is fundamentally flawed. Understanding these flaws is important because these arguments provide a key basis for intervener opposition to PBR and interveners' insistence that any PBR approved by the Commission require both *ex ante* proof of opportunities for "true efficiency gains" and *ex post* proof that savings achieved are associated with "true efficiency gains".

18. First, interveners are drawing an artificial distinction between "mere cost cutting" and efficiency. Efficiency is measured by whether either the same or more output is produced with fewer inputs. Bonbright states, for instance:[16]

> Static efficiency can be thought of in two specific contexts. A firm is said to be: (1) technically efficient if for any given level of output it minimizes costs; (2) allocatively efficient if it produces the appropriate quantity of output from society's perspective and uses its inputs in the appropriate combinations, given

[14] BCPSO Submission, para.14.

[15] BCPSO Submission, para.7.

[16] Principles of Public Utility Rates (2nd), Bonbright, Danielsen, and Kamerschen, Chapter 21, p. 16.

> the relative prices of these inputs. In addition, a firm is (3) dynamically efficient if over time it is producing more or better products with the same level of inputs.

19. Efficiency has occurred, by definition, if the earned return equals or exceeds the allowed return under a revenue cap that has a positive stretch factor (i.e., the I-X trajectory will be below inflation). No other proof of efficiency is required or necessary.

20. Second, the premise that "mere cost cutting" would necessarily *harm* customers under PBR is also invalid. It is hard to imagine that interveners would be so opposed to FortisBC cutting departmental budgets under COS ratemaking. Cost reductions achieved under PBR without degrading customer service or impairing asset integrity deliver direct and tangible benefits to customers, just as they would under COS. Rebasing is only delayed. In the interim, customers do obtain: (i) the full benefit of the savings implicit in the X-Factor at the outset; and (ii) half of the incremental cost savings during PBR, based on a larger pool of potential savings. Interveners' opposition to "mere cost cutting" under PBR (but not COS) appears to be based, to a material degree, on the invalid assumption that any budget reductions will now be the product of gamesmanship on the part of FortisBC or at the expense of service quality and asset integrity. The flaws in these arguments are addressed separately below.

Response to the "Perverse Incentive" and Gamesmanship Arguments

21. Interveners make a variety of arguments that boil down to an unwarranted suspicion that customers will be harmed under PBR by the utility padding base year costs[17], bundling capital projects to bring them over the CPCN threshold[18], and deferring costs until after the PBR term. FortisBC submits that the Commission should reject these arguments for several reasons.

22. First, although COPE has couched its arguments in terms of an inherent "gravitational pull" in an attempt to circumvent the legal presumption of good faith and

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17 Exhibit C12-2, CEC Opening Statement, p.16.

18 BCPSO Submission, para.65.

evidence demonstrating FortisBC's *bona fides*[19], other interveners have been less diplomatic. Either way, it is self-evident that interveners are violating the presumption of good faith.

23. Second, the perverse incentive/gamesmanship arguments ignore the existence of a regulator. The Commission is determining base costs according to COS principles, as in any RRA. The base costs are starting with a fully vetted and approved RRA, with certain adjustments scrutinized in this process to arrive at an appropriate base year cost. As for CPCN gamesmanship, the Commission would address as a threshold matter in a CPCN application any attempt to combine projects to have them excluded from the I-X Formula. At the end of the PBR term, the Commission will be tasked with setting rates based on the utility's reasonable and prudent cost of providing service. If the Commission were to conclude at that time that FEI's or FBC's revenue requirement includes costs that are not reflective of the quality of service to be provided by the utility by virtue of some imprudent conduct of the utility (e.g., a deferral during PBR had resulted in excessive costs), then the Commission would have the ability to address the issue in setting rates for the post-PBR test period. This is, in principle, no different from the exercise that the Commission undertakes in every COS RRA. It would be circular for the Commission to assess the merits of PBR based on the assumption that the Commission will not adequately perform any of these tasks.

24. Third, CEC contends that the increase in FEI's costs after the last PBR period[20] is evidence of cost deferrals having taken place. CEC's erroneous conclusion is based in part on the flawed premise that sustainment capital spending below the formula amount can only result from deferred spending or the capital not being required.[21] Sustainment capital savings can also be achieved by undertaking the projects more efficiently. In FEI's 2010-2011 Revenue Requirements Application that followed the last PBR, FEI had the burden of demonstrating the

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[19] FortisBC addressed the presumption and evidence regarding FortisBC's corporate objectives in paras. 22 and 25 of the initial PBR Submission.

[20] Exhibit C12-2, CEC Opening Statement, p.17.

[21] CEC Submission, para.367 "Because the formula for capital spending does not involve definition of any specific expenditure it is impossible to determine what is being deferred. However, give that capital expenditure on sustainment capital is all related to achieving needed system benefits simple underspending of the formula can logically only involve either capital that was never required or if assumed to be required then must be deferred."

reasonableness of its 2010 and 2011 forecasts and it met that burden of proof. FortisBC provided a detailed Appendix D4 in the FEI Application[22] further explaining why the savings achieved under the FEI 2004 PBR Plan had been permanent savings. ICG has also acknowledged that "there is no evidence of material cost deferrals".[23]

25. FortisBC demonstrated in FEI Appendix D4 that, in any event, deferrals would often produce a positive NPV. CEC maintains that NPV is not the way to assess the implications of deferred costs because "deferring capital spending also defers that (sic) benefits associated with the spending, which are improved system reliability and safety."[24] It is notable that CEC's submission, being focussed on circumstances where the deferral comes at the expense of "improved system reliability and safety", is a much narrower argument than a position that all cost deferrals are bad. Capital projects could be delayed for reasons that have no impact on safety or reliability, e.g., lower growth, third party project cancellations, newer technologies available, lower cost alternative solutions, etc.

26. The evidence before the Commission about the results of the past PBRs, as well as FortisBC's commitment to maintaining credibility with all stakeholders over the long-term, supports the Commission setting aside this issue of cost deferrals unless and until there is a reasonable basis to conclude that (a) deferrals might have occurred, and (b) there is some indication that customers may have been harmed by it.

Pre-Identifying Benefits is Not a Pre-condition of Adopting PBR

27. ICG and CEC maintain that, in order for PBR to be justified, FortisBC had to have submitted a comprehensive list of opportunities for achieving savings under PBR.[25] ICG states that "In the absence of such evidence the Panel should conclude that differences between

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[22] ICG commented at para.26 of its Submission that that there was no such Appendix A4. ICG was presumably looking at the FBC Application, not the FEI Application.

[23] ICG Submission, para.27.

[24] CEC Submission, para.372; see also para.585.

[25] ICG states, for instance, at paras.19-20: "FBC is asking the Panel to conclude, based on no actual evidence and a theoretical construct, that there is a pool of available cost-effective efficiency investments." CEC states at para. 369 that "absent obtaining open transparent documentation of savings the Commission should be very cautious about assuming that there are savings worth the rewards being provided."

forecast expenditures and actual expenditures are more likely and frequently achieved by a high forecast or delayed work than by efficiency gains from efficiency investments."[26] BCSEA similarly suggests that there is "no evidence" other than "speculation based on PBR experiences in other times or places" of the actual financial experience of ratepayers in each of the with-PBR and without-PBR scenarios.[27] In response, FortisBC submits:

- First, the tangible monetary benefits shared with customers in the last FEI and FBC PBR Plans, and Commission's after-the-fact endorsement of FEI's 2004 PBR, represent more than "speculation" about the benefits of PBR. ICG, despite its contention that savings are "more likely and frequently achieved" through deferrals, admits that there is no evidence of deferrals occurring in the last PBR.[28] The repeated use of PBR in other jurisdictions (Ontario, for instance, is in its fourth generation) is also compelling evidence that regulators in other jurisdictions regard PBR to be beneficial to both customers and utilities.

- Second, neither the validity of PBR generally, nor the justification for the proposed PBR Plan, depends on FortisBC forecasting specific savings or demonstrating that the benefits could not have been achieved under a COS regime. It is telling that ICG refers to the potential for savings to be more frequently attributable to "a high forecast". FortisBC has filed PBR Applications based on formulaic derivation of rates, not a COS revenue requirements application based on cost forecasts. The distinction is fundamental. Under COS ratemaking, FortisBC would have to justify its forecast costs, including accounting for any costs that it will incur to achieve potential efficiencies. PBR is a formula-based approach, calibrated to inflation and industry TFP. The Companies' evidence in this proceeding is properly focussed on establishing that the rates yielded by the overall PBR Plan (including the I-X Formula) are just and reasonable.

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[26] ICG Submission, para.37.

[27] BCSEA Submission, para.228.

[28] ICG Submission, para.27.

28. In a similar vein, CEC advocates adjusting the base year costs to account for potential savings that the Companies might achieve during the PBR period.[29] This is not an appropriate approach under PBR. PBR is formula-driven off of a base year forecast that reflects costs for that test period and a formula that is set independently of the utility's forecast of costs during the PBR term. The X-Factor includes a stretch factor over and above industry TFP that is premised on the Companies having a reasonable opportunity to achieve savings during the PBR Plan period. It would be unfair to the Companies to adjust the base year costs downwards to reflect the Companies' best opportunities to achieve potential savings throughout the PBR term (even if the adjustment also reflects potential costs associated with achieving those savings), without adjusting the X-Factor to zero to reflect the loss of opportunities to achieve savings. CEC's one-sided approach would violate the regulatory compact.

(b) PBR Brings Improved Regulatory Efficiency

29. FortisBC has identified direct and indirect benefits associated with the more streamlined regulatory process appropriate for PBR. Interveners have not questioned the intuitive indirect benefit of permitting utility employees to shift their focus from managing the regulatory process to managing the business. However, interveners have variously characterized the potential for direct cost savings as "speculative"[30], "unsupported by the evidence"[31], undocumented[32], and unsubstantiated[33]. FortisBC submits:

- First, the regulatory cost savings under past PBR Plans provides an evidentiary basis to conclude that there will be direct cost savings under the proposed PBR Plan.

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29 Exhibit C12-2, CEC Opening Statement, p.15.

30 IRG Submission, para.37.

31 IRG Submission, para.37.

32 CEC Submission, para.12.

33 BCPSO Submission, para.5; ICG Submission, para.114.

- Second, it is logical to expect both direct and indirect savings, given that the most contentious aspects of the Companies' revenue requirements will be determined by formula.

- Third, other intervener arguments on regulatory cost are founded on errors or flawed logic.

Past Regulatory Costs Are Evidence that PBR Will Deliver Direct Savings

30. There is evidence on the record as to the cost of FortisBC's past regulatory processes, both under COS regulation and PBR.[34] Recent revenue requirements applications have been 10 to 30 times more costly than the Annual Review processes in the last PBRs.[35] Regulatory processes have become more costly over time, so future Annual Reviews will likely cost more than $30,000-$70,000 (the cost of prior Annual Reviews) even though the Annual Reviews are intended to fulfil the same function as before. Nevertheless, the magnitude of the cost differential between the past Annual Reviews and recent revenue requirements proceedings remains persuasive evidence that there should be significant direct savings.

31. Unlike CEC and BCPSO, IRG appears to accept that PBR will result in direct savings in regulatory costs. Yet, IRG still suggests that the differential will be small. It reasons that (a) FortisBC has overstated the impact of recent applications on FBC rates, which should be 0.5% per year,[36] and (b) "it is reasonable to conclude that they [regulatory costs] may fall in the range of about 0.2% to 0.4% of FBC's annual revenue."[37] FortisBC takes no issue with IRG's figure of 0.5%, as it is actually consistent with what FortisBC said at the hearing.[38] IRG provided

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[34] T3: 438-439.

[35] FEI Exhibit B-11, BCUC IR 2.292 series, FEI Exhibit B-23, CEC IR 2.75.1.1, Exhibit B2-11, CEC IR 3.5.5, FEI Exhibit B-23, CEC IR 2.74 series, FBC Exhibit B-25, CEC 2.36.5.

[36] IRG Submission, para.30.

[37] IRG Submission, para.31.

[38] FBC's costs for the recent applications ranged between $2.5 to 3 million. FortisBC's evidence, which is quoted by IRG in paragraph 30 of IRG's submissions, was that the rate impact of a revenue requirement application was 1%. This would be spread over two years for a two-year test period, making the impact approximately 0.5% per year.

no justification for its figures of 0.2% to 0.4% for regulatory costs under PBR. These figures are at odds with past experience.

Logic Suggests that There Will Be Cost Savings

32. BCPSO, in arguing that direct savings are unlikely to be achieved, stresses that "Less than half of the Utilities' revenue requirements will be subject to PBR, with the balance of the costs subject to annual review with IRs, and some formal process."[39] It is not logical to focus on the percentage of costs excluded from the formula for several reasons.

- First, the majority of the costs outside of the PBR formula are flow-through costs even under COS. CPCN capital that is outside the formula would be subject to a CPCN application even under a COS regime. Under PBR, the Commission maintains the same level of oversight for these items.
- Second, among the flow-through items, only property taxes and other revenue (11%) will be reviewed as part of the Annual Review process; all other items relate to recovery of existing costs or are calculations only. Property taxes are covered by a deferral account and other revenue is generally non-contentious.[40]
- Third, controllable items subject to the formula are the items that generate the greatest work effort in revenue requirements applications. While BCPSO might not accept this fact, the focus of BCUC IR 1 to FEI in the present process is a good illustration of FortisBC's point:

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[39] BCPSO Submission, para.10.

[40] FBC Exhibit B-7, BCUC IR 1.183.1, Exhibit B2-8, BCUC IR 3.51 series.

Topic	# of IR	% of IR
PBR	124	14%
Demand	56	6%
Other revenue	10	1%
Capital/O&M	267	30%
Financing/Taxes/Acctg Policies/Deferrals	111	12%
Balanced scorecard benchmarking	4	0%
LTSP	7	1%
NGT	12	1%
TES/FAES	28	3%
EEC	278	31%
	897	100%

The vast majority of the BCUC round 1 IRs addressed topics that will be subject to the formula (Capital/O&M) or will not be part of the Annual Review (PBR and EEC).

33. CEC and BCPSO have done their best to portray FortisBC's PBR Plan as including numerous costly processes that would not be required under COS. CEC states, for example: "There are expected to be 4 Annual Reviews, one Mid-term review, a post-PBR review and possibility of re-openers, off ramps, and exogenous factor reviews" and adds that "each of these processes will likely be significant in and of themselves."[41] BCPSO similarly states that "there will be an annual process to approve I-X, G [growth factor], and billing determinants, and to set rates".[42] These characterizations are misleading:

- There is no "post-PBR review" other than the next COS RRA that would occur in any event.
- The Mid-term review is part of the third Annual Review.
- There are no processes other than the Annual Reviews associated with any of the listed factors.

[41] CEC Submission, para.15.

[42] BCPSO Submission, para.11.

- Exogenous factors require a separate process under COS when the unanticipated event occurs part-way through a test period, such that there is no additional process under PBR.

- In terms of what occurs at the Annual Review, the I-Factor is a simple calculation of agreed upon forecasts. There will not be a process to approve the X-Factor because it will be fixed for the whole term. The approval of a growth factor is part of the approval of the demand forecast process and the associated forecasts of billing determinants and does not require any additional steps. As discussed above, the other items are straightforward and are typically not a focus.

34. Interveners' contention that the proposed PBR processes will be onerous and inefficient is inconsistent with their expressed concerns about PBR being less transparent than COS regulation.[43] A less intensive regulatory process is going to save money, and the evidence of past regulatory costs backs that up.

35. CEC submits that "the customers will experience significant increased costs of regulation under PBR because the whole proposal from the Utilities is so complex…".[44] The parameters of the PBR Plan will be decided in this hearing, leaving parties to address only limited matters at the Annual Reviews. The fact that FortisBC's proposal is based on past PBR plans that were negotiated by many of the same stakeholders should give interveners a running start at understanding the Annual Review process. Interveners' understanding should also improve with each successive Annual Review.[45]

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[43] BCPSO Submission, para.5.

[44] CEC Submission, para. 440.

[45] The AUC has arrived at a similar conclusion: "It is the Commission's expectation that the adoption of a PBR plan will make the regulatory system more efficient over time as the Commission, interveners and companies become more familiar with it." AUC Decision 2012-237, p.6, para.24. We have a head start on Alberta in this regard, given the past experience in BC.

Other Intervener Arguments on Regulatory Costs

36. CEC suggests that the cost savings associated with PBR should be discounted due to the scale of the present process for examining the PBR Plan.[46] The costs of the current process have been significant, but they are sunk. The Commission's decision as to whether to adopt PBR should be based on potential cost savings from this point onwards.

37. CEC mistakenly suggests that FEI's evidence regarding the financial treatment of regulatory costs is internally inconsistent:

> FEI has said that regulatory benefits from reduced O&M costs related to the RRA process versus a PBR process would be shared 50%:50% between the customers and the shareholder and the external cost would go through deferral accounts excluded from PBR and would flow 100% to the customer's account. The CEC submits that this is contradictory evidence and that the Utilities claim of regulatory savings should be viewed by the Commission with considerable skepticism.[47]

FortisBC's evidence is consistent. The O&M savings from reduced regulatory processes (i.e., the internal savings in the various business units) will show up in the O&M, which will be shared. The direct external costs are captured in deferrals – savings will flow 100% to customers.

Final Comment on Intervener Arguments Regarding Regulatory Cost

38. Interveners' contention that there will be no cost savings under PBR would only ring true if the Commission were to accede to intervener demands to (in CEC's words) "require documentation of permanent efficiencies before allocating rewards to the Utilities."[48] Remaining under COS regulation, where the Companies manage to a Commission-approved envelope of costs rather than to line items, would undoubtedly be more efficient than requiring FortisBC to perform annual tracking/analysis and justification of each dollar saved. FortisBC addresses in the following paragraphs other reasons why that type of review is inappropriate.

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[46] CEC Submission, para.13.

[47] CEC Submission, para.16.

[48] CEC Submission, para.12.

(c) The PBR Plan Provides Appropriate Transparency

39. Interveners assert that PBR will compromise transparency and prudent management in a manner that outweighs savings from regulatory efficiencies.[49] The different regulatory approach under PBR, which reduces the depth of regulatory review of controllable utility costs, is not synonymous with a lack of transparency and prudent management.[50] The proposed PBR Plan provides for appropriate oversight in the context of a formula-based rate structure.

- First, the controllable costs are the product of a pre-determined formula that is determined with reference to factors external to the Companies (TFP and inflation) and applied to base year costs fixed by the Commission. Detailed reporting on a departmental basis is not required to ensure that the utility manages costs. The utility must meet or beat the formula amount to earn its allowed return. Customers and the utility share in benefits above that amount. The absence of a line-by-line justification during the PBR term provides the Companies with greater flexibility to undertake initiatives that might yield incremental savings to be shared with customers.

- Second, the elements of the Companies' costs that are not captured by the formula are addressed in each Annual Review during the PBR term, more frequently than would be the case in a typical COS test period.

- Third, capital expenditures are still subject to the requirement of prudence, contrary to CEC's arguments. As with any revenue requirements application, only the depreciation expense, ROE and related taxes associated with prudently incurred capital can be reflected in rates after the PBR term. Rates in the post-PBR test period must also reflect the level of service quality commensurate with

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[49] E.g., CEC Submission, para.1(f); BCPSO Submission, para.5; CEC Submission, para.18; COPE Submission, p.48.

[50] IRG suggests at para.41 that the "Companies' Joint Final Submissions acknowledge reduced transparency under the proposed PBR Plan", which is not accurate. In the quotation referenced by IRG, FortisBC had stated that "The review of the cost of service will not be as detailed as a revenue requirement application would be, since controllable costs are largely formula driven." This is not synonymous with a lack of transparency.

rates, which would account for any imprudent utility conduct that had caused service to deteriorate. If future asset condition were to be compromised because of imprudent asset management under PBR, that too could be addressed in setting future rates just as it would be addressed today under COS. This doesn't mean an automatic "prudency review" in the formal sense; rather, the review is inherent the standard RRA rate setting process. In all of these circumstances, FortisBC is owed the presumption of prudent management, which is notably absent from interveners' arguments.

40. CEC's idea that rewards under PBR should only be paid after documentation of individual efficiencies and productivity[51] is an antithesis to the concept of light-handed regulation under PBR. Interfering with management's decision process by requiring documentation of the process will delay decisions and also reduce the number of options to those that can be easily documented and easily explained to stakeholders. This also assumes efficiency and productivity can be evaluated by comparing one year to the next as if nothing has changed, when that is not the case in the dynamic real world. The risk to the Companies is increased substantially because of return uncertainties if the Company cannot document the certainty of benefits to the stakeholders despite the irrefutable evidence of higher returns and shared benefits. Since the overall certainty of benefits to stakeholders is demonstrated by the utility return and the provision of more output with the same or fewer inputs, there is no validity to the interveners' demands for further evidentiary requirements related to efficiency or productivity.

41. Interveners' arguments are internally inconsistent when it comes to the issue of transparency because they also express a preference for revenue caps and the Alberta model.[52] Revenue caps, and the revenue cap per customer and price cap approaches in Alberta, provide less direct oversight, along with a larger envelope of costs that can be a source of savings. FortisBC's proposed PBR Plan strikes a good balance between regulatory oversight and efficiency incentives, using a proven model that is familiar to stakeholders.

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[51] CEC Submission, para.47.

[52] CEC Submission, para.173; BCPSO Submission, para.27.

(d) Response to Other Intervener Arguments Against PBR

Mr. Gabana's Arguments

42. Mr. Gabana's arguments, while ostensibly related to PBR and FortisBC's PBR Plan, are really a re-hashing of arguments that Mr. Gabana has raised in other proceedings and a recitation of past Commission decisions with which he disagrees. Mr. Gabana's submission is of no assistance to the Commission in determining the PBR matters at issue.

Using Deferral Accounts to Permit Efficiency Initiatives

43. CEC takes the position that "the issue of payback could be better addressed through deferral accounts, which would not limit payback to any term." It suggests that "such an approach would reduce the risk for the Utility and ratepayers and assure adequate oversight by the Commission."[53] ICG makes a similar argument in favour of deferral accounts.[54] This approach is not a substitute for PBR because, while it removes the payback disincentive, it does not provide any incremental incentive to seek out efficiencies either. It would also be a cumbersome process, feasible only for larger scale projects. A significant source of efficiencies under PBR is a multitude of smaller initiatives that require greater management flexibility to implement than would be afforded by CEC's deferral account approach.[55] Using deferral accounts as a substitute for PBR would limit the prospects for the utility to achieve efficiency and productivity improvements that are the primary objective of PBR.

ICG's Argument that Efficient Operations Are a Precondition for PBR

44. ICG suggests that evidence that FBC is *already* operating efficiently is a precondition to adopting PBR: "This Application requires the Panel to conclude, based on the evidence, that FBC both operates efficiently and has captured a number of efficiencies that would not otherwise have been achieved through traditional cost of service regulation."[56] ICG

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[53] CEC Submission, para.53.

[54] ICG Submission, para.32.

[55] Exhibit B2-2 CEC IRs 3a 38.5 and 38.6.

[56] ICG Submission, para.11.

maintains that FBC has failed to prove that it is efficient because the Companies objected to producing a TFP study of FBC's operations at the request of ICG.[57] In response:

- As interveners are often quick to point out, the Companies are not operating in a competitive marketplace. PBR is intended to provide greater potential to extract efficiencies from the utility business in recognition that there are structural impediments to achieving some efficiencies under COS regulation.[58] Implicit in that concept is the recognition that it would be highly unlikely that any regulated utility will have achieved optimal efficiency such that *no* further efficiency opportunities exist.

- PBR is routinely applied to utilities of varying stages of maturity, with different stages of development being addressed through the design of the PBR. Utilities deemed to be least efficient by the OEB are assigned a higher X-Factor, not excluded from the PBR process. Drs. Lowry and Overcast both reflected FortisBC's past PBR experience through the stretch factor. Dr. Lowry, for example, assigns an explicit stretch factor of 0.2% to FEI and FBC "since there is no reason to believe that the utilities are superior or inferior cost performers".[59]

- FortisBC objected to ICG's demand to prepare a TFP study on FBC's operations because, as the experts in this case agree, TFP provides no insight into whether a utility is efficient.[60]

ICG's Statements Regarding Limited Opportunities for Efficiency Under PBR

45. In arguing against PBR, ICG states that the electric utility industry "is a mature industry with a limited number of technological improvements so there are a very limited

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[57] ICG Submission, para.1.

[58] Specifically, the structural impediment is that rebasing occurs before a utility can achieve pay-back on efficiency investments with a longer pay-back period.

[59] FBC Exhibit C6-13, BCSEA-CEC (Lowry) IR 1.7.1.

[60] This is discussed in the initial FortisBC PBR Submission at para.142.

number of efficiencies to achieve."[61] Leaving aside the fact that this argument is inconsistent with ICG's argument addressed immediately above, there is no evidence on the record to back ICG's assertion. Moreover, ICG is failing to account for the potential for business process-related efficiencies. It is reasonable to expect that FortisBC has harvested the "low hanging fruit" after many years under PBR. However, the fact that efficiencies are now harder to come by would actually suggest (all else equal) the need for a longer PBR term to open up new opportunities.

ICG's Arguments About the Scope of Deferral Accounts

46. ICG suggests that the existence of deferral accounts to cover non-controllable costs is important context for the PBR Application. It appears to be arguing that using deferral accounts for flow-through items under PBR puts customers at risk.[62] The regulatory rationale for deferral accounts is long-established. The proposed PBR Plan employs deferral accounts in the same way they have been employed for years under both COS and PBR regimes. The merits of deferral accounts should not be a factor in the Commission's consideration of the proposed PBR Plan.

B. THE MEANING OF "HOLISTIC REVIEW"

47. COPE has misstated FortisBC's position regarding the need for the Commission to assess the proposed PBR Plan on a holistic basis. COPE states: "The Companies' stance – that their application is essentially an all-or-nothing package – is curious, especially since they originally proposed that it be resolved by way of a negotiated settlement process."[63] FortisBC has been clear throughout this process - including in its Opening Statement and PBR Submission - that considering the PBR Plan holistically is not synonymous with an "all-or-nothing" proposal. Rather, FortisBC has acknowledged that it is possible for the Commission to make changes, but that the Commission should consider how potential changes might affect the overall fairness of

[61] ICG Submission, para.25.

[62] ICG Submission, para.17.

[63] COPE Submission, p.16.

the package.[64] None of the arguments raised by interveners regarding specific elements of PBR Plan impugn the concept of PBR generally so as to require a wholesale rejection of the PBR Plan, and FortisBC addresses in Part Three the flaws in interveners' arguments that there is misalignment in individual elements of the proposal.

C. BUILDING ON PAST EXPERIENCE WITH PBR

48. BCPSO asserts that the PBR model proposed by FortisBC "has very little history and is not a widely used regulatory model."[65] BCPSO's assertion is incorrect. FEI has been under PBR for 10 of the last 15 years, and FBC has been under PBR for 14 of the last 17 years. FortisBC's proposed PBR Plan is built on same basic model that was used in the last two FBC PBR plans and the last two FEI PBR Plans, dating back well over a decade. Building block models are also used in other jurisdictions.[66] The passage from the transcript that BCPSO has cited as a FortisBC admission to the contrary was actually addressing a different point ("Are you aware of any empirical studies comparing the performance-driven results of the two approaches identified in that paragraph?").[67] Not being aware of "empirical studies" comparing PBR models is different than not being aware of other instances where building block PBR models have been employed.

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64 FortisBC PBR Submission, para. 291.

65 BCPSO Submission, para.8.

66 FEI Exhibit B-6, BCPSO-FEI IR 1.10.1.

67 BCPSO Submission, para.8.

PART THREE: EVIDENCE ON COMPONENTS OF OVERALL PBR PLAN

49. In this Part, the Companies address the main intervener arguments regarding individual components of the PBR Plan other than the I-X formula and SQIs, which are addressed in Parts Four and Five, respectively. Two high-level comments are in order. First, it is difficult to separate intervener arguments regarding each individual Plan element from their general opposition to PBR. CEC, in particular, seeks to elevate concerns regarding particular aspects of the PBR Plan to be a justification to return to COS rate-making (or, alternatively, to adopt a type of regime that that is PBR in name only, contemplating multiple intensive reviews of all management decisions made by the Companies during the term). Many aspects of the Companies' proposed PBR Plan are unchanged from the Companies' previous PBR plans. Interveners find "misalignment" not only in the changes, but also in the key elements that had made the prior *negotiated* FEI and FBC PBR plans a success. They also find "misalignment" in regulatory constructs that have been an accepted part of COS regulation in this jurisdiction for many years. The issues raised by interveners regarding elements of FortisBC's proposed PBR Plan do not impugn the value of PBR per se, and are without merit in any event.

A. A FIVE-YEAR TERM IS APPROPRIATE

50. Among the interveners, only ICG and CEC provided detailed submissions opposing the proposed five-year PBR term. FortisBC addresses their main arguments below.

(a) Response to ICG's Submissions on PBR Term

51. ICG's first argument for a shorter term is that it "does not accept that the efficiency investments, if any, are as finely tuned to the regulatory regime as would need to be the case to justify a 5 year PBR Plan".[68] ICG is approaching the term analysis backwards. PBR is about creating opportunities to find efficiencies. The Commission should select the term so as to maximize these opportunities (counterbalanced by the need for periodic rebasing), not try to identify the shortest term necessary to make already identified opportunities viable. Shortening the term would *guarantee* that certain opportunities will not exist. A shorter term

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[68] ICG Submission, para.45.

also reduces the power of the incentive for management to find - using economic terms - the best available combinations of inputs to produce outputs. There is an opportunity cost to customers associated with a shorter term, which ICG is ignoring.

52. ICG's other argument is that "a 5 year PBR Plan should only be approved for a utility with rate stability closely following inflation. That may be the case for FEI, but it is not the case for FBC."[69] ICG has not cited any evidence in support of the notion that PBR cannot work in the context of a utility that has recently been experiencing rate increases higher than inflation. Indeed, based on the evidence of both Drs. Overcast and Lowry, the scenario envisioned by ICG merely suggests that the X-factor for the utility will tend to be negative. FBC's recent rate trajectory has had to do with the need to prudently invest in asset replacement and reinforcement projects and the cost of acquiring energy to meet customer demand. FBC's proposed PBR Plan accounts for such circumstances by excluding lumpy capital from the formula and by flowing through variances in power purchase expenses.

(b) Response to CEC's Submissions on PBR Term

53. Consistent with CEC's general opposition to PBR, CEC advocates a term of three years "at most".[70] Given that we are half-way through 2014 already, CEC is effectively advocating "at most" a two-year term. CEC's approach would increase the amount of regulatory review and direct costs to customers, compared to a two-year RRA because there would also be Annual Reviews. A two-year PBR term would also provide no greater potential for efficiency investments than a two-year RRA, and would (other things being equal) suggest a lower X-Factor that provides customers with less up-front benefit. There would also be fewer benefits shared. A longer term is necessary to give the Companies time to identify and implement opportunities for savings and to realize the benefits.

54. The reasons that CEC has advanced in opposition to a five-year term do not withstand scrutiny.

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69 ICG Submission, para.47.

70 CEC Submission, para.65.

- CEC maintains that customers will be exposed to "increased forecasting and estimating uncertainty and error" and "increased risk that the costs of the PBR plan will exceed any real benefits".[71] In fact, FortisBC's proposed PBR Plan reduces forecasting risk to customers from the risk under COS, regardless of the PBR term. Formula inputs and flow-through items will be re-forecasted annually in the fall of the preceding year, as opposed to preparing two-year forecasts in the spring before the first year of a two-year COS test period (as per the last RRAs).

- CEC cited in support of a short PBR term a passage from the AUC's PBR decision that stated "... while it is a praiseworthy pursuit to want to avoid a disruption of frequent base rate cases, it is hard over the course of years to base rates on costs if you don't once in a while look at the costs."[72] The quotation is actually a statement of NERA addressing Enmax's proposal for a 10-year PBR term, and in that context FortisBC takes no issue with that comment. The AUC approved a five-year term, consistent with FortisBC's proposal. The AUC stated:[73]

> 836. The Commission considers that a five-year fixed term for each of the PBR plans is reasonable. The Commission has chosen this period recognizing that some of the elements approved in the PBR plans in this decision are novel and this term is consistent with the typical term for PBR plans in North America. Although a shorter term tends to blunt the incentives for companies to identify and implement productivity improvements, the Commission has approved the inclusion of an efficiency carry-over mechanism to mitigate this effect.

- CEC perceives FortisBC's five-year proposal only in terms of customers losing "the benefit of embedding the 'productivity savings'".[74] First, the rebasing is only delayed, not "lost". Second, there is an opportunity cost to the approach

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[71] CEC Submission, para.28.

[72] CEC Submission, para.41.

[73] AUC Decision 2012-237, para.836.

[74] CEC Submission, para.55.

CEC is advocating, which CEC is not recognizing. Frequent rebasing only benefits customers to the extent that savings have been achieved. Under PBR, the rebasing is less frequent but there is a real potential for the utility to generate greater benefits. Every regulator that has ever approved PBR has implicitly recognized and accepted this dynamic. The AUC *expressly* recognized that a shorter term blunts the incentive properties of the PBR.[75] The OEB has also recognized this principle explicitly:

> PBR decouples the price (the distribution rate) that a distributor charges for its service from its cost. This is deliberate and is designed to incent the behaviors described by the Board in 2000. This approach provides the opportunity for distributors to earn, and potentially exceed, the allowed rate of return on equity. It is not necessary, nor would it be appropriate, for ratebase to be re-calibrated annually."[76]

B. TREATMENT OF COSTS UNDER PBR PLAN

55. FortisBC addresses below intervener arguments on the proposed treatment of capital and O&M under the PBR Plan. Some of the issues included by CEC in its discussion of O&M and Capital treatment under PBR actually relate to the base year costs, and have been addressed in the Non-PBR Reply Submissions of FEI and FBC.[77]

(a) Controllable Costs – O&M

56. Only CEC and BCPSO addressed O&M in any detail. CEC has submitted that FEI's regulatory and business development O&M should be excluded from the formula. Otherwise, CEC and BCPSO's PBR O&M submissions focussed on the inclusion of a growth factor (they both oppose it) and how a growth factor should be determined (CEC opposes using forecasted customer additions).

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[75] AUC Decision 2012-237, para.837.

[76] Exhibit B2-8, BCUC IR 3.12.2.1; OEB's Report (18th October, 2012) titled "Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach"

[77] In particular: pp.75-77 re the customer additions forecast.

Business Development Group Expenditures Properly within the Formula

57. CEC asserts that the Business Development group should be excluded from the O&M formula or "that there be accountability for ensuring benefits are optimized and not compromised to the PBR cost cutting incentive".[78] CEC correctly sees the benefits of the Business Development group to ratepayers. However, its assertion that the group should be excluded from the O&M formula is misguided. There is an alignment of ratepayer and shareholder interests with respect to Business Development group expenditures. FEI has been clear that it views the Business Development groups' activities as a crucial and necessary component of its operations.[79] The nature of the Business Development group's activities are that they require development over time and, for this reason, FEI has stated that it "requires stability in personnel and budget planning".[80] It is therefore in FEI's interest to maintain funding to this group so that the business can continue to develop appropriately. However, if FEI found a way to reduce the expenditures in this group without compromising the benefits that the group provides, this would be beneficial to ratepayers. In this scenario, customers would continue to reap the benefits of the Business Development group's activities, but also share in any overall savings over the course of PBR and benefit from the lower overall O&M after PBR.

Finance and Regulatory Group Expenditures Properly within the Formula

58. CEC discusses the O&M costs of FEI's Finance and Regulatory department and incorrectly asserts that "there is no reason why regulatory costs should be subject to formulaic increases under PBR for which the Utility would be rewarded if underspent, when the proposition is that regulatory costs will be dramatically reduced."[81] However, consistent with the theory of PBR, the Finance and Regulatory department O&M costs are controllable costs of the utility and properly belong under the O&M formula. Furthermore, FEI's Finance and Regulatory O&M costs are forecast to be relatively flat over the PBR term (rather than being

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78 CEC Submission, para.317.

79 Exhibit B-11, BCUC IR 1.110.2.

80 Exhibit B-11, BCUC IR 1.110.2.

81 CEC Submission, para.322.

"dramatically reduced" as the CEC asserts).[82] As FEI has discussed fully in Part Three of its Non-PBR Reply Submission, the evidence is that the reduction in regulatory costs due to PBR will not reduce the O&M requirements of FEI's Finance and Regulatory department.[83] This is in part because regulatory hearing costs (including external legal, expert witnesses and consultants, Commissioner costs, PACA awards, administrative costs such as courier expenses) are recovered in deferral accounts.[84] Consequently, a reduction in such costs has no impact on the Finance and Regulatory department's O&M requirements. In addition, other significant regulatory applications and processes that are anticipated over the PBR period are forecast to offset any savings in the Finance and Regulatory department due to PBR. As FEI has stated, "If FEI were not under PBR, the forecasts for Finance and Regulatory department staff may be increasing rather than staying at existing levels."[85] On a more principled basis, however, the base year costs should reflect the resources required by the utility in the base year going into PBR, and should not be reduced by guestimates of the efficiencies that may be achieved over the PBR Period. As FEI has discussed more fully in its Non-PBR Final and Reply Submissions, this kind of "baking in" of efficiencies into the base year distorts the PBR formula (which already includes factors for efficiencies) and therefore compromises the utility's reasonable opportunity to recover its prudently incurred costs and earn its fair return.

O&M Associated With AMI

59. CEC states that "there is no process to ensure that all AMI O&M benefits are captured and excluded."[86] This argument, which is without merit, is addressed in FBC's Non-PBR Submission.

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[82] Exhibit B-1, p. 192.

[83] Exhibit B-8, CEC IR 1.23.2; Exhibit B-23, CEC IR 2.74.1 and 2.75.1; Exhibit B-24, BCUC IR 2.292.1, 2.292.2 and 2.292.3.

[84] Exhibit B-23, CEC IR 2.74.1 and 2.75.1.

[85] Exhibit B-24, BCUC IR 2.292.3.

[86] CEC Submission para.323.

Rationale for Including a Growth Factor

60. FortisBC's proposal to include a growth factor in the PBR Plan represents no change from the prior plans. BCPSO and CEC adopt the position of Mr. Bell that, while customer growth is a cost driver, FortisBC's cost history does not support both an increase related to inflation and an increase related to growth.[87] FortisBC addressed Mr. Bell's position in its initial PBR Submission, pointing out that (i) the I-Factor and the growth factor serve different purposes, and (ii) the historic O&M per customer was influenced by a number of factors that precluded drawing any conclusions about inflation.[88] FortisBC would only add that CEC's position is at odds with the views of its own expert on this point.[89]

Response to CEC's Argument Regarding Forecast Risk

61. CEC opposes using forecast customer growth, and favours using the prior year's actual customer number for the prospective year. CEC's view is that FortisBC's proposal gives rise to forecast risk for the customer (or as CEC puts it, "embedding errors and compounding them").[90] FortisBC submits:

- First, CEC does not appear to recognize that relying on the prior-year's actuals is simply another way of forecasting. In effect, one is assuming that the next year's growth will look like the prior year's growth. It is difficult to understand how that approach should be expected to be more accurate than accounting for the circumstances that are expected to occur in the relevant year, as is done when using a forward-looking forecast. The fact that FortisBC also uses forecasts rather than prior year actuals when setting rates on a COS basis demonstrates that this is an accepted regulatory practice.

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87 BCPSO Submission, para.22. CEC Submission, paras.256 to 261.

88 FEI-FBC Exhibit B-44 Rebuttal Evidence to Mr. Bell, p.3, lines 23 to 31.

89 In his response to BCUC-CEC (Lowry) IR 2.5.1, Dr. Lowry identified a "solid rationale" for including both inflation (growth input prices) and number of customers (as a proxy for growth scale) in a revenue cap formula.

90 CEC Submission, para.92.

- Second, FortisBC will be using a proven, Commission-approved forecasting methodology. FortisBC has demonstrated that, contrary to CEC's assertion[91], the methodology yields unbiased results of FEI's customer additions (see FEI Non-PBR Submission/Reply Submission, Demand Forecasting).

- Third, CEC's arguments regarding the magnitude of the forecasting risk are based on a misinterpretation of FortisBC's proposal. In particular, it is evident that CEC believes that forecasting errors would compound during the PBR term[92], when in fact FortisBC's approach involves re-forecasting the number of customers and resulting customer service line additions each year using updated information from the prior year. Annual reforecasting actually reduces the forecast risk relative to two-year COS RRAs that are based on two-year forecasts.

62. CEC opposes using average customers to reflect O&M growth because "there is no good calculable answer as to the linkage between average customers and O&M costs."[93] The average number of customers is a reasonable proxy, was used in the last PBR plans, and is commonly used in PBR.[94] There is value in its simplicity and clarity. FortisBC's proposed approach is also efficient because the revenue forecast is consistent with and based on the number of customers. The use of average customers is neutral *vis a vis* customers and FortisBC.

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[91] CEC Submission, paras.250 to 286.

[92] See, for instance, CEC Submission paras.284, 288, 376, and 529 where CEC variously states that "all of which would carry forward into the O&M base for the next year", identifies "compounding of the error in the recursive formula" and states that "Customer service lines are not trued up to actual" and "…the formula does not rebase…This would apply also to any errors that arise out of the use of the customer count and or the service line addition count."

[93] CEC Submission, paras.266, 281.

[94] For instance, Dr. Lowry stated: "In the energy distribution business, however, we have noted that the number of customers served is the dominant output variable driving cost in the short and medium term". Lowry Evidence, p.10

(b) Controllable Costs – Capital

Inclusion of FBC's Capital in PBR Plan

63. CEC maintains in its FBC Non-PBR Base Capital Submission that all of FBC's capital expenditures should be excluded from the PBR formula. CEC claims that variability in capital makes FBC likely to defer expenditures and under-spend the PBR formula, resulting in excessive unfair returns.[95] These submissions are without merit.

64. CEC supports its argument that capital expenditures are too variable to reliably include in the PBR formula with reference to the historical variance in FBC's total capital expenditures between years 2010 to 2013.[96] However, 2013 Base Capital incorporates an adjustment for non-recurring major projects and an adjustment to account for certain non-controllable items.[97] It is this adjusted capital expenditure figure to which the PBR formula is applied. Examining year-over-year variability in total capital, rather than just the controllable portion of capital that FBC is proposing to include in its 2013 Base Capital, is significantly skewing the results. The adjustments made to arrive at 2013 Base Capital eliminate a large degree of the variability that occurs in capital expenditures year over year.[98]

65. CEC also looks to variations between FBC's budgeted and actual capital expenditures in past years, and suggests that the Company has "a history of underspending against approved amounts".[99] As is expressly acknowledged by CEC, the figures it relies upon again consider total capital expenditures rather than only the portions included in 2013 Base Capital, and there were "extenuating circumstances" that contributed "significantly" to the variances.[100] The majority of these variances in historical capital expenditures arose from factors that were not controllable by FBC, such as unanticipated market variances, lower than expected customer activity and project rescheduling as a result of the timing of Commission

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[95] CEC Non-PBR Capital Submission, para.30-32.

[96] CEC Non-PBR Capital Submission, para.4, 15.

[97] Exhibit B-1-FBC Application, p.56.

[98] Exhibit B-25 - FBC Response to CEC IR 2.34.1.

[99] CEC Non-PBR Capital Submission, para.4, 18.

[100] CEC Non-PBR Capital Submission, para.20.

decisions or labour disruptions. Further, the majority of the variances were related to capital projects that were approved pursuant to CPCN applications. As FBC is seeking to have these types of expenditures tracked outside of the PBR formula, the majority of these variances between the budgeted and actual figures will not occur.[101]

66. In considering the forecast of capital expenditures during the PBR Term, CEC looks at how expenditures vary within the major functional areas of capital.[102] This also emphasizes the differences between expenses between individual years, rather than over the entire PBR Term. CEC ignores the fact that the PBR formula is to be applied to 2013 Base Capital at the aggregate levels, rather than being applied at the functional level.[103] This approach is consistent with one of the guiding principles of the PBR Plan: that it should be easy to understand, implement and administer, in order to reduce regulatory burden. In contrast, the type of granular analysis conducted by CEC is contrary to this principle and unnecessarily increases the complexity of the mechanism.[104] When Capital is determined under the PBR Formula at an aggregate level, FBC is able to determine the appropriate allocation of overall funds, between the different functional areas, as needed, as well as over the entire length of the PBR Term.[105]

67. Much like its approach to historical capital expenditures, CEC's approach to the capital projects also ignores what figures are captured within the forecasts. CEC relies on Table C5-3 from the Application to show variations in forecast Total Gross Capital Expenditures during the PBR Term. However, when the same table is prepared without CPCN-related projects and one-time major expenses, the forecast variability disappears.[106]

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[101] Exhibit B-10 - FBC Response to CEC IR 1.3.3.

[102] CEC Capital Submission, para.13.

[103] Exhibit B-7 - FBC Response to BCUC IR 1.28.2.1.

[104] Exhibit B-7 - FBC Response to BCUC IR 1.28.2.1.

[105] Exhibit B-7 - FBC Response to BCUC IR 1.98.1.

[106] Exhibit B-10 - FBC Response to CEC IR 1.71.1.

68. FortisBC submits that, as set out in the FBC Non-PBR Submission[107], including Regular Capital under the PBR formula gives FBC the appropriate flexibility to find and capture efficiencies for the long-term benefit of customers.

Growth Factor

69. As with O&M, BCPSO maintains that the growth factor for capital yields a formula that is too generous.[108] BCPSO cites Mr. Bell's evidence, who had based his conclusion on the fact that neither total capital nor distribution sustainment had tracked customer growth for the period 2007-2012.[109] There is no particular reason to expect that total capital expenditures would have been linearly related to customer growth during the 2007-2012 period, as this total capital includes expenditures on system reinforcement.[110] Mr. Bell agreed under cross-examination, with reference to numerous practical examples, that the addition of customers affects distribution capital requirements.[111] This is also consistent with basic utility economics since adding a customer requires adding capital.

70. BCPSO's argument that FortisBC's capital formula is too generous is inconsistent with BCPSO's stated preference for the AUC model. FortisBC's proposed PBR Plan is actually much less generous to the Companies than the AUC plan in this regard. Other than the escalation by I-X, the AUC formula implicitly assumes that the average cost per customer in total in the next period is the same and there is no lower rate base as a result of depreciation. The effect of this is that rates under the AUC formula would provide an additional spending envelope equal to the amount of depreciation that was not taken out of rate base. FortisBC's proposed PBR Plan recognizes depreciation of the existing rate base directly and reduces rates

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[107] FBC Non-PBR Submission, para.89-91.

[108] BCPSO Submission, para.21.

[109] (Bell evidence at page 14 reproduced in B2-26) is FBC Bxhibit B.14, ICG IR 1.36.1,

[110] This same issue was addressed in estimating TFP with both witnesses concluding that there is no reasonable way to measure the impact of these costs on TFP and hence no way to measure the relationship to customer growth which was an output in all of the TFP studies.

[111] T6:1311, l.14-1314, l.6 (Bell).

for the effect of lower rate base.[112] In the absence of a growth factor in the proposed PBR Plan, there would be no way to recognize the new operating costs and rate base included in revenue requirements.[113] In the context of FortisBC's proposed PBR Plan, the failure to include these costs would violate the regulatory compact.

(c) Limited Rebasing of Capital

71. BCPSO advocates incorporating a cumulative threshold that reflects the cumulative nature of capital, and provides the example of "if rebasing were to occur when spending exceeded +/- 30% of the cumulative average annual capital, this would limit the cumulative impact of any repeated under spending."[114] The BCPSO proposal constitutes an additional complexity that would serve to further weaken the capital incentive in the plan even more than the proposed +/-10% limited capital rebasing proposed by the Utilities.[115]

(d) Flow-Through Costs and Revenues (Y-Factors)

72. CEC is the only intervener that has addressed flow-through costs in any detail. CEC's submissions are characterized by a variety of incorrect statements and illogical arguments. FortisBC submits that the following CEC arguments should be rejected.

73. CEC begins its discussion of flow-through costs and revenues by making the following statement: "There are no benefits to the customers from expenditures which are tracked outside the PBR formula which is the bulk of the revenue requirement which are significant."[116] There is one notable benefit that CEC is overlooking: FortisBC could not operate and provide service to customers without those costs. There is a long-established practice of according flow-through treatment to unpredictable and uncontrollable costs so that customers pay the actual costs and there are no windfall gains or losses.

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[112] FortisBC PBR Submission, para. 40. Transcript Volume 4 page 628 line 22 to Page 630 line 2 and page 632 line 21 to page 633 line 17.

[113] FEI-FBC Exhibit B-44 Rebuttal Evidence to Mr. Bell, pp.4-6.

[114] BCPSO Submission, para.25.

[115] We have assumed that by "cumulative average", BCPSO is referring to adding up five years of +/- 10% for a total of +/-50% of the annual average, making +/-30% a more restrictive threshold.

[116] CEC Submission, para.508.

74. CEC states: "The flow through items will serve to shift the risk from the Utility to the ratepayer."[117] CEC adds that "the sizable amount of flow through costs and revenues represents another example of a misalignment between ratepayer and Utility interests and results in a significant loss of openness and transparency that would otherwise be afforded under a COS review."[118] The fallacy in CEC's "risk shifting" argument is the proposed flow-through items are, by and large, the same flow-through items that exist today under COS regulation (FEI's are the same, but FBC is proposing a few changes to align with FEI). The treatment of these flow-throughs remains the same as well. Therefore, maintaining the same fundamental profile of flow-through accounts, as had been the case in the previous COS and PBR regimes, maintains the existing risk profile for customers and the Companies. Eliminating flow-through treatment of uncontrollable costs would actually shift risk to the Companies. These amounts are sufficiently large that the resulting earnings risk would necessitate a rethink of ROE (which gets back to the long-established justification for deferrals in the first place).[119] CEC's "loss of transparency" argument is equally specious. The flow-through items will be reviewed each year under PBR at the Annual Reviews, which is twice as often as under a two-year COS RRA.

75. CEC states: "Activities such as managing interest expense and taxes are key customer concerns that are tracked outside but are not entirely outside management control."[120] FortisBC has addressed in IRs the extent to which interest expense and taxes are uncontrollable. The deferral treatment is focussed on the uncontrollable part of interest expense and taxes - the rate. The Companies have never had the ability to make "best efforts" to manage the Government of Canada bond yield and credit spread and have no "controllability" over whether governments change the income tax rates or tax laws.[121]

[117] CEC Submission, para.729.

[118] CEC Submission, para.735.

[119] FEI Exhibit B-11, BCUC IR 1.12.2

[120] CEC Submission, para.742 also paras.808, 809.

[121] FEI Exhibit B-8, CEC IR 1.46.1; FBC Exhibit B-7, BCUC IR 1.189.6; and 1.191.1.

FortisBC and customers will share in any savings resulting from anything other than a change in the interest rate or tax rate.[122]

76. CEC maintains that “Revenues are to be flowed through on the basis that they are uncontrollable by the Utility and that customers may make changes in the amount of natural gas they use for various reasons. Accordingly, there is virtually no incentive for the Utilities to develop revenue generating or other projects beneficial to the ratepayer.”[123] First, FortisBC has said it would bring forward revenue-generating items at the Annual Review. It is perplexing that CEC seems unwilling to rely on FortisBC’s willingness to propose revenue generating initiatives under PBR when it seems to trust FortisBC under COS and the incentives in each case are identical. Second, FortisBC’s revenue deferral accounts are unchanged from COS. FEI will continue to have customer additions (which FEI works to increase) and the industrial revenues (which FEI works to influence) outside of a deferral, consistent with CEC’s argument that incentives should target controllable costs. FEI cannot control the weather and the change in use that flows from weather variability, which is why FEI has the RSAM for example.

77. FortisBC submits that the Commission should be confident in moving forward with well-established regulatory constructs for flow-through costs, and rejecting intervener challenges to them.

(e) CPCN Capital Treated Outside Formula

78. Only ICG and CEC addressed CPCN capital treatment in any detail. They oppose elements of FortisBC’s proposal that are unchanged from FEI’s prior PBR Plan.

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[122] FEI Exhibit B-8, CEC IR 1.46.1.

[123] CEC Submission, paras.752, 754.

Response to ICG's Opposition to Using CPCN Criteria

79. ICG maintains that an effective PBR Plan for capital "must incent only recurrent expenditures" and the CPCN criteria are not limited to non-recurring capital.[124] It is not appropriate to use a test of "non-recurring" to identify the capital falling outside the formula. All capital investment is non-recurring in the sense that an investment made in one period will not be made again for many years. It is most appropriate to include within the formula capital those expenditures that are generally manageable and knowable based on customer growth and past capital budgeting experience. CPCN projects represent large, discreet and "lumpy" project investment that should not be placed under the formula.[125]

80. ICG's other argument is that using the CPCN criteria "has the unintended consequence of ensuring that changes to the CPCN Guidelines [sic - CPCN threshold] will also affect the PBR Plan."[126] There are three reasons why this argument should be rejected as a basis not to use the CPCN criteria. First, the thresholds for both FEI and FBC have been in place for many years, and FortisBC is not intending to propose any changes to it during the PBR period. Second, the size of the CPCN projects anticipated for the PBR period are such that a change would have to be relatively significant to have any practical implications. Third, the Commission is well-equipped to address unintended consequences - it could simply direct that the threshold remain in place during the PBR term.

81. CPCN projects are sufficiently important that public review and Commission approval are integral to the inclusion of the projects in the capital budget. There is an existing process and CPCN guidelines for this capital. The criteria are known and understood by stakeholders. The FEI and FBC Applications include lists of the CPCN applications that the Companies intend to submit during the PBR Period. Any other "line" drawn may require a change to the process under which the "outside the PBR" capital is reviewed, and would have to recognize that projects brought within the formula could not be reviewed in the same

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[124] ICG Submission, paras.51, 57.

[125] Exhibit B2-1, BCUC IR 296.5.1.

[126] ICG Submission, para.51.

fashion as is done today for CPCN projects. There is no compelling reason to deviate from the prior PBR design.

Response to CEC's Arguments on Treatment of O&M Impacts Associated With CPCNs

82. CEC agreed in its Opening Statement that the "exclusions of CPCNs from the PBR process is an appropriate methodology and is aligned with customer interests", subject to its concerns around treatment of O&M impacts.[127] CEC's concern appears to be that O&M savings associated with CPCN projects other than AMI give rise to a "material opportunity for the Utility to have the customers pay for the project costs and financing but potentially have to pay again when the savings are realized".[128] CEC is assuming that the proposed treatment is one-sided in favour of the utility; however, CPCN projects can produce O&M cost increases.[129] Either way, the X-Factor proposed by FortisBC already includes a stretch factor that represents a sizable margin conferring immediate benefits on customers. Both of these factors make it reasonable to avoid the unnecessary complication of differentiating additional savings (or costs) associated with CPCN projects and adjusting the formula down (or up) to account for them. However, if the Commission is concerned, then it can always consider the O&M effects of a CPCN project as part of the CPCN process, and determine whether these effects should flow through outside the formula.[130]

Response to CEC's Opposition to Considering CPCN's in Annual Review

83. CEC maintains that the protection provided by the CPCN threshold "is proposed to be lost as the Utilities indicate that they will possibly seek approval for projects that would otherwise qualify for CPCNs at the Annual Review as opposed to a stand-alone CPCN application."[131] This is a red herring. Irrespective of the forum in which CPCN projects are brought forward, or the timing of the application, FortisBC must satisfy the same statutory test

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[127] T2:170.

[128] CEC Submission, para.396.

[129] Exhibit B2-1, BCUC IR 2.305.1.

[130] T3:492 (Roy); T2: 333 (Roy).

[131] CEC Submission, para.777.

and evidentiary burden. The Commission will retain the ability to direct that a CPCN be heard separately, just as it could direct that a CPCN application should be heard with the Annual Review.[132]

(f) Exogenous (or "Z") Factors

84. CEC is the only intervener that directly opposes the proposed treatment of exogenous factors.[133] CEC's arguments are generally concerned with advocating for a materiality threshold. FortisBC's proposed exogenous factor treatment is unchanged from the treatment in the prior FEI and FBC PBR plans and also reflects how unforeseen and uncontrollable events are addressed under COS. CEC's arguments for departing from the existing practice are not supported by a coherent logic and would confer windfall gains or losses upon customers or the Companies.

85. CEC's main justification for a materiality threshold seems to be that the Companies' proposal is somehow asymmetrical to the detriment of customers. CEC states, for instance: "The PBR formula should not reward the Utility for events beyond management control and should certainly not do so if the Utility is not willing to undertake the corresponding risk for events that are beyond its control. This is a good rationale for a materiality threshold for Z factors."[134] FortisBC's proposal is symmetrical. Favourable exogenous factors, which FortisBC will identify at the Annual Reviews, will flow entirely to customers.[135] An exogenous factor adjustment is not "rewarding" the Company or customers, since costs and savings are simply being passed through dollar for dollar.

86. CEC also states: "The materiality of events which can be used to trigger a Z-Factor process is not defined and increases the risk to customer of inappropriate flow through of expenses."[136] Each Z-Factor is examined by the Commission on a case by case basis. It

[132] Exhibit B2-1, BCUC IR 3.10.1.

[133] ICG expressly endorsed that element of the Plan, assuming the Commission proceeds with PBR: ICG Submission, para. 74. Other parties were silent.

[134] CEC Submission, para.481.

[135] T4: 820 starting at line 1.

[136] CEC Submission, para.622.

would not be appropriate for the Commission to evaluate FortisBC's proposed PBR Plan from the premise that the Commission will not do its job properly.[137]

87. CEC advocates a materiality threshold of 30 basis points of ROE per year.[138] CEC's submissions focus on exogenous costs that FortisBC might seek to claim, so it is unclear whether CEC is similarly content for the Companies to keep any exogenous benefits up to that level (asymmetric treatment would be inconsistent with CEC's primary argument addressed above). Either way, 30 basis points per year is a large threshold. For context, this is equivalent to greater than $4 million in O&M. For FEI's capital, it is very likely in excess of $45 million, and potentially much higher depending on the asset class. Establishing this threshold for one year has ongoing implications because all the remaining years in the PBR would lose or gain the 30 bps as well. Under CEC's proposal, an early Z-Factor could result in a very large cumulative windfall for either customers or the Companies. Based on the types of exogenous factors addressed under FEI's last PBR Plan, CEC's approach (with symmetrical treatment) would have favoured the Companies since a number of exogenous factor flow-throughs were for rate decreases.[139] In a scenario that favoured customers, this could impair the Companies' opportunity to earn a fair return.

88. CEC relies on the 40 basis point materiality threshold in the AUC PBR plan as support for a materiality threshold for FortisBC.[140] CEC states, for instance: "Several costs such as Interest Expense and Return on Equity which are included in FEI and FBC would likely have been excluded in Alberta or have required demonstration that they met 'Z' factor criteria."[141] FortisBC sees no principled rationale for a materiality clause for the reasons articulated previously. As a practical matter, Alberta utilities are much better equipped to manage exogenous factors under the formula than FortisBC because of the AUC PBR plan design.

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[137] CEC IR 3.29.7; T 4 page 802 lines 14 to end, and page 803 starting at top.

[138] CEC Submission, para.622.

[139] T4: 819, l.6 – 820, l.15 (Roy).

[140] CEC Submission, para.644.

[141] CEC Submission, para.741.

FortisBC addressed in its initial PBR Submission how the AUC PBR plan provides much greater flexibility to Alberta utilities.[142]

89. CEC lists the guidelines (apart from materiality) that they recommend for exogenous factors.[143] For the most part, these criteria are similar in effect to the criteria in FortisBC's proposed PBR Plan.[144] CEC has introduced a new criterion "mitigated to the greatest extent by the Utility". FEI is governed by the prudence test and any exogenous factor will be tested under FortisBC's proposal. A guideline that is focussed on outcomes rather than prudent conduct, which CEC appears to be advocating, is contrary to the UCA.

C. EARNINGS SHARING MECHANISM

90. CEC suggests that FortisBC has departed from "matching customer interest" by replacing a "line-by-line review used to determining incentive sharing between the customer and the Utility in the 2007 plan."[145] CEC is mistaken about the nature of the FBC 2007 PBR Plan. The Negotiated Settlement Agreement ("NSA") regarding FBC's 2007 PBR Plan included an ESM.[146] FortisBC's ESM proposal is essentially identical to the prior FEI and FBC PBR plans.[147]

91. A significant number of CEC's ESM-related submissions[148] are really just restatements of CEC's earlier arguments against PBR generally, and are equally invalid in this context. For instance:

- CEC maintains that "to the extent that the rates represent any more than what is legitimately established as the appropriate return on equity based on the prudent management there are no 'savings' for the customer, and the increase

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142 FortisBC PBR Submission, para. 40. Transcript Volume 4 page 628 line 22 to Page 630 line 2 and page 632 line 21 to page 633 line 17.

143 CEC Submission, para.639, 653.

144 Exhibit B2-11, CEC IR 3.31.1.

145 CEC Submission, para.445.

146 FBC Exhibit B-1, page 31 lines 31-33. Exhibit B2-8, BCUC 3.26.9 (B-2-8) G-58-06.

147 The only difference was that FBC's 2007 PBR plan had included a mechanism to review any amounts over 2% variance.

148 CEC Submission, para.455.

in ROE comes at additional expense."[149] This cannot be true. Rates are fixed in advance based on the formula, leaving no potential for the increase in earned ROE to come from customers. FortisBC can only generate higher returns if it is able to manage costs efficiently so as to produce the same output with fewer inputs or produce more outputs with the same inputs. FortisBC must also first exceed the savings embedded in the stretch factor, all of which accrues to customers. If FortisBC benefits under the ESM through a higher return, then the customers will share equally under the ESM.

- CEC incorrectly states that the ESM "does not limit the risk to the customer, because it does not limit the earnings available to the Utility which may or may not be achieved as a result of beneficial actions".[150] It is not accurate to equate the potential for FortisBC to gain with harm to customers, for the reasons described above. Moreover, the ESM mitigates risk to both customers and the Companies because they share equally any upside from savings above the formula and any downside of the utility not achieving sufficient savings to meet the formula.[151] The balanced nature of the ESM provides credibility for the PBR Plan.[152]

- CEC characterizes the impact of an ESM as follows: "Theoretically, the 50:50 ESM provides that the risk is shared equally between the customer and the Utility. However, the ratepayer is at risk for 50% of the Utility return above ROE plus it would need to make up the entire actual cost of any under-spending or deferral that occurred (rather than an efficiency), whereas the Utility is only at risk from under-earning. FEI would recover from ratepayers 50% of the actual return on equity below its approved return on equity."[153] The ratepayer is not

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[149] CEC Submission, para.450.

[150] CEC Submission, para.458.

[151] T2:262, ll.13-17 (Roy).

[152] FortisBC PBR Submission, para.91.

[153] CEC Submission, para.518.

appropriately characterized as being "at risk" for 50% of the utility return above ROE because it is the utility that is sharing with customers, not the other way around. Under a COS regime 100% of those "under-spendings" flow to the utility.

92. On the topic of 50:50 sharing, CEC also states: "Capital investments may be made that are paid for by the ratepayer, while the Utility earns on underspending. The CEC asked whether or not the contribution of investing capital to reduce O&M costs could be recognized such as with a 75:25 split in the ESM however the Utility does not recognize the concern."[154] The scenario identified cannot arise under FortisBC's proposal because the cost of service driven by capital spending is also subject to sharing and not "paid by the ratepayer". The response to the IR cited by CEC had also included a discussion on why asymmetric ESMs are unfair and why CEC's concept of differentiating among expenditures based on their purpose is unadvisable.[155]

D. EFFICIENCY CARRY-OVER MECHANISM

93. FEI's last PBR plan included an ECM for capital, and FortisBC's proposal is to adopt a rolling five year ECM that also applies to O&M. BCPSO and CEC have opposed any ECM.

(a) BCPSO Arguments on ECM

94. BCPSO seeks to characterize the ECM as a mechanism that gives the Companies something for nothing. It suggests that the utility will benefit twice by reducing its costs, and characterizes the process of achieving cost reductions as being simple and expected in light of the "fiduciary responsibility" on management to seek efficiencies.[156] These submissions miss the mark. The operating assumptions underlying an ECM, which are reasonable assumptions, are that (a) the regulator has vetted and approved reasonable base year costs, and (b) the utility must take more than the typical steps to achieve incremental cost savings in order to

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[154] CEC Submission, para.467.

[155] FEI Exhibit B-8, FEI CEC IR 1.48.2.

[156] BCPSO Submission, para.34.

meet the "stretch" formula. We have addressed in Part Two above the fallacy of the "fiduciary duty" argument.

95. BCPSO concedes that the AUC has characterized ECMs as an innovative means of encouraging companies to continue to make cost saving investments near the end of the PBR term.[157] However, BCPSO seeks to distinguish the AUC plan:

> Clearly, in Alberta, the ECM was to incent continued investment throughout the PBR term. Under the Fortis proposed building block model, the utility can under spend on O&M and capital in each year and earn superior returns, and then claim an ECM. But there is no need, in circumstances where the utility can benefit from underspending the formula, to also provide an additional incentive to underspend in the form of an ECM. Also, under the Fortis plan, a large productivity investment will likely qualify for CPCN treatment. As such, BCPSO submits there is no need for any ECM in the Fortis PBR.[158]

Neither of these factors are distinguishing features. An Alberta utility can underspend O&M and capital each year and enhance its ROE, which will then flow to the ECM. The AUC has been approving significant capital trackers, which are similar in nature to FortisBC CPCNs.

96. BCPSO also seeks to portray the ECM as presenting significant downside risk for customers.

- BCPSO first sets up the following scenario: "Fortis underspends budget in year 5, the ratepayer gets half the benefit of the underspending under the ESM, but in year 6 rates will be set on a cost of service basis. Fortis will submit forecasts which may or may not accurately incorporate efficiency gains achieved under the PBR."[159] As with many of the intervener arguments, the underlying premise of this argument is that the Commission is incapable of doing its job. FortisBC submits that the Commission should be evaluating the proposed PBR Plan on the premise that the Commission will be able to determine just and reasonable rates

[157] Decision 2012-237, para.775.

[158] BCPSO Submission, para.29.

[159] BCPSO Submission, para.35.

in the next COS review. BCPSO's lack of confidence in COS review after PBR is directly at odds with its insistence in the superiority of COS review versus PBR.

- BCPSO next envisions a scenario where "if Fortis overspends budget, the ratepayers will pay for this overspending twice, once as a direct result of the overspending and once as a result of the ECM."[160] This cannot occur under FortisBC's proposal since the ECM is symmetric. If FortisBC overspends, then it will under-earn. There will be no ECM benefit in favour of FortisBC to carry over. Instead, FortisBC will pay back ECM benefits to customers.

(b) CEC Arguments on ECM

97. CEC, like BCPSO, maintains that ECM amounts to "the customer continu[ing] to reward the Utility when there are no earnings which it is 'sharing' with the customer."[161] This argument is starting from the wrong premise. The concept of an ECM is that all benefits are reflected in customer rates at rebasing but all of the required recovery of and return on the efficiency investments has not been paid. In other words, the ability to recover the costs on the investment declines over the five-year period and rebasing embeds the lower cost going forward for the project.[162] The full carrying costs over the five years have not been paid if the project was implemented after the first year. The ECM is designed to make the Company whole for the portion of these costs not recovered in the rates during the remaining years of the PBR term.

98. CEC's submissions on the Rate Base Benefit Factor (RBBF) are based on an incorrect understanding of how the RBBF is used. CEC characterizes the RBBF "as a means of determining the impact of underspending on capital investment." The RBBF is only for purposes of determining the ECM, not to "determine the impact of underspending on capital

[160] BCPSO Submission, para.36. The similar argument made by BCPSO in para.39 is also factually incorrect.

[161] CEC Submission, para.514.

[162] FEI Exhibit B-16; FBC Exhibit B-6, Response to Undertaking of Commissioner Cote.

investment". CEC has also exaggerated any potential issues with the 15% value by assuming that it applies throughout the PBR period.[163]

99. CEC states that "it was demonstrated in the Oral Hearing that there is actually no incentive to undertake an investment in an efficiency measure at the end of the term because of the ECM, and conversely there is an incentive to pursue O&M savings."[164] CEC has not accurately captured the thrust of the evidence (which CEC later quoted in paragraph 571 of its Submission). FortisBC has consistently identified that, in the absence of an ECM, the decreasing payback period as the PBR term progresses is a structural impediment to investing in efficiencies later in the term. Commissioner MacMurchy's example related to O&M in the final year of PBR. The witnesses identified instances where an ECM would still work as intended for 5th year O&M, which included: (i) when the cost of the efficiency initiative is a capital item while the savings are in O&M (as would occur, for instance, when investing in a new technology or IT system to save on labour costs), and (ii) initiatives where there is little or no cost attached to achieving the efficiency savings. It is only the specific example posed by Commissioner MacMurchy that does not work in the ECM – that is, the case where the upfront cost of the efficiency initiative undertaken in year 5 is an O&M item and the annual O&M savings (or savings generated within the 5th year) is less than upfront O&M cost. FortisBC would not even pursue an initiative with those expected results.

100. CEC claims that Commissioner MacMurchy's 5th year example of a large O&M cost that produces a smaller annual O&M savings going forward is a problem in other years of the PBR term as well.[165] This is incorrect. This can be illustrated by assuming that Commissioner MacMurchy's 5th year example occurred instead in the 4th year - with an upfront O&M cost of $1 million and annual savings of $500 thousand. In the 4th year there would be a net O&M cost increase of $500k ($1 million upfront costs - $500 thousand of annual savings) that would carry forward in the ECM. CEC focuses on this but comes to the wrong conclusion because it ignores what happens in the following year. In the next year (the 5th year

[163] CEC Submission, para.398.

[164] CEC Submission, para.566. CEC footnote 612 is a wrong reference it should be T4, p.740 not p.750.

[165] CEC Submission, para.573.

in this example) only the $500 thousand of annual savings would occur so the net year-to-year impact would be to go from + $500 thousand in year 4 to - $500 thousand in the 5th year. The net benefit in year 5 that gets carried forward in the ECM would therefore be $1 million. The net result would be an ECM penalty of $500 thousand carried forward from year 4 and an ECM benefit of $1 million carried forward from year 5. While the cost and benefit effects are staggered by one year the ECM would handle the costs and benefits correctly. Commissioner MacMurchy was correct in noting that an efficiency initiative with an upfront O&M investment in excess of the annual savings is a concern for the ECM in the fifth year only.

101. CEC asserts that there would be damage to the business case of an efficiency investment because FEI is taking half of the benefits through the Earnings Sharing Mechanism.[166] These assertions are incorrect. As FEI explained in the response to CEC IR 1.49.2 (FEI Exhibit B-8), the ESM does not affect the business case of an efficiency investment. This is because the earnings sharing mechanism applies to both the costs and the benefits of an efficiency initiative.

102. In paragraph 616 of its Submissions CEC makes arguments about FortisBC refusing to carry savings from periods prior to 2013 beyond the base year, which is not the case. FortisBC has embedded the savings from prior periods in the base year O&M and is therefore carrying them forward beyond the base year. FEI has built large sustainable savings below the 2013 approved O&M into the 2013 base year O&M. In FBC's case sustainable savings are likewise built into the base and carried forward (savings from the AMI project are not appropriately reflected in the 2013 base year O&M so FBC is flowing those through outside the O&M formula). Savings from special initiatives and prior periods will therefore be reflected appropriately in the O&M levels throughout the PBR term for both FEI and FBC, and the CEC claims in paragraph 616 are without merit.

103. CEC suggests that the ECM should be rejected because it was "poorly researched and poorly documented"[167]. The stakeholders are familiar with the concept of ECM, since FEI's

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[166] CEC Submission, para.574. A similar claim is also made in CEC Submission, para.419.

[167] CEC Submission, para.561.

previous PBR included an ECM. FEI's 1998-2001 PBR also had a limited capital incentive mechanism that included a carryover component. The FEI 2004 PBR plan ECM was similar in many respects to the current proposal (including the concept of rate base benefit factor). ECMs are in place in Quebec and Alberta. FortisBC provided the examples and issues paper from Australia as another jurisdiction with an ECM approach.[168] Dr. Lowry's comments regarding ECM were also largely positive and supportive. For instance, Dr. Lowry stated:

> ECMs are a potentially useful component of PBR plans. They can in principle be designed to encourage long-term performance gains, discourage opportunistic timing of deferrable expenses, and share the resultant benefits equitably between utilities and their customers … The ECMs proposed by Fortis would provide some encouragement for the realization of long-term performance gains and some discouragement for the opportunistic timing of deferrable cost.[169]

104. FortisBC submits that there is a compelling rationale for an ECM and it should form part of the PBR Plan.

E. SAFEGUARDS - MID-TERM REVIEW AND OFF-RAMPS

105. ICG supports FortisBC's proposals on the Mid-Term Review and off-ramps if the Commission proceeds with PBR.[170] Other interveners, apart from CEC, were silent on the Mid-Term Review and financial off-ramp triggers (several interveners did address the service quality trigger, and those arguments are addressed in Part Five below).

106. CEC's submissions on the financial trigger for the off-ramp proposal start from the wrong premise about the nature of FortisBC's proposal. CEC's misunderstanding of the Companies' financial trigger is reflected, for example, in the following incorrect statements that characterize the proposal as being asymmetrical and retroactive:

- "…the financial trigger is asymmetric between the ratepayer and the Utility";[171]

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168 FEI Exhibit B-16.

169 Exhibit C6-20-1, BCSEA-CEC (Lowry) IR 2.16.1.

170 ICG Submission, para.74.

171 CEC Submission, para.658.

- "…the options for the customer to trigger an off-ramp are highly restricted while the Utility retains the option of filing a cost of service application at their discretion."[172]

- "The risk is exceedingly one sided as the ratepayer is not afforded the opportunity to file for 'cost of service' at their discretion."[173]

- "Similarly, it is not known if the Utility would seek to regain any losses it might have incurred during the PBR period."[174]

The evidentiary citations provided by CEC in its submissions on this point do not support the statements CEC has made and leave out important details.[175] FortisBC's proposal is symmetric. Customers have the same opportunities afforded by an off-ramp as the Companies. Utilities address financial distress through an application to the Commission. The equivalent mechanism for customers is a complaint to the Commission. There is nothing in the PBR Plan that would (i) purport to unlawfully fetter the Commission's discretion in the future, or (ii) skirt the rule against retroactive ratemaking. In short, CEC's arguments on the off-ramps should be rejected.

107. CEC maintains that in the event a PBR plan is approved a "multi-prong trigger point is more appropriate to protect ratepayer interests over the term of the PBR, if it is established at a low enough level to be acceptable to the customer in any given year".[176] CEC has provided no rationale for why a "multi-prong trigger point" is more appropriate than a single trigger point. The Companies have explained why a single trigger point is better in their response to CEC IR 3.45.3.

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[172] CEC Submission, para.660.

[173] CEC Submission, para.701.

[174] CEC Submission, para.689.

[175] Exhibit B2-11, CEC IR 3.40.2 and 3.43.5.

[176] CEC Submission, para.705.

F. ANNUAL REVIEW

108. ICG has expressed support for the FortisBC proposal for Annual Reviews if the Commission proceeds with PBR.[177] However, the general thrust of CEC's and BCPSO's submissions has made one thing clear: if PBR is going to work, then the Commission will have to be clear in its Decision about its expectations regarding the purpose of Annual Reviews. One of the key benefits of PBR will be eliminated if interveners that do not support PBR as a concept are permitted to take the approach at Annual Reviews of demanding from FortisBC detailed justification of individual efficiencies achieved in the prior year. The level of transparency provided during the last PBR Plan - which is what FortisBC is proposing to maintain now - is appropriate. Customers as a whole, and the Companies, will benefit from the Commission explicitly rejecting the demands of CEC and BCPSO and endorsing the prior approach.

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[177] ICG Submission, para.74.

PART FOUR: THE (I-X) FORMULA

A. PROPOSED INFLATION FACTOR (I-FACTOR) IS REASONABLE

109. CEC characterizes FortisBC's proposed composite I-Factor based on forecasts of BC-CPI and BC-AWE as being contrary to the objective of aligning the interests of customers and FortisBC.[178] It appears to advocate using BC-GDPIPIFDD as a macroeconomic inflation index, but potentially using EUCPI for capital.[179] BCPSO does not appear to take a position on FortisBC's proposal to use a composite I-Factor based on BC-CPI and BC-AWE, but (like CEC) opposes using forecast inflation. FortisBC submits that there is a compelling rationale for its proposal consistent with principles adopted for COS and prior PBRs, and there is no justification to adopt the interenvers' approach.

(a) Use of Composite Index Incorporating Labour-Specific Index is Appropriate

110. FortisBC's objective in including BC-AWE in a composite index was to recognize the higher labour inflation experienced by the Companies. CEC has not provided any evidence (because there is none) that BC-GDPIPIFDD or BC-CPI alone is more reflective of the labour costs that FortisBC experiences than BC-AWE. CEC's primary basis for opposing the use of BC-AWE appears to be that labour price indexes tend to rise more rapidly than corresponding macroeconomic indicators.[180] Selecting a measure that is less reflective of the labour inflation to be experienced by the Companies for the purpose of advantaging customers and disadvantaging the utility is not "aligning interests" -- quite the opposite. CEC is essentially urging the Commission to introduce known bias in the I-X formula so as to benefit customers at the expense of the utility.

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[178] Exhibit C12-2, CEC Opening Statement, p.5.

[179] 115."The CEC submits that the appropriate measure for inflationary cost pressures is a general macroeconomic measure of inflation and specifically the BC GDPIPIFDD." 176."The CEC concludes that the GDPIPIFDD index would be the most appropriate approach and that the EUCPI would be an appropriate approach for capital, if the Commission is to proceed with a traditional PBR." 98. The CEC submits that Dr. Lowry's evidence is the best evidence on the record for the choice of a macroeconomic inflation factor. 111. Dr. Lowry's evidence recommends using the BC CPI or the BC GDP IPIFDD as the appropriate macroeconomic indexes for inflation.

[180] CEC Final Submission, para. 109; FBC Exhibit C6-9, PEG Evidence, page 44 and Page 45.

111. CEC's discussion on the significance of the variances is one of a number of instances in its submissions[181] where CEC has presented data in a misleading fashion. It states:[182]:

> The CEC submits that the evidence shows that the Conference Board of Canada over estimates CPI and AWE. As a single forecaster its estimate of AWE exceeds the estimate of CPI by 100% more than the actual AWE historically exceeds CPI (0.62% to 0.31%). The evidence is that the Utilities proposed methodologies will over estimate inflation.

CEC's reference to 100% is meaningless and based on an artificial reference to actual CPI. The difference between the measures is only meaningful when considered in context of the actual measure itself. Comparing the quoted variances to a base inflation rate of 2% to 2.5% is quite a different perspective than concluding it is a difference of 100%. Presenting the data as CEC has done is misleading because it provides no context as to the magnitude of the differences in absolute terms - and it is the *absolute* number that is used in the formula.

112. CEC seeks to distinguish the circumstances that caused the AUC to incorporate a measure of labour inflation in the I-Factor.[183] It argues that "there is no evidence that the same influences" of price volatile commodities and a tight labour market "are present in BC as they are in Alberta." CEC's argument is a red-herring. FortisBC is proposing to use BC-AWE, which reflects conditions in BC.[184]

(b) 55% Labour/45% Non-Labour Weighting

113. CEC objects to using FortisBC's proposed weighting of 55% labour (BC-AWE)/ 45% non-labour (BC-CPI), citing the fact that FEI's O&M had been consistent at 45% labour/55% non-labour before reversing in 2012, while FEI's capital "has been in the 22% to 78% range

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[181] Other examples can be found at CEC Submission, para.78 (Discussed later in this section), para.591 (Describing the longer PBR term as increasing the Utility reward by 400% regardless of the actual duration of the cost-saving. There is no 400% increase in the Utility's reward. That math is based on a full five year term, when the PBR term is only three years longer than a typical RRA, and does not account for sharing.

[182] CEC Submission, para. 102.

[183] CEC Submission, para.105.

[184] T2: 289, ll. 1-17.

ending in 2012 at 24% to 76%".[185] First, the weightings should reflect the base year, not historical years. The reversal in O&M weightings occurred in 2012 when customer care was insourced, resulting in higher payroll costs and lower outside service costs (non-payroll O&M). Basing the weighting on O&M information on 2012 is appropriate because customer care will remain insourced during the PBR term. Second, the percentages CEC is using are not accounting for the fact that there is a labour component in the "non-labour" line item. For capital in particular, there is contractor labour in the non-labour line and accounting for that brings the capital labour percentage up to 64% from 24%, higher than the FortisBC's proposed weighting. Overall, 45% of non-labour is actually labour-driven.[186] This all supports the reasonableness of FortisBC's proposed 55% labour weighting.

114. It is noteworthy that, although CEC is adamantly opposed to a labour specific inflation measure, Dr. Lowry actually modified his recommended I-X Formula for FEI's O&M to include a 55% BC-AWE weighting.[187]

(c) Use of Forecast Inflation for Following Year is Appropriate

115. FortisBC has proposed to use forecast inflation because forecast inflation represents the challenge that the Companies face, whereas FortisBC has no opportunity to react to conditions that have already occurred. CEC's and BCPSO's opposition to the use of forecast inflation is based on flawed logic.

BCPSO's Arguments in Favour of True-Up

116. BCPSO declares that "Fortis' position that its costs are based on forecast inflation, rather than actual inflation, makes no sense." The basis for BCPSO's statement is: "A great many companies presumably negotiate labour and materials agreements based on forecasts, and yet actual inflation almost invariably differs from forecast inflation. How does

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[185] CEC Submission, para. 99.

[186] FEI Exhibit B-6, FEI BCPSO IR 1.13.2 and T2:319 ll. 13-23 (Roy)

[187] BCUC-CEC IR 1.22.1 (Lowry). There is an error in the formula as it shows .55 BC-AWE and .35 GDPIPIFDD (instead of .45), but this was later corrected in BCUC-CEC IR 2.4.2.

this occur if forecasts determine costs?"[188] FortisBC has never stated that forecasts always determine costs for the *economy as a whole*, and this would not be accurate in any event. The point that BCPSO is overlooking is that the I-Factor is serving as a proxy for the inflation that will be experienced by FortisBC, not the economy as a whole. The evidence is that FortisBC is affected by forecast inflation.

CEC's Argument of Using Previous Year's Actual

117. CEC submits that retroactive truing up is not necessary and that the AUC's approach of using prior year actual is preferable to the Utilities approach of "using forecasts, embedding errors and compounding them".[189] CEC's preferred approach is just another way of forecasting, which employs a simplifying assumption that the actual experience in the prior year is predictive of the future. The Companies have to manage on a forward basis and react to factors on a prospective basis. CEC's approach introduces lag in that using past inflation as a forecast methodology does not consider what events might occur in the upcoming year that will impact inflation, which a forecast - being forward looking - does consider. It is also inconsistent with COS rate making that uses a future test year concept.

118. CEC's approach of using the actual level for a prior period as a forecast for the future period can introduce volatility in the comparison of actual to forecast. The Figure below was prepared using the data from FEI Response to CEC IR2.15.2. It illustrates that using the previous year's actuals as forecasts would have resulted in greater over and under estimations of inflation from 2008 to 2012 as compared to the forecast method.

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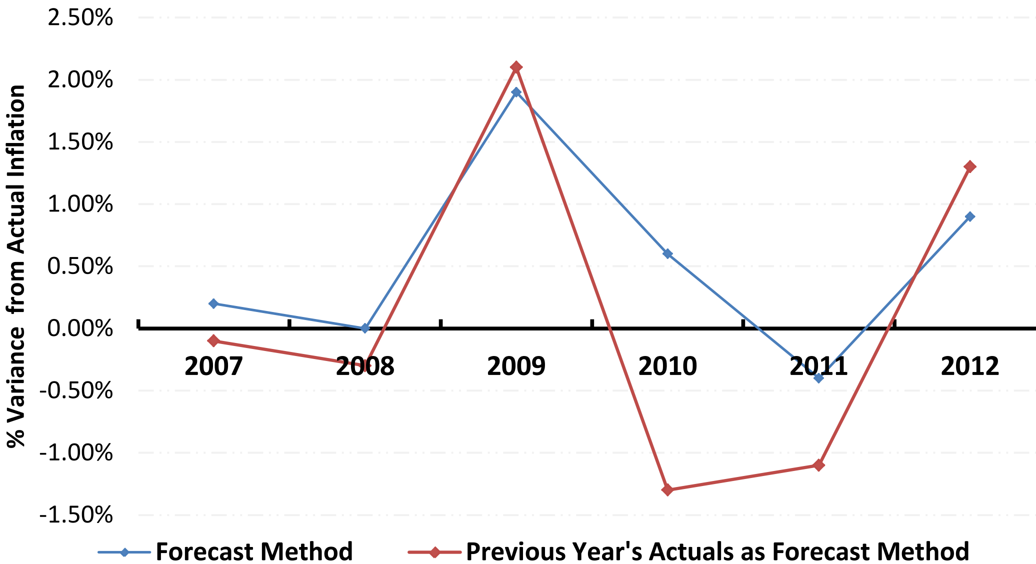
[188] BCPSO Submission, para.44.

[189] CEC Submission, para.92.



CEC's Argument that Forecast BC-CPI and BC-AWE Historically Overestimated

119. A key element of CEC's argument against using forecasts of BC-CPI and BC-AWE is that CEC considers those indexes to be consistently overestimated. Over the past five years, these two indexes experienced only a slightly positive variance on average, and FortisBC submits that CEC has overstated this point.

120. CEC first misstates the past variances: "Of the 9 years of data, 7 are over forecast and only 2 are under forecast."[190] In fact, of the 9 years of data, 5 are over forecast, 2 are equal, and 2 are under forecast. If 2009 is removed, the difference is quite small at a difference of 0.19% annual average.

121. CEC's discussion on the significance of the variances is another instance where CEC has presented data in a misleading fashion. At paragraph 78 of its submissions CEC makes reference to variations between forecast and actual BC-CPI being 75 times and 300 times greater than the sensitivity analysis performed by FortisBC[191] on the impact of forecast to actual variations in CPI.[192] By FortisBC's calculations the difference is approximately 1.5 times,

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[190] CEC Submission, para.83.

[191] FBC Exhibit B-7, BCUC IR 1.12.2

[192] From Exhibit B2-11, CEC IR 3.15.2.

not the 75 times cited by CEC.[193] The reference to 300 times in CEC paragraph 79 is equally ill-conceived and is based on a supposed compound annual variance between forecast and actual CPI of 1.4% (which CEC provides no calculations to support). FortisBC's own calculations of the compounded annual variance between forecast and actual CPI yields the same difference of 0.38% for the simple average. CEC's claim that there is a compound annual variance between forecast and actual BC-CPI of 1.4% is unsubstantiated and the Commission should disregard it.

122. CEC also maintains that "AWE is consistently over forecast by about 0.58% annually…".[194] This conclusion is not supported by the responses to the two IRs referenced by CEC. The only evidence of actual vs. forecast BC-AWE was the Staff Witness Aid, and the surrounding discussion at the hearing. The Witness Aid included incorrect forecast information. The extent of the over-forecast, once corrected, was only 0.24% annually over the five year period.[195]

123. CEC states at paragraph 82 that: "The CEC accepts that actual inflation measures are supposed to reflect what the price cost pressures are across the whole economy and that this is the appropriate benchmark. To the extent everyone else experiences the same issues of being driven by forecasts the actuals will reflect that." The assumption that "everyone experiences the same issues" is not correct. For instance, Dr. Lowry recognizes that aggregate inflation, in particular output based macroeconomic measures like GDPIPIFDD, will not be reflective of input price inflation that the Companies are likely to experience over the PBR term. Dr. Lowry's typical approach, and his recommended approach, has been to "calibrate" TFP for these differences.

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[193] The FortisBC analysis being referenced by CEC had provided an illustrative impact of BC-CPI being over-forecast by 25 basis points, to which CEC is comparing an annual variance between forecast and actual CPI BC over a nine year period of 38 basis points.

[194] CEC Submission, para.81.

[195] T3: 596 to 598.

CEC's Argument About Substitution Bias

124. The substitution bias that CEC is asserting to have biased CPI upwards is not a valid basis for the Commission to adopt CEC's preferred inflation index over BC-CPI. CEC's preferred indexes are also fixed-base indexes, which is the source of alleged substitution bias.

125. It is not credible for the CEC to assert systematic bias in CPI,[196] while at the same time not acknowledging that (i) the price indexes used by Dr. Lowry (Handy Whitman, ECI for the utilities sector and an M&S index from a private firm that was not available for review) are all fixed-base like CPI (ii) CPI is updated more frequently (e.g., the Handy Whitman Index is 41 years out of date), and (iii) Dr. Overcast has shown that the upward bias in these price indexes dwarfs the 50 basis point error that CEC is asserting with respect to CPI. The error for the Handy Whitman gas construction cost associated with plastic vs. steel pipe alone is 257 basis points; adjusting Dr. Lowry's X-Factor for this bias alone would result in a significantly lower X-Factor. Similarly, the ECI index includes highly specialized and highly compensated employees in the electric utility business who are not even employed by either of the Companies. Finally, as noted above and described later, any CPI bias is also more than offset by the magnitude of required "calibration" adjustments that Dr. Lowry would conduct to match macro inflation measures to the Companies themselves.

CEC's Argument that AWE Does Not Reflect Benefits of Labour Productivity

126. CEC argued to the effect that the labour forecast using the AWE represents the cost side of labour agreements but does not represent the benefits side of labour, whereby companies in general obtain increased efficiency in their labour arrangements. To the extent this happens there is an interaction with the X factor methodology and a potential for misalignment of the incentive mechanisms of PBR."[197] This argument is starting from the wrong premise. The I-Factor is intended to be concerned with costs faced by the utility. The X-Factor is concerned with productivity, and one of the components of Total Factor Productivity is

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[196] CEC Submission, para.96.

[197] Exhibit C12-2, CEC Opening Statement, p.9.

the productivity of labour. The incentive mechanisms will be properly aligned so long as the I-Factor reflects the expected inflation being experienced by the utility.

(d) Other Issues With BC-GDPIPIFDD and EUCPI

127. There are additional reasons to prefer using FortisBC's proposed composite index over CEC's proposed use of BC-GDPIPIFDD generally and EUCPI for the Companies' capital.[198] BC-CPI, unlike BC-GDPIPIFDD and EUCPI, is readily understood and familiar to all parties. Moreover, EUCPI is an electric utility index. It cannot reasonably track gas construction costs because it does not have the most important components of capital inputs for gas.[199] There is no forecast for EUCPI.[200] Since the PBR Plan is to be applied to both Companies, there is logic to applying the I-Factor to both Companies. EUCPI is not suitable for that purpose.

(e) Summary on I-Factor

128. FortisBC submits that the proposed composite index, based on forecast inflation, is an appropriate proxy for the cost pressures faced by the Companies. There is no demonstrable benefit in terms of efficiency or accuracy to be achieved from adopting CEC's preferred indexes.

B. FORTISBC'S PROPOSED X-FACTOR IS APPROPRIATE

129. Among the interveners, only CEC addressed the X-Factor in any detail. Several themes run through CEC's submissions on the X-Factor. They contend that the evidence on TFP is too complicated for the Commission to address properly, presumably suggesting that the X-Factor should be negotiated. They maintain that Dr. Overcast's approach should be rejected because it is not based on the traditional index-based TFP approach. They maintain that Dr. Overcast lacks the experience of Dr. Lowry, and hence Dr. Lowry's evidence should be preferred. They paint Dr. Overcast as an advocate. Tellingly, however, CEC has not provided

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[198] CEC Submission, para.176.

[199] FEI Exhibit B-45, FEI – FBC Rebuttal Evidence, p.50

[200] FEI Exhibit B-45, FEI – FBC Rebuttal Evidence, p.50; FEI/FBC-CEC IR 1.4.1 (Lowry)

any substantive answers (nor has any other intervener) to Dr. Overcast's explanation as to why Dr. Lowry's methodology overstates TFP when applied to utilities. FortisBC submits:

- CEC has cited Dr. Lowry's initial range of X-Factors, not his final numbers. His final numbers were the bottom of the initial range for both FEI and FBC.
- The Commission is capable of weighing the expert evidence and coming to a considered decision, and should do so.
- The relative weight given to the TFP evidence of Drs. Overcast and Lowry should be based on the reasonableness of the assumptions underlying their respective TFP studies, not the number of times that each expert has testified on TFP.
- The fact that Dr. Overcast recommends a negative TFP and disagrees with Dr. Lowry does not make him an "advocate of his client's position" - rather, it demonstrates that Dr. Overcast has ensured his approach accounts for the actual circumstances faced by gas and electric utilities.
- Dr. Overcast's methodology has a strong theoretical basis as well as the practical advantage of capturing the operating realities of the gas and electric utility industries.
- The overwhelming evidence is that the assumptions underlying Dr. Lowry's TFP studies resulted in his measured TFP being significantly overstated for both the electric and gas utility industries, and that the necessary adjustments to compensate for the upward bias in his calculations would support FortisBC's proposed X-Factor.

(a) CEC is Citing the Wrong Version of Dr. Lowry's X-Factor

130. CEC has cited in its Submission[201] Dr. Lowry's initial X-Factor recommendations, not his "final recommendations" filed in his round 2 IR responses. Dr. Lowry's final X-Factors were single values, fixed at the **bottom** of the initial range for both FEI and FBC.[202] The final value was 1.16% for FEI (inclusive of stretch factor) and 1.13% for FBC (inclusive of stretch factor). The Commission should be referencing the final numbers, not the much higher ranges cited by CEC.

(b) The Commission's Ability to Determine the X-Factor

131. CEC suggests that the evidence on TFP is too complicated for the Commission to address properly. They state for instance that "one of the most serious questions for the Commission to resolve is whether or not it is really suitable to impose this morass of complicated debate into the rate making process."[203] The implicit argument is that the Commission should refer the Applications to an NSP. FortisBC supported NSP at the outset of this proceeding.[204] However, it is one thing to recognize the advantages of an early NSP as an efficient and fair alternative to an expensive hearing, and entirely another to argue that the X-Factor evidence is too complicated to be resolved through the hearing process that the Commission has chosen. The Commission is capable of weighing the expert evidence and coming to a considered decision, and should do so. Prolonging this PBR proceeding with more process after the hearing is already complete only serves the interests of those stakeholders who seek to avoid PBR or water it down to the point where any advantages of PBR are lost.

(c) Response to Submissions Regarding Dr. Overcast's Expertise

132. Dr. Lowry, from the outset of his involvement in this proceeding, took a very aggressive position regarding Dr. Overcast's qualifications to recommend an appropriate X-

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[201] CEC Submission, para.179.

[202] BCUC-CEC IR 2.4.1 (Lowry). These are the values for the "Single ARM, reformed capital tracker", which is Dr. Lowry's expressed preference.

[203] CEC Submission, para.208.

[204] Appendix D8 [discussion on NSP being appropriate].

Factor. Dr. Lowry characterized Dr. Overcast as a threat to the future of PBR in Canada. He essentially suggested that the promising future for PBR in Canada could only be protected from Dr. Overcast if the Commission were to (a) adopt the recommendations that Dr. Lowry (as a self-described "long-time practitioner") put forward, and (b) expressly assign no weight to Dr. Overcast's TFP calculations.[205] CEC has stayed true to that theme in its final argument, predictably emphasizing the fact that Dr. Overcast had not previously performed a formal TFP study.[206] FortisBC submits that the relative weight given to the TFP evidence of Drs. Overcast and Lowry should be based on the reasonableness of the assumptions that underlie their respective TFP studies, not the number of times that each expert has testified on TFP. FortisBC makes five points in this regard.

Expertise to Identify Reasonable Input and Output Measures

133. First, the calculation of TFP is, at its heart, a straightforward mathematical equation: *TFP = change in outputs - change in inputs*. Expertise comes into play in selecting the right input and output assumptions. The results of any TFP analysis - no matter how the analysis is undertaken - are only as good as the input and output assumptions used in the calculation (a trite principle captured by the adage "garbage in, garbage out"). Dr. Overcast has the professional and academic qualifications to understand the assumptions underlying traditional index-based methodologies (which include Dr. Lowry's approach), and the practical experience to explain how and why those assumptions do not align with gas and electric utility operations. In fact, Dr. Overcast's qualifications to identify reasonable input and output assumptions for the electric and gas utility industries are unparalleled in this proceeding. For instance:

- ***Expertise to select output measures:*** Drs. Overcast and Lowry agree that outputs reflect what drives utility costs, making an understanding of what drives utility costs a pre-requisite of selecting appropriate measures of outputs. Dr. Overcast has prepared cost of service allocation (COSA) studies, and testified to them. He

[205] FBC Exhibit C6-13, BCSEA-CEC (Lowry) IR 1.11.2.

[206] CEC Submission, para.210.

was an executive at gas and electric utilities for many years, and held senior positions in those utilities in roles where he was responsible for overseeing cost of service matters. He demonstrated his expertise at the hearing. His evidence on the capacity and customer drivers of distribution and transmission costs was consistent with conventional COSA analysis and past Commission decisions.[207] For instance, the Commission's 2003 Centra Gas [now FEVI] Rate Design Application Decision had stated:[208]

> The next step, classification, attempts to classify costs into cost causation categories (demand, commodity or customer). For instance, transmission costs tend to be demand-related because they are associated with the size of the facilities needed to meet the maximum demand. Classification of demand-related costs may be further refined as, for example, coincident peak ("CP") or non-coincident peak ("NCP"). CP may be further refined to reflect whether the utility experiences one demand peak per year ("1 CP"), two peaks per year such as a summer peak and a winter peak in demand ("2 CP") or demand peaks each month ("12 CP"). Procuring and delivering gas supply to the utility's system tend to be classified as commodity related. Meter reading and billing costs tend to be classified as customer related.

The Commission applied the same concepts in the 2007 BC Hydro Rate Design Application Decision:[209]

> In cost of service studies the distribution system is commonly split between the portion of the system which was constructed solely as a result of the customer requiring service, of which customer metering is the most common example, and the portion of the system constructed because of the demand placed on electrical equipment. Distribution substations are generally classified 100 percent demand, and all equipment between this point and the meter may be determined to be demand or customer-related.
>
> The methods used to determine the demand/customer split 1 are more fully described by EES:

[207] FEI Exhibit B-11, BCUC-FEI IR 1.30.1 includes a more lengthy discussion of past decisions.

[208] Order G-42-03, p.7.

[209] BC Hydro 2007 Rate Design Application - Phase I October 26, 2007 Decision and Order G-130-07, pp.83-84.

> "There are three basic methodologies to classify distribution costs: basic customer charge (sometimes called 100% demand), minimum system and zero intercept. Variations around these three basic methods are also common. The basic customer charge methodology assumes that the distribution system is built to meet the customers' non-coincident peak demand. Therefore, the basic customer charge methodology classifies customer accounting, and O&M and capital costs for meters and services as customer-related, while the remaining distribution costs are classified as 100% non-coincident demand-related.
>
> Distribution costs are also sometimes split between demand and customer according to a zero intercept or minimum system methodology. These methodologies reflect the philosophy that the distribution system is in place in part because there are customers to serve throughout the service territory expanse, and that a zero or minimally-sized distribution system is needed to serve these customers even if they only have a 100 watt light bulb in their residences. The concept follows that any costs associated with a system larger than this minimal size are due to the fact that customers "demand" a delivery quantity of electricity greater than the minimum. These costs required to meet demands greater than those met by the minimum system are treated as demand related (Exhibit C7-4, Testimony of EES Consulting, pp.16, 17)."

Dr. Lowry's relative inexperience with COSA analysis was obvious from his decision to select output measures based solely on the correlations suggested by econometric analysis. He neither assessed why correlations existed, nor verified his conclusions based on operational information. His use of a throughput measure of output was at odds with conventional COSA analysis and past Commission decisions, as was his opposition to using a capacity based measure.

- ***Expertise to determine inputs***: Dr. Overcast, in discussing capital inputs and the Handy-Whitman Index, demonstrated his depth of understanding about how utility technology has evolved over time and the effect this evolution has had on input substitution. He provided extemporaneous explanations of operational

processes and system planning issues.[210] By contrast, Dr. Lowry did not discuss the components of the "basket of goods" comprising the Handy-Whitman Index or offer any explanation as to why they might reflect today's construction input mix. An understanding of the components of the "basket of goods" in the index is critical to identifying any bias.

134. CEC and other interveners have made no attempt in their submissions to refute the substance of Dr. Overcast's evidence on input and output measures.

Expertise to Collect and Analyse Data

135. Second, Dr. Overcast used his understanding of how utility operating conditions affect productivity to develop a reasonable alternative methodology that dispenses with the need to make many of the stylized assumptions evident in Dr. Lowry's study. Dr. Overcast used actual *ex post* utility data for every utility in his sample, rather than using indexes to generalize input costs. Dr. Overcast possesses the qualifications to gather and analyse data, and has the knowledge about the utilities in the sample to explain features in the data. He demonstrated his unparalleled understanding at the hearing.[211]

Upward Bias Identified in Dr. Lowry's Analysis Based on Objective Facts

136. Third, key instances where Dr. Overcast has identified upward bias in Dr. Lowry's calculations are matters of objective fact, not a difference of expert opinion.

- A construction price index that treats utilities as if they still mostly install expensive steel pipe or copper conductor as had been the case 41 years ago will overstate the real price of inputs (and overstate Dr. Lowry's TFP). Dr. Overcast was able to use data from the US Federal agency PHMSA to prove that Dr. Lowry underestimated the capital required to serve customers and thus underestimated capital inputs with his measure of the change in capital. This

[210] E.g., T7:1513, l.12-1516, l.7 (Overcast).

[211] See FortisBC PBR Submission, para.142 for an example where Dr. Overcast discussed operating conditions of Con Edison.

issue alone resulted in Dr. Lowry's calculated TFP being overstated by orders of magnitude.[212]

- A labour price index will be overstated (and Dr. Lowry's TFP overstated), by definition, when it excludes material components of total compensation, excludes lower paid utility employees from the employee mix, and includes in the employee mix highly paid technicians that distribution utilities do not employ.[213]

- Capital inputs will be understated (and Dr. Lowry's TFP overstated), by definition, if there is no recognition given to the material net cost of decommissioning plant (net negative salvage).[214]

- There is objective evidence that the service value of utility plant does not decline steadily, as Dr. Lowry's approach assumes.[215] TFP will be too high, by definition, if plant that still has full service value is being treated as if it is not required to generate outputs.[216]

- Outputs will be understated (and TFP overstated), by definition, when Dr. Lowry has only accounted for one type of output produced by utilities (customers) and has ignored another (capacity).[217]

Neither CEC, nor any other intervener has even attempted to refute these points. Dr. Overcast was confident that correcting Dr. Lowry's input measure alone would yield a negative TFP.[218]

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[212] See FortisBC PBR Submission, para.236.

[213] FortisBC PBR Submission, para.223

[214] FortisBC PBR Submission, para. 225

[215] FortisBC PBR Submissions, para.229

[216] FortisBC PBR Submission, para. 229

[217] FortisBC PBR Submission, para.194 Subtracting a smaller output number from inputs yields a smaller TFP by definition.

[218] See FortisBC PBR Submission, para.239.

Corroborating Opinion

137. Fourth, Dr. Overcast is not alone among experts in concluding that Dr. Lowry's approach overstates TFP when applied to utilities.[219]

Dr. Lowry Did Not Calibrate Results Downwards Per His Normal Approach

138. Fifth, Dr. Overcast's evidence that Dr. Lowry's X-Factor was overstated because Dr. Lowry had not "calibrated" his calculations was based on Dr. Lowry's own admissions that it is required, not a difference of opinion.220 Dr. Lowry clearly indicates in his evidence that:

> …when a macroeconomic inflation measure is used, the ARM [I-X Formula] must be calibrated in a special way if it is to reflect industry cost trends… [and that] … the inflation measure can still conform to index logic provided that the X factor effectively corrects for any tendency of GDPPI growth to differ from industry input price growth[221].

139. However, as Dr. Overcast points out in his rebuttal evidence222 Dr. Lowry ignores this integral component of his own theory and does not calibrate his X-Factor range recommendations despite recommending that the Companies use the macroeconomic indicator BC-GDPIPIFDD for its I-Factor, and despite having done so in other regulatory filings.223 According to the experts on TFP calculations during the AUC proceeding, including Dr. Lowry, using an output-based inflation index is problematic because the measure of output inflation already incorporates the effects of economy-wide productivity gains.224 In other words, BC-GDPIPIFDD already incorporates the effects of the BC economy-wide productivity gains and therefore would not necessarily be indicative of the input price inflation likely to be experienced by the Companies during the plan term. For this reason, the theory requires the TFP estimates to be calibrated to produce an appropriate x-factor in order to correct for the difference between output inflation included in the inflation factor and the industry input

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[219] See FortisBC PBR Submission, para.232.

[220] See FortisBC PBR Submission, para.240.

[221] PEG Evidence, p. 13.

[222] FEI Exhibit B-45, pp.59-60

[223] FEI Exhibit B-45, p.53

[224] FEI Exhibit B-1-1 PBR Application Appendix D8, p 416, paragraph 423 (AUC Decision 2010-237

inflation likely to be experienced by FortisBC. The result is an X-Factor calculation that is overstated for both FEI and FBC by approximately 100 basis points. Had Dr. Lowry calibrated his X-Factor calculations according to his own methodology, the appropriate X-Factor ranges for FEI and FBC would be below the 0.5% S-Factor proposed by the Companies. The table below compares Dr. Lowry's final recommended X-Factor225 with calibrated X-Factors calculated by Dr. Overcast in his rebuttal evidence.226

	FEI	**FBC**
Dr. Lowry's Final X-Factor [227]:	1.16%	1.13%
Calibrated X-Factor:[228]	0.13%	0.21%.
Overstated by:	**+1.03%**	**+0.92%**

(d) CEC's Argument that Dr. Overcast is an Advocate Not an Expert

140. CEC argues that Dr. Overcast is an advocate of FortisBC's position, rather than an expert, and suggests that his evidence should be discounted for this reason.[229] In support of this argument, CEC cites the facts that (i) Dr. Overcast observed at the end of the hearing that the Commission could reasonably approve FortisBC's proposed X-Factor,[230] and (ii) Dr. Overcast performed a calculation of the impacts of Dr. Lowry's recommendations.[231] CEC's argument ignores the full thrust of Dr. Overcast's evidence. Dr. Overcast's recommended X-Factor was zero, a different number from what FortisBC has proposed. Dr. Overcast's view - which he repeated on a number of occasions - was that FortisBC's proposal of 0.5% was too high based on his assessment of industry productivity levels. He also recognized that there was judgment required in determining an appropriate X-Factor and understood FortisBC's practical rationale

[225] BCUC-CEC IR 2.4.1 (Lowry)

[226] FEI Exhibit B-45,Overcast Rebuttal Evidence, p. 60 – 64.

[227] Inclusive of stretch factor of 0.2%.

[228] Inclusive of stretch factor of 0.2%.

[229] CEC Submission, para.213.

[230] CEC Submission, para.161.

[231] CEC Submission, para.188.

for increasing the proposed X-Factor as a signal to stakeholders that PBR would benefit all parties. The fact that Dr. Overcast provided detailed support for his own recommendations, while differentiating his own recommendation from management's decision to increase the stretch factor, only reinforces that Dr. Overcast's recommendations were based on his own independent analysis.

(e) Other Considerations Supportive of FortisBC's Proposed X-Factor

141. FortisBC included in its initial PBR Submission a section that outlined other considerations that support the reasonableness of FortisBC's proposed X-Factor of 0.5%. The factors included the accelerated trend in asset replacement in the gas and electric utility industries, PEG's recommended X-Factors for Ontario utilities, and a high-level comparison with illustrative revenue requirements forecasts. FortisBC addresses intervener submissions on these points below, as well as other factors that interveners have cited in support of Dr. Lowry's analysis.

Asset Replacement in the Electric and Gas Utility Industries

142. The Commission should take note of the fact that no intervener, including CEC, provided any response whatsoever on the matter of accelerated asset replacement and its effect on industry TFP. The evidence that industry is facing unprecedented acceleration of infrastructure replacement is overwhelming. The evidence that this will cause TFP to decline or become negative was undisputed by Dr. Lowry.

X-Factor in Other Jurisdictions

143. CEC compiled approved Canadian X-Factors in a table at paragraph 214 of its Submission and argued that they generally provide support for Dr. Lowry's evidence. That is not the case. First, the timing of these decisions is important when there is evidence of accelerating asset replacement occurring in the last five years that is expected to continue during the PBR term. Apart from Alberta's X-Factor of 1.16%, all of the other cited X-Factors over 1.0% were set at least five years ago, presumably based on even older information. The 2009 Ontario 3rd Generation numbers cited by CEC have since been replaced in the 4th

Generation with much lower X-Factors based on negative TFP results. The high end of 4th Generation X-Factor range is only 0.6% (inclusive of a stretch factor), and the low end of the range is zero percent, much lower than FortisBC's proposed X-Factor of 0.5%. Second, the AUC's X-Factor was based, by and large, on expert evidence that used the same academic assumptions used by Dr. Lowry that do not properly reflect actual productivity.[232] Both experts in this proceeding also considered the NERA analysis relied upon by the AUC to be incorrect in any event.

Comparison to Forecasts

144. CEC responds to the evidence that Dr. Lowry's recommendations result in an unachievable result vis a vis the illustrative forecasts by suggesting that FortisBC's illustrative forecasts are overly generous. CEC reasons that the forecasts should be reduced by 2% per year before performing any comparison because, on average, FEI "have received 1.8% less in allowed O&M expenditures than they have requested from the Commission".[233] CEC goes on to argue that CEC's concern about the forecasting is "legitimized" by the fact that FEI did not provide a requested graphic for a 0.73% annual decrement on the forecasts.[234] CEC concludes that the Commission should give no weight to the estimated revenue shortfall produced by Dr. Lowry's recommendations.[235] There are three fundamental problems with CEC's reasoning.

- First, CEC has misunderstood the effect of prior O&M disallowances. If the Commission disallows 1.8% of O&M in one year, then that decrease flows to future years as well. So, if the Commission then reduces the O&M by 2% in the next year, it is only an incremental 0.2% that is disallowed.[236]

- Second, the impact of a 0.73% annual decrement on FEI's five-year forecasts would be $283 million, an implausible scenario considering that FEI's revenue

[232] Exhibit B-1, Appendix D-1, pp.31-35.

[233] CEC Submission, para.184.

[234] CEC Submission, para.185.

[235] CEC Submission, paras.181-183.

[236] FEI Exhibit B-23, CEC IR 2.80.3.

requirement impact of the formula O&M and capital amounts averages $239 million per year.[237]

- Third, while CEC challenges the reliability of FortisBC's five-year forecasts in this context when it is expedient to do so, CEC also appears willing to *endorse* the forecasts in other contexts when it is expedient to do so. Contrast the above challenge to the forecast accuracy to the following statement that appears only a few pages later in CEC's submissions: "The Utilities provide high level forecasts with respect to O&M. They state that the forecast cost of service should not be the focus of this proceeding. The CEC submits that the projected costs under cost of service are appropriate references in determining how the PBR can be expected or has performed."[238] Given this statement, CEC's attempt to justify the unfair financial implications of Dr. Lowry's X-Factor recommendations should be rejected.

Dr. Lowry's "Corrections" to Dr. Overcast's TFP Calculations

145. Starting at paragraph 152, CEC lists the "major flaws" that Dr. Lowry identified with Dr. Overcast's methodology. CEC then recounts Dr. Lowry's calculations of the impact on Dr. Overcast's analysis when the "major flaws" are "corrected". The "corrections", when examined closely, are revealed to be changes in Dr. Overcast's assumptions to match Dr. Lowry's own assumptions. The "corrections" are meaningless when Dr. Lowry's assumptions do not approximate reality.

Interveners' Approach of Comparing Proposed X-Factor to X-Factor Under Prior Plans

146. CEC attaches significance to the fact that FortisBC's proposed X-Factor is lower than the X-Factor in the 2004 FEI PBR Plan. It characterizes this fact as further evidence that the Companies are moving "in a direction misaligned with customer interests".[239] ICG cites the

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[237] Exhibit B2-8, BCUC IR 3.51.3.

[238] CEC Submission, para.233.

[239] Exhibit C12-2, CEC Opening Statement, C12-2, p.5.

average X-Factor of 2% during the last FBC PBR plan and states: “The only justification offered by FBC to support such a departure from past X factors is that it is starting from a more productive state. Therefore the level of incremental future productivity that it is able to achieve is expected to be lower than the level of productivity that is already embedded within the organization.”[240] There are two answers to these arguments.

- First, neither of the PBR experts in this case, including CEC’s own expert, used the previous negotiated X-Factor as the starting point for their recommendations. Rather, Drs. Lowry and Overcast both based their recommendations on industry productivity levels, which is consistent with what is done in other jurisdictions where PBR has not been negotiated. The TFP study undertaken by Dr. Overcast yielded a negative TFP. FBC’s prior history under PBR only came into play in determining the stretch factor. Drs. Lowry and Overcast agreed that the stretch factor should decline over time to recognize diminishing returns.[241]

- Second, the fact that the X-Factor averaged 2% during the last FBC PBR is not a rationale for adopting the same X-Factor today. TFPs have been declining, and accelerated infrastructure replacement continues. PEG recently calculated a negative TFP in Ontario, and even Dr. Lowry’s recommendation and NERA’s values in Alberta fall well short of the number advocated by ICG.

(f) Concluding Comments on Weighing Expert Evidence

147. The Commission does not need to condemn the expertise or the work product of either Dr. Lowry or Dr. Overcast to determine this case (let alone to protect the future of PBR in Canada). FortisBC is not suggesting that Dr. Overcast’s approach yields perfect results, or that Dr. Lowry’s methodology is unusable. FortisBC’s fundamental points, which are borne out on the evidence, are:

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[240] ICG Submission, para.65.

[241] See FortisBC PBR Submission, para.147.

- While Dr. Lowry is a credible expert on economic matters, it is inescapable that his TFP results for the electric and gas industries are much too high due to the implicit and explicit assumptions he has employed; and

- Dr. Overcast's methodology, and his critique of Dr. Lowry's methodology, is rooted in a practical understanding of how utilities operate. Dr. Overcast's methodology yielded results that make more intuitive sense given that the North American utility industry is characterized by mature utilities with significant capital requirements for system replacement. TFP is logically negative.

148. The Commission's determination regarding the X-Factor should consider the evidence of both experts, giving full recognition to the implications of particular assumptions and judgments that each expert has made. If Dr. Lowry's TFP study results were to be adjusted to account for the upward bias inherent in his assumptions (and still using Dr. Lowry's own methodology), they would reinforce the reasonableness of the Companies' proposed X-Factor of 0.5%.

PART FIVE: MAINTAINING SERVICE QUALITY

149. FortisBC has acknowledged throughout this process that maintaining acceptable levels of service quality is important. FEI's and FBC's past PBR Plans had incorporated SQIs to provide the Commission and stakeholders with the necessary comfort that the Companies remained equally committed to service quality in the PBR context. FortisBC has employed the same rationale in incorporating a suite of SQIs in the proposed PBR Plan. FortisBC has proposed some changes to the mix of SQIs and how performance is assessed, which interveners characterize as "misalignment". Interveners also *perceive* a "misaligned" change in how FortisBC is approaching enforcement. FortisBC submits:

(a) The manner in which COPE has dismissed cost considerations underscores the fact that its interests are not aligned with the interests of customers.

(b) The proposed mix of SQIs covers the essential elements of the customer experience and facilitates appropriate monitoring.

(c) The Commission has recourse to enforcement options consistent with the prior PBR plans, including mechanisms with potential financial implications for the Companies.

A. COST SHOULD BE A FACTOR IN SETTING MOST SQIs

150. BCPSO recognizes that "service quality, like reliability, is a factor that must be traded off against cost" - a reasonable approach that is not at all surprising since BCPSO's constituents are paying the costs.[242] COPE, on the other hand, takes the approach of pointing to the impact associated with increasing Telephone Service Factor (TSF), facetiously referring to a $50,000 annual cost as being "hefty" and the $35,000 to $60,000 cost of an external audit as "lordly"[243]. The manner in which COPE has dismissed cost considerations is a good reminder of the fact that COPE has a very specific interest in this proceeding that is not necessarily aligned

[242] BCPSO Submission, para.56.

[243] COPE Submission, para.23.

with the interests of customers. Cost should be a consideration when service quality issues other than safety are concerned.

151. FortisBC understands that these sums are not large from the perspective of absolute rate impacts. However, there is no useful purpose served by incurring costs - however large or small they might be - when they are not necessary. Customers and the Commission routinely probe small-dollar items in COS revenue requirements applications.[244] They have also been sensitive to the need to balance service quality with cost. The analysis should be no different in setting the base year costs, which is done on a COS basis.[245]

152. Customer groups appear to accept that FortisBC generally maintains a high standard of service quality,[246] and FortisBC submits that the Companies have struck an appropriate balance between cost and service. The Commission could reasonably conclude that a different balance is appropriate in particular instances and adjust the base year cost accordingly; however, it would be the height of irony if, in doing so, the Commission were to give credence to COPE's view that FortisBC should somehow be faulted for remaining conscious of the rate impacts of increasing service quality.

B. THE APPROPRIATE SUITE OF SQIs AND APPROPRIATE BENCHMARKS

153. There is no single "right" answer regarding the appropriate suite of SQIs and the benchmarks to be applied. FortisBC has employed appropriate and principled criteria in the selection of SQIs.[247] The Companies' proposal overlaps to a significant extent with the SQIs employed in the prior FEI and FBC PBR plans, with the changes (both the addition of new SQIs

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[244] For example, the Commission asked IRs in the last FEI RRA on the cost of each wine glass and serving of food distributed at a function. The cost was only a tiny fraction of the cost of increasing TSF.

[245] CEC paragraphs 840 and 841 seem to suggest that FortisBC's desire to maintain 70/30 somehow demonstrates a flaw with PBR incentives and delivers a benefit to the shareholder, which would be wrong on both accounts. The cost would be accounted for in the (COS-based) base year costs.

[246] BCPSO, for instance, states that "service quality, like reliability, is a factor that must be traded off against cost, and does not object to the Fortis proposal to maintain service quality at existing levels rather than increasing it." BCPSO Submission, para.48.

[247] FEI Exhibit B-1-3, Appendix D7, p.1. T:1262, l.5-1263, l.7 (Swanson).

and discontinuance of other SQIs) resulting from a greater focus on the factors most directly influencing the customer experience.

(a) Continuity in SQIs from Prior PBR Plans

154. Interveners have focussed on the fact that FEI is proposing to discontinue seven SQIs[248] and FBC is proposing to discontinue six SQIs[249]. Comparing the number of SQIs in FortisBC's proposal to the number of SQIs in the former PBR plans is not a meaningful indicator of FortisBC's commitment to maintaining service quality. It is also too simplistic to equate having fewer SQIs with greater risk to customers. The more complete picture is:

- Many of the key SQIs used in prior PBR plans remain in place or have simply been replaced.

- FortisBC has added a new SQI, First Call Resolution, which is a leading indicator and central to the customer experience.[250] Customer interveners generally support this step.[251]

- Several of the discontinued SQIs were in fact only discontinued because the underlying objective has been adequately, or more effectively, addressed by another metric. This is true for the metric Formal Complaints to the Commission, for example.[252]

- Some of FBC's discontinued metrics had been implemented to address specific concerns that have now been resolved.[253]

[248] FEI Application, App. D7, pp.3-4.

[249] FBC Application, App. D6, p.3.

[250] FortisBC PBR Submission, para.262.

[251] IRG Submission, para.43; CEC Submission, para.945; BCPSO Submission, para.58.

[252] First Call Resolution and Customer Satisfaction measures adequately capture customer dissatisfaction in a more timely manner.

[253] FBC Exhibit B-7, BCUC IR 1.67.1.

- Other discontinued SQIs, such as FBC's Generator Forced Outage and FEI's Transmission Reportable Incidents and Leaks per KM of Distribution System Mains were discontinued because they do not directly affect the customer experience. The logic of focussing SQIs on the customer experience rather than asset integrity is the next topic discussed.

155. As indicators are an important communication tool of the overall service level to customers, it is appropriate to focus on the key SQIs that best allow stakeholders to assess the Companies' attention to service quality during PBR.

(b) It is Reasonable for SQIs to Focus on Direct Customer Experience

156. FortisBC has selected the suite of SQIs with a focus on the direct customer experience, using the criteria set out in the Applications.[254] Interveners seek to include performance indicators relating to a wide variety of matters including asset health and corporate responsibility. The Companies do not dispute CEC's statement[255] that such matters are of interest to customers (they are of interest to the Companies too); however, it does not follow that SQIs addressing these matters need to be included in the PBR Plan. FortisBC submits that its approach of focussing its suite of SQIs on matters more directly impacting service quality is appropriate because:

- the Companies do not have the discretion to allow assets to deteriorate;
- the Companies already report to the Commission in considerable detail in a format that would be of greater use to the Commission;[256]
- developing indicators reflective of actions taken (or not taken) during PBR is not practical; and

[254] FEI Application, App. D7, p.2; FBC Application, App. D.6, p.1.

[255] CEC Submission, para.880.

[256] Transcript Vol.6:1196; l.11-1197, l.20 (Pataki, Chernikhowsky)

- FortisBC is accountable to another regulator regarding safety, and the inclusion of AIFR is sufficient to signal the Companies' continued commitment to employee safety under PBR.

157. FortisBC made these points in greater detail in paragraph 275 of its PBR Submission. None of the interveners other than CEC addressed any of these specific points in its submissions.[257] CEC's response was to point to AUC Rule 002. Other than the AUC's electric reliability indicators (SAIFI, SAIDI and circuit SAIDI) that are similar to FBC's SAIDI and SAIFI SQIs), there are no asset health SQIs in AUC Rule 002.[258] AUC Decision 237, which addresses asset health, made it clear that (as Mr. Swanson stated[259]) the AUC is contemplating asset health **reporting**:

> 944. Having determined that some asset management monitoring will be required, the Commission is of the view that stakeholders and the Commission would benefit from an AUC consultative process to develop reporting requirements. This consultation will be separate from the process discussed above with respect to AUC Rule 002. The Commission anticipates that it will conduct a distribution company round-table on this matter after the commencement of the PBR term.

FortisBC already reports to the Commission on a number of aspects of asset management.

(c) Reply to Intervener Submissions on Informational Indicators

158. The issue of whether or not there should be benchmarks or standards for certain SQIs was canvassed by a number of interveners. COPE states, for instance, that "It is FEI/FBC's proposal in this proceeding to do away with specific standards, a radical step not supported by evidence or, for that matter, by reason."[260] COPE is overstating the nature of FortisBC's proposed change from prior PBR plans. In prior FEI and FBC PBR plans, there have always been SQIs that have been treated as informational indicators in recognition that the results are

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[257] BCPSO argues more generally for the inclusion of indicators addressing asset integrity: BCPSO Submission, para. 63.

[258] Updated Rule 002: http://www.auc.ab.ca/acts-regulations-and-auc-rules/rules/Documents/Rule002.pdf

[259] T6: 1196 (Swanson)

[260] COPE Submission, p.27. See also BCPSO Submission, para.52; CEC Submission, para.894.

largely beyond the utility's direct control. Under the last FEI PBR Plan, for example, Customer Satisfaction and third-party distribution system incidents (contact with pipelines) were directional measures. Under the last FBC Plan the Customer Satisfaction Index was a directional measure.

159. The same rationale that had previously justified maintaining Customer Satisfaction and third party distribution system incidents as directional indicators - less direct control by the utility - continues to exist in this PBR. FortisBC's proposal to change SAIDI, SAIFI and AIFR to directional indicators is also justified by virtue of the less direct nexus between FBC's spending decisions and performance experienced.[261] The less direct nexus with the informational indicators makes it difficult to draw any conclusions from the reported results about the utility's conduct. ICG recognizes this difficulty in stating that year to year variability in SAIDI and SAIFI is "driven more by weather than any other factor."[262] FortisBC is proposing only one less benchmarked indicator for gas and electric than is in use in Alberta, which CEC uses as a point of comparison.[263]

(d) Reply to Intervener Submissions on Benchmarks

Implications of Setting Benchmarks Based on Historic Averages

160. COPE generally favours setting benchmarks equal to the Companies' past performance (which may or may not be higher than the Companies most recent performance), and have objected to the benchmarks being set any less than the average level of performance.[264] This position, in and of itself, is not unreasonable. The problem is that (a) interveners are equating any performance below the average with deterioration in service quality, and (b) they are also demanding that the utility be penalized financially in some fashion when a particular standard is not met. Using a mathematical average means, by definition, that service should be expected to fall above and below that standard on a regular basis. Deviations

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[261] T6:1263, l.16- 1264, l.18 (Chernikhowsky).

[262] ICG Submission, para.110.

[263] CEC Submission. para.110.

[264] See, for example, BCPSO Submission, para.49.

below the average may not be indicative of a service quality decline at all. In those circumstances, adopting financial penalties (of whatever kind) only sets customers up for a windfall gain at the expense of the Companies.

161. COPE[265] suggests that the use of averages is an answer to the fact that there is inherent volatility in service levels because the average historical level already includes "external" and "beyond control" events. This argument does not account for the fact that the potential level of variability is far larger than reflected in a three-year average. For example, the cumulative coldest winter may only occur once every 50 years. Such an event may impact all kinds of performance measures in a significant way (e.g., SAIDI/SAIFI, call centre response times, customer satisfaction, billing, etc. etc.) FortisBC submits that the logical answer to these issues is found in adopting an approach to SQIs that (a) treats the SQIs most subject to external influence as informational indicators, (b) establishes benchmarks for non-informational indicators in a manner that recognizes the inherent volatility in the results of certain SQIs, and (c) ensuring that the processes in place for enforcement of service quality retain the necessary flexibility to account for the potential that real declines in service quality have nothing to do with the conduct of FortisBC or incentives inherent in the PBR Plan. FortisBC's proposal addresses the Companies' legitimate concern in a reasonable way.

Implications of Setting Benchmarks Based on Industry Average

162. CEC recommends that benchmarks "be established at the appropriate levels based on efficient peers (not history)".[266] Using peer group benchmarks for SQIs is not reasonable without some means to account for the fact that utilities differ from one another in terms of asset age, customer density, system configuration, O&M or Net Plant, unit costs, and so on. More importantly, service quality metrics set in other jurisdictions reflect specific determinations of those regulators as to the reasonable cost of providing service, determinations which may be at odds with the decisions made by this Commission.

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[265] COPE Submission, p.31. COPE states: "Volatility' (to which they refer at para.277) is normal and expected and that is why the standard reflects a multi-year historical average and why the performance is only measured annually."

[266] CEC Submission, para.828.

Implications of Setting Higher Benchmarks

163. FortisBC's current level of service quality is high. Increasing service level requirements above the benchmarks proposed by FortisBC will give rise to asymmetric risk in circumstances where there is no direct correlation between utility spending and service levels. (In other words, there are much higher odds of being below a benchmark than above it if the benchmark is 99% compared to 90% unless it can be determined - as in the case of TSF - that taking particular steps like adding a specific amount of labour can consistently produce the desired results.) FortisBC's concern would apply, for instance, in the case of Emergency Response Times.[267] FEI has achieved a sub-60 minute response rate of 97.6% over the 2010-2012 timeframe, which is an extremely good response rate. FEI proposes to set the benchmark at 95% because the odds of falling below a benchmark of 97.6% for reasons beyond utility control are significantly higher than would be the case with a benchmark set at 95%.

164. BCPSO submits that since AMI is expected to positively influence the SQI Meter Reading Accuracy, that benchmark should be subject to review during the proposed Mid-Term review.[268] Although it is expected that AMI may positively influence the SQI meter reading accuracy, it is not likely to result in a fundamental increase in the service level. This is primarily due to the fact that the SQI targets and the results FBC has attained previously are already at a very high level. Further, FBC will be required to manually read a certain number of non-AMI meters following the completion of the AMI project. These meters will remain susceptible to the potential errors inherent in the manual meter reading process.[269]

C. CONSEQUENCES IN THE EVENT SERVICE QUALITY DECLINES

165. Intervener submission on FortisBC's proposal regarding enforcement of SQIs fall into two broad categories: (i) interveners are critical of FortisBC's desire to ensure that the Commission's approach to SQIs recognizes that factors beyond the Companies' control will affect performance, and (ii) interveners assert that FortisBC's proposal contemplates no

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[267] BCPSO raised Emergency Response Times at paras.56-57 of its Submission.

[268] BCPSO Submission, para.51.

[269] FBC Exhibit B-7, BCUC IR1.65.1, 1.64.1.

financial consequences for declining service quality, and that financial consequences are essential. In this section, FortisBC makes the following points in reply:

- Proof that service quality declines are caused by the utility is essential to the logic of including SQIs in a PBR plan in the first place, and proof of causation is also ultimately necessary to ensure compliance with the UCA and the regulatory compact.

- The Commission has recourse to enforcement options consistent with the prior PBR plans, including options that entail potential financial implications for the Companies.

- The experience under the past PBR Plans demonstrates that the proposed approach to enforcement will provide appropriate incentives to maintain service quality.

- Ms. Alexander's proposal is fundamentally directed at punishing the Companies without due process, rather than being directed at upholding the regulatory compact, and should therefore be rejected.

(a) The Importance of Causation in Assessing Performance

166. Interveners appear to concede that the whole point of SQIs in a PBR plan is to counteract what might otherwise be a theoretical incentive for a utility to cut costs that may result in service quality declines.[270] Yet, these same interveners do not seem to recognize that implicit in the logic of including SQIs in PBR is that service quality must first be within the utility's control (one cannot dis-incent outcomes that are beyond the utility's control any more

[270] COPE states at p.3: "It is an unfortunate reality that PBR can tend to undermine this important facet of the regulatory compact." It goes on to state "If left unchecked, there can be an escalation of the natural tendency of monopoly providers of essential services to cut corners when it comes to service quality and other customer needs. There are no competitors, so there is nowhere else for ratepayers to obtain their energy services. They are 'captives' of the monopoly utility." CEC speaks in terms of deterring "cost cutting" in areas that can or could affect service quality: CEC Submission, para.828.

than one can incent outcomes that are beyond the utility's control[271]). A SQI scheme that fails to distinguish between declines in service quality attributable to conduct of the utility and declines that are the product of factors beyond the utility's control is at odds with the rationale for including SQIs in PBR in the first place.

167. The SQI enforcement regime moves from illogical to unlawful when financial enforcement mechanisms do not (a) distinguish natural variation in SQI results around an average from actual deterioration in service quality or (b) distinguish service quality declines attributable to imprudent utility conduct from uncontrollable declines. FortisBC's point in this regard can be stated as follows:

> *Just as the fair return standard does not guarantee recovery of imprudently incurred costs, the criterion "more than a fair and reasonable charge for service of the nature and quality provided by the utility" does not confer upon customers the absolute right to have service maintained at predetermined SQIs irrespective of the circumstances. It only confers upon customers the right not to have service degrade because of some imprudent conduct on the part of the utility.*

168. The fact that Ms. Alexander and COPE recognize the need for a waiver in some circumstances[272] is an implicit admission that the utility cannot be held accountable for factors beyond its control, provided the events are large enough. There is no meaningful distinction between declines due to extreme events beyond the control of the utility and declines associated with uncontrollable factors that fall short of extreme events.

169. COPE suggests internal inconsistency on the part of FortisBC in that the "PBR plan for shareholder rewards would yield a prize for the utilities arising from positive economic and other factors which are, again, entirely beyond their control or influence."[273] There are two responses to this argument.

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[271] Which is why uncontrollable costs are typically captured in deferral accounts and are proposed to be excluded from the I-X Formula.

[272] COPE Submission, p.34.

[273] COPE Submission, p.37.

- First, the "economic or other factors" cited by COPE may not be favourable to the utility, as COPE implicitly assumes. Whereas the proposed treatment of economic impacts on the Companies' controllable costs is symmetrical, COPE is not proposing any corresponding benefit to FortisBC in the event that SQI's are exceeded. The risk to the Companies would still be asymmetric with incentive payments for exceeding SQIs because the utility already operates at a high level of service quality.

- Second, the utility's ability to manage its overall costs to respond to negative events far exceeds its flexibility to respond to a particular event that impacts a particular SQI result, e.g. an event occurs that results in an unexpected increase in call volumes.

(b) Enforcement Options Consistent with Prior Plans

170. Interveners such as COPE and CEC have continued to paint FortisBC's SQI proposal as being one that, unlike the prior PBR plans, is devoid of any enforcement element apart from moral suasion and the off-ramp tied to a sustained serious degradation of service quality.[274] This is not an accurate portrayal of FortisBC's proposal. The Commission has other tools available to it address service degradation, which are statutory in nature and exist independently of whether they are addressed explicitly in the proposed PBR Plan.

Tools for Identifying Service Quality Issues

171. FortisBC's position has been that "If there is a material change to service quality identified by stakeholders, stakeholders will work to identify a change that can address that element and put it forward to the Commission. FEI will work co-operatively to ensure compliance with requirements." CEC quotes this passage and interprets it as suggesting that "the onus is now passed on to the stakeholders, and the stakeholders also appear to be responsible for identifying a change and making a recommendation to the Commission while it

[274] COPE Submission, p.7.

appears the Companies' responsibility is only to be compliant and work cooperatively."[275] This is an inaccurate interpretation of FortisBC's evidence. The "stakeholders" to which FEI referred would include FortisBC. FortisBC's position, as in the prior 2004 FEI PBR Plan, is that the onus of establishing that a benchmark has been met rests with the Companies. FortisBC will meet that burden by reporting on its service quality performance at each Annual Review. FortisBC will be actively involved in developing and implementing a solution.

172. CEC quoted the following provision from the prior FEI 2004 PBR Plan, and suggested that the current proposal deviates from it:[276]

> Each SQI will be evaluated on its own merits and a material deviation from the benchmark for any single performance indicator that cannot be explained by events beyond Terasen Gas control is sufficient basis to argue service quality deterioration.

173. CEC is again seeing new "misalignment" in FortisBC's proposal where no change from the prior FEI plan was intended. The above provision (i) recognized that deviation from a benchmark wasn't synonymous with service quality deterioration, (ii) required consideration of causation, and (iii) allowed customers to "argue" service quality deterioration, as opposed to contemplating automatic penalties being implemented without regard to the circumstances.

The Role of Off-Ramps as a Tool for Enforcing Service Quality

174. Interveners criticize FortisBC's SQI off-ramp proposal or being too blunt to be effective, and criticize the criteria that FortisBC has proposed as a trigger. With respect to the first argument, FortisBC recognizes that the off-ramp is a blunt instrument for enforcing SQIs. It is, however, an effective tool of last resort. There were off-ramps included as part of the past PBR plans. The concept remains appropriate.

175. COPE and CEC criticize the fact that FortisBC has proposed to leave the term "sustained serious degradation of service quality" undefined. CEC maintains that "it is

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[275] CEC Submission, paras.852 and 853. See also paras.918 and 919.

[276] CEC Submission, paras.855 and 856.

unreasonable to expect a Utility to perform to any kind of standard if no standard is established".[277] COPE even implies some sinister motive: "Of course, the lack of any such definition or boundary is to the benefit of the Companies since they would be able to litigate and argue extensively on this matter should it even come into play…."[278]. CEC's argument is a red herring since the Companies are seeking to maintain a higher level of service than the level that would trigger the off ramp. COPE's comment echoes Ms. Alexander's "sob stories" view of utilities, and should be disregarded for similar reasons. The Companies have proposed essentially the same service quality trigger for its off-ramp as existed in the past PBR plans. FortisBC's rationale for leaving this term undefined is to permit the Commission to consider all of the circumstances before concluding whether or not to terminate the PBR. Those circumstances would include whether or not service quality degradation had anything to do with the regulatory model in place or the actions of FortisBC. This continues to be the most reasonable approach.

176. Contrary to COPE's assertion[279], FortisBC is not proposing that the off-ramp could only be triggered by consensus (COPE appears to have misread the referenced response). FortisBC is confident that stakeholders would be capable in such circumstances of working together to find common ground, but the Commission would ultimately determine on its own whether the off-ramp should be triggered.

Limiting PBR Incentive to Enforce Service Quality

177. CEC and BCPSO[280] advocate reviewing the amount of an incentive paid to the Companies in the manner contemplated in the last FEI PBR Plan.[281] As Mr. Swanson stated at the hearing, stakeholders always have the right to ask the Commission to assess the reasonableness of utility rates, whether or not those rates are the product of a PBR Plan.[282]

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[277] CEC Submission, para.914.

[278] COPE Submission, p.7.

[279] COPE Submission, p.10.

[280] BCPSO Submission, para.64.

[281] Order G-51-03, p.22.

[282] Transcript Vol.6:1173, ll.23-26 (Swanson).

Under section 59 of the UCA, a rate is "unjust" or "unreasonable" if the rate is either "(a) more than a fair and reasonable charge for service of the nature and quality provided by the utility" or (b) insufficient to yield a fair return. The rates under PBR are set based on the utility taking appropriate steps to deliver a particular level of service quality. The rate yielded by the PBR Plan is, in effect, too high if service quality declines materially as a result of some imprudent conduct by the utility. A finding of imprudence is a precondition to disallowing a portion of the incentive because the overall PBR must still confer an opportunity to earn a fair return. The presumption of prudence would apply.

The Prospect of Review After PBR

178. CEC maintains that the prospect of review after the PBR period "can provide customers with little to no ease because the incentives will have been paid and the ability for the Commission and customers to retroactively treat performance failures will be limited without other regulatory constructs."[283] As indicated above, stakeholders will be able to challenge the payment of incentives during the PBR term if service quality declines because of some imprudent conduct on the part of FortisBC. In any event, the prospect of a post-PBR review does have "teeth". If service quality is expected to be lower in the upcoming COS test period due to some imprudent utility conduct, then rates for the test period can reflect that expected (lower) level of service.

179. CEC asserts that "if the company expects to have Earnings Carryover, they should also have SQI carry over."[284] There is no need for an "SQI carryover". The measures that are subject to lag are primarily the informational indicators SAIDI/SAIFI that are less controllable by the Companies.[285]

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[283] CEC Submission, para.892.

[284] CEC Submission, para.927.

[285] T6:1263, l.16- 1264, l.18 (Chernikhowsky).

(c) Past Experience Demonstrates the Adequacy of Proposed Enforcement Mechanisms

180. COPE is explicit in recognizing that the Companies can be expected to act in good faith when it comes to maintaining service quality, but suggests that there is an "inherent gravitational pull exerting itself inexorably on the conduct of the utilities over five years of light-handed oversight." COPE maintains that this "pull" necessitates the enforcement mechanisms advocated by Ms. Alexander.[286] The objective evidence in fact suggests that FortisBC's proposed enforcement mechanisms - both explicit and implicit - provide appropriate incentives to maintain service quality. To date, in the absence of Ms. Alexander's heavy-handed penalty mechanism, the Companies have maintained a consistently high level of service quality under both PBR and COS regulation. There has never been an instance where these Companies, under their current ownership, have been found to have taken some action or made a decision aimed at enhancing profits at the expense of service quality. The SQI component of the PBR Plan should account for FortisBC's track record of maintaining appropriate service quality, the Companies' expressed commitment to maintain service levels under this PBR Plan, and the existing mechanisms that are in place to address service quality in the unlikely event that it becomes an issue.

(d) Ms. Alexander's Penalty Recommendation Should Be Rejected

181. COPE has not answered key points raised by FortisBC regarding the legal validity and heavy-handedness of Ms. Alexander's proposal. The Commission should reject her model for the reasons set out in FortisBC's initial PBR Submission[287] and below.

The Proper Characterization of Ms. Alexander's Proposal

182. COPE states, referring to Ms. Alexander's proposal, that "in retrospect the choice of the work (sic) 'penalty' was unfortunate as it does not fully or accurately capture the concept Ms. Alexander is proposing but her testimony as outlined above was very clear…". COPE has re-

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[286] COPE Submission, p.6.

[287] Starting at para.281.

characterized Ms. Alexander's proposal as being (1) compensatory and (2) related to just and reasonable rates:

> What Ms. Alexander proposes is a streamlined mechanism to adjust the cost to ratepayers of utility services to reflect the impact of any degradation of the services arising from this inherent weakness of the PBR regime. The result may feel like a penalty to the utility, and in a broad sense it is, but in reality it provides a rate adjustment mechanism in order to ensure that the PBR complies with section 59 of the Utilities Commission Act.[288]

183. Whatever label COPE might seek to apply to Ms. Alexander's mechanism, its essence is punitive. Her proposal involves levying a predetermined amount automatically when SQIs are not met, without any demonstration of imprudence, and the amount she recommends has no link whatsoever to the impact felt by customers. The Commission's jurisdiction to issue penalties is subject to important procedural parameters prescribed by the UCA, and Ms. Alexander's proposal is inconsistent with those parameters.

Ms. Alexander's Penalties and the Regulatory Compact

184. COPE seeks to characterize FortisBC's opposition to Ms. Alexander's penalty mechanism as giving insufficient weight to service requirements under section 59(5) of the UCA, "as though a substandard service is of the same value as one which meets performance benchmarks". That is not FortisBC's position. FortisBC's position, as stated earlier, is:

> *Just as the fair return standard does not guarantee recovery of imprudently incurred costs, the criterion "more than a fair and reasonable charge for service of the nature and quality provided by the utility" does not confer upon customers the absolute right to have service maintained at predetermined SQIs irrespective of the circumstances. It only confers upon customers the right not to have service degrade because of some imprudent conduct on the part of the utility.*

In examining the incentive payment, the Commission must presume prudence and then have regard to whether the service quality decline is attributable to some imprudent conduct on the part of the utility. Otherwise, the PBR Plan will be insufficient to provide FortisBC with an opportunity to earn a fair return.

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[288] COPE Submission, p.48.

185. COPE maintains that "FortisBC's submission that Ms. Alexander's proposed system imports findings that the utility had acted imprudently is incorrect."[289] To be precise, a finding of imprudence is essential to reduce the utility's earnings, and Ms. Alexander's system operates irrespective of any consideration of prudence at all. COPE offers three justifications for why this is acceptable, each of which is answered below:

- COPE's first argument is that "the entire PBR as proposed liberates a large segment of the activities and decisions of the utility from a prudency review: the incentive to realize efficiencies and reap financial rewards replaces prudency-based oversight, particularly in relation to expenditures on Operations and Maintenance."[290] While forecasting is replaced by a formula for the duration of the PBR term, the service quality implications of FortisBC's spending is not "liberated" from review.

- COPE's second argument is that "the mechanism is simply about fine-tuning the evaluation of services received by ratepayers for the purpose of setting rates in compliance with sections 59 and 60."[291] FortisBC has already addressed this argument.

- COPE's third argument is that "the onus is upon the utility to demonstrate prudency, except for after-the-fact disallowances of past expenditures from rate recovery." It cites the Ontario Court of Appeal decision in Great Lakes Power Ltd. v Ontario (Energy Board) [2010] O.J. 2335, including paragraph 22[292] As an initial comment, the court was using the term "prudency review" as being synonymous with a revenue requirements application.[293] The Companies do bear the burden of proof in a COS revenue requirements application to demonstrate that the

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289 COPE Submission, p.48.

290 COPE Submission, p.48.

291 COPE Submission, p.48.

292 COPE Submission, p.48.

293 See for instance paragraph 12: "Through a process called a prudency review, the Board responds to its obligations under the Act to protect the interest of ratepayers by reviewing a distributor's revenue requirement and ensuring that it is reasonable before passing the costs off to its customers."

forecast costs are reasonable as part of demonstrating that the requested rates based on those costs are just and reasonable. In the context of PBR, the burden is still on the Companies, but the exercise becomes one of proving that the base costs and proposed PBR Plan combine to produce just and reasonable rates during the PBR term. Ms. Alexander's penalty mechanism is based on an *ex post* review of the results of the plan (i.e., service quality has, in fact, declined) not an *ex ante* exercise of proving the proposed Plan is reasonable. The presumption of prudence does apply to assessing past utility conduct, as COPE appears to acknowledge.

186. COPE implies that there is something hypocritical in the Companies citing regulatory efficiency as a benefit of PBR, while objecting to automatic and predetermined penalties for not meeting a predetermined SQI benchmark.[294] The substantive statutory rights under the regulatory compact - including the right to an opportunity to earn a fair return - must always trump regulatory efficiency. Moreover, FortisBC has never advocated efficiency at the expense of due process.

187. COPE cites a survey attached to Ms. Alexander's evidence as support for the widespread use of penalty mechanisms.[295] However, the survey was also discussing Reliability Standards. Half of the states in the survey cited by Ms. Alexander have no performance standards whatsoever, let alone penalty mechanisms. The same survey also stated that, among the 41 states that responded, only "seven states said 'yes', they do account for service quality in performance based or incentive ratemaking mechanisms, with no change from 2001…". Or, put another way, the vast majority of states do not employ any penalties, and there is no evidence of the statutory regimes in place in the states that do have penalties.

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[294] COPE Submission, p.7.

[295] COPE Submission, p.36.

D. OTHER ISSUES REGARDING SQIs

(a) Ms. Alexander as an Expert Witness

188. COPE states that "FortisBC's collateral attack on Ms. Alexander's integrity as an expert witness requires a response [see for example Vol. 5 p. 932 l. 26 – 933 l. 13, and FortisBC submission para. 259]." They add that "it is highly improper on the part of FortisBC to have impugned her integrity, especially in so casual and unsubstantiated a manner."[296] COPE concludes by saying "We expect FortisBC to provide a retraction of this scurrilous characterization of Ms. Alexander's evidence in the utilities' reply submission."[297] FortisBC stands behind its submission for the following reasons.

189. First, FortisBC has not asked the Commission to find that Ms. Alexander acted outside the proper role of an expert. Paragraph 259 from FortisBC's PBR submission, to which COPE has objected, states: "While COPE wants to see a higher level of non-emergency service from the call centre (80/30), it is important that the Commission keep in mind that COPE's interest in increasing the amount of available call centre work for its members is not aligned with the interests of customers." That statement expressly relates to COPE's position in this proceeding, is accurate, and has nothing to do with Ms. Alexander's credibility as a witness. The passage COPE has cited from the transcript similarly related to whether there was alignment of interests between customers and COPE members. Counsel for FortisBC asked: "And you'd accept though that the interest of unionized utility staff and customers may not always be totally aligned." Ms. Alexander acknowledged that could be the case. Again, the passage does not address Ms. Alexander's role as an expert.

190. Second, the Commission does not need to determine that Ms. Alexander acted outside the proper role of an expert in order to accept FortisBC's submissions that:

- The interests of COPE members and customers may not be aligned;
- Ms. Alexander's recommendations impose asymmetric risk on the Companies;

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[296] COPE Submission, pp.32, 33.

[297] COPE Submission, p.34.

- Her recommendations gave insufficient recognition to FortisBC's track record of maintaining high levels of service quality under PBR or otherwise; and
- Her penalty regime was developed without regard to the law governing utility regulation in British Columbia.

These are all valid grounds for the Commission to reject, or give little weight to, Ms. Alexander's SQI evidence without making any findings regarding Ms. Alexander's role as an expert.

(b) Response to Submissions on Other Jurisdictions

191. CEC asserts that FortisBC's evidence with respect to the penalty regimes in other jurisdictions is misleading. It says that "the AUC did not 'reject' the use of reward or penalty mechanism but instead utilized other legislative provisions to address the issue which they considered superior."[298] FortisBC's evidence was "The Alberta Utilities Commission's (AUC) Decision 2012-237 rejected the use of any **PBR specific** reward or penalty mechanism" [Emphasis added.]. This is accurate and context is important. FortisBC was making the point that the AUC decided that Rule 002 and the existing general penalty regime was sufficient, which is consistent with FortisBC's proposal.

(c) CEC's Preference for Documented Efficiencies Instead of SQIs

192. CEC's lead off submission on SQIs is that SQIs are insufficient protection for customers and that "a process which rewarded documented 'efficiencies' with due consideration of the cost-benefit relationship for the activities would negate the need for SQIs or other measures to protect ratepayer interests."[299] In other words, CEC wants to initiate a level of regulatory review that meets or exceeds the level of review involved in COS regulation. Under COS, the Commission sets the rate and the utility is left to manage the business within the spending envelope that the rate provides. There is no ex post review of the utility's activities before the utility is permitted to keep 100% of the benefits of any savings below the

[298] CEC Submission, paras.900-902.
[299] CEC Submission, paras.824, 827.

forecast costs. This type of reporting was unnecessary in prior PBRs, and remains inappropriate. FortisBC has addressed CEC's general opposition to PBR and its demands for more regulatory process in Part Two of this Reply Submission.

PART SIX: AMALGAMATION

193. CEC makes a number of arguments to the effect that the PBR Plan does not adequately account for the amalgamation of the gas utilities. CEC's submissions are founded on an incorrect understanding of how the effect of amalgamation will be addressed under FortisBC's proposal. Specifically:

- CEC states that "the fact will remain that there will not have been a review of this aspect of the amalgamation"[300] and adds that: "Only the Utility will know if amalgamation has resulted in a significant change in its ability to achieve its stretch factor."[301] The O&M and capital base inclusion for FEVI/FEW into the I-X Formula will be reviewed in the Annual Review for 2015.[302] Any savings/costs of amalgamation will be an exogenous factor or flow-through under the PBR Plan. No further process is required.

- CEC says: "FEVI has not been under PBR and there may well be synergies that are within easy reach and justify a more challenging stretch factor."[303] This is incorrect. FEVI's O&M was under formula from 2006 to 2009. In addition, approximately 60% of FEVI's O&M is allocated from FEI or relates to FEI employees, and FEVI has been the beneficiary of productivity initiatives in all of the years that FEI was under PBR. FEVI's O&M is managed with the same focus regardless of being a different corporate entity.

- CEC suggests that differing customer growth will impact the PBR Plan, stating that the Companies "also acknowledge however that significant customer growth may be expected though they downplay the impact."[304] Customer growth is forecast in the formula. It will result in both increased revenue and

[300] CEC Submission, para.400.
[301] CEC Submission, para.723.
[302] Exhibit B-48, p.16.
[303] CEC Submission, para.721.
[304] CEC Submission, para.722.

increased costs to support the growth. No change is required to the methodology of the PBR formula from the inclusion of FEVI.[305]

[305] CEC Submission, para.722.

PART SEVEN: PROCEDURAL MATTERS

A. FURTHER PROCESS CONTRARY TO THE INTERESTS OF CUSTOMERS OR FORTISBC

194. Several interveners, including IRG[306], CEC[307] and ICG[308], advocate going to a NSP after the conclusion of this proceeding to negotiate a different rate construct.[309] The Commission should conclude its assessment of the Application in a manner consistent with its procedural order, and bring this proceeding to a close. An NSP can be a fair and efficient means of addressing an application, but directing an NSP now would be neither fair nor efficient.

- The better part of a year will have lapsed since the application was filed. The time for the first Annual Review is approaching. Extending the process now with the substantial risk that an agreement would not be reached with parties opposed to PBR would be inappropriate. FortisBC would not be willing to enter into any settlement based on the type of framework demanded by interveners.

- The Commission has a very extensive evidentiary record before it, including PBR evidence from Dr. Overcast and three intervener experts.

- Interveners have had every opportunity to make their positions known to the Commission, both through evidence and extensive arguments. It is equipped to make a determination on just and reasonable rates under PBR and should do so.

195. CEC's stated rationale for referring the Applications to an NSP is that "the Utilities have failed to conduct an adequate assessment of customer interests and that their consultation process with customers was perfunctory, one way communication with little to no opportunity for the customer to communicate the perception of significant flaws."[310] CEC's submission appears to be less about consultation and more about an unreasonable expectation

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[306] IRG Submission, para.53. BCSEA-SCBC are "not necessarily proposing these procedural possibilities, but they could be considered."

[307] CEC Submission, para.10.

[308] ICG Submission, para.2.

[309] BCSEA-SCBC Submission, para.235.

[310] CEC Submission, para.10.

that FortisBC ought to have been open to not proposing PBR at all. The Commission had directed FortisBC to file a PBR or productivity plan, and had followed-up with a letter confirming FortisBC should investigate a PBR. FortisBC considered PBR to be the right approach. FortisBC did discuss PBR with Staff and stakeholders.[311] FortisBC proposed a PBR Plan that it believes is just and reasonable based on its consideration of what stakeholders had negotiated in past FEI and FBC PBR Plans, the input of Dr. Overcast, information about what is being done in other jurisdictions, and the concerns expressed by interveners coming out of the past PBR plans. FortisBC included Appendix D4 in specific response to intervener concerns, and proposed limited capital rebasing to address the concerns. This is an appropriate approach.

B. TIMING OF DECISION

196. A Commission decision on this Application would be required by mid-August 2014 in order to proceed with the 2014 Annual Review and set permanent rates for January 1, 2015. Otherwise, FortisBC would likely file an application for interim rates for 2015 and determine permanent rates in 2015.

197. If the Decision is issued after the end of September 2014, any difference between FEI's interim 2014 rate and the final 2014 rate will have to be processed by FEI as a rate rider in 2015 instead of a rate adjustment in 2014. FBC is less affected by this date because FBC is proposing to address any difference in 2014 rates by deferring the revenue requirement difference for amortization in 2015, consistent with the treatment of the revenue requirement impact of the GCOC decision.

PART EIGHT: CONCLUSION

198. Interveners have provided no valid basis to reject PBR out of hand, nor have they justified the adoption of a regulatory model that is so process intensive as to be PBR in name only. FortisBC's proposed PBR Plan represents a balanced package that is fair to both customers and the Companies. It will provide a just and reasonable basis for setting rates for the next five years, and should be approved.

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[311] ICG-FBC IR 1.3.1; T2:337 (Swanson).

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

Dated: June 12, 2014

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Principles of Public Utility Rates (2nd), Bonbright, Danielsen, and Kamerschen

KN
270.3
B65
1988

Principles of Public Utility Rates

Second Edition

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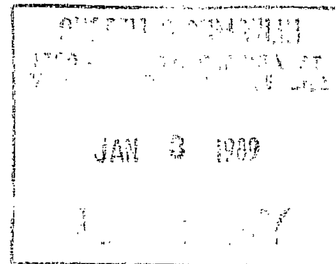

Public Utilities Reports, Inc.
Arlington, Virginia

is felt needed as "... it is a source of disturbance, annoyance and embarrassment to the bureaucracy" (Adams, 1965, p. 283).

Problem of Inappropriate or Secondary Goals

As we indicated earlier, the second generic problem facing regulatory policy is that the regulators may select inappropriate or secondary goals eschewing the more fundamental ones. Let us examine this contention.

Goals of Regulation. The basic goals of regulation are efficiency and equity. Balancing these two major goals is not easy. According to Ross (1972, p. 257): "Regulation is not an impossible job, but almost." Let us first turn to efficiency, the goal that professional economists generally urge should be dominant.

Actually, efficiency is not a goal itself, but a means to the end of societal welfare maximization. But let us follow common parlance on this. Static efficiency can be thought of in two specific contexts. A firm is said to be: (1) *technically efficient* if for any given level of output it minimizes costs; (2) *allocatively efficient* if it produces the appropriate quantity of output from society's perspective and uses its inputs in the appropriate combinations, given the relative prices of these inputs. In addition, a firm is (3) *dynamically efficient* if over time it is producing more or better products with the same level of inputs.

Efficiency Conditions. Static economic efficiency in a competitive industry where price equals marginal cost is of three sorts: efficient allocation of output, efficient production of output, and efficient level of output (see Friedman, 1986). A profit maximizing (nondiscriminating) monopolist equating marginal revenue with marginal cost will achieve only the first two of these efficiencies. In the natural monopoly case, forcing the firm to produce where price equals marginal cost will capture all three efficiencies. However, the ensuing net losses must be made up out of general tax revenues or by allowing discriminatory pricing.

Standard microeconomic theory teaches that there are two efficiency conditions. The first efficiency condition that price equals marginal cost tells how much a firm should produce to achieve social optimality. The second efficiency condition involves whether a firm should come into existence in the first place. A firm should produce if, and only if, at the output at which price equals marginal cost, consumer surplus plus profit is positive, i.e., consumer surplus is greater than the loss to the firm. A private profit-maximizing monopoly

will only produce when profit is nonnegative, so that profit plus consumer surplus must be positive. While an unregulated monopolist will never produce when it should not, it may fail to produce when it should, or, for example, when the losses are less than the consumer surplus.

A possibility noted previously is to let firms compete under the indirect regulation of the antitrust laws. Of course, the technological inefficiency of these firms may cause higher prices than the more efficient profit-maximizing monopolist would charge. Only if we wish to preserve competitors (a political decision), and not competition (an economic decision), would this represent sound public policy. The Demsetz (1968) solution of auctioning off monopoly operation or ownership franchises, provided there are no legal barriers and transaction costs are modest, is theoretically most satisfying as it retains the technical efficiency of a natural monopoly, but it would be a pragmatist's nightmare. Even unmitigated regulatory commission bashers are, in some cases, leary of the practical limitations of auctioning franchises.

Public ownership of natural monopolies, such as has been instituted in most other nations, has not been seriously suggested in the United States for some time, despite the precedent of the Tennessee Valley Authority and numerous municipal electric and water utilities. It would probably take a depression of the magnitude of the 1930s for this idea to warrant serious attention, since it is contrary to general philosophical beliefs.

Problems with Government Ownership and Subsidization. There are two problems with a government-owned or subsidized solution to a natural monopoly. According to public choice theory, government officials are not benevolent, bureaucratic, omniscient gods standing outside the system. They are people with the same self interest motives that drive private monopolists. Instead of trying to maximize net benefit as is suggested by the public interest theory, government administrators and legislators may be expected to act rationally in their own self interests. They may buy popularity with consumers (producers) by forcing prices below (above) marginal cost which, e.g., in the latter case can lead to large political contributions to the incumbent administrator. Perhaps Ambrose Bierce (1957, p. 107 cited in Breyer, 1982, p. 19) expressed best the likelihood that nationalized industries would be operated less efficiently than private firms, when he defined such a typical nationalized service as a lighthouse as "a tall building on the seashore in which the government maintains a lamp and the friend of a politician."