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By Electronic Filing

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Sirs/Mesdames:

Re: British Columbia Hydro and Power Authority ("BC Hydro")
Performance Based Regulation Report ~ Project No. 1599045

We enclose for filing BC Hydro's Final Submission in the above-noted proceeding.

Yours truly,

FASKEN MARTINEAU DuMOULIN LLP

[Original signed by]

Matthew Ghikas
Personal Law Corporation

MTG/lh
Enclosure

BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF

THE UTILITIES COMMISSION ACT

RSBC 1996, CHAPTER 473

AND

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

(BC HYDRO)

REVIEW OF THE PERFORMANCE BASED REGULATION REPORT

FINAL SUBMISSIONS OF BC HYDRO

May 3, 2021

MATTHEW GHIKAS

Fasken Martineau DuMoulin LLP

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PART ONE INTRODUCTION

1. The evidence in this proceeding, including the consensus view of three respected experts (Dr. Weisman, Mr. Kolesar and Dr. Lowry), is that all forms of regulation provide incentives to encourage improved performance by utilities, falling on a continuum in terms of the strength of those incentives. The efficacy and desirability of particular mechanisms depend on the specific circumstances of each utility. The experts also concur that BC Hydro's current regulatory regime falls part-way along the incentive continuum, incorporating various mechanisms that may be characterized as Performance Based Regulation ("PBR").

2. In that context, characterizing the central issue in this proceeding as a choice between Cost of Service regulation ("COSR") and PBR would present an overly simplistic, and ultimately false, dichotomy. It would also prompt unnecessary disputes over nomenclature. The analytical exercise is, rather, one of assessing whether the existing incentives for good performance can be strengthened in a way that the assumed benefits outweigh the disadvantages.

3. The experts, including the BCUC's consultant (Dr. Lowry), have identified a range of incentive mechanisms for consideration. BC Hydro is advancing three of them as part of its upcoming Fiscal 2023-Fiscal 2025 Revenue Requirements Application ("RRA") proceeding - a three-year test period, statistical benchmarking, and expanded use of performance metrics. The evidence demonstrates that the three mechanisms are forms of PBR, are compatible with the unique circumstances of BC Hydro, are relatively easy to implement, will improve the existing incentives for BC Hydro to perform well, and can be expected to deliver benefits that outweigh the disadvantages.

4. Apart from those mechanisms, Dr. Lowry focussed on four other potential options: (1) an even longer test period, (2) indexing or formula approaches to determining revenues, (3) partial decoupling to facilitate financial incentives for pursuing electrification, and (4) attaching financial incentives to specific metrics or initiatives, to which Dr. Lowry refers as Performance Incentive Mechanisms ("PIMs"). BC Hydro submits that the evidence supports a determination that these additional options should be set aside.

5. The potential benefits that most of these mechanisms purport to offer are absent in the case of BC Hydro because they are predicated on BC Hydro being motivated by the potential to exceed its regulated return on equity ("allowed ROE") for the benefit of its shareholder (the Government of B.C.), or alternatively on the ability to reward management with bonuses for doing so. BC Hydro is motivated to pursue efficiencies to deliver on its mandate to keep rates affordable, but has no mandate to exceed its allowed ROE (i.e., to maximize profits for its shareholder). Its compensation structure is aligned with its broader mandate, and BC Hydro is precluded from adopting management bonuses as a means of emulating a mandate to maximize profits. It is telling that the three experts in this proceeding – all of whom are generally advocates of PBR – are either unconvinced of its prospects for success in this instance (Dr. Weisman, Mr. Kolesar) or focus on the theoretical benefits and report equivocal or unflattering results for previous attempts to incorporate PBR elements for publicly-owned utilities (Dr. Lowry).

6. Even if the BCUC were to conclude (despite the expert evidence) that BC Hydro would respond to incentives premised on a mandate to exceed its allowed ROE, the advantages that these mechanisms purport to offer would be questionable in the context of BC Hydro. They would, in any event, be outweighed by disadvantages. BC Hydro's track record under the existing framework since 2018, when the BCUC directed BC Hydro to prepare a PBR Report, suggests that the potential "upside" to PBR is more limited than originally anticipated - notably, rate increases over that period have been below inflation, and the BCUC has both acknowledged BC Hydro's commitment to cost control and signalled that BC Hydro should be increasing its spending in some areas after years of fiscal restraint. Moreover, Dr. Weisman has demonstrated empirically that a three-year test period has greater incentive power than a five-year Multi-year Rate Plan ("MRP") with 50 percent earnings sharing (an approach used in other longer MRPs in B.C.). At the same time, adopting lengthy MRPs with indexing to afford BC Hydro greater autonomy to find efficiencies diminishes transparency and stakeholder acceptance – significant drawbacks in the context of a Crown corporation that was, until relatively recently, subject to limited BCUC oversight.

7. Since the BCUC will consider BC Hydro's three proposals in the Fiscal 2023-Fiscal 2025 RRA proceeding[1], its decision in the present proceeding should be devoted to findings about how certain characteristics of BC Hydro would affect the efficacy and implementation of the various measures raised in this proceeding, and whether any potential benefits can be expected to outweigh the identified challenges. While an outcome of this proceeding could be to rule out certain mechanisms or direct BC Hydro to file a proposal in the future (i.e., *determinations "in principle"*), the BCUC should refrain from directing *the implementation* of any mechanism without the benefit of a specific proposal and evidence on its implications that would come in a future RRA proceeding.

[1] BCUC Order No. G-92-21: "Any change to the test period that is requested in the August 2021 RRA filing is a matter that should be addressed in that proceeding."

PART TWO ISSUE AND REQUESTED FINDINGS DEMONSTRATED BY THE EVIDENCE

A. THE CENTRAL ISSUE

8. BC Hydro submits that the central issue before the BCUC in this proceeding is appropriately framed as:

> Considering BC Hydro's unique circumstances, whether, *in principle*:
>
> (i) a three-year test period, information-only performance metrics and regular statistical benchmarking merit further consideration in the upcoming RRA as potential mechanisms to strengthen the existing incentives for cost control, productivity improvements and performance; and
>
> (ii) any of the four additional options for future consideration identified by Dr. Lowry has the potential to further increase the incentives for cost control, productivity improvements and performance, either at all or sufficiently to outweigh any disadvantages.

B. REQUESTED FINDINGS DEMONSTRATED BY THE EVIDENCE

9. On the central issue, the BCUC should find:

- The three changes that BC Hydro is incorporating in its next RRA – a three-year test period, regularly scheduled statistical benchmarking, and information-only performance metrics – will improve the incentives under the existing framework for BC Hydro to perform well while retaining valued attributes, and therefore in principle merit the BCUC's further consideration in that RRA proceeding. (Part Four)

- The other mechanisms under consideration in this proceeding for subsequent test periods – in particular, a longer MRP, formulaic rates, adding financial incentives to performance metrics, and moving from full to partial revenue decoupling to incentivize electrification – should be not be adopted. They do not align with the circumstances of BC Hydro because they either rely on conditions that are not present in BC Hydro or the assumed advantages do not outweigh the disadvantages of adoption. (Part Five)

10. The central findings are supported by a number of points, which are summarized below. BC Hydro respectfully submits that the BCUC should make these findings explicit in its Decision.

- All forms of regulation provide incentives, and fall on a continuum in terms of the strength of those incentives. The effectiveness of specific incentive mechanisms will depend on the circumstances of the utility. (Part Three, Section C)

- BC Hydro's existing regulatory framework provides incentives for BC Hydro to operate efficiently and provide safe and reliable service in various ways, including its mandate, the rate-setting process, having to operate within a predetermined revenue envelope for multiple forward test years, the holdback compensation structure aligned with BC Hydro's mandate, and public scrutiny. (Part Three, Section D)

- Although it is common to refer to BC Hydro's existing regulatory regime as "COSR", it differs from "textbook" COSR. It incorporates, to varying degrees, each of the four PBR approaches identified by Dr. Lowry. (Part Three, Section E)

- Since 2018, when the BCUC ordered BC Hydro to prepare a PBR Report, the evidence that the existing framework is providing effective incentives has accumulated. (Part Three, Section F)

- BC Hydro's mandate established by the Government of B.C. does not include exceeding its allowed ROE (i.e., to maximize profits for its shareholder). The absence of a mandate to exceed the allowed ROE is a unique feature of BC Hydro's regulatory framework that distinguishes BC Hydro from investor-owned utilities and other publicly-owned utilities under PBR. It limits the efficacy of incentive mechanisms premised on the opportunity to earn more than the allowed ROE. (Part Three, Section G)

- While a management compensation structure can be designed to mimic the profit maximization motive of an investor-owned utility, the Public Sector Employers'

Council ("PSEC") guidelines would preclude BC Hydro from adopting this approach. (Part Three, Section H)

- There is value in having an approach to regulatory oversight that enjoys credibility among key stakeholders. Some stakeholders have expressed reservations about the adoption of certain PBR incentive mechanisms predicated on significantly increasing BC Hydro's autonomy. (Part Three, Section I)

- A three-year test period (which Dr. Lowry refers to as an MRP with a stair-step Attrition Relief Mechanism ("ARM")) is a form of PBR. It can be expected to strengthen incentives, increase regulatory efficiency and retain valued transparency, such that it merits further consideration in the upcoming RRA. (Part Four, Section B)

- Statistical benchmarking is a PBR mechanism. It can be a useful tool to help the BCUC and interveners evaluate the reasonableness of BC Hydro's cost forecasts, such that it merits further consideration in the upcoming RRA. (Part Four, Section C)

- Information-only performance metrics are a PBR mechanism. They can enhance the existing incentives for efficiency and performance, such that they merit further consideration in the upcoming RRA. (Part Four, Section D)

- In the unique circumstances of BC Hydro, the advantages of longer MRPs are questionable and the disadvantages are potentially significant. (Part Five, Section B)

- The use of a formula or index to set rates is not a necessary characteristic of a PBR regime, and any potential advantages are outweighed by the disadvantages in the case of BC Hydro. (Part Five, Section C)

- There is no reason to expect that associating ROE implications with performance indicators will strengthen BC Hydro's existing incentives to perform well, since (i) BC Hydro's mandate does not include earning returns in excess of the allowed ROE, and (ii) the BCUC has determined it can only apply penalties to amounts above the allowed ROE. (Part Five, Section D)

- Partial decoupling of low-carbon electrification revenues, ostensibly to encourage electrification, is ill-suited to BC Hydro's circumstances and would harm ratepayers. (Part Five, Section E)

PART THREE CONSIDERATIONS THAT SHOULD INFORM BCUC'S DETERMINATION

A. INTRODUCTION

11. This Part sets out considerations that should inform the evaluation of potential future modifications to BC Hydro's current regulatory regime. The key points, and requested findings, are summarized in Part Two above.

B. THE EVIDENCE OF THE THREE EXPERTS IS ALIGNED ON KEY MATTERS

12. In this proceeding, the BCUC has had the benefit of thoughtful and balanced evidence from three experts in incentive ratemaking:

- **Dr. Mark Lowry** from Pacific Economics Group was retained by the BCUC to provide background on PBR and identify various types of incentive regulation in use around the world.

- **Dr. Dennis Weisman** is Professor of Economics Emeritus at Kansas State University who specializes in economic regulation. He has advised and provided evidence on PBR for many years and written numerous academic articles and co-authored a book on the topic of incentive regulation.

- **Mr. Mark Kolesar** is a former commissioner at the Alberta Utilities Commission. He served for 12 years, including six years as Vice Chair and two years as Chair (ending in 2020). During that time, Mr. Kolesar was among the commissioners who presided over the introduction and development of PBR in Alberta.

13. As discussed in subsequent sections of these Submissions, the expert evidence is aligned in key respects. Dr. Weisman, Mr. Kolesar and Dr. Lowry are, in general, advocates of incentive regulation and PBR. At the same time, all three experts recognize that regulatory constructs must account for the unique circumstances of BC Hydro.

14. Dr. Lowry offers a menu of potential PBR options. The experts are united as to the suitability of some of these options for BC Hydro, and BC Hydro is pursuing them. However, other

options identified by Dr. Lowry remain theoretical and are premised on the existence of conditions that are, in fact, absent for BC Hydro.

15. Mr. Kolesar and Dr. Weisman are unconvinced that the conditions required to enable the successful adoption of some PBR elements are present in the case of BC Hydro, particularly because of BC Hydro's mandate and constraints on its management compensation system. Dr. Lowry acknowledges the challenges. He reports unflattering results for previous attempts to employ certain PBR mechanisms for publicly-owned utilities. The results reported by Dr. Lowry are consistent with the observation that a publicly-owned company with a broad public interest mandate, rather than a mandate to exceed its allowed ROE, is nonetheless motivated to achieve superior performance without the prospect of higher earnings under PBR.

16. BC Hydro submits that the BCUC should heed these notes of caution and concentrate its efforts on the successful implementation of the mechanisms that BC Hydro is advancing in the upcoming RRA.

C. INCENTIVE REGULATION SHOULD BE VIEWED AS A CONTINUUM, NOT A BINARY CHOICE BETWEEN COSR AND PBR

17. The expert evidence, discussed below, is that incentive regulation should be viewed as a continuum. The effectiveness of specific incentive mechanisms will depend on the particular circumstances of the utility.

(a) All Regulation is Incentive Regulation

18. Dr. Weisman states: "In my opinion, the labels of PBR and COSR can sometimes be misleading. In a quotation widely attributed to Professor Alfred Kahn, the former regulator and renowned economist observed that 'All regulation is incentive regulation.'"[2] Dr. Weisman adds: "Whereas COSR is frequently treated in the literature as a discrete alternative to PBR, these two types of regulatory regimes are best understood in terms of lying along a continuum based on the strengths of the incentives for efficient performance."[3] Dr. Weisman also adopts a quotation

[2] Exhibit B-9, BCUC IR 1.15.1 (Weisman).

[3] Exhibit A2-1, First Weisman Report, Executive Summary.

from an academic treatise (co-authored by a Nobel laureate in economics) to the effect that "overall [Cost of Service] and [PBR] regulations have a lot in common…the contrast between the two modes is mostly one of emphasis."[4] "Textbook COSR" and "textbook PBR", which fall on either end of the continuum, differ from what is generally employed in practice.[5]

19. Mr. Kolesar similarly states that "…the choices before the Commission fall on a continuum between what may be seen as the two extremes between COSR and PBR…Accordingly, the Commission has a range of regulatory regime alternatives by which it may achieve its objectives in regulating BC Hydro."[6]

20. Dr. Lowry observed: "Most PBR approaches used today can be characterized as incremental reforms to COSR designed to address these problems rather than entirely different regulatory systems."[7] This observation speaks to a continuum of regulatory regimes.

(b) "PBR" Includes Multiple Forms of Incentive Regulation

21. Dr. Weisman and Dr. Lowry both define PBR broadly, as an approach to regulation that provides incentives to perform well or achieve identified goals.

22. Dr. Weisman states, for instance, that incentive regulation or PBR "can be defined as the design and implementation of rules that encourage a regulated firm to achieve desired goals by granting some, but not complete, discretion to the firm."[8] Dr. Lowry expresses agreement with Dr. Weisman's definition of PBR and suggests that it is preferable to speak in terms of "incentive regulation":

> And by the way, may I say that this definition of PBR is pretty much in line with Dr. Weisman's definition. It's really maybe a better term for it would be incentive

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4 Exhibit B-9, BCUC IR 1.15.1 (Weisman).

5 Exhibit A2-1, First Weisman Report, Executive Summary. E.g., "The textbook model of COSR with no regulatory lag contemplates instantaneous rate reductions that serve to normalize excess returns."

6 Exhibit B-8, Kolesar Report, p. 4

7 Exhibit A2-5, Lowry Report, p. 16.

8 Exhibit A2-1, Appendix F, pp. 4-5.

regulation, because it's not confined just to forms of regulation that try to link rewards to some specific measure of performance.[9]

23. Dr. Lowry sets out four well-established PBR approaches:

- MRPs;
- relaxation of the link between revenue and system use;
- targeted performance incentive mechanisms; and
- special incentives to use disfavored inputs.[10]

24. Dr. Weisman agrees that "All four approaches to PBR identified by Dr. Lowry have the potential to improve the utility's incentives to "perform well". Whether this potential is realized will turn on the strength of the incentives for superior performance. These incentives may be of a financial or non-financial type."[11]

(c) Characterizing PBR as Inherently Superior to COSR Is Incorrect

25. It would be incorrect to assume that PBR always provides stronger incentives to COSR**.**

26. Mr. Kolesar states: "I would respectfully encourage the Commission not to fall into the trap of believing that PBR is always and everywhere superior to COSR."[12]

27. Dr. Weisman similarly states: "While the economics literature typically compares the textbook models of COSR and PBR in extolling the superiority of the latter, the real world in which "the devil is in the details" is not nearly as straightforward."[13] Depending on specific design

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9 Tr. 2, p. 107, ll. 7-25 (Lowry).

10 Exhibit A2-5, Lowry Report, pp. 5-6, 16; Exhibit A2-7, Lowry Presentation, slide 7.

11 Exhibit B-8, Appendix A, p. 5.

12 Exhibit B-9, BCUC IR 1.16.8 (Kolesar).

13 Exhibit A2-1, First Weisman Report, p. 2.

details, regimes that might be formally labelled "PBR" could have lower incentive properties than a regime that might be labelled "COSR".[14] He elaborates:

> The textbook model of COSR with no regulatory lag contemplates instantaneous rate reductions that serve to normalize excess returns. This regulatory regime lies at the far left on this continuum indicating extremely weak (low-powered) incentives. In contrast, long-term PBR with no earnings sharing or rebasing lies at the far right on this continuum indicating extremely strong (high-powered) incentives. Notably, COSR with a long regulatory lag may reside on this continuum to the right of a short-term PBR regime that incorporates a narrow deadband, pronounced earnings sharing and a full rebasing of rates at the end of the PBR term. In this special case, COSR exhibits more high-powered incentives than PBR. The key point is that PBR is not necessarily superior to COSR in all cases.[15]

28. Dr. Weisman supports his evidence with illustrative calculations demonstrating that "a modified form of the Commission's current approach to COSR (i.e., moving from a 2-year to a 3-year test period) can exhibit stronger incentive power than a formal, [five-year] indexed PBR plan with a significant earnings-sharing component."[16]

29. The anecdotal and study evidence referenced by Dr. Lowry that suggests underwhelming results for PBR with publicly-owned utilities (discussed in paragraph 95 below) illustrate this point.

(d) The Effectiveness of Particular Forms of Incentive Regulation Depends on the Circumstances

30. There is a wide range of incentive mechanisms in use in the industry. However, the efficacy and desirability of particular incentive mechanisms depend on the particular circumstances of each utility.[17] As Dr. Weisman stated:

> I would also point out that I believe there are hazards in simply examining regulatory practices in other jurisdictions and reflexively assuming that it would

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[14] Exhibit B-9, BCUC IR 1.15.1 (Weisman).

[15] Exhibit A2-1, First Weisman Report, Executive Summary.

[16] Exhibit A2-9, BCUC IR 1.15.1 (Weisman).

[17] The AUC adopted as a principle that "The design of the PBR plan should recognize the unique circumstances of each regulated company." Exhibit A2-1, First Weisman Report, pp. 21, 24.

> work satisfactorily or is necessarily the optimal approach in the case of BC Hydro as a Crown Corporation. I believe it is helpful to be mindful of the counsel proffered in the following quotation. "The two most important lessons to be drawn from the literature surveyed here are that there is no single combination of regulatory settings that is best in all situations and that the various components of a regulatory scheme are interrelated. The most appropriate regulatory scheme for a given situation will depend on the characteristics of the firm and industry being regulated, as well as the institutional environment." [Graeme Guthrie, "Regulating Infrastructure: The Impact on Risk and Investment," Journal of Economic Literature, Volume 44(4), December 2006, p. 966.][18]

31. Mr. Kolesar states that a PBR plan should be adopted only if "the conditions for its adoption are adequate and the benefits are sufficient to justify the potential effort required to design and implement a workable PBR plan."[19]

32. Any new incentive mechanisms for BC Hydro should reflect BC Hydro's unique circumstances, including BC Hydro's performance under the existing framework, its mandate as a Crown corporation, constraints on its compensation structure, and priorities identified by the BCUC.

D. BC HYDRO'S CURRENT REGULATORY FRAMEWORK PROVIDES INCENTIVES

33. The evidence, discussed below, demonstrates that BC Hydro's existing framework provides effective incentives for BC Hydro to operate efficiently and provide safe and reliable service in five ways.[20]

(a) Incentive Source #1: BC Hydro's Mandate from the Government of B.C.

34. First, the Government of B.C. provides incentives for BC Hydro to operate efficiently and effectively.

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[18] Exhibit B-9, BCUC IR 1.11.1 (Weisman). See also: Exhibit A2-1, First Weisman Report, p. 12.

[19] Exhibit B-9, BCUC IR 1.16.2 (Kolesar).

[20] Exhibit B-9, BCUC IR 1.3.2.

35. The Government of B.C. requires BC Hydro to exercise fiscal discipline. For example, the 2013 10-Year Rates Plan set rate targets for fiscal 2020 to fiscal 2024. BC Hydro had to find new efficiencies to maintain those rate targets as a declining rate of load growth created new cost pressures. The Comprehensive Review identified additional opportunities to reduce costs to support Government's affordability mandate.[21]

36. BC Hydro's mandate, which is set out in BC Hydro's Mandate Letter from Government and the Service Plan, continues to include having rates that are "among the most affordable in North America". Efficiency and cost control are emphasized throughout the Service Plan, with the focus of these efforts being to keep rates affordable for customers.[22] BC Hydro is subject to scrutiny from the Government of B.C. when it establishes budgets and the Government of B.C. is involved in the selection of the metrics in the Service Plan.[23] As such, BC Hydro's budgeting process must actively consider and incorporate opportunities to reduce costs and absorb cost pressures. BC Hydro's forecasts are predicated on expected productivity gains.[24]

37. Mr. Kolesar emphasizes the importance of BC Hydro's affordability mandate in driving productivity improvements:

> BC Hydro's mandate to have rates "among the most affordable in North America" provides a strong incentive to ensure that the costs to provide utility service are necessary and prudently incurred, at minimum, and also provides a further incentive to seek productivity improvements to satisfy this mandate by keeping rates as low as possible. As I stated in my submission, in this regard I agree with Dr. Weisman that crown corporations like BC Hydro are "de facto subject to two different regulatory authorities—the regulatory commission and the government owner" and as such, BC Hydro has a strong incentive to seek productivity improvements to satisfy the expectations of the Government of British Columbia with respect keeping rates among the most affordable in North America.[25]

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21 Exhibit A2-1 BC Hydro PBR Report, p. 11-69.

22 Exhibit B-8, BC Hydro Supplementary Evidence, p. 5, referencing page 5 of BC Hydro's 2019/20 – 2021/22 Service Plan.

23 Exhibit A2-1, BC Hydro PBR Report, p. 11-57.

24 BCUC IR 1.3.2.

25 Exhibit B-10, CEC IR 1.15.3 (Kolesar).

38. Dr. Weisman observes that "even when a regulated firm does not have profit-maximization as a primary objective, it may still be guided by a social responsibility to minimize costs to ensure that customer rates are no higher than necessary."[26] For firms with a profit-maximization objective, PBR offers an avenue through which consumers may be able to enjoy a slower increase in rates indirectly, as a by-product of the efficiency gains the utility discovers in the course of its pursuit of higher profits. In the case of BC Hydro, those lower rates can be secured directly by the Company's mandate to have among the lowest rates in North America.[27]

(b) Incentive Source #2: BCUC Oversight

39. The BCUC's regulatory processes provide a second source of incentives for BC Hydro to operate efficiently and effectively.

40. BC Hydro must demonstrate to the satisfaction of the BCUC that its planned revenue requirements reflect no more than the reasonable and prudent costs of providing utility service and that its forecasts are reasonable. The BCUC can disallow any amounts in excess of this standard. Meeting this standard necessarily requires BC Hydro to demonstrate that it is operating efficiently, and that it has processes in place to ensure cost discipline.[28] BC Hydro also reports to the BCUC on a number of performance metrics.[29]

41. The BCUC can also consider the veracity of BC Hydro's previous forecasts when evaluating whether forecasts for future periods are reasonable. It is therefore in BC Hydro's interest to put forward forecasts that reflect its best efforts to control costs in order to build and maintain credibility with the BCUC and interveners over time and for future proceedings.[30]

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[26] Exhibit B-8, Weisman Supplementary Report, para. 11.

[27] It is instructive to conceive of this in term of the different objectives of the two type of firms. For a utility with a profit-maximization mandate, its objective is to maximize profits subject to the constraint that rates not exceed the level permitted under the rate cap. For a utility with a rate affordability mandate, such as BC Hydro, its objective is to minimize rates subject to the constraint that its net income commitment to Government is achieved.

[28] Exhibit B-9, BCUC IR 1.3.2.

[29] Exhibit B-9, BCUC IR 1.3.2; Exhibit B-8, BC Hydro Supplementary Evidence, p. 13.

[30] Exhibit B-9, BCUC IR 1.3.2.

(c) Incentive Source #3: Forward Test Years / Operating Within Approved Rates

42. A third important source of incentives under BC Hydro's current regime is the BCUC's use of forecast (rather than actual) costs and revenues to set rates, an approach sometimes referred to as using forward test years.

43. Setting rates for one or more forward test years requires BC Hydro to manage its actual costs within a pre-determined revenue envelope to achieve its allowed ROE. BC Hydro's shareholder bears the risk of failing to operate within that revenue envelope. The risk exposure prompts productivity improvements that are passed on to customers in two ways:

- in the current test period, if BC Hydro identifies savings over and above what are required to meet its allowed ROE and invests those savings in service improvements; and
- in future test periods, when rates are re-based.[31]

44. Dr. Weisman observes that, in terms of efficiency incentives, BC Hydro's current framework based on forward test years "would tend to give rise to stronger incentive properties than textbook COSR regulation, *ceteris paribus*."[32]

45. As discussed in Part Four below, adding a third year to the upcoming test period increases the incentive to seek productivity improvements – "sharpens the sticks"[33] – because it extends the period over which BC Hydro bears the risk of failing to operate within a defined revenue envelope.

(d) Incentive Source #4: Holdback Pay

46. BC Hydro's management compensation structure, which incorporates a holdback for certain senior management and executives, promotes efficiency. A portion of the holdback for

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31 Exhibit B-9, BCUC IR 1.3.2.

32 Exhibit B-9, BCUC IR 1.15.1 (Weisman).

33 Exhibit A2-3, RRA MoveUP IR 1.3.1 (Weisman).

Executive Team members reflects BC Hydro's performance against Service Plan metrics. The Service Plan metrics are aligned with BC Hydro's mandate, which includes keeping rates affordable. BC Hydro sets its budget to account for the affordability mandate. Executive Team members are expected to achieve the budgets for which they have accountability in order to receive holdback pay.[34]

47. In its decision on BC Hydro's Fiscal 2020-Fiscal 2021 RRA, the BCUC determined: "With respect to holdback [incentive] pay, BC Hydro appears to have a well-established process for evaluating performance against the individual and corporate objectives…".[35]

48. As discussed later, BC Hydro is constrained in its ability to use employee compensation to emulate a corporate mandate to exceed the allowed ROE.

(e) Incentive Source #5: Public Scrutiny and Public Reporting

49. A fourth source of incentives under BC Hydro's current regime is public scrutiny. Public scrutiny is particularly strong in the case of BC Hydro, as a Crown corporation with a significant public profile.[36] BC Hydro reports publicly (and to the Government of B.C.) on its Service Plan metrics. Among other things, these performance metrics provide information on affordability, system reliability and BC Hydro's internal operations.[37]

E. BC HYDRO'S CURRENT REGULATORY REGIME ALREADY INCLUDES PBR ELEMENTS

50. Although it is common to refer to BC Hydro's existing regulatory regime as "COSR", it differs from "textbook" COSR. As explained below, BC Hydro's current regulatory regime already incorporates each of the four PBR approaches identified by Dr. Lowry, to varying degrees.

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[34] Exhibit B-9, BCUC IR 1.21.2.

[35] Fiscal 2020-Fiscal 2021 RRA Decision, p. 65.

[36] Exhibit B-9, BCUC IR 1.3.2.

[37] Exhibit B-9, BCUC IR 1.1.2; Exhibit B-8, Supplementary Evidence, p. 19.

(a) BC Hydro Already Has Multi-Year Test Periods With Revenues Invariant to Costs

51. Dr. Lowry's first PBR approach is an MRP incorporating what he refers to as an "Attrition Relief Mechanism" or ARM. BC Hydro's current framework incorporates multi-year rate-setting and Dr. Lowry defines ARM to include BC Hydro's forward test year approach.

52. MRPs incent efficient performance by creating a multi-year disconnect between allowed revenue and actual costs, so that a utility must perform within a pre-determined revenue envelope to achieve, or potentially exceed, its allowed ROE.[38] BC Hydro's current regulatory regime creates a multi-year disconnect between allowed revenue and actual costs by setting rates based on forecast costs for multiple forward test years.[39] The Fiscal 2020-Fiscal 2021 RRA was a two-year test period, and the prior RRA covered three forward test years (fiscal 2017-fiscal 2019).

53. Dr. Lowry identifies four different types of ARMs that can be used in the context of an MRP. His presentation states, for instance:

Attrition Relief Mechanism ("ARM")

ARM design is biggest issue in most MRP proceedings

ARMs may cap rates or allowed revenue growth

In either case, there are four established design approaches

- Indexing
- Stairstep
- Hybrid
- Tracker/Freeze

BC Hydro focused on the *indexing* approach in its recent PBR papers

[38] This feature is referenced throughout the evidence although it is expressed in different ways. Refer to Exhibit A2-1, BC Hydro PBR Report, p. 11-9; Exhibit A2-1, First Weisman Report, p. 10; Exhibit A2-5, Lowry Report, p. 33; Exhibit B-8, Kolesar Report, Appendix B, p. 7-8; and BCUC Order No. G-47-18, p. 111.

[39] Exhibit A2-1, BC Hydro PBR Report, p.11-69.

54. Dr. Lowry's description of the "stairstep ARM", and the case study referenced in his presentation, make it clear that "stairstep ARM" is synonymous with the forecast test year approach currently in use for BC Hydro:[40]

Stairstep ARMs

Allowed revenue may, alternatively be based on cost forecast or proposal

This typically results in predetermined "stairstep" trajectory

e.g., *3% growth in 2022, 2.5% in 2023 etc.*

Controversy centers on "controllable" costs (opex and capex)

Several methods have been used for capex budgets

- Multi-year proposal/forecast ("RRA approach")
- Average of recent historical values
- Test year capex (repeated)

Precedents: CA, FL, GA, NY, Northwest Territories

Case Study: Northwest Territories Power

Application Base revenues for bundled service

Stairstep ARM based on 3 forward test years

Plan term 3 years (2016/17 through 2018/19)

Monitoring of service quality performance

No earnings sharing, off-ramp, or efficiency carryover mechanisms

Reference: Northwest Territories Public Utilities Board Decision 16-2017
Case Study: Northern States Power (MN)

55. The parallels between BC Hydro and Dr. Lowry's case study are strong. BC Hydro operated under a three-year forward test year RRA during the same period as Northwest Territories Power – the Fiscal 2017-Fiscal 2019 RRA. BC Hydro's Service Plan, which is filed as part of its RRAs, included service quality indicators for monitoring purposes. BC Hydro's RRA, again like Northwest Territories Power, had no earnings sharing, off-ramp or efficiency carryover mechanisms.

[40] Exhibit A2-7, Lowry Presentation, slides 50, 51.

56. Other case studies provided by Dr. Lowry also incorporate "stairstep ARMs". These include the RIIO in Britain (eight-year forecast) and PG&E (two-year forecast).[41]

57. Dr. Lowry, in his presentation, specifically refers to BC Hydro's "multiple forward test years" as "PBResque".[42]

58. Although Dr. Weisman does not use Dr. Lowry's nomenclature, he emphasizes that BC Hydro's current model differs from the "textbook" COSR typically referenced in comparisons to PBR. The current BC Hydro model provides greater incentives than "textbook" COSR:

> In the textbook model of cost-of-service regulation, the earnings of the regulated firm are capped, and an earnings review can be triggered whenever earnings diverge sufficiently from target levels. In contrast, the form of cost-of-service regulation that applies to BC Hydro specifies a fixed test period over which the regulated firm is not subject to an earnings review and a recalibration of rates to achieve a target rate of return. The distinction between textbook cost- of-service regulation and PBR is often cast in terms of whether the term of the regulatory regime (i.e., regulatory lag) is fixed in advance or determined endogenously on the basis of the regulated firm's earnings.[43]

59. Just as Dr. Lowry identifies both "indexing" and "stairstep" (i.e., cost forecast) as established approaches to ARM, Dr. Weisman explains that indexing is one potential approach to PBR, rather than a necessary component of it:

> The use of a formula or index to set rates is not a necessary characteristic of a PBR regime. The superior incentive properties of these two different approaches (indexed and non-indexed) turn on the fact that the rate trajectory over the course of the regulatory regime is invariant to the regulated firm's own performance regardless of whether that rate trajectory is determined by the "I – X" formula or by a cost forecast set at the outset of the regulatory regime. [44]

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41 Exhibit A2-7, Lowry Presentation, slides 84, 86.

42 Exhibit A2-7, Lowry Presentation, slide 64.

43 Exhibit B-8, Weisman Supplementary Report, p. 13.

44 Exhibit B-8, Weisman Supplementary Report, pp. 8-9.

60. Dr. Lowry noted that statistical cost research (which can include a productivity or "X" factor) can be used in the design of an "index ARM".[45] BC Hydro explained that a productivity factor may be used to set rates or could be used to establish a benchmark data point to assess the reasonableness of a cost forecast.[46] In previous RRAs, BC Hydro has provided benchmarking studies to help the BCUC and interveners assess the reasonableness of BC Hydro's cost forecasts.[47] BC Hydro is intending to undertake regular benchmarking to inform the assessment of its forecasts, as discussed in Part Four.

(b) BC Hydro Already Has Full Revenue Decoupling

61. The second PBR approach that Dr. Lowry identifies is a relaxation of the link between revenue and system use, or "revenue decoupling". BC Hydro's Load Forecast Variance Account is a revenue decoupling mechanism.

62. A revenue decoupling mechanism "causes actual revenue to track allowed revenue closely; thus, revenue (and earnings) are 'decoupled' from system use."[48] Relaxation of the link between revenue and system use is a form of PBR because it incents a utility to pursue lower cost alternatives (e.g., DSM) even if they reduce customer load. Dr. Lowry explained:

> So most obviously the utility is going to be more willing to do price conservation programs if they're going to be able to be compensated for the lost margins that result from those programs. And it really has added up over the years all over North America, the effect of these conservation programs on load growth.[49]

63. Dr. Weisman and Dr. Lowry agree that revenue decoupling also facilitates longer test periods, since it (i) addresses the revenue implications of declining system use, without the need

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45 Exhibit A2-7, Lowry Presentation, slides 36-37.

46 Exhibit B-10, BCOAPO IR 1.9.1.2.

47 Exhibit B-8, BC Hydro Supplementary Evidence, p. 15.

48 Exhibit A2-7, Lowry Presentation, slide 24.

49 Tr. 2, p. 145, ll. 3-9 (Lowry). See also: Exhibit A2-5, Lowry Report, p. 19.

for more frequent rate applications,[50] and (ii) removes controversy over volume forecasts "because it's all going to be decoupled in the end."[51] Dr. Weisman explains, for example:

> Revenue decoupling can represent an important element of a regulatory regime. The additional revenue stability provided by decoupling (i.e., delinking revenues from system use) can potentially extend the period between rate cases or rebasing (i.e., regulatory lag) and thereby strengthen incentives for performance. This is necessarily the case because the additional revenue stability can help to avoid financial windfalls and shortfalls that may trigger the need for a rate case and an earnings review.

64. BC Hydro's Load Forecast Variance Account achieves this decoupling by allowing BC Hydro to defer variances between actual and allowed revenue to the account and to amortize the balance of the account into rates in future years.[52] Dr. Lowry's presentation slides state "BC Hydro's Non-Heritage Deferral Account effectively decouples revenues from sales volumes" and characterized that feature as "PBResque".[53] At the Workshop, Dr. Lowry introduced the topic of decoupling by stating: "Okay, so let's go on to talk about revenue decoupling. Parties here should know a fair bit about that because they've been doing revenue decoupling in B.C. for just as long or about as long as anywhere in North America."[54]

(c) BC Hydro Already Uses Performance Metrics and Benchmarking

65. The third well-established PBR approach is targeted performance measures, which BC Hydro also uses.

66. Targeted performance measures are a form of PBR because they quantify aspects of utility operations to incent improved performance in those areas. This can be done through performance metrics (which can be provided in "scorecards" on websites or in filings) and can include setting benchmark or target values. If benchmark or target values are set, a utility's

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50 Exhibit A2-5, Lowry Report, pp. 19-20; Tr. 2, p. 145, l. 24-p. 146, l. 3 (Lowry).

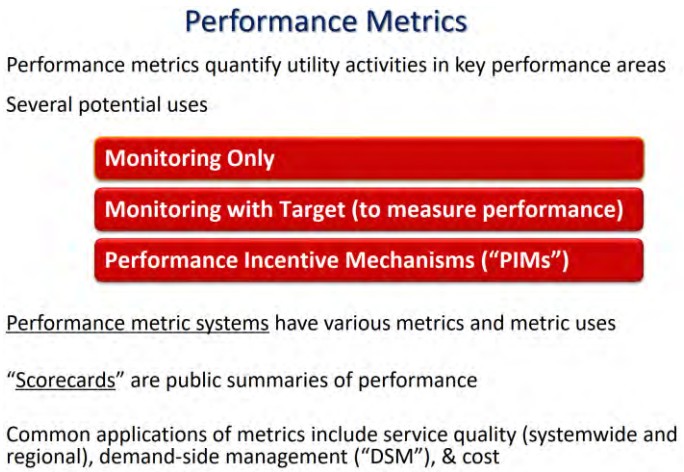
51 Tr. 2, p. 146, ll. 13-20 (Lowry).

52 Order No. G-246-20, Directive 15, p. 197.

53 Exhibit A2-7, Lowry Presentation, slide 64.

54 Tr. 2, p. 141, l. 23-p. 142, l. 1 (Lowry).

performance against the targets can be linked to its allowed revenue.[55] Dr. Lowry summarized this in his presentation as follows: [56]



67. Dr. Lowry is clear that any use of metrics is properly characterized as a form of PBR. He stated at the Workshop for instance:[57]

> MR. GHIKAS: That would be a part – that would fall within how you are defining the term PBR when you are using that term today?
>
> MR. LOWRY: Sure. Sure, particularly when they involve PIMs [Performance Incentive Mechanisms, i.e. financial incentives], but yes, I mean, I think that you could even say that any use of metrics is going to be a form of PBR kind of falls within that category, yes.

68. Under BC Hydro's current regulatory regime, performance metrics for both Monitoring Only and Monitoring With Target are included in the Service Plan, in RRAs and other BCUC filings.[58] BC Hydro's performance against metrics is evidence that the BCUC can consider in setting rates. Service Plan metrics correspond to the mandate set by the Government of B.C. (they are developed with input from the Government of B.C.), providing a means of public

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55 Exhibit A2-5, Lowry Report, p. 22.

56 Exhibit A2-7, Lowry Presentation, slide 9.

57 Tr. 2, p. 110, l. 21-p. 111, l. 1 (Lowry).

58 Exhibit B-8, BC Hydro Supplementary Evidence, p. 19. The Service Plan is filed as part of RRAs.

accountability.[59] They are also used to determine holdback pay for eligible senior management employees. BC Hydro explained:

> By reporting annually on performance metric targets in the Annual Service Plan and results in the Annual Service Plan Report, BC Hydro is incented to improve its performance in these areas to achieve the targets that have been set. If improvements or targets are not achieved, these results are publicly reported and must be explained to the Government of B.C., as BC Hydro's shareholder, and most importantly, to the public. In addition, these results are used to determine the Corporate component of holdback pay for eligible employees. BC Hydro's performance against these targets, over time, demonstrates maintained and improved performance.[60]

69. BC Hydro's Service Plan already contains many of the metrics approved as part of FortisBC's 2014 to 2018 PBR Application, and has others that were not included in FortisBC's plan.[61]

70. There is also significant overlap between the Service Plan metrics and the list of popular metrics that Dr. Lowry identifies in his report, including with respect to reliability, service and conservation.[62]

71. Dr. Lowry characterizes BC Hydro's Service Plan performance metrics as "PBResque".[63]

(d) BC Hydro Already Has Targeted Incentives for Disfavoured Inputs

72. The fourth well-established PBR approach that Dr. Lowry identifies, and which is reflected in BC Hydro's current regulatory regime, is special incentives to use disfavoured inputs.

73. Special incentives to use disfavoured inputs are a form of PBR because they incent utilities to make greater use of inputs that may otherwise be used in sub-optimally low amounts.[64] One

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59 Exhibit A2-1, BC Hydro PBR Report, p. 11-57.

60 Exhibit B-10, BCOAPO IR 1.8.2.

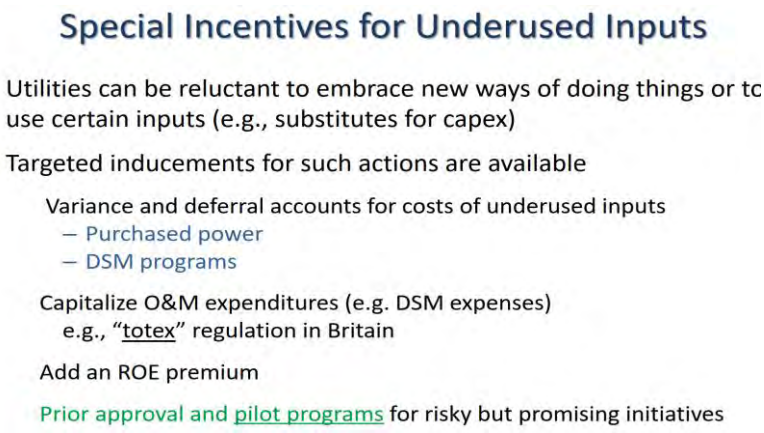
61 Exhibit A2-1, BC Hydro PBR Report, p. 11-57.

62 Exhibit A2-5, Lowry Report, pp. 23-24.

63 Exhibit A2-7, Lowry Presentation, slide 64.

64 Exhibit A2-5, Lowry Report, p. 29.

way this is done is through regulatory accounts (cost trackers) that allow recovery of specific costs. This approach is often used to incent utilities to invest in DSM, since DSM reduces the need for capital investments upon which a utility might otherwise earn a return and causes declining demand.[65] The role of regulatory accounts in providing incentives for underused inputs is reflected in the following slide from Dr. Lowry's presentation:[66]



74. BC Hydro's Demand-Side Management Regulatory Account allows BC Hydro to defer costs related to DSM activities to the account and to amortize the balance of the account into rates over 15 years, on an ongoing basis.[67] Dr. Lowry confirms that BC Hydro's Demand-Side Management Regulatory Account is the type of cost tracker he is contemplating as a special incentive.[68] BC Hydro does not, however, earn an ROE premium on the balance in the Demand-Side Management Regulatory Account, unlike the DSM accounts approved for FortisBC.[69]

F. THERE IS TANGIBLE EVIDENCE THAT BC HYDRO RESPONDS TO EXISTING INCENTIVES

75. Since 2018, when the BCUC ordered BC Hydro to prepare a PBR Report, the evidence that the existing framework is providing effective incentives has accumulated.

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65 Exhibit A2-5, Lowry Report, p. 30.

66 Exhibit A2-7, Lowry Presentation, slide 28.

67 BCUC Order No. G-48-14.

68 Exhibit A2-7, Lowry Presentation, slide 64. He notes that "DSM program costs are tracked and amortized" and characterizes this as "PBResque".

69 BC Hydro only recovers interest on the account balance, whereas FortisBC earns a return based on its weighted average cost of capital (which incorporates ROE).

76. BC Hydro sets budgets that are efficient and challenging to achieve. David Wong, BC Hydro's Executive Vice President of Finance, Technology and Supply Chain and Chief Financial Officer, spoke to this point during the Fiscal 2020 to Fiscal 2021 RRA proceeding, stating:

> Well, first of all, when we put together this application we pushed hard to recreate budgets that I would say are hard to deliver on what we need to deliver on. And we are actually finding that this year. I mean, [there are] pockets of groups within our company are finding it really challenging. Just the technology as an example, in our area. And so a lot of effort went in [to the] development of this application to find those savings, and now what we need to do is actually realize on them, which I think we are doing a really good job of.
>
> We are working very hard every day to rationalize and manage our costs. And so, on the record, we are not providing what is happening as far as within the business. But I can tell you things like insurance costs have increased for us. We have to deal with that. So we are finding other areas to manage against that, and we are essentially slightly over budget on our operating costs when we look for the year. But like it was mentioned earlier, as a team what we are doing is we are looking at, well what can people, customer care and regulatory do to reduce costs, in order to help the vegetation maintenance that needs to happen over in integrated planning? And those conversations are happening, and we are doing it. And we are working extremely hard to be able to end our year end on budget.

77. BC Hydro's assurances are supported by objective evidence. For example:

- BC Hydro's rates have been held below inflation;
- The Brattle Group's benchmarking study filed with the Fiscal 2020-Fiscal 2021 RRA indicated that BC Hydro's operating costs compare favourably to those of an appropriate peer group[70];
- The BCUC made favourable findings in its Fiscal 2020-Fiscal 2021 RRA Decision about BC Hydro's cost discipline, budgeting and governance processes[71];

[70] Exhibit A2-1, BC Hydro PBR Report, p. 11-28.

[71] E.g., Decision, p. 58: "The Panel accepts BC Hydro's approach to leveraging a top down to bottom up budgeting to forecast its base operating costs for the Test Period, which provides insight into the cost pressures and savings opportunities for BC Hydro."; p. 75: "The Panel acknowledges BC Hydro's efforts to

- There has been a clear shift in the tenor of the BCUC's commentary regarding cost control. The BCUC's Decision on BC Hydro's Fiscal 2017-Fiscal 2019 RRA (which directed BC Hydro to prepare a PBR Report) identified concerns related to cost control. For example:

> As previously discussed, the Panel is concerned about the ability of BC Hydro to achieve the ten year rates forecast, in the light of rising O&M costs, lower than forecast load, increasing energy costs, and increasing deferral account balances. We acknowledge BC Hydro's cost cutting measures and also the upcoming comprehensive government review of BC Hydro's expenditures and we are hopeful that further efficiencies can be found.
>
> Our concern lies in the apparent decoupling of revenues and expenditures within the test period. Expenditures have risen faster than revenues. A company with expenditures that exceed its revenues is not sustainable. Accordingly we are of the view that a rate setting mechanism that could help BC Hydro to accomplish its cost control objectives is of value.[72]

By contrast, the BCUC's overriding concern in the Fiscal 2020 to Fiscal 2021 RRA Decision related to whether BC Hydro needed to spend more in certain areas after years of cost cutting. The Decision stated, for example:

> We are concerned that a singular focus on keeping rates low, while salutary, may encourage any utility to cut corners and focus on cutting costs in areas that may have detrimental effects. These effects could be in the Test Period but could also manifest in a future test period(s).[73]

The BCUC identified vegetation management, cybersecurity, employee training, safety and Energy Studies as areas that may require additional funding.[74]

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minimize the increase in base operating costs."; p. 78: "The Panel finds that BC Hydro's capital planning process is reasonable."

[72] Order G-47-18, Decision, p. 110.

[73] Exhibit B-9, BCUC IR 1.21.2; Exhibit B-8, BC Hydro's Supplementary Evidence, p. 10.

[74] Decision, p. 195.

78. BC Hydro submits that, in light of these facts, it is a legitimate question whether the original impetus for the BCUC requiring BC Hydro to prepare the PBR Report still exists. BC Hydro's progress under the existing regime is an important consideration, that along with the unique circumstances discussed below, suggests that the benefits of adopting PBR would be more modest than initially assumed.

G. UNIQUE CIRCUMSTANCE #1: BC HYDRO'S MANDATE AS A CROWN CORPORATION

79. As discussed in Part Three, Section C above, the experts agree that the efficacy and desirability of particular incentive mechanisms depend on the particular circumstances of each utility. A defining characteristic of BC Hydro is its mandate as a Crown corporation, and in particular the absence of a mandate to exceed its allowed ROE (i.e., maximize profits) for the Government of B.C. The expert evidence, discussed below, is that the absence of a mandate to maximize profits, unless it can be emulated using incentive compensation for utility management, limits the efficacy of incentive mechanisms offering the opportunity to achieve an ROE above the allowed ROE.

(a) BC Hydro Is Not Mandated to Exceed its Allowed Return

80. BC Hydro's Mandate Letter[75] and Service Plan[76] set out the Government of B.C.'s expectations for the Company. Efficiency and cost control are emphasized throughout; however, the focus of these efforts is to keep rates affordable for customers, not to increase shareholder returns above the allowed ROE. Exceeding allowed ROE / net income target is not identified as an expectation or desirable outcome anywhere in either of these two documents.[77]

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[75] For the most recent version of BC Hydro's Mandate Letter, refer to: https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/accountabilityreports/openness-accountability/bch-mandate-letter-2019-2020.pdf

[76] For the most recent version of BC Hydro's Service Plan, refer to: https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/regulatory-planningdocuments/service-plans/bchydro-service-plan-2019-201902.pdf

[77] Exhibit B-8, BC Hydro Supplementary Evidence, p. 5.

81. The 2019 Mandate Letter, for instance, recognizes BC Hydro's mandate to safely provide reliable, affordable, clean electricity throughout British Columbia. It then sets out some specific objectives, including the following:

> Continue to implement the Government direction resulting from Phase 1 of the comprehensive review of BC Hydro, and make all reasonable efforts to limit rate increases to the amounts projected in the F2020 to F2024 rates forecast
>
> Participate in Phase 2 of the comprehensive review of BC Hydro, which will examine opportunities to keep rates low and strategically position BC Hydro for long term success, within the context of a rapidly evolving international and continental energy sector and provincial and federal climate action strategies
>
> Provide comprehensive quarterly and annual performance reports to the Deputy Minister of Energy, Mines and Petroleum Resources (EMPR) on the status of BC Hydro finances and forecasts, as well as other initiatives and directions approved by the BC Hydro Board and the Minister of EMPR
>
> Continue to deliver planned capital projects on time and on budget to maintain the reliability of the system, while providing community benefits and training and apprenticeship opportunities.[78]

82. BC Hydro's evidence, which is consistent with the Mandate Letter and the Service Plan, is that the Government of B.C. does not expect BC Hydro to exceed its allowed ROE and has not mandated BC Hydro to exceed its allowed return:

> BC Hydro's actual net income is consolidated into the Government of B.C.'s financial statements. The Government of B.C. plans its budget based on BC Hydro achieving its allowed net income –no more and no less. In other words, BC Hydro is expected to achieve an actual net income that is as close to its allowed net income as possible.[79]

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[78] For the most recent version of BC Hydro's Mandate Letter, refer to: https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/accountabilityreports/openness-accountability/bch-mandate-letter-2019-2020.pdf

[79] Exhibit B-8, BC Hydro Supplementary Evidence, p. 5.

83. Instead, the Government of B.C.'s mandate to BC Hydro incents BC Hydro to (a) seek out incremental efficiency gains in response to incremental cost pressures so that it can advance its affordability mandate and achieve its allowed ROE; and (b) re-invest any cost savings from efficiency gains in excess of its incremental cost pressures into initiatives that support the provision of safe and reliable electricity service or other identified policy priorities.[80]

84. As Mr. Kolesar observed, "These shareholder-directed objectives promote a culture of cost control, and processes and procedures aimed at satisfying budget expectations, but not for the purpose of increasing profits, as would be the case in a publicly traded profit maximizing entity."[81]

85. The objective facts support BC Hydro's evidence regarding the absence of a mandate to exceed its allowed ROE. In five of the last six fiscal years, BC Hydro's actual net income has been either at or below the allowed amount.[82] Yet, BC Hydro (and, ultimately, its shareholder) has foregone opportunities to increase net income. Two notable examples are:

- In the Fiscal 2020-Fiscal 2021 RRA, BC Hydro proposed to continue using Trade Income to reduce the overall revenue requirements for customers, rather than increase the return realized by the Government of B.C. as regulatory law would have suggested. BC Hydro confirmed that government was aware of BC Hydro's approach.[83] The Government of B.C. then issued an Order-in-Council to direct this treatment.[84]

- In the Fiscal 2020 to Fiscal 2021 RRA, BC Hydro proposed an accounting treatment for net gains from the sale of surplus properties that resulted in the

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80 Exhibit B-9, BCUC IR 1.19.1.

81 Exhibit B-8, Kolesar Report, p. 9.

82 Exhibit B-8, BC Hydro Supplementary Evidence, p. 5. Excluding fiscal 2019, in which the Rate Smoothing Regulatory Account was written off, BC Hydro's actual net income varied from its plan by between 0 per cent and 2 per cent.

83 Exhibit B-8, BC Hydro Supplementary Evidence, pp. 6-7; Exhibit B-10, BCSEA IR 1.3.1.

84 B.C. Reg 88/2021 (Order in Council No. 172), deposited March 22, 2021.

> significant proceeds flowing to ratepayers, despite the shareholder's entitlement to those proceeds at law.[85]

86. Mr. Kolesar observed that "any earnings in excess of that [allowed] amount may be viewed as unpalatable, as they may lead to allegations that rates have been higher than they otherwise should have been."[86] This is, in fact, what occurred in the case of Hydro Quebec where the company's financial performance prompted a media firestorm and legislative reform. The following media excerpt gives a flavour for the unfavourable coverage:

> Québec customers into government coffers, Natural Resources Minister Jonatan Julien confirmed Thursday. Julien said $90 million of the revenue from overcharging by Hydro-Québec will be steered to the Treasury Board, despite projections that the government budgetary surplus could hit $5 billion by the end of the year.
>
> The minister said the refund reduction was part of a formula worked out by the previous Liberal government, which called for only 50 per cent to be returned to customers overcharged by the utility.[87]

87. The question is not whether the Government of B.C. would accept higher net income, but rather what the Government of B.C. expects of BC Hydro and has mandated BC Hydro to do. The mandate determines the incentives to which BC Hydro will and will not respond.[88]

(b) The Absence of Mandate to Exceed its Allowed ROE Compromises the Effectiveness of Earnings-Based Incentive Mechanisms

88. The expert evidence, discussed below, is that the absence of a mandate to exceed the allowed ROE significantly undermines the *incremental* incentive power of mechanisms that offer a utility the opportunity to increase earnings above the allowed ROE.

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85 Exhibit B-8, BC Hydro Supplementary Evidence, p. 7.

86 Exhibit B-10, BCOAPO 1.12.1 (Kolesar).

87 Exhibit A2-2, F2020=F2021 RRA BCUC IR 1.198.1. E.g., Canadian Press: "Quebec will keep half the $180 million overcharged to Hydro customers".

88 Exhibit B-9, BCUC IR 1.19.1.

A Profit Maximization Motive Is Implicit in Many PBR Mechanisms

89. Mr. Kolesar explains that "PBR relies on the profit incentive to compel the utility to seek out productivity gains so as to increase shareholder returns…", and his statement is consistent with the observations of Dr. Weisman[89] and other regulators.[90]

90. Mr. Kolesar points out that, without the motive to exceed the allowed return, the incremental incentive power attributed to PBR is absent:

> PBR is premised on the basic idea that the firm will respond to the incentive to earn greater returns for its shareholder by seeking productivity gains because its shareholders keep all (or a portion of) the greater returns that result from being more productive until the time of rebasing. If, as I have posited in my submission, BC Hydro is not a profit maximizer and therefore would not be expected to respond fully to the incentives of PBR to seek productivity gains so as to earn a return in excess of its allowed return, then there may be little or no advantage to adopting PBR in terms of economic efficiency.[91] [Emphasis added.]

91. Mr. Kolesar concludes that, in light of BC Hydro's unique mandate, the benefits of PBR are unlikely to be fully realized. He suggests that the BCUC consider whether a form of COSR might be better suited to BC Hydro:

> I have provided in this submission an overview of alternative forms of regulation currently under consideration by the BCUC in this proceeding, and an analysis of how both a profit-maximizing and a non-profit-maximizing utility can be expected to respond to the incentives provided in both cost of service regulation and performance-based regulation. I have then considered evidence on the culture, processes and procedures, compensation scheme and the expectations of the Company's shareholder, and concluded that BC Hydro is not a profit-maximizer and will be unlikely to fully respond to the incentives of PBR. Accordingly, I conclude that the benefits of PBR are unlikely to be fully realized.

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89 Exhibit A2-1, First Weisman Report, p. 11: "The greater risk that the firm bears under PBR must be coupled with the distinct possibility, though not a guarantee of greater reward. The prospect of greater reward is the impetus for the regulated firm's investment in cost-reducing effort."

90 Exhibit B-9, BCUC 1.16.9 (Kolesar); Exhibit A2-1, First Weisman Report, p. 9, citing the Ontario Energy Board's statement that: "It provides the utilities with incentive for behaviour which more closely resembles that of competitive, cost-minimizing, profit-maximizing companies."

91 Exhibit B-10, BCOAPO 1.12.2 (Kolesar).

> I encourage the Commission to consider the perspectives provided in this submission when weighing the evidence in this proceeding and determining the form of regulatory regime for BC Hydro. The Commission should consider whether BC Hydro's culture, processes and procedures, compensation scheme and the expectations of its shareholder are adequately attuned to the incentives of PBR, and whether, upon weighing all of the Commission's objectives, a form of COSR might better suit the circumstances of BC Hydro.[92] [Emphasis added.]

92. Dr. Weisman shares Mr. Kolesar's scepticism about whether, in the case of BC Hydro, PBR would provide incentives over and above those inherent in the existing regime:

> The fundamental economic principle underlying PBR is that the regulated firm bears greater risk in exchange for the prospect of greater reward. For investor-owned, regulated firms this reward manifests itself in the form of higher profits. The corporate board in combination with senior management would naturally have strong incentives to design "performance pay" mechanisms that induce the firm's managers (agents) to act as if they were the firm's owners (principals). In fact, this principal-agent relationship between owners and managers is the very foundation of modern corporate governance.
>
> In the case of Crown Corporations, the "reward" does not typically manifest itself in the form of higher profits. As a result, there is no guarantee that the corporate board in combination with senior management would necessarily design "performance pay" mechanisms that would induce the managers of the firm to act as if they were the firm's owners. Should this be the case, it may be less likely that PBR would elicit efficiency gains that render it a superior alternative to traditional, cost-of-service regulation. The ability of PBR to leverage the profit motive to improve efficiency for investor-owned regulated firms may be lessened for Crown Corporations.
>
> The above observations notwithstanding, managerial motivation operates with both carrots (rewards) and sticks (punishments). Hence, to the extent that PBR "sharpens the sticks", it may be expected to generate some efficiency gains, even for Crown Corporations.1[93] Nonetheless, the reason that we observe both carrots and sticks being used as motivational instruments in competitive markets is because carrots and sticks work best when used in combination with one another to provide stronger incentives for efficiency.

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92 Exhibit B-8, Kolesar Report, p. 2.

93 Dr. Weisman's footnote states: "The "stick" under PBR is the prospect that the regulated firm may be required to bear financial losses for a longer period of time than that same firm operating under traditional, cost-of-service regulation."

> This discussion should not be construed to suggest that PBR is without merit for Crown Corporations. Indeed, there are notable examples of PBR being employed successfully in public enterprises. It is the case, however, that the gains from adopting PBR are perhaps more tenuous for Crown Corporations simply because there are more opportunities for the incentive power of the PBR regime to be weakened. To wit, the regulator may adopt a high-powered PBR plan that is subsequently tempered by a lack of managerial performance incentives in the Crown Corporation. Conversely, the Crown Corporation may put in place strong managerial performance incentives that are tempered by a low-powered PBR plan.
>
> To put it succinctly, the "success" of PBR may be less certain in the case of Crown Corporations simply because it requires a greater degree of coordination between government and regulatory governance structures that would be expected to occur naturally in the case of investor-owned, regulated firms.[94]

93. Dr. Lowry agrees that publicly-held utilities are generally less driven to bolster earnings than those in private sector:

> Now, I want to say here at the outset that I'm largely in agreement with the discussion that Dr. Weisman had about this issue and I don't want to minimize or belittle the concern about the Crown corporations.
>
> Publicly held utilities, be they provincially owned or municipally owned, are generally less driven to bolster earnings than those in the private sector, and they may also have more operating restrictions by dint of being publicly held.[95]

94. Dr. Lowry discusses the empirical evidence, or lack thereof, regarding Crown utilities under PBR plans. The results only underscore why the BCUC should question the rationale for moving forward with PBR mechanisms that rely on a motive to maximize profits. The evidence is, at best, equivocal. In some cases, it shows underwhelming performance:

- Dr. Lowry acknowledges that there is no statistical analysis suggesting that publicly owned utilities are more efficient under PBR than under COSR.[96]

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[94] Exhibit A2-3, RRA MoveUP IR 1.3.1 (Weisman). See also, Exhibit A2-1, First Weisman Report, p. 59.

[95] Tr. 2, p. 228, ll. 22-p. 229, l. 5 (Lowry); Exhibit A2-7, Lowry Presentation, slide 66.

[96] Tr. 2, p. 240, ll. 6-11 (Lowry): "No, I have not any point today made any such claim."; Exhibit A2-5, Lowry Report, p. 66.

- Dr. Lowry referenced a number of studies and scholarly papers suggesting, e.g., "PBR is not well-suited to publicly-owned utilities", PBR is "ineffective", and PBR brings "no significant cost performance or pricing response".[97]

- Dr. Lowry states that some publicly-owned utilities "have underperformed" under PBR, citing the Ontario municipal utilities as examples.[98]

- Dr. Lowry remarked on the poor track record of publicly-owned utilities under PBR several times during his presentation. For instance:

> But I'll be honest, I mean we have no reason to think that there's been any kind of great success story in Ontario from the -- under the multiyear rate plan there's no great success story there for productivity.[99]
>
> ….
>
> Now definitely it's the case that some companies operating under -- some publicly held utilities operating under multiyear rate plans have not done all that great. I mean, they have rarely distinguished themselves it might even be said. I mentioned that Ontario power distributors, which are mostly munies, have had sluggish productivity growth under PBR.[100]
>
> ….
>
> First of all I would like to point out that I did not say that statistical cost research points to a great result for Crown corporations or publicly held corporations. I did not say that. If anything it's an underwhelming and unclear relationship, but there's no evidence that they've done markedly worse or worse at all on balance. That's all I was saying about that.[101]
>
> ….

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97 Exhibit A2-5, Lowry Report, pp. 67-68.

98 Exhibit A2-7, Lowry Presentation, slide 66.

99 Tr. 2, p. 180 l. 22-p. 181, l.6 (Lowry).

100 Tr. 2, p. 229, l. 26-p. 230, l. 7 (Lowry).

101 Tr. 2, p. 238, ll. 14-21 (Lowry).

> I think that these Crown corporation arguments do hold some water because, as I've said, there's isn't an impressive track record of publicly held utilities doing swimmingly well under PBR.[102]

95. Dr. Lowry went on to note in passing that there is no evidence that publicly-owned corporations have lower productivity growth than investor owned utilities.[103] However, the pertinent issue in this proceeding is whether PBR offers real additional benefits relative to forward test year COSR when it is applied to publicly-owned entities, not whether investor-owned corporations are inherently more efficient than Crown corporations. In that regard, Dr. Lowry's observations above suggest that publicly owned utilities do not require the "carrot" of higher earnings to encourage efficient performance.

BC Hydro Is Still Motivated to Seek Efficiencies

96. It is important to recognize that, while BC Hydro's lack of mandate to strive to exceed the allowed ROE motive casts doubt on the value of *incremental* efficiency incentives associated with PBR, BC Hydro still has the incentives to act efficiently described in Section D above. As BC Hydro put it, "the incentive to find these efficiencies would come, as it does today, from the obligation and commitment on the part of management to deliver on its mandate and not from the opportunity to increase earnings."[104] Mr. Kolesar expressed the point this way:

> However, as I point out in my response to BCOAPO IR 1.12.1, under COSR BC Hydro will have an incentive to seek productivity improvements for the purpose of satisfying its mandate to keep rates among the lowest in North America and may achieve over time the same outcome with respect to productivity gains and rates as low as, or potentially lower than, under PBR.[105]

97. Dr. Weisman expressed the point in metaphor: "Metaphorically speaking, a horse that does not favor additional carrots will not be induced to run faster when the reward for doing so

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[102] Tr. 2, p. 249, ll. 7-10 (Lowry).

[103] "And I don't think there is any -- I don't think that there is evidence that strongly indicates that there is inferior public sector performance."

[104] Exhibit A2-1, BC Hydro PBR Report, p. 11-70.

[105] Exhibit B-10, BCOAPO 1.12.2 (Kolesar). See also: Exhibit B-9, BCUC 1.16.9 (Kolesar).

is more carrots. That said, a dutiful horse may run faster simply because his owner wishes him to, and he aspires to please his owner."[106]

(c) It is the Nature of the Mandate, Not Public Ownership *Per Se*, that is Determinative

98. Mr. Kolesar and Dr. Weisman both emphasize that it is not government ownership *per se* that presents an obstacle to the implementation of certain PBR incentive mechanisms, but rather the absence of a profit maximization mandate. Mr. Kolesar states, for instance:

> I remain of the view that a well-crafted PBR plan can be adopted for crown-owned power distributors, if the conditions for its adoption are adequate and the benefits are sufficient to justify the potential effort required to design and implement a workable PBR plan, given the consequential risks if the plan is not successful. In this instance, the BCUC should weigh the evidence before it to determine if conditions in BC Hydro, given that it is not a profit-maximizing entity, lend themselves to the adoption of a PBR plan, and whether its regulatory objectives for BC Hydro might better be achieved with a COSR regime. I would respectfully encourage the Commission not to fall into the trap of believing that PBR is always and everywhere superior to COSR.[107]

99. There are examples of other government-owned energy utilities in Alberta and Quebec being subject to PBR mechanisms, but they are all mandated to maximize profits (i.e., exceed the allowed ROE, if possible):

- ***EPCOR and ENMAX are Mandated to Maximize Profits:*** The municipal utilities in Alberta, EPCOR and ENMAX, both have a mandate to maximize profits (i.e., exceed the allowed return, if possible).[108] In other words, while they are publicly-owned, the government shareholders (City of Edmonton and City of Calgary, respectively) have determined that they want their utility to behave like an investor-owned utility. EPCOR has an expectation of escalating dividends and

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[106] Exhibit B-10, MoveUP IR 1.4.1 (Weisman).

[107] Exhibit B-9, BCUC IR 1.16.1 (Kolesar). See also: Exhibit A2-1, First Weisman Report, p. 58.

[108] Exhibit B-8, Kolesar Report, p. 3: "During my tenure at the Alberta Utilities Commission, I approved PBR plans for EPCOR Distribution, ENMAX Distribution and ENMAX Transmission, all which are profit maximizing public enterprises."

an incentive compensation structure that rewards management for higher earnings.[109] Mr. Kolesar noted that the AUC had satisfied itself that the entities were profit-maximizers before approving PBR:

> It is noteworthy that in Proceeding ID.12, that lead to the above referenced decision, the Commission considered this very question. On the one hand, the evidence before the Commission from Dr. Cronin was that "some FBR plans suffered from serious design flaws in the rate adjustment mechanism and the consequences on company profits and consequent regulatory backlash" and that "despite being potentially superior to cost of service regulation, regulators have found it imperative that regulatory safeguards be built into PBR plans to mitigate the tendency and severity of structural shortcomings." On the other hand, the Commission heard the following from Mr. Holden, the ENMAX CEO:
>
> > "When I took on the role of CEO of ENMAX, my clear expectation and mandate that I established with the Board of directors was, first of all, to verify for myself that this was indeed a board of directors that could act like a commercial company or nongovernment-owned company and had a mandate to operate as a board that was sufficiently independent that commercial decisions could be made without undue political influence. … The second is, I try very much to run this company as if it is competing in a world aggressively with investor-owned utilities, investor-owned competitors, private competitors, entrepreneurs. And I'm assembling a team that has the capabilities to work in that way."
>
> The Commission concluded that "the incentives and culture being created at [ENMAX] at least in part by competition in other related lines of business lend themselves to the adoption of an FBR plan."[110]

- ***Hydro Québec Is Mandated to Maximize Profits:*** Hydro-Québec is the only provincial Crown corporation currently operating under a PBR plan. PBR for

[109] Exhibit A2-1, First Weisman Report, p. 61.

[110] Exhibit B-9, BCUC 1.16.2 (Kolesar).

Hydro-Québec Distribution is legislated, and the legislation establishes a four year term and an earnings-sharing mechanism.[111] In other words, unlike BC Hydro, the framework created by Hydro-Québec's shareholder incorporates the expectation that Hydro-Québec will seek to maximize profits (i.e., exceed the allowed return, if possible). Dr. Lowry confirmed this:

> I mean, governments may not care that much about the earnings that they receive from the utility, and I'll tell you one exception to that rule is the province of Quebec that cares a lot about the earnings stream from Hydro-Québec. Maybe that's not true in British Columbia, but it's certainly true there.[112]

100. Municipal utilities in Ontario are subject to PBR. However, Dr. Lowry indicated that the need to regulate the dozens of municipal utilities efficiently was a key part of the rationale for moving to formulaic regulation:[113]

> There used to be over 80. Now they are into the -- maybe the low 70s or high 60s, I'm not sure exactly but there are still many of them. And that's something that the BCUC should be mindful of because when the Ontario Energy Board went to price caps for all these companies, I mean, part of it was a matter of a practical -- I won't say necessity, but there was a strong inducement to come up with a formulaic approach to regulation that would ease the board's burden.

Dr. Lowry has also reported poor performance by the Ontario utilities under PBR, as discussed above.

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111 Exhibit A2-2 RRA IR BCUC 1.198.1.

112 Tr. 2, p. 234, ll. 18-24 (Lowry).

113 Tr. 2, p. 139, l. 23-p. 140, l. 6 (Lowry).

H. UNIQUE CIRCUMSTANCE #2: CONSTRAINTS ON MANAGEMENT COMPENSATION STRUCTURE PRECLUDE REPLICATING A PROFIT MAXIMIZING MOTIVE

101. Dr. Weisman observed that a management compensation structure can be designed to mimic the profit maximization incentive of an investor-owned utility.[114] As indicated above, this approach has been taken in the case of EPCOR.[115] This is not an option in BC Hydro's case because of the constraints imposed by Public Sector Employers' Council ("PSEC") policy.

102. PSEC policy restricts incentive-pay to a limited number of senior management employees, in the form of a salary holdback. The PSEC Guide to B.C. Public Sector Compensation and Expense Policies states: "Bonus programs are no longer permitted and must be phased out for executive and excluded employees where they exist. Instead, a hold back of up to 20 per cent of maximum base salary may be implemented for senior executives in place of a bonus program."[116] While a salary holdback is a form of incentive pay, the maximum amount awarded to an individual employee is capped (i.e., it cannot increase above a pre-determined cap if excess net income is realized). A portion of the capped holdback is dedicated to individual employee performance. The remaining corporate component of the holdback reflects BC Hydro's results against its Service Plan performance measures, which represent the mandate provided to BC Hydro by the Government of B.C.

103. As described in Section D above, the holdback pay incents eligible employees to seek out efficiencies because BC Hydro sets its budget to account for its affordability mandate and related metrics in the Service Plan. Executive Team members are expected to achieve the budgets for which they have accountability, in order to receive holdback pay.[117] However, since BC Hydro's mandate does not include maximizing returns above the allowed ROE, none of BC Hydro's Service

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[114] "A carefully designed employee compensation plan can succeed in doing just that even though BC Hydro may not have profit-maximization as its primary or even its secondary objective." Exhibit B-8, Weisman Supplementary Report, para. 11. See also: Exhibit A2-5, First Weisman Report, p. 6..

[115] Exhibit A2-1, First Weisman Report, pp. 59-61. "In other words, management is the residual claimant for any gains from efficiency and innovation that remain after the dividend is paid."

[116] Exhibit B-8, BC Hydro Supplementary Evidence, p. 8.

[117] Exhibit B-9, BCUC IR 1.21.2.

Plan performance measures reflect this objective.[118] It would be incongruous to determine the corporate component of holdback with reference to criteria that are at odds with BC Hydro's mandate.

104. As Dr. Weisman concluded, in the absence of both a mandate to seek earnings over the allowed ROE and a management compensation structure that replicates that mandate, the assumed benefits of PBR will not materialize:

> By way of conclusion, PBR can be effectively applied to a crown corporation. In order to realize the myriad benefits expected of PBR it will be necessary for the government to adopt a management compensation structure with incentive properties similar to those discussed above. Absent such an incentive-based compensation structure for management, the crown corporation may have incentives for efficiency and innovation that are no stronger than those under textbook COSR regardless of the PBR regime adopted by the BC Commission. Should this be the case, the expected net benefits from adopting PBR are *di minimis*.[119]

I. UNIQUE CIRCUMSTANCE #3: REGULAR REVIEWS ARE AN IMPORTANT SOURCE OF CREDIBILITY FOR THE FRAMEWORK

105. After a period during which the BCUC's oversight of BC Hydro was significantly curtailed, the BCUC is holding regular RRAs. These proceedings are an important source of credibility, not only for BC Hydro but for the regulatory framework more generally. Incentive mechanisms predicated on affording BC Hydro greater autonomy and involving more opaque approaches to rate setting would present unique stakeholder acceptance challenges.

(a) Regular BCUC Reviews Build Public Confidence Coming Out of a Period of Constrained Regulation

106. PBR is predicated on increasing the utility's autonomy to seek out efficiencies. Indeed, it is critical to the operation of PBR that the utility is not at risk of being second-guessed for its

[118] Exhibit B-8, BC Hydro Supplementary Evidence, p. 8; Exhibit B-10, BCSEA IR 1.6.4.

[119] Exhibit A2-1, First Weisman Report, pp. 61-62.

decisions during the test period.[120] As Dr. Weisman explains in his report, there may be little practical difference between PBR and COSR in the absence of a strong regulatory commitment to the autonomy principle of PBR.[121] Stakeholder buy-in avoids calls for detailed regulatory reviews that would lead to second guessing.

107. The fact that the BCUC's ability to regulate BC Hydro only recently became less constrained after a 10-year hiatus means it is likely to be more challenging to secure stakeholder support for an approach that would grant BC Hydro increased autonomy from regulatory scrutiny.[122] Greater autonomy from detailed regulatory review is likely the opposite of what interveners are expecting, following a prolonged period where the BCUC's oversight of BC Hydro has been limited.

108. There are a number of issues currently outstanding where more time and review are required to build familiarity and understanding among the BCUC and interveners.[123] There has been significant intervener and BCUC interest in initiatives being undertaken by BC Hydro, such as electrification, safety, Mandatory Reliability Standards, cybersecurity, and vegetation management strategies. The outcome of the pending Integrated Resource Plan is not yet known, but could result in a number of initiatives. The Site C project will be going into service, and its costs will begin impacting rates. BC Hydro submits that one can reasonably expect interveners to want to explore those issues, rather than cede greater autonomy to BC Hydro.

(b) Continuity in BC Hydro's Regulatory Regime Is Beneficial

109. Continuity in the regulatory regime is also an important consideration. The extensive adoption of PBR mechanisms would mean that BC Hydro would effectively have been subject to

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120 Exhibit A2-1, BC Hydro PBR Report, pp. 11-66 to 11-67; see also Dr. Weisman's definition of PBR in Exhibit A2-1, First Weisman Report, pp. 4-5, 8. E.g. "Regulatory commitment is key to the superior performance of price cap regulation. The regulated firm must credibly believe that the regulator will not simply appropriate the cost savings it was encouraged to discover."

121 Exhibit A2-1, First Weisman Report, pp. 50.

122 Exhibit B-8, BC Hydro Supplementary Evidence, p. 9.

123 Exhibit A2-1, BC Hydro PBR Report, pp. 11-63 to 11-67; Exhibit B-9, BCUC IR 1.2.2.

three different regulatory regimes (regulation by Government, the existing framework and PBR) in a relatively short period of time.

110. One implication of frequent changes is that stakeholders are constantly playing "catch-up". The hiatus in BCUC regulation undermined stakeholders' knowledge about BC Hydro's operations. BC Hydro submits that the most effective way to build a strong foundation of familiarity and comfort is through successive RRA proceedings.[124] There are a number of important matters that will be advanced through the regulatory process in the upcoming years. There could be understandable reluctance to pursue a new regulatory regime if it comes at the expense of engagement and progress on these matters.

111. Mr. Kolesar explained that frequent changes to the regulatory regime can also increase costs:

> Regulated utilities require a degree of regulatory certainty, in part because their investors recognize that there is less risk in a stable regulatory environment with a degree of predictability. This helps keep the cost of capital for the regulated entity lower than it would be in a more uncertain environment. Therefore, frequent significant changes to the regulatory regime may have a detrimental effect on a utility's cost of capital.
>
> In addition, whether regulated under COSR or PBR, a utility will adjust its business practices to align with the regulatory regime, a process that may take several business cycles to complete and that will, if successful, help to achieve the regulator's objectives. However, if there are frequent significant changes to the regulatory regime, a utility may have difficulty aligning its business practices, which may in turn result in increased costs, contrary to one of the objectives of regulation to emulate the results achieved in a competitive market to the greatest extent possible.
>
> However, recognizing the above, changes to a regulatory regime can and should be undertaken if there is a sufficient expectation that the changes will better achieve the objectives of regulation over time. Maintaining a regime over several regulatory cycles and making only incremental improvements in successive cycles may assist the regulator in achieving its objectives while reducing the perception of regulatory risk.[125]

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[124] Exhibit A2, 1, BC Hydro PBR Report, pp. 11-67.

[125] Exhibit B-10, CEC IR 1.17.3.

112. The adoption of the incentive mechanisms being advanced by BC Hydro, addressed in Part Four below, will reflect the incremental approach recommended by Mr. Kolesar.

(c) Public Acceptance Will Be a Challenge With Some Aspects of Incentive Regulation

113. BC Hydro anticipates that stakeholders, including some interveners in this proceeding, will have reservations about the incentive mechanisms discussed in Part Five of these Final Submissions. There are at least three reasons why stakeholder acceptance may be a challenge.

114. First, as BC Hydro explains in more detail in Part Five, regulation involving a review of a utility's costs (as occurs at more frequent intervals under COSR) is more transparent and accessible than indexing and formulae. The experts agree on this point.[126] Mr. Kolesar indicates, for instance:

> I agree that the complexities of a new PBR regime can result in some uncertainty among parties with respect to how the formula works and the incentives that they are intended to promote particularly for parties accustomed to COSR, given that PBR can be complex and difficult to understand.[127]

Mr. Kolesar cited the challenges in Alberta with PBR implementation: "The experience in Alberta was that PBR was difficult to explain and therefore often criticized."[128] Dr. Lowry remarked: "Now, Dr. Weisman does talk about the esoteric and controversial nature of those studies, and I wish I could say that that wasn't true." In addition to Alberta, Dr. Lowry added Ontario and Massachusetts to the list of jurisdictions where stakeholder acceptance of indexing and formulae proved controversial.[129]

115. Second, the experience in Alberta and Quebec shows that there can be skepticism about regulatory models that use profits in excess of the regulated rate of return as an incentive.

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[126] Exhibit B-8, Weisman Supplementary Report, para. 23; Tr. 2, p. 175, ll. 16-25 (Lowry); Exhibit A2-5, Lowry Report, pp. 40-41.

[127] Exhibit B-10, CEC IR 1.17.1 (Kolesar).

[128] Exhibit B-8, Kolesar Report, p. 11.

[129] Tr. 2, p. 175, ll. 16-25 (Lowry).

- Mr. Kolesar noted that, even in the case of investor-owned utilities, the AUC battled the perception among some stakeholders that it was unfair for a utility to earn more than the allowed return:

> One of the constant criticisms of PBR in Alberta was that the earnings of the companies in excess of the allowed return meant that rates were higher than they otherwise should be. It was difficult for certain critics of PBR to comprehend the longer-term objectives and the mechanics of PBR, so these criticisms were often difficult to allay.[130]

- The experience in Quebec is a case study on this point, with headlines blaring that Hydro-Quebec customers had been "overcharged" when Government earned returns in excess of the allowed rate of return.[131]

116. Lack of faith in the regulatory approach is problematic in and of itself, but Dr. Weisman adds that this perception can also compromise the effectiveness of PBR over time:

> This issue of recontracting and the efficiency distortions resulting therefrom is arguably one of the more serious problems with PC [Price Cap] regulation in practice. A key premise underlying PC regulation is that increased profits for the firm will be viewed by regulators and their constituency as something other than failure of regulation itself. If this premise is false, then regulators will be under constant political pressure to recontract when the firm reports higher profits. In equilibrium, the firm learns that this is how the game is played and the efficiency gains from PC regulation in theory may fail to materialize in practice.[132]

117. Third, Mr. Kolesar also observed, citing his own experience on the AUC, that it is difficult to prove that customers have been better off under PBR:

> However, there are a number of challenges in demonstrating these benefits, particularity relative to the benefits on COSR. First, the promised predictability of rates is often circumvented by the less predictable impact of Y, K and potentially

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130 Exhibit B-8, Kolesar Report, p. 9, fn 13.

131 Exhibit A2-2, F2020=F2021 RRA BCUC IR 1.198.1. E.g., Canadian Press: "Quebec will keep half the $180 million overcharged to Hydro customers".

132 Exhibit A2-1, First Weisman Report, p. 50.

> Z factors on annual rate increases. Secondly, it is hard to demonstrate that the productivity gains achieved by the utility throughout the PBR term are actually passed on to customers at the end of the PBR term. It will take a degree of diligence on behalf of a subsequent panel of the Commission to put the necessary regulatory processes into place to identify and account for those productivity gains in a subsequent regime. Finally, it is difficult to demonstrate that the rates under PBR were lower, or at least no higher than what rates would have been under PBR [sic-COSR]. These challenges with respect to PBR often make it difficult for the regulator to respond to criticisms that the utility has benefited from PBR more than customers.[133]

118. The AUC is currently reviewing whether to continue the PBR regime in Alberta.[134]

J. REQUESTED FINDINGS DEMONSTRATED BY THE EVIDENCE

119. The evidence discussed above supports the BCUC making the associated findings listed in Part Two.

[133] Exhibit B-8, Kolesar Report, p. 12.

[134] Alberta Utilities Commission, Evaluation of Performance-Based Regulation in Alberta, Proceeding 26356, March 1, 2021.

PART FOUR BC HYDRO'S PENDING IMPROVEMENTS TO THE FRAMEWORK

A. INTRODUCTION

120. In its Supplementary Evidence, BC Hydro has identified three changes to BC Hydro's existing framework to be advanced in the context of BC Hydro's upcoming RRA:

- A three-year test period;
- Regularly scheduled statistical benchmarking; and
- Information-only performance metrics.

121. The BCUC will be considering the merits of these proposals in the context of the RRA; however, the evidence discussed below demonstrates that, conceptually, these three changes will augment BC Hydro's existing incentive to control costs, improve productivity and achieve superior performance. They retain, and augment, valued transparency.

B. THREE-YEAR TEST PERIOD STRENGTHENS INCENTIVES, INCREASES REGULATORY EFFICIENCY AND RETAINS VALUED TRANSPARENCY

122. BC Hydro has used a three-year test period in the past (Fiscal 2017-Fiscal 2019 RRA). The experts are unanimous in their support for a return to a three-year test period. There are, in principle, four benefits of doing so.

(a) Rationale #1: Additional Year Increases "Stick" Incentive (but Not "Carrot" Incentives)

123. A three-year test period would provide stronger incentives to perform efficiently and reduce costs because it increases regulatory lag[135] – the period between rebasing. That is, the additional year extends the length of time over which BC Hydro must manage upward cost pressures within a pre-defined revenue envelope to achieve the Service Plan performance measures and the allowed ROE.[136] BC Hydro explains:

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[135] Dr. Weisman defines regulatory lag and explains its significance at Exhibit B-8, Weisman Supplementary Report, para. 14. See also: Exhibit A2-5, Lowry Report, p. 8.

[136] Exhibit, B-10, CEC IR 1.2.1.

> BC Hydro's proposal to add a third year to the test period extends the period over which BC Hydro bears the risk of failing to operate within a defined revenue envelope, which increases the incentive to seek productivity improvements. In other words, it "sharpens the sticks" (as discussed by Dr. Weisman in response to MOVEUP IR 1.3.1 in Exhibit A2 3) because BC Hydro is subject to the risk of financial losses for a longer period of time.[137]

124. The other incentives under BC Hydro's current regime to control costs discussed in Part Three, Section D above (e.g., its affordability mandate, BCUC oversight of rates, holdback compensation structure, and public scrutiny) will all remain intact with a three-year test period.

125. Dr. Lowry states that moving to a three-year test period is "an obvious no-brainer".[138] He characterizes a three-year test period as an MRP[139], and (as explained in Part Three, Section C above) classifies the use of forecasts to determine the rates during each of the test years as a "stair-step ARM". He stated at the Workshop that "Three years puts you on the threshold of a PBR type of system" and "once you get to three, four, five, you're starting to get to the incentivized end of the spectrum."[140]

126. It is evident that Dr. Lowry's enthusiasm for longer test periods is predicated (at least in part) on the expectation that utilities are motivated, not just by the desire to manage down-side risk, but also by the prospect of *exceeding* its allowed return through cost savings. Since this is not the case for BC Hydro, the additional incentive that come with increasing regulatory lag is more muted than theory might suggest. Nevertheless, Dr. Weisman and Mr. Kolesar, both of whom are cognizant of the nature of BC Hydro's mandate and the constraints on management bonuses, agree that a three-year test period is still beneficial from the perspective of increasing incentives.

127. Dr. Weisman sees adding a year to a COSR-style test period as a way to increase the type of "stick" (downside) incentive that currently exist, recognizing that BC Hydro's lack of mandate

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137 Exhibit B-9, BCUC IR 1.3.2.

138 Tr. 2, p. 250, ll. 19-23 (Lowry); See also: Tr. 2, p. 199, ll. 7-14 (Lowry)

139 Exhibit A2-7, Lowry Presentation, slide 29: "Rate case moratorium (e.g., 3-5 year rate case cycle)"

140 Tr. 2, p. 199, ll. 7-14 (Lowry).

to exceed its allowed return negates the "carrot" (upside) incentive that would otherwise justify a longer MRP:

> I would make the following general observations on PBR and performance incentives more generally based on three-plus decades of experience as an academic, journal editor/referee, industry practitioner and economic consultant involved with the theory and practice of incentive regulation and PBR.
>
> …
>
> The theoretical case in support of PBR (e.g., pure price-cap or revenue-cap regulation) for profit-maximizing electricity utilities (or those than can be induced to act as such) is also relatively strong. That said, there is no large body of published, peer-reviewed empirical studies to confirm that the gains from adopting PBR are on par with the adoption of pure price-cap regulation in telecommunications. Those gains may well exist, but the empirical support in the form of peer-reviewed publications is relatively sparse.
>
> The case for PBR in motivating superior performance for Crown Corporations is the weakest of the three for reasons that both Dr. Lowry and I have canvassed in our various submissions. Moreover, to the extent that (i) BC Hydro's behavior is not motivated by the prospect of higher earnings; and (ii) institutional constraints preclude BC Hydro from adopting an incentive-based compensation scheme for its employees, the case for PBR is weaker still.
>
> These observations are not dispositive in suggesting that PBR would not benefit consumers, but it does suggest that the case for adopting PBR under these conditions is less compelling. This is one of the reasons why I recommend that the Commission seriously consider lengthening the test period from 2 to 3 years. This is a modified form of the Commission's current approach to COSR that has parallels with some of the early forms of incentive regulation in telecommunications (i.e., rate-case moratoria).[141]

128. Dr. Weisman concludes that "lengthening the regulatory lag (e.g., increasing the test period from 2 to 3 years) can have a significant effect in increasing the power of the regulatory

[141] Exhibit B-9, BCUC IR 1.14.1 (Weisman).

regime."[142] He added that the change "has the potential to confer incremental net benefits relative to the *status quo* for all primary interest groups."[143]

129. Mr. Kolesar similarly states: "Accordingly, I agree with Dr. Lowry and Dr. Weisman that a three-year test period will create a greater disconnect between BC Hydro's allowed revenue and actual costs and increase the incentive power of COSR."[144]

(b) Rationale #2: Customers Benefit from Additional Year of Rate Predictability

130. Second, over the course of the test period, ratepayers are protected from further rate increases. Upward cost pressures that would be passed on to customers in the form of rate increases at the end of a two year test period would have to be absorbed by BC Hydro for another year under a three year test period.[145]

(c) Rationale #3: Adding a Third Year Increases Regulatory Efficiency

131. A third benefit of adding a third year to the test period is regulatory efficiency. This is a material benefit. The regulatory proceeding cycle has been fairly constant in recent years. The additional year would allow BC Hydro to focus more of its efforts on operating the business and finding additional efficiencies and performance improvements to the benefit of ratepayers.[146]

(d) Rationale #4: Adequate Protections Are in Place to Impose Forecasting Discipline

132. Dr. Weisman expressed confidence in the utility's efforts to exercise care when forecasting over a three-year period, citing the discipline imposed by the ongoing interaction between a utility and its regulator:

> For example, if the regulated firm consistently exaggerated its forecasts, it would lose credibility with the regulator and the regulator has many tools available to "punish" firms that deliberately abuse its discretion. Second, in game-theoretic terms, the relationship between the regulator and the regulated firm is not a one-

142 Exhibit B-8, Weisman Supplementary Report, para. 50.

143 Exhibit B-10, Zone II IR 1.5.1 (Weisman).

144 Exhibit B-9, BCUC IR 1.17.3 (Kolesar).

145 Exhibit B-9, BCUC IR 1.3.2.

146 Exhibit B-9, BCUC IR 1.3.2.

> shot game, but a dynamic, multi-period game in which aberrant behavior in one period can be disciplined in subsequent periods. This is likely one of the reasons why the Averch-Johnson effect (i.e., the incentive to overemploy capital) under COSR regulation, which was initially developed in a static model, has defied consistent empirical validation. In other words, how the regulated firm would behave and conduct its operations when there is no "tomorrow" is likely to diverge significantly from how the regulated firm would behave and conduct its operations when there are many "tomorrows." The multi-period game, which characterizes the interaction between the regulated firm and the regulator, provides a disciplinary mechanism that does not exist in a one-shot or static game.[147]

133. Mr. Kolesar noted that the reporting of performance metrics and periodic statistical benchmarking, as proposed by BC Hydro, will further augment the incentive power of COSR.[148]

(e) A Note on Nomenclature

134. With respect to nomenclature, Dr. Weisman observes: "It matters not whether this new regulatory regime [three-year test period] is "PBR" or "COSR" because these labels can sometimes be misleading, if not counterproductive. As discussed in my initial PBR Report, PBR is not always and everywhere superior to COSR."[149] BC Hydro has discussed this point in Part Three, Section C above.

C. REGULARLY-SCHEDULED STATISTICAL BENCHMARKING WILL BE VALUABLE

135. In this proceeding, Dr. Lowry has proposed regularly scheduled statistical benchmarking studies[150] and provided some suggestions on the approach and methodology for these studies.[151] BC Hydro is developing terms of reference to guide the objective, scope and frequency of future benchmarking studies.[152]

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147 Exhibit B-9, BCUC IR 1.12.2 (Weisman).

148 Exhibit B-9, BCUC IR 1.17.3 (Kolesar).

149 Exhibit B-10, Zone II IR 1.5.1 (Weisman).

150 Tr. 2, p. 253 (Lowry). In his report, Dr. Lowry includes cost benchmarking with PBR category of performance measures: Exhibit A2-5, Lowry Report, p. 24.

151 Tr. 2, pp. 120, 134, 135, 186 (Lowry).

152 Exhibit B-8, BC Hydro Supplementary Evidence, p. 15.

136. Statistical benchmarking can be a useful tool to help the BCUC and interveners evaluate the reasonableness of BC Hydro's cost forecasts. BC Hydro explains:

> Statistical benchmarking studies can help to address concerns with regard to information asymmetry or upward forecasts by providing additional data points that the BCUC and interveners can use to help evaluate the reasonableness of BC Hydro's costs forecasts.
>
> For example, if a statistical benchmarking study were conducted to determine the operating cost levels of a peer group of utilities, the BCUC and interveners could consider BC Hydro's operating cost levels relative to the benchmark and evaluate BC Hydro's evidence with regard to any differences.[153]

137. Benchmarking, as a form of incentive regulation, is not new to BC Hydro; the Company previously retained The Brattle Group to prepare an operating cost benchmarking study for its Fiscal 2020-Fiscal 2021 RRA.[154]

138. The specific details for terms of reference for future statistical benchmarking, including consideration of Dr. Lowry's design suggestions[155], are best determined through a BCUC process and informed by input from interveners. Stakeholder consultation will commence shortly in anticipation of including proposed terms of reference in the upcoming Fiscal 2023-Fiscal 2025 RRA. Once the BCUC determines the final terms of reference in its RRA decision, BC Hydro could then include the first benchmarking study as part of the following RRA. In addition to accommodating stakeholder consultation, this schedule makes sense given how recently The Brattle Group completed its benchmarking.

D. EXPANDED INFORMATION-ONLY PERFORMANCE METRICS ARE BENEFICIAL

139. In its Supplementary Evidence, BC Hydro states: "BC Hydro recognizes the interest from the BCUC and interveners in performance metrics and believes that information-only performance metrics, determined through a BCUC process, could help to achieve the goals of

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153 Exhibit B-10, BCOAPO IR 1.6.2.

154 Exhibit A2-1, BC Hydro PBR Report, p. 11-28, citing BC Hydro's Fiscal 2020 to Fiscal 2021 RRA, Appendix T. BC Hydro also uses benchmarking in other aspects of its business.

155 E.g., Tr. 2, pp. 120, 134, 135, 186.

BCUC regulation of BC Hydro."[156] These performance metrics, which could augment the Service Plan metrics in use today, are most efficiently established through the upcoming RRA proceeding.[157]

140. As discussed in Part Three, Section C above, Dr. Lowry identifies performance metrics as a PBR mechanism, regardless of whether they are used for reporting, monitoring against targets, or have associated financial incentives. Dr. Weisman similarly observes that "non-financial incentives in the form of information-only performance metrics can potentially serve an important role in motivating desired performance. The relative strength of these non-financial incentives may be expected to turn on the particular institutional framework and governance structure under which the regulated firm operates."[158] The necessary institutional framework and governance structure exists for BC Hydro. BC Hydro will need to justify its performance against these metrics in successive RRA proceedings. BC Hydro is also subject to close public and Government scrutiny as a Crown corporation, making reporting on performance a particularly effective incentive for superior performance.

141. BC Hydro explains in Part Five why attaching financial incentives to metrics would be problematic in the context of BC Hydro.

E. REQUESTED FINDING DEMONSTRATED BY THE EVIDENCE

142. Based on the evidence discussed above, the BCUC should find that,. in principle, the three changes that BC Hydro is incorporating in its next RRA will improve the incentives under the existing framework for BC Hydro to perform well while retaining valued attributes; therefore, they merit the BCUC's further consideration in that RRA proceeding. The BCUC can make this "in principle" finding without fettering the discretion of the BCUC Panel hearing the RRA to consider the merits of the specific proposals based on the evidentiary record in the RRA process.

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156 Exhibit B-8, BC Hydro Supplementary Evidence, p. 19.

157 Exhibit B-10, ZONE II IR 1.3.3.3.

158 Exhibit B-8, Weisman Supplementary Report, para. 10.

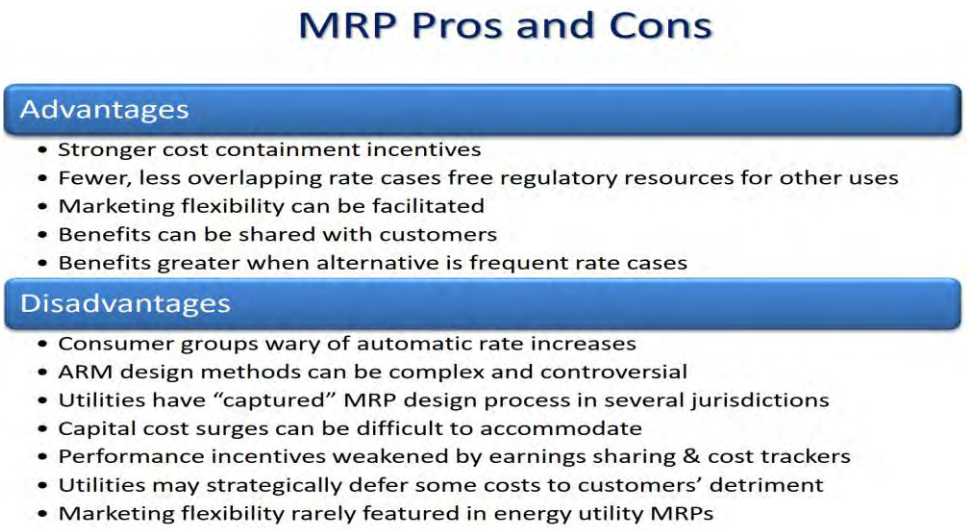
PART FIVE ADDITIONAL MECHANISMS DO NOT MEET THE COST / BENEFIT TEST

A. INTRODUCTION

143. Dr. Lowry identifies other mechanisms for consideration in the future - in particular, a longer MRP, formulaic rates, adding financial incentives to performance metrics and moving from full to only partial revenue decoupling to incentivize electrification. These mechanisms are ill-advised given BC Hydro's unique circumstances. As discussed below, the assumed benefits of BC Hydro adopting these mechanisms are either illusory or are outweighed by real and considerable disadvantages.

B. MRP LONGER THAN THREE YEARS OFFERS QUESTIONABLE BENEFITS AND HAS POTENTIAL DISADVANTAGES

144. Dr. Lowry identifies, at a conceptual level, various pros and cons of an MRP:



145. There is, however, a difference between PBR in theory and PBR in practice, a point which Dr. Weisman and Mr. Kolesar made in various ways and Dr. Lowry implicitly acknowledged in saying: "Despite growing popularity of MRPs, serious implementation problems have arisen, including in Canadian jurisdictions" and "Remedies for these problems are not yet fully satisfactory".[159] The evidence discussed below demonstrates that, in the unique circumstances

[159] Exhibit A2-7, Lowry Presentation, slide 81.

of BC Hydro, the assumed advantages of longer MRPs are questionable and the disadvantages are potentially significant.

(a) The Prospect of "Stronger Cost Containment Incentives" Bringing Greater Customer Benefits Is Questionable for BC Hydro

146. The primary rationale offered by Dr. Lowry for considering a four or five-year MRP in the future is the potential for stronger cost containment incentives to yield additional benefits –three of the five "advantages" in his slide (above) are variations on this rationale. There are two reasons to question whether increasing BC Hydro's test period beyond the three years currently contemplated will provide the stronger incentives that theory might suggest.

147. First, as discussed in Part Four, the absence of a mandate to exceed the allowed ROE already mutes the incremental efficiency incentive associated with extending the period between rebasing. BC Hydro seeks efficiencies between rate cases to manage the risk of not being able to cover its costs and earn its allowed ROE. The additional motivation present for investor-owned utilities to seek even greater savings so as to *exceed* its allowed ROE is absent.

148. Second, even for a profit maximizing utility (which BC Hydro is not), the length of the period between rebasing is only one of two factors that determine the incentive power of a regulatory regime. The other input is the share of the efficiency gains retained by the utility. As Dr. Weisman observed, "there are trade-offs between these two dimensions of incentive power."[160]

149. Longer MRPs are often accompanied by an Earnings Sharing Mechanism ("ESM") as a means of reducing risk to the utility and customers and making the prospect of higher utility

[160] Exhibit B-8, Weisman Supplementary Report, para. 35.

profits more palatable for ratepayers.[161] The MRPs of both of the FortisBC utilities include an ESM.[162] Dr. Lowry[163] and Dr. Weisman agree that ESMs reduce the incentive power of an MRP.[164]

150. Dr. Weisman performs an illustrative economic analysis demonstrating that a three-year test period with a fixed-rate forecast and no earnings sharing has approximately 33 percent more incentive power than a five-year indexed PBR regime with a 50 percent ESM.[165] In other words, although customers under the five-year plan would be sharing in the benefits, there would be fewer benefits to share. Dr. Weisman concludes: "This suggests that at least in terms of incentive power, the Commission may well be taking a step backward if it opted for this type of PBR regime."[166]

(b) MRPs Change the Focus of the Regulatory Process, Without Necessarily Reducing the Amount of Process

151. A commonly cited potential benefit of adopting MRPs, and one referenced in Dr. Lowry's slide, is reducing regulatory burden. BC Hydro submits that the BCUC should not be pursuing a lengthy MRP in the expectation that it will reduce regulatory process.

152. Mr. Kolesar, who is well-positioned to speak to the implementation of PBR regimes given his role at the AUC, observes that "despite potential assumptions to the contrary, the process is no less onerous than that required under COSR to establish a revenue requirement and set rates...".[167] The adoption of PBR in Alberta resulted in more, not less, regulatory process:

> PBR promises less regulatory burden because the term of a PBR plan is generally longer than the term under COSR and the utility is presumed to be "set free" to manage its business rather than focus on regulatory filings. However, that promise is not always so easily realized. PBR, at least at the initial stages of implementation, often requires a

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161 Exhibit B-8, BC Hydro Supplementary Evidence, pp. 13-14.

162 Exhibit B-9, BCUC IRs 1.15.2 and 1.15.3.

163 See Dr. Lowry's presentation slide above.

164 Exhibit A2-7, Lowry Presentation, slide 61; Exhibit A2-5, Lowry Report, p. 58: "On the downside, an ESM weakens utility performance incentives."; Exhibit A2-1, First Weisman Report, pp. 37-38. See Exhibit A2-1, BC Hydro PBR Report, pp. 11-31, 11-34 for references to AUC, FERC and other authority on this point.

165 Exhibit B-8, Weisman Supplementary Report, para. 43.

166 Exhibit B-8, Weisman Supplementary Report, p. 19.

167 Exhibit B-8, Kolesar Report, p. 7.

> number of supplemental or concurrent regulatory proceedings to deal with matters such as the annual rates adjustment under the PBR formula, the periodic calculation and approval of K, Y and potentially Z factors, the monitoring of quality metrics, and alike. Alberta experienced an increase in regulatory filings under PBR, in part because of the nature of some of the Commission's PBR plans, for which the Alberta commission was often criticized. The Commission should carefully analyze and consider the potential regulatory burden under both COSR and PBR.[168]

153. As discussed previously, the AUC is currently reviewing whether to continue with PBR.

154. Mr. Kolesar identifies two factors that might *increase* the complexity of BC Hydro's proceedings relative to the Alberta experience:

- Unlike BC Hydro, Alberta's electric utilities are not vertically integrated and only distribution is regulated under PBR. In Mr. Kolesar's opinion, the vertically integrated nature of BC Hydro "may make the PBR regime for BC Hydro more complex to design and implement, particularly as it relates to the treatment of capital expenditures." The issues arising in the design of a PBR regime from the lumpiness of capital investment "may be further exacerbated when the utility is vertically integrated."[169]

- BC Hydro's relatively recent return to regulation after a hiatus:

  > With respect to the recent emergence from a prolonged hiatus in Commission oversight, during which rate caps were set by government, I agree with BC Hydro it may be more difficult for the Commission to garner the understanding and support of parties for the adoption of PBR. Accordingly, the Commission may be required to adopt more safeguards and oversight mechanisms in its PBR regime than they might otherwise undertake, given that there has been no detailed oversight for a prolonged period. This may increase regulatory burden under a PBR regime beyond the

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[168] Exhibit B-8, Kolesar Report, p. 11. See also: Exhibit B-9, BCUC IR 1.7.1 (Kolesar). Mr. Kolesar listed and described the numerous AUC processes in his response to Exhibit B-9, BCUC 1.18.1 (Kolesar).

[169] Exhibit B-9, BCUC IR 1.7.1 (Kolesar).

> increase in filing requirements normally expected in a PBR regime.[170]

(c) The Benefit of "Facilitating Marketing Flexibility" is Illusory: Would Violate the *Utilities Commission Act* ("UCA")

155. Dr. Lowry identifies "marketing flexibility can be facilitated" as the other potential benefit of longer MRPs, citing "marketing flexibility" as a way to encourage electrification. The concept envisioned by Dr. Lowry would seem to involve, in essence, giving BC Hydro freedom between rate cases to implement rate structures to promote electrification without prior approval of the BCUC.[171] It seems to be premised on there being no revenue decoupling, i.e., not having the Load Variance Regulatory Account, such that electrification revenues flow to the shareholder rather than customers. This, in and of itself, is problematic for reasons discussed later. More fundamentally, while "marketing flexibility" may have been used effectively in regulating the rail and telecom industries (as Dr. Lowry noted), it is not permissible in B.C. under the UCA for BC Hydro to change its rate structures unilaterally.[172]

(d) The Potential Disadvantages Include Accommodating Capital Surges and Customer Acceptance of Automatic Increases

156. While the assumed advantages of a longer MRP are questionable or illusory in the case of BC Hydro, there are clear disadvantages. The list of disadvantages of MRPs identified by Dr. Lowry in his presentation included that (i) consumer groups may be wary of automatic rate

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170 Exhibit B-9, MoveUP IR 1.5.1 (Kolesar).

171 Tr. 2, p. 217, l. 20-p. 219, l. 6 (Lowry). "Between rate cases, yeah. I mean it's not like they would never have a chance to weigh in on them, but between rate cases they would be permitted and there would be a tendency to deem the special packages prudent in the next rate case because any discount, if there was an excessive discount, is coming out of the company's pocket."

172 UCA, s. 61(3): "The rates in schedules as filed and as amended in accordance with this Act and the regulations are the only lawful, enforceable and collectable rates of the public utility filing them, and no other rate may be collected, charged or enforced." Section 63: "A public utility must not, without the consent of the commission, directly or indirectly, in any way charge, demand, collect or receive from any person for a regulated service provided by it, or to be provided by it, compensation that is greater than, less than or other than that specified in the subsisting schedules of the utility applicable to that service and filed under this Act."

increases, (ii) ARM design methods may be complex and controversial, (iii) capital cost surges can be difficult to accommodate.[173]

157. A longer MRP means more years between full rate cases in which the regulator and interveners can test the utility's revenue requirements. In the intervening years, escalation occurs automatically either in accordance with a forecast (i.e., stair-step ARM) or a formula or index. Forecasting is a more straightforward process that is well-understood by stakeholders, but becomes more difficult as the length of the test period is extended and is complicated by capital surges. In BC Hydro's view, "a three-year test period strikes an appropriate balance between strengthening the incentive created by setting a pre-determined revenue envelope over multiple years and providing a reasonable cost forecast that is not subject to too many 'unknowns'."[174] As discussed in the next section, formulae and indexes present similar challenges regarding capital surges and present their own challenges in terms of complexity and controversy over whether it is producing a reasonable annual escalation in revenues.

C. FORMULA OR INDEX-BASED RATE MAKING SHOULD NOT BE PURSUED

158. The use of a formula or index to set rates is not a necessary characteristic of a PBR regime.[175] BC Hydro has identified several reasons why a formula or indexed based approach to setting rates should not be pursued.[176]

(a) Reason #1: A Forecast and Indexing Can Be Equally Effective at Creating Incentive

159. Using a formula or index would not provide any incremental incentive to find productivity improvements compared to the existing approach of using a multi-year cost forecast, other things being equal. Dr. Weisman explained:

> The superior incentive properties of these two different approaches (indexed and non-indexed) turn on the fact that the rate trajectory over the course of the

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[173] Exhibit A2-7, Lowry Presentation, slide 61.

[174] Exhibit B-10, BCOAPO IR 1.4.3.

[175] Exhibit B-8, Weisman Supplementary Report, para. 26. Dr. Lowry identifies a "stair-step ARM" (forecasting) as a mechanism for use in a PBR MRP.

[176] Exhibit B-10, AMPC IR 1.1.2.

> regulatory regime is invariant to the regulated firm's own performance regardless of whether that rate trajectory is determined by the "I – X" formula or by a cost forecast set at the outset of the regulatory regime.
>
> The incentive power of the regulatory regime would not be expected to differ across the two scenarios outlined in the question when (i) both the forecast and the formula/index are invariant to the regulated firm's behavior (i.e., the immutability conditions is satisfied); (ii) the regulated firm is financially viable under both scenarios (i.e., the regulated firm is not in or near financial default); (iii) there is no earnings-sharing mechanism under either approach; and (iv) the test period is the same in both scenarios. In both regulatory regimes, the rate trajectory is fixed by a benchmark that is invariant to the regulated firm's own performance (i.e., the immutability condition is satisfied).
>
> In general, the incentive power of a regulatory regime depends on (i) the share of the efficiency gains the regulated firm is allowed to retain; and (ii) the length of time that it is allowed to retain them (i.e., regulatory lag).[177]

160. Dr. Lowry characterized the incentive properties of using forecasts to determine revenues in an MRP as potentially "strong", if there is no earnings sharing to weaken it.[178]

(b) Reason #2: Design Complexity Can Create Controversy and Acceptance Challenges

161. While the choice between an index or a cost forecast does not change the incentive power of the regulatory regime, it does involve other trade-offs, particularly with regard to the considerations around complexity of design. Complexity of design can be expected to impact the extent of stakeholder confidence in the framework. Three notable design challenges are set out below.

Indexing and Productivity Studies Are Less Readily Understood than Forecasts

162. First, indexing is opaque and it comes with an alphabet of factors (e.g., I, X, K, Y, Z). The design of PBR, the inter-relationship among various PBR elements, and determination of these

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[177] Exhibit B-8, Weisman Supplementary Report, paras. 21, 34, 35.

[178] Exhibit A2-5, Lowry Report, p. 38: "Apart from such inflation adjustments, and any earnings sharing mechanism that the plan may include, there is typically no adjustment to rates during the plan if the actual cost incurred differs from the forecast. This approach to ARM design might therefore generate strong cost containment incentives despite the use of forecasts."

factors is highly specialized and is primarily the domain of experts. The complexity of these issues makes PBR inherently less accessible to customers and the public generally. BC Hydro explains:

> With regard to maintaining public confidence and support, BC Hydro submits that the use of a multi year cost forecast is superior to an index or formula approach, particularly in the case of BC Hydro, which is publicly owned and has a significant public profile and has only recently come back into relatively unfettered regulation. A multi year forecast provides better insight into BC Hydro's operations than an index or formula and will allow the BCUC and interveners to develop greater familiarity and understanding of BC Hydro's costs over time.[179]

163. Dr. Weisman cautions that the process of debating the numerous technical issues associated with indexing "can easily devolve into a battle of the statisticians."[180] Dr. Lowry characterizes MRPs as "complex regulatory systems that require skills...".[181] He acknowledges that productivity studies, which may be used to inform an indexed or formula-based approach to setting rates, are both esoteric and controversial: "Now, Dr. Weisman does talk about the esoteric and controversial nature of those studies, and I wish I could say that that wasn't true. But I'm sorry to say that there has been a lot of controversy in recent years."[182]

Treatment of Capital Adds Complexity and Controversy When Using Formula or Index

164. Second, the treatment of capital within an MRP adds complexity and is often controversial.

165. Dr. Weisman indicated that "The treatment of capital in the design of PBR plans in the electricity sector has confounded regulators in North America."[183] Dr. Lowry indicates that the determination of how to treat capital within an MRP with an indexed ARM was a "Controversial

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179 Exhibit B-10, MoveUP IR 1.1.1; Exhibit A2-1, BC Hydro PBR Report, p. 11-68.

180 Exhibit B-8, Weisman Supplementary Report, para. 23.

181 Exhibit A2-5, Lowry Report, p. 64.

182 Tr. 2, p. 175, ll. 16-25 (Lowry); Exhibit A2-5, Lowry Report, pp. 40-41, e.g.: "Controversy is common concerning cost trend research in a proceeding to approve an indexed ARM."

183 Exhibit A2-1, First Weisman Report, p. 46.

issue in several PBR proceedings (e.g., ALTA, BC, ON, MA, ME)".[184] Dr. Lowry acknowledged the challenge associated with creating a formula for capital in light of the lumpy nature of capital spending: "Now, let's get into one of these problems that particularly arises in the context of index-based regulation, and it's particularly a problem in Canada recently, is this phenomenon of a CapEx surge."[185]

166. In addition to the challenge of accommodating capital surges, Dr. Lowry points out the difficulty of accounting for the impact of replacement capital on productivity studies.[186] He indicated that "Necessary capex surges can be addressed by cost trackers, but trackers involve their own complications…",[187] a point discussed in BC Hydro's PBR Report.[188]

Indexing Only Operating Expenses Has Its Own Challenges

167. Indexing operating costs only would eliminate challenges related to capital, but offers its own complexities. For one thing, large "carve outs" from the index or formula (e.g, tracking all capital costs using annual forecasts) would weaken whatever additional incentive to reduce costs that is assumed to come from the adoption of an MRP with indexing (already questionable for BC Hydro).[189] Indeed, Dr. Weisman observes that as the amount of costs "carved out" from the PBR formula increases, the distinction between PBR and cost of service regulation decreases.[190] Mr. Kolesar identifies other issues:

> If the objective is to apply an I-X type formula only to O&M expenses, there are additional considerations. First, developing a productivity factor for O&M alone is a difficult task, largely because Total Factor Productivity measures are not easily bifurcated into measures of O&M, as distinct from capital; and it is not clear that partial productivity factors can be reasonably or easily developed and may not

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184 Exhibit A2-7, Lowry Presentation, slide 48.

185 Tr. 2, p. 190, ll. 1-3 (Lowry).

186 Tr. 2, p. 191, ll. 14-19 (Lowry).

187 Exhibit A2-5, Lowry Report, p. 41.

188 Exhibit A2-1, BC Hydro PBR Report, pp. 11-40 to 11-45, where BC Hydro discusses how avoiding very broad capital tracker treatment can require the use of multiple formulae or indexes within a single MRP.

189 BCUC Decision, FortisBC Inc. Multi-Year Performance Based Ratemaking Plan 2014-2018 (September 15, 2014), page 170: "In the Panel's view, the more capital excluded from formula spending, the fewer benefits of PBR accrue to ratepayers and shareholders alike."

190 Exhibit A2-1, First Weisman Report, p. 47.

> pass academic muster. Secondly, applying an I-X to O&M alone may be detrimental in that it may provide an incentive to shift costs from O&M to capital and vice versa, potentially negatively influencing the achievement of dynamic efficiencies in the firm and increasing costs in the long run.
>
> In doing any of the above, the regulator should consider whether the result will provide a better forecast of O&M expenses and, more importantly, whether the index approach will increase the utility's incentives to seek out productivity gains.[191]

Special Considerations for Vertically Integrated Utilities

168. The complexity involved in indexing is amplified by the fact that BC Hydro is a vertically integrated utility, potentially requiring different considerations for each line of business. Dr. Lowry notes: "I mean, the whole use of an actual comprehensive indexing for a vertically integrated utility is it's not widely done. I had mentioned the Hawaiian Commission is wanting to go in that direction. But, you know, this isn't generally done -- hasn't been done since back in the 1990s, really. So I wasn't really advocating that for BC Hydro, although it is feasible."[192]

(c) Reason #4: A Formula or Index Offers a False Sense of Precision

169. The use of a formula provides a false sense of precision because, as Mr. Kolesar observes "both PBR and COSR require a significant amount of judgment on the part of the regulator."[193] He elaborates:

> There is potentially an argument that, even if the incentives of PBR cannot be fully realized, there is an advantage to adopting PBR because the indexed stream of revenues requires the utility to achieve a specified level of productivity, and accordingly the outcome will better emulate a competitive market outcome. However, in practice, there is no way to determine whether the expected level of productivity under a PBR regime will indeed be any different than what will be achieved under another form of regulation. Although PBR has the appearance of mathematical precision because it is formula-based, determining all the elements

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191 Exhibit B-9, BCUC IR. 1.18.4 (Kolesar).

192 Tr. 2, p. 264, ll. 1-9 (Lowry).

> of a PBR plan involves a significant amount of judgment on the part of the regulator, and the interplay among the final mix of elements cannot be assumed to deliver a specific intended or measurable level of productivity, relative to what might be achieved under an alternative form of regulation. The principal objective of PBR is to create an incentive for the utility to seek productivity improvements, not to generate a revenue requirement or achieve a specific level of productivity. The ensuing level of achieved productivity will be dependent on how the utility responds to that incentive.[194]

170. The potential that allowed revenue may be set too high or too low exists whether a cost forecast or an index or formula is used and may be greater if an index or formula is used, particularly given the extent to which BC Hydro's costs are not correlated with potential index or formula metrics such as customer growth or inflation.[195]

(d) Reason #5: Index or Formula Does Not Necessarily Eliminate Need for Forecasts

171. The use of an index or formula does not necessarily eliminate the need for forecasts. This is certainly the case with "tracked" costs excluded from the index or formula (e.g., capital), but it can also occur where there is doubt as to whether costs are truly linked to inflation or other index parameters. In the case of BC Hydro, it is experiencing significant operating cost pressures that are not tied to inflation or customer growth, but rather represent important investments that can show up in productivity studies as reduced productivity. Resilience investments like Mandatory Reliability Standards compliance, vegetation management and safety all fall in this category, for instance, since they do not drive system, customer or load growth.[196]

172. While the use of an index or formula does not necessarily eliminate the need for cost forecasts, BC Hydro's proposal for regularly scheduled statistic benchmarking discussed in Part Four above could enable the use of an index to inform the assessment of cost forecasts. The difference between these approaches is whether the index informs the BCUC's decision on allowed revenue for a test period or is actually used to set allowed revenue for a test period. BC Hydro submits that using a cost forecast to set allowed revenue, and using an index to inform an

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[194] Exhibit B-8, Kolesar Report, p. 10.

[195] Exhibit B-10, BCOAPO IR 1.5.1.

[196] Exhibit B-9, BCUC IR 1.12.1.

assessment of the reasonableness of that forecast, incorporates the benefits of both approaches while avoiding the disadvantages discussed above.

D. ADDING FINANCIAL INCENTIVES TO PERFORMANCE METRICS WOULD NOT ENHANCE THE INCENTIVE POWER

173. As discussed in Part Three and Part Four, the Service Plan metrics provide incentives for BC Hydro to perform better and those incentives will be augmented by the pending adoption of other information-only reporting metrics. There are two related reasons why the BCUC should eschew attaching financial rewards or penalties (what Dr. Lowry refers to as "PIMs"[197]) to BC Hydro's performance against metric targets.

(a) Reason #1: BC Hydro's Unique Mandate and Legislation Makes PIMs Ineffective and Unnecessary

174. Since BC Hydro's mandate does not include the prospect of earning returns in excess of the allowed ROE, there is no reason to expect that offering the potential to exceed the allowed ROE for meeting performance targets will strengthen the existing incentive.[198]

175. Performance metrics often play a key role in MRPs to guard against the potential that the incentives associated with a longer period between rebasing will drive the utility to sacrifice service and reliability in the quest for higher profits.[199] This concern is less applicable in the case of BC Hydro, since BC Hydro's mandate includes service and reliability (among other things) and does not include seeking to earn returns above the allowed ROE.[200]

176. Dr. Lowry notes that DSM is a common target for attaching financial incentives to performance metrics. There are three points in response:

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[197] Exhibit A2-5, Lowry Presentation, p. 22.

[198] Exhibit B-9, BCUC IR 1.3.1.

[199] Tr. 2, p. 113, l. 25-p. 114, l. 11 (Lowry): "You know, really in the absence of a multiyear rate plan, the need for any sort of a PIM attended on service quality is less obvious."

[200] Exhibit B-9, BCUC IR 1.3.1.

- Incentives intended to overcome a disincentive to invest in DSM are of no value in BC Hydro's case. There is a disincentive for an investor owned utility because DSM reduces revenues and can reduce the need for capital investment, upon which a utility earns its regulated rate of return. BC Hydro does not have that disincentive, given its mandate to promote energy conservation and its revenue decoupling mechanism (the Load Forecast Variance Account).[201]

- If the concern is that BC Hydro may be pursuing excessive levels of DSM and initiatives that are not cost-effective, that premise is also incorrect. The Demand-Side Measure Regulation sets out requirements for measures to be cost-effective, which BC Hydro's initiatives meet. BC Hydro applies the additional test of requiring measures to be lower than the market price under the Utility Cost Test.[202]

- The introduction of a shared savings performance incentive mechanism for conservation could discourage measures aimed at providing equitable opportunities across customer classes or targeted opportunities for certain customer groups. In other words, a shared savings performance incentive mechanism could incent BC Hydro to pursue the most cost-effective DSM initiatives instead of initiatives driven by policy, regulatory or equity considerations.[203]

(b) Reason #2: Financial Penalties Can Only Be Applied Against Earnings in Excess of Allowed ROE

177. The BCUC has previously recognized that financial penalties associated with performance metrics should only be applied against earnings in excess of a utility's allowed ROE.

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[201] Tr. 2, p. 114, ll. 12-14 (Lowry). "Similarly you would have more need for a DSM PIM if you didn't have revenue decoupling, if you didn't amortize DSM expenses, for example."

[202] Exhibit B-8, BC Hydro Supplementary Evidence, pp. 17-18.

[203] Exhibit B-8, BC Hydro Supplementary Evidence, pp. 17-18.

178. The 2014-2019 PBR and 2020-2024 MRP regimes governing FortisBC Energy Inc. and FortisBC Inc., two investor-owned utilities, have included penalties related to performance against metrics.[204] Specifically, under these regimes, failure to meet Service Quality Indicator benchmark thresholds could result in a reduction to the share of earnings retained by the utility in excess of the allowed ROE, if the BCUC determines it represented a serious degradation of service quality attributable to the actions or inactions of the utility.[205] Under this framework, the reduction in earnings depends on there being earnings above the allowed ROE. The BCUC has determined that, otherwise, the only remedy is to exercise statutory powers that are also available to the BCUC in respect of BC Hydro. The BCUC's 2014-2019 FortisBC PBR Decision states:[206]

> Where, after due process, the Commission finds that Fortis has failed to provide adequate service and the failure was, in whole or in part, due to the actions (or inactions) of Fortis, the Commission may reduce the share of earnings above the allowed rate of return that would otherwise flow to the Company. The reduced share of earnings would be credited to customers in the form of a compensation credit. The Panel directs that the maximum reduction to the incentive earnings will be an adjustment to the earnings sharing mechanism to reflect a 60 percent ESM share to the customer rather than the standard 50 percent. When assessing the magnitude of any reduction in each Company's share of the incentive earnings, the Commission will take into account the following factors:
>
> • Any economic gain made by each Company in allowing service levels to deteriorate;
>
> • The impact on the delivery of safe, reliable and adequate service;
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> • Whether the impact is seen to be transitory or of a sustained nature; and
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> • Whether each Company has taken measures to ameliorate the deterioration in service.

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[204] Exhibit B-10, MoveUP IR 1.3.1

[205] The process for assessing service level performance and potential penalties is outlined in the "Consensus Recommendation" approved by the BCUC in Order G-14-15, dated February 4, 2015,1 which were interpreted by the BCUC on pages 18-19 of the Reasons for Decision for Order G-107-15, dated June 13, 2015.

[206] 2014-2019 FortisBC PBR Decision p. 155.

> Where there are no incentive earnings to share (i.e. the rate of return achieved by the Companies are at or below the approved rate of return), the Commission may still assess whether the level of service provided by the Company is adequate. In this case, the actions taken will be driven by the provisions in the *Utilities Commission Act*. This might include ordering Fortis, under section 25 of the *Utilities Commission Act*, to take certain actions to remedy a service deficiency or the imposition of an administrative penalty under section 109.2 of the *Utilities Commission Act*. [Emphasis added.]

179. Since BC Hydro has no mandate to achieve more than its allowed net income in the first place, the threat of withholding those additional earnings does not provide an effective means of strengthening the existing incentives discussed in Part Three above and with information-only performance metrics.[207]

(c) PIMs Have Implementation Challenges in Practice

180. Dr. Lowry observed that ratepayer acceptance can be a challenge: "Concern about overpayment for performance has prompted many consumer advocates to oppose PIMs with awards." He also noted several practical problems that regulators have encountered implementing PIMs, including concerns about over or under-compensation, diminishing incentive properties over time, and focusing on some objectives to the detriment of other important objectives.[208]

(d) PIMs Do Not Reduce Regulatory Burden

181. Dr. Lowry is unequivocal that PIMs should not be pursued with the expectation of reduced regulatory process:[209]

> Lastly, I'll say about the PIMS in general there was a question advanced, and a good one, about whether or not PIMS always streamlined regulation. And the answer is no, it doesn't. I mean, there are some approach to PBR that are intended to streamline regulation but the PIMs aren't really one of them. And each PIM is its own little complicated thing and sometimes they're very complicated, like the shared savings DSM type PIMs. And so a big consideration in developing a set of

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[207] Exhibit B-9, BCUC IR 1.3.1; Exhibit B-8, BC Hydro Supplementary Evidence, pp. 4-6.

[208] Exhibit A2-5, Lowry Report, p. 26.

[209] Tr. 2, p. 115, l. 22- p. 116, l. 7 (Lowry).

> PIMs for a utility is going to be, is the incremental benefit worth the incremental regulatory costs that's involved?

E. PARTIAL DECOUPLING WOULD HARM RATEPAYERS

182. Dr. Lowry identifies partial decoupling of low-carbon electrification revenues as an option the BCUC might consider to encourage electrification. However, this approach is ill-suited to BC Hydro's circumstances and would harm ratepayers.

183. As discussed previously, BC Hydro currently has full decoupling through the Load Forecast Variance Account. Partial decoupling, by contrast, would divert variances in incremental revenues from low carbon electrification (all of which currently flow to ratepayers under full revenue decoupling) to the Government of B.C.

184. Dr. Lowry's suggestion to consider moving from full to partial decoupling is premised on the assumption that BC Hydro will be less incented to pursue electrification under the current full decoupling because ratepayers receive the entire benefit of electrification sales. Since partial decoupling shifts a portion of those benefits to the shareholder, the idea is that BC Hydro will be more motivated to pursue electrification. Dr. Lowry explained the premise as follows:[210]

> R. ANDREWS: Dr. Lowry, could you explain how it's your view, or if it's your view that BC Hydro's decoupling takes away an incentive to do low carbon electrification given that Hydro is long on energy?
>
> MR. LOWRY: Well, the margin that might be gleaned from it's passed back to the customer. That's the concern. I mean there's still some incentive there but it's not as strong as it would normally be under utility regulations – not less strong than there would be under a price cap example either – because the margin is not kept by the company, it's passed back to the customer. Any extra effort is passed -- the benefit of any extra effort on the margin is passed back.

185. Dr. Lowry added: "allowing the company to keep part of that margin could help incentivize them to do a particularly bang-up job on this."[211]

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[210] Tr 2, p. 152, ll. 2-13 (Lowry).

[211] Tr. 2, p. 222, l. 19-p. 223, l.10 (Lowry).

186. The diversion of these revenues to the shareholder would mean, all else equal, higher rates paid by customers. In order for partial decoupling to produce net benefits to ratepayers, BC Hydro would need to respond to the additional financial incentive sufficiently to more than offset the revenues diverted to the shareholder. There is no reason to expect that will be the case in light of BC Hydro's mandate.

187. First, as Dr. Weisman observed, "implicit in Dr. Lowry's suggestion is the premise that profit-maximization and earnings-based employee compensation serve as the primary motivation for the utility's behavior."[212] This is not the case, as discussed in Part Three.

188. Second, part of BC Hydro's mandate is to pursue electrification. BC Hydro stated:

> BC Hydro is already motivated to increase low carbon electrification because of the mandate provided by the Government of B.C. which is premised on the following two outcomes: (1) helping our customers and the Government of B.C. to achieve their objectives with regard to the reduction of greenhouse gas emissions, and (2) generating incremental tariff revenue that can help to offset cost pressures and keep rates low for customers.[213]

189. Dr. Lowry agreed that the strength and importance of an incentive is diminished if there is already a government mandated action:

> MR. GHIKAS: Presumably, though, the strength or the importance of the incentive is diminished if you've already got government mandating something.
>
> MR. LOWRY: Well, certainly the amount of incentive that's needed is probably less in that case. Because certainly one of the principles of the design of a PIM, for example, is don't pay out any more money than you need to get the elicited behaviour, desired behaviour.[214]

190. As a result, BC Hydro is justified in its conclusion that "under partial revenue decoupling, ratepayers would be worse off than they are today because they would be unnecessarily

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[212] Exhibit B-9, BCUC 1.10.1 (Weisman)

[213] Exhibit B-9, BCUC IR 1.6.3. See also: Exhibit B-10, BCOAPO IR 1.7.1.

[214] Tr. 2, p. 222, ll. 9-17 (Lowry).

foregoing some of the revenue benefits of the electrification initiatives."[215] The result would run counter to BC Hydro's affordability mandate.

F. REQUESTED FINDING DEMONSTRATED BY THE EVIDENCE

191. Based on the evidence discussed above, the BCUC should find that the other mechanisms under consideration in this proceeding for subsequent test periods – in particular, a longer MRP, formulaic rates, adding financial incentives to performance metrics, and moving from full to partial revenue decoupling to incentivize electrification – do not pass the cost-benefit test. Specific findings are set out in Part Two.

[215] Exhibit B-9, BCUC IR 1.6.3. See also: Exhibit B-10, BCOAPO IR 1.7.1.

PART SIX CONCLUSION

192. The measures that BC Hydro is advancing in the upcoming RRA are endorsed by all three experts and, in principle, can be expected to deliver benefits in the unique circumstances of BC Hydro. The evidence does not, however, support the future adoption of other mechanisms identified for consideration. In the case of BC Hydro - a Crown utility with a broad mandate focussed on returning benefits to customers and without any discretion to implement an employee compensation structure to reward higher profits - the assumed benefits of these mechanisms are either illusory or are outweighed by real and considerable disadvantages. BC Hydro respectfully submits that the BCUC should make the findings set out in Part Two of these Submissions.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

Dated: May 3, 2021

Matthew Ghikas

Counsel for BC Hydro