August 22, 2019

VIA ELECTRONIC MAIL

British Columbia Utilities Commission
Sixth Floor, 900 Howe Street
Vancouver, BC
V6Z 2N3

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

Dear Sirs/Mesdames:

Re: British Columbia Hydro and Power Authority (“BC Hydro”) Review of the Regulatory Oversight of Capital Expenditures and Projects ~ Project 3698877

We are counsel to the Commercial Energy Consumers Association of British Columbia (the “CEC”). Attached please find the CEC’s Final Submissions with regard to the above matter.

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

Yours truly,

OWEN BIRD LAW CORPORATION

Christopher P. Weafer
CPW/jj
cc: BC Hydro
cc: Registered Interveners
COMMERCIAL ENERGY CONSUMERS
ASSOCIATION OF BRITISH COLUMBIA

FINAL SUBMISSIONS

British Columbia Hydro and Power Authority Review of the Regulatory
Oversight of Capital Expenditures and Projects
Project No. 3698877

August 22, 2019
Commercial Energy Consumers Association of British Columbia

British Columbia Hydro and Power Authority Review of the Regulatory Oversight of Capital Expenditures and Projects
Project No. 3698877

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I. CEC PARTICIPATION IN BC HYDRO CAPITAL REVIEW PROCESS

1. The CEC represents the interests of ratepayers consuming energy under commercial tariffs in applications before the BC Utilities Commission (“BCUC” or “Commission”).

2. BC Hydro is seeking approval of the 2018 Capital Filing Guidelines, which it states are ‘designed to update, expand and replace the 2010 Guidelines’. ¹

3. The Commission established this proceeding in Order G-58-16 dated May 3, 2016, to review the regulatory oversight of BC Hydro’s capital expenditures and projects.

4. The proceeding was put in abeyance while the Commission undertook the Inquiry of Expenditures Related to the Adoption of the SAP Platform. That Inquiry dealt in detail around BC Hydro’s capital review of information technology. The root of the Inquiry was a concern around information provided by BC Hydro to the Commission in a revenue requirement proceeding such that the Commission was not provided accurate and complete information on BC Hydro’s information technology. The CEC participated actively in that Inquiry. The CEC notes that on page 58 of its report the Commission made the following statement:

“The Panel takes issue with BC Hydro’s argument that the CEC’s position demonstrates a “fundamental misunderstanding of the purpose of IT Systems,” and if anything, the Panel considers BC Hydro’s rejoinder to suggest that it is BC Hydro that demonstrates a fundamental misunderstanding of the basis for approving major investments.”

5. The CEC undertook participation in this process in an attempt to put forward a proposal for continuous improvement of BC Hydro’s capital reporting.

6. The CEC evidence of Mr. Craig and Mr. Thomson was filed as Exhibits C-3 - 10 and C-3-11 and is consistent with an attempt to create ongoing incremental improvement in BC Hydro’s Capital Review Processes for approving capital investments. Mr. Thomson, as a

¹ BC Hydro Final Argument page 6
past president of Manitoba Hydro and past Vice President at FortisBC Energy Inc., supported the approach as reasonable and consistent with sound utility management practices.

SUMMARY OF CEC SUBMISSIONS

7. The CEC submits that the evidence before the Commission establishes that the submissions from BC Hydro in this Capital Review Process are insufficient to enable a suitable level of regulatory oversight.

8. The CEC recommends that the Commission deny the current application as the sole and exclusive definition of the information to be made available to the Commission.

9. The CEC recommends that the Commission establish a process to work constructively with BC Hydro to develop a more robust framework for understanding the utility context to improve the Commission’s capabilities for regulatory review of BC Hydro’s capital management.

10. The CEC recommends that the Commission establish an ongoing process for improvement of the information available to the Commission to support its regulatory oversight roles of the capital expenditures of BC Hydro. Specifically, the CEC recommends that the Commission launch a process under section 24 of the Utilities Commission Act (“UCA”) to systematically improve the information available to the Commission in order to more effectively perform its regulatory oversight.

11. The CEC provides the following submissions for the Commission’s review and consideration.

RECENT BC GOVERNMENT REVIEW OF BC HYDRO IS STRONG EVIDENCE OF NEED FOR IMPROVEMENT IN BCUC REVIEWS

12. The CEC submits that the deficiencies in BC Hydro’s capital review information processes were highlighted in the results from the Phase 1 Government Review, found at Appendix C of BC Hydro’s F2020 - F2021 RRA.

13. At page 4 of the review under the heading “Capital Program, Operating Costs Revenues” the report stated as follows:

“BC Hydro will reduce planned capital additions by $2.7 billion, from $18.5 billion to $15.8 billion over the 10 years from Fiscal 2020 to Fiscal 2029. BC Hydro has carefully considered system impacts. Safety and reliability risks will be managed through targeted investments, with no reductions in investments to meet legal, regulatory or tariff requirements.”

14. It is the CEC’s submission that the ability for the Government, in cooperation with BC Hydro, to come up with material reductions in planned capital expenditures demonstrates that the existing capital review processes and reporting requirements have not been
sufficient to discipline BC Hydro’s planned capital additions. It is relevant to note that the access to detailed information through the joint review by Government and BC Hydro materially improved capital spending discipline. The CEC submits that the Government Review signals a direction from the Provincial Government to increase the regulatory oversight of BC Hydro by the Commission in a manner consistent with the CEC evidence.

15. The CEC submits that the kind of information and detail BC Hydro and the Government reviewed to make decisions with regard to managing capital investment and managing safety and reliability risks among other key metrics for cost effective performance should be made available to the Commission.

16. The CEC’s filed evidence is consistent with enabling the Commission to ensure that safety, reliability risks were assessed and managed against reductions in planned capital additions. This is precisely what the CEC’s evidence is focused on.

17. At the March 15, 2019, Workshop on the BC Hydro F2020 - F2021 RRA, Mr. Kumar spoke to the $2.7 billion in capital spending that has been reduced as a result of the joint Government/BC Hydro review. Mr. Kumar confirmed that at page 105, lines 21 through 26 of the Workshop Transcript as follows:

   “Mr. Weafer: “So better and more current information will enable you to find more efficiencies and cost effectiveness, is that fair Mr. Kumar?”

   Mr. Kumar: “That is fair.”

18. The CEC submits that more current information and more detailed information can enable the BCUC in its oversight role to identify more efficiency and cost effectiveness opportunities on the part of BC Hydro.

19. This is entirely consistent with the CEC’s position that the Commission should engage in a process to identify improved information for the Commission and improved understanding of efficiency and cost effectiveness opportunities to strengthen its regulatory oversight capabilities.

20. BC Hydro submits that approval of a set of capital filing guidelines is indeed the appropriate outcome for the proceeding, but the CEC submits that this is not sufficient.

21. The appropriate outcome for the proceeding is not exclusive approval of a specific set of Guidelines, particularly those put forth by BC Hydro, but rather the development of a new capability to improve the information the Commission has available for approaching its regulatory roles in regard to capital expenditure, additions and management oversight and a process for improving the availability of meaningful information to enhance the Commission’s understanding of the utility.
II. BC HYDRO PROPOSAL

BC HYDRO’S PROPOSALS ARE INSUFFICIENT FOR ESTABLISHING IMPROVED COMMISSION REGULATORY OVERSIGHT CAPABILITIES

22. BC Hydro seeks Commission approval of its 2018 Capital Filing Guidelines included as Appendix B to BC Hydro’s Revised Proposal pursuant to sections 45-46 and sections 59-61 of the UCA.²

23. BC Hydro expects that their BC Hydro 2018 Guidelines will:

   (i) Promote an effective and efficient review of BC Hydro’s capital expenditures and projects;

   (ii) Clarify the nature of the BCUC’s oversight over BC Hydro’s capital expenditures and projects in revenue requirements applications, major project applications, and compliance reports;

   (iii) Provide guidance to BC Hydro with respect to the information required for revenue requirements applications, when a CPCN is required, and the timing of compliance reports; and

   (iv) Document BC Hydro’s commitment to file section 44.2 applications for major projects that are not extensions.³

24. BC Hydro points out that:

   “The 2018 Capital Filing Guidelines are proposed to be only guidelines and, like other guidelines approved by the BCUC, would not be binding ‘on any party’ under the UCA in the sense that deviation from the guidelines would be impermissible.⁴ BC Hydro notes that the BCUC could deviate from the BC Hydro 2018 Guidelines, which ‘do not bind the Commission’ and that the guidelines would not ‘fetter it discretion’.⁵

25. The CEC submits that the BC Hydro 2018 Guidelines as proposed do not provide a sufficient basis for ongoing capital review in that they do not provide a complete and readily understandable picture of BC Hydro’s capital management and spending over time, do not establish a strong cost benefit analysis as a basis for decision-making, and do not focus on ongoing improvements.

26. The CEC submits that while the Commission has the option to require additional information as circumstances dictate, it would be preferable for the BC Hydro 2018 Guidelines to establish a robust set of information that can be utilized on an ongoing basis.

² Exhibit B-16, BCUC 2.17.1
³ Exhibit B-16, BCUC 2.17.1
⁴ Exhibit B-16, BCUC 2.17.2
⁵ BC Hydro Final Argument page 24
27. BC Hydro summarizes its Revised Proposal at pages 11-20 of its Final Argument.

28. Content of the Revised Guidelines include:

(i) Background on BC Hydro’s capital investments (sections 2 and 3);
(ii) Scope of review in Revenue Requirements Applications (“RRAs”) (section 4);
(iii) Guidelines for Major Projects Applications (section 5);
(iv) Review of Capital Investments that are Part of Programs (section 6);
(v) Review of Projects Linked to Strategies, Plans and Studies (section 7);
(vi) Clarity on Compliance Reporting (section 8); and
(vii) Form and Content of Revenue Requirements and Major Project Filings (section 9).

29. BC Hydro states that the primary mechanism which the BCUC has to review projects on a prospective basis is through major project filings (Certificate of Public Convenience and Necessity (“CPCN”)s and section 44.2 applications) while RRAs are the place to review the balance of capital investments.6

Major Projects Review

30. BC Hydro points out that the proceedings which consider major project applications (CPCNs and section 44.2 applications) for approval or acceptance are usually detailed and complex. BC Hydro considers that it is reasonable and practical for the BCUC to limit its detailed and in-depth public interest review of projects to significant projects which remain within a materiality threshold.7

31. The CEC agrees that detailed and in-depth public reviews of specific projects are appropriately focused on major projects such as CPCNs and section 44.2 applications and can be reasonably constrained by materiality thresholds.

32. The CEC evidence clearly identifies that Commission review of CPCN and section 44.2 applications would benefit from a better understanding of BC Hydro’s context of objectives, strategies, drivers and capital plans.8 The CEC notes that BC Hydro’s focus on its performance in regard to capital is cost-focused and not cost-effectiveness performance-focused.9 The CEC submits that BC Hydro’s strategies are inadequately evaluated from the point of view of assessing costs and benefits thus limiting the

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6 BC Hydro Final Argument page 29
7 BC Hydro Final Argument page 28
8 Exhibit C3-10, Page 56, Para 111
9 Exhibit C3-10, Page 66, Para 171
Commission’s ability to exercise its regulatory oversight role. The CEC notes the importance of a better understanding of the drivers for capital expenditures.

33. The CEC submits that the evidence supports the view that review of these applications would be substantially improved if there was better information available to the Commission on the context for the project reviews, from which the Commission would be better informed to carry out its oversight.

Projects Should be Approved in the Context of a Whole Plan

34. The CEC submits that assessing major projects is best undertaken with a full understanding of the management processes that provide context for a decision, and that this can be completed in a separate process.

35. BC Hydro confirms that understanding of the full context of projects as they become available could be useful in assessing the value of a project when it is ultimately reviewed. BC Hydro states that this is consistent with BC Hydro’s project management and financial practices to provide internal approval in phases as projects develop.

36. Brown and Carpenter consider that examining BC Hydro’s planning processes may be helpful to the BCUC in assessing BC Hydro’s revenue requirements application.

37. The CEC submits that there is agreement that an understanding of processes is important in providing context for decision-making.

RRAs

38. BC Hydro states that for those projects that are not the subject of a major project application the RRA process is the appropriate place for review and testing.

39. BC Hydro is of the view that RRAs provide sufficient information and opportunity for the BCUC to review BC Hydro’s capital investments.

40. BC Hydro submits that Chapter 6 and Appendices I, J and K supplemented as necessary through information obtained through information requests should be adequate for the BCUC to conduct a review for the purposes of setting rates during the test period.

41. The CEC agrees that much of the evidence included in the new RRA can be useful to the Commission in reviewing various components for inclusion in the test period but that it still remains substantially deficient in providing an appropriate understanding of the

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10 Exhibit C3-10, Page 77, Para 222 and 227
11 Exhibit C3-10, Page 68, Para 181
12 Exhibit B-16 CEC 2.13.2
13 Exhibit B-16 Expert Evidence CEC 2.8.3
14 BC Hydro Final Argument page 29
15 BC Hydro Final Argument page 29
information because of a failure to provide quantitative information regarding such items.\(^\text{16}\)

42. In the 2020 RRA, BC Hydro states that a key metric that we use to evaluate our performance in the delivery of capital projects is to compare the actual project costs for in-service projects to the Original Approved Expected Cost, over an aggregated five-year period. On this metric, we perform very well.\(^\text{17}\)

43. Also in the current RRA, BC Hydro states that once the long-term capital investment levels have been established, preliminary financial targets are developed for each of the asset categories. These preliminary financial targets are an input into the bottom-up planning process.

44. Within the common Enterprise Capital Planning process, each asset category uses a bottom-up planning process that is tailored to the characteristics of the portfolio, considering:

- The function, criticality, volume and complexity of the different assets;
- The magnitude of the risks, issues and opportunities;
- The size, scope, complexity and costs of the capital investments; and
- The internal stakeholders that should be involved in the process.\(^\text{18}\)

45. The CEC notes that cost effectiveness or cost benefit analysis are not elements of BC Hydro’s capital planning process as described in the RRA.

46. The CEC submits that comparing the actual project costs for in-service projects to the Original Approved Expected Cost in no way captures the cost effectiveness of the project.

47. The CEC submits that the bottom up planning process is inadequate in that it does not include any cost benefit analysis and the cost effectiveness of the project is not addressed.

48. The CEC submits that the combination of information obtained in the Major Projects review and RRAs does not provide a sufficiently wholistic view of BC Hydro’s capital plans to provide an adequate level of comfort to the BCUC that BC Hydro’s capital spending of billions of dollars over time is being optimized to ensure that public interest and ratepayer impacts are being protected.

\(^{16}\) Exhibit C3-10, Page 77, Para 227

\(^{17}\) 2020 – 2021 RRA, Exhibit B-1, page 6.11, clause 6.2.1.2

\(^{18}\) 2020 – 2021 RRA, Exhibit B-1, page 6.28, clause 6.3.3
49. The CEC submits that a more structured and robust analysis process needs to be provided on an ongoing basis to ensure that the individual parts of BC Hydro’s spending reflect cost-effective strategies and planning processes as a whole.

**Capital Additions vs Expenditures**

50. BC Hydro submits that the BCUC should focus on capital additions rather than capital expenditures in order to ‘promote regulatory efficiency and fairness’. They outline their reasoning in Final Arguments at page 30 which include the risk of changing information, potential for redundancy of review as expenditures will ultimately become additions, and lack of impact on rates.

51. If interveners focussed on capital expenditures, rather than additions, they would be reviewing projects (future capital additions) based on an early stage of project development such that the information on cost, schedule, and scope may be more uncertain and more prone to material changes. Such reviews may therefore be premature, and would not have any impact on the rates for the test period.

52. Further, as projects with capital expenditures in a test period are likely to have capital additions in the next test period, projects would be subject to multiple reviews over successive revenue requirement proceedings.

53. Projects that are not forecast to enter service in a test period may be early in their lifecycle and any information on the projects may be preliminary. The BCUC’s review of such project may therefore be based on information that is incomplete or likely to change. As a result, any comments from the BCUC on such a project may provide limited value.

54. Reviewing capital expenditures does not aid the BCUC in setting rates as capital expenditures do not impact rates. Reviewing capital expenditures would divert focus and attention from issues that are relevant to the setting of rates in the test period.

55. The CEC submits that early review of capital expenditures provides necessary information to the Commission and intervenors that will contribute over time to the continuously improvement of the oversight process.

56. The CEC submits that BCUC review of capital expenditures as they progress to capital additions would not represent an onerous increase in regulatory proceedings.

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19 BC Hydro Final Argument page 30
20 Exhibit B-4, CEC 1.14.3
21 Exhibit B-4, CEC 1.14.3
22 Exhibit B-16, BCUC 2.36.4
23 Exhibit B-16, BCUC 2.36.4
57. The CEC further submits that, rather than diverting focus and attention from issues, reviewing capital expenditures would instead provide valuable information to the BCUC and intervenors. This would be an enhancement of the information currently provided in the RRA process, and would enable continuous improvement of BCUC oversight of BC Hydro’s capital planning processes.

58. The CEC submits that such analysis confines the Commission in its oversight of capital spending inappropriately and to a significant degree.

59. The CEC submits that focusing on capital additions goes directly to rate setting in the period for the revenue requirement application, while other capital expenditures and plans being carried out in the period may have significant impacts on future rates. The CEC submits that the Commission’s scope for review and oversight should cover all aspects of capital so that the Commission has an appropriate context for its regulatory oversight and decision-making responsibilities.

III. CEC EVIDENCE

60. In September 2018, the CEC provided evidence as to its view of appropriate information requirements for the Commission in a document prepared by Mr. David Craig (Exhibit C3-10).

61. Mr. Craig submitted that the role of the BCUC with respect to capital expenditures and investments is to ensure they are cost-effectively deployed and provide full value to ratepayers.

62. Additionally, he pointed out that small improvements in the cost-effectiveness of BC Hydro’s capital can have substantial impacts far outweighing the potential regulatory and other costs that may precipitate improvements.24

63. The CEC notes that over 10 years the total capital expenditures may involve over $220 billion. If the oversight of the BC Hydro cost-effectiveness results in a 1% improvement on $10 billion in expenditures this could be worth $100 million of benefit for each 1% or $10 billion to which it may be applicable.

64. The CEC also intended to promote an understanding of the importance of recognizing the capital consequences of long term and strategic plans and rationalizing these to the capital plans developed for various projects. The CEC’s evidence is that understanding and accounting for the interplay of drivers, strategies and plans is key to successful capital planning and review.

65. The CEC submits that the sizeable nature of the impacts provides an important justification for the Commission to ensure that it is conducting its role of oversight to the highest appropriate level.

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24 Exhibit C3-10 CEC Evidence page 1
There were two parts to Mr. Craig's evidence.

The first part provided the CEC's recommendations to the Commission with respect to information which could be provided by BC Hydro to the Commission to enable improvement of the Commission's Regulatory Oversight of Capital Expenditures and Projects. Mr. Scott Thomson also provided expert evidence with regard to Part I of the evidence (Exhibit C3-11).

Part 1 of the evidence focused on facilitating information that allowed for analysis of cost effectiveness including tracking benefits to costs.

The CEC provided a set of templates for quantitatively representing BC Hydro’s cost effectiveness in managing and planning capital expenditures and investments. These were established as examples of the types of calculations that can be made to achieve this purpose, and were intended to provide a starting point rather than a final solution.

Part II of Mr. Craig's Evidence was intended to provide background to the Commission on the CEC's assessment of BC Hydro's capital management as demonstrated by various regulatory proceedings before the Commission in which capital management issues were considered. The purpose of Part II of the evidence was to provide background which supports the recommended information framework proposed in Part I of Mr. Craig's Evidence.

Mr. Craig and the CEC responded to numerous information requests outlining the content and form of suggested information.

The CEC submits that the evidence provided by Mr. Craig provides a sound objective for information for the Commission to pursue over a period of time in conjunction with BC Hydro.

IV. BC HYDRO IS BUILDING A VALUE-BASED DECISION-MAKING TOOL THE COMMISSION HAS NOT YET SEEN

Value-Based Decision-Making

The CEC’s evidence is all about making decisions about capital expenditures and capital management based on value. The CEC has referred to this as matching the costs to the benefits in quantitative analytical form.

BC Hydro’s Value-Based Decision-Making Approach

BC Hydro states its value-based decision-making approach corresponds to an assessment that provided an evaluation of the overall costs vs. the overall benefits, where the benefits

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25 Exhibit C3-10, Cover Letter
such as dispatchability, risks, timing and location and others are quantified according to a standardized metric for each, but not necessarily assigned a dollar value.\(^\text{26}\)

75. BC Hydro says that this approach, which is currently being developed, is expected to recognize most of the risk-based and financial benefits that are linked to the achievement of BC Hydro’s strategic objectives that can be quantified within reason on a common economic scale.

76. The value-based decision-making approach is being designed under BC Hydro’s Asset Investment Planning Tool project.\(^\text{27}\)

77. BC Hydro is implementing a value-based decision-making approach that will build on their existing capital investment planning processes as part of the Asset Investment Planning tool project. The project will develop and implement an enterprise value framework. Using this tool and the enterprise value framework, the capital portfolio can be optimized by selecting the investments that will bring the highest total net economic value to BC Hydro while satisfying a variety of financial, resource, or timing constraint scenarios. These optimization scenarios will help inform the development of the capital portfolio in the future.\(^\text{28}\)

78. The CEC submits that this is positive evidence that BC Hydro management is engaged internally in an appropriate project with benefits and that this is analogous to the intent of the CEC evidence. The CEC notes the intent of BC Hydro to optimize a capital portfolio.

79. The CEC applauds this effort at BC Hydro and recommends that the Commission also support this effort.

80. There are technical analysis limitations to aggregating benefits at the portfolio level. These include, but are not limited to, the aggregation of benefits of investments with different durations across a multi-year time horizon, benefits that are not defined on a common scale, and varying levels of certainty on project benefits given the various levels of project definition. The Asset Investment Planning Tool project, if implemented, is expected to bridge these technical analysis limitations by providing a common economic scale and allowing us to calculate the present value of the benefits.\(^\text{29}\)

81. The CEC agrees that there are challenges with all of these aspects. This is one of the issues that makes reviewing the current level of information provided to the Commission so difficult, if not impossible, particularly when combined with the lack of quantification. The CEC notes that it is unnecessary to have everything converted to an economic scale but that back analysis of trade-offs is important.

\(^{26}\) Exhibit B-16, CEC 2.11.1  
\(^{27}\) Exhibit B-16, CEC 2.13.6 (also reference BC Hydro’s response to BCUC IR 2.35.3)  
\(^{28}\) Exhibit B-16, CEC 2.19.2  
\(^{29}\) Exhibit B-16, CEC 2.13.6
82. BC Hydro is unable to provide documentation of the value-based decision-making approach until completion of the Implementation Phase. The project name is Asset Investment Planning Tool and it commenced in November 2017. The Implementation Project Plan, as one of the deliverables of the Definition Phase, will have the detailed project scope, a cost estimate range and project schedule. A project plan for completion of the work has not been developed.\textsuperscript{30}

83. BC Hydro says the sponsor of the Asset Investment Planning Tool project is the Senior Vice President, Integrated Planning but does not say who will approve the final decision-making approach. The final decision-making approach is still being developed.\textsuperscript{31}

84. The CEC recommends that the Commission follow up this application with a process of its own to gain a similar understanding of the capital expenditure and management process at this level.

85. BC Hydro says the key objectives for the Asset Investment Planning Tool project include:\textsuperscript{32}

- Improved understanding of the total economic value of investments and determination of the optimal investment timing based on resource and budget constraints;

- Reduction of manual effort required to maintain the ten-year asset investment plan in multiple technology systems and excel files; and

- Enhanced business reporting: a dedicated enterprise solution will enable more consistent portfolio reporting and transparency on the impacts of portfolio-level decisions.

86. The CEC supports these objectives as they represent a significant improvement to BC Hydro’s processes and also represent the very kind of information base the Commission should be building to better its understanding around capital expenditures of BC Hydro.

87. BC Hydro states that with regard to the Asset Investment Planning Tool project, the BCUC has not been consulted or provided input into the framework design, and that the value framework, if approved, will be an internal framework to guide capital planning decisions.\textsuperscript{33} BC Hydro says that the Government of BC has also not been involved in or provided input to the project.\textsuperscript{34}

\textsuperscript{30} Exhibit B-16, CEC 2.19.4, 2.19.4.1, 2.19.4.4

\textsuperscript{31} Exhibit B-16, CEC 2.19.4.6

\textsuperscript{32} Exhibit B-16, CEC 2.19.4.7

\textsuperscript{33} Exhibit B-16, CEC 2.19.4.8

\textsuperscript{34} Exhibit B-16, CEC 2.19.4.9
88. The results of the Asset Investment Planning Tool project are not included in the Capital Guidelines. The Asset Investment Planning Tool project is currently in the Definition Phase.\textsuperscript{35}

89. The CEC suggest that if BC Hydro does not want to consult with the Commission about information requirements, then the Commission should pursue defining its own information requirements to support its understanding of the business related to capital. Eventually, the Commission should support BC Hydro providing information related to this initiative as referenced in the Capital Review Guidelines after the Commission is satisfied with the information base.

90. While BC Hydro with all of its resources has had 2 years to work on this project, the CEC had a very limited time to propose a framework. The CEC did not suggest that it had a final answer or framework but did recommend that the Commission engage BC Hydro to work toward a suitable framework for supporting Commission regulatory oversight.

V. CEC EVIDENCE ON CAPITAL PLANNING DEMONSTRATED THIS IS IMPORTANT INFORMATION FOR THE COMMISSION

Capital Planning

91. When asked if identification of trends in its capital planning processes, which suggested either improvements or deterioration of project values over time, would be useful to BC Hydro, BC Hydro states that trends in project values within the overall capital plan are limited in their usefulness because projects are evaluated and approved on a standalone basis.\textsuperscript{36}

92. The CEC contends that BC Hydro’s projects are approved on the basis of cost effectiveness and that information on declining value over time would be relevant to the Commission in assessing priorities. The argument that because projects are approved on a stand-alone basis is flawed as is the rejection of “change in value” being potentially relevant.

93. BC Hydro confirms that understanding of the full context of projects as they become available could be useful in assessing the value of a project when it is ultimately reviewed. BC Hydro states that this is consistent with BC Hydro’s project management and financial practices to provide internal approval in phases as projects develop.\textsuperscript{37}

94. The CEC submits that this is a more appropriate answer and shows the importance to value in understanding the staging of projects.

\textsuperscript{35} Exhibit B-16, CEC 2.19.4.10
\textsuperscript{36} Exhibit B-16, CEC 2.13.1
\textsuperscript{37} Exhibit B-16, CEC 2.13.2
When BC Hydro does long-term resource planning, and particularly when it is assessing rate impacts, it does not do so with a long-term capital plan underlying the plans. BC Hydro typically estimates the difference in rate impacts between alternative portfolios instead of estimating the absolute rate impact of each portfolio. The rate impact difference could include differences in capital expenditures, but does not rely on a specific long-term capital plan underlying the plans.\textsuperscript{38}

The CEC notes that the long-term resource planning at BC Hydro does include assessment of major capital requirements and scenarios for such have also been shown. The long-term resource planning contains contingency planning for major components of the overall system.

BC Hydro does not use a 10-year capital plan and consequent rates as an input to capital planning. BC Hydro states the 10-year capital plan is an output of the capital planning process. BC Hydro’s Executive Team provides direction on long-term capital investment levels, which are established considering the balance of affordability (including long-term rate projections), system performance and the need to continue to safely manage assets. This direction is one of the many inputs into the bottom-up planning step of BC Hydro’s capital planning process.\textsuperscript{39}

The CEC submits that this evidence supports the contention that is well known: BC Hydro has had a long term (10-year) rates plan and that this and prior capital plans are indeed input to the bottom-up planning as the BC Hydro diagram the CEC relied on in its evidence shows.

BC Hydro includes information on the Capital Plan on RRA in the form of a briefing note. BC Hydro does not file long-term capital plans as part of other regulated processes.\textsuperscript{40}

Brown and Carpenter would likely agree that that the level of capital expenditure is likely to influence rates, subject to BCUC approval and the potential for prudence review/disallowance.\textsuperscript{41}

The CEC submits that this is an appropriate assessment, which gives rise to the importance of the Commission building a more robust understanding of the capital expenditures, capital plans and capital management at BC Hydro.

\textsuperscript{38} Exhibit B-16, CEC 2.13.3  
\textsuperscript{39} Exhibit B-16, CEC 2.13.4  
\textsuperscript{40} Exhibit B-16, CEC 2.13.5  
\textsuperscript{41} Exhibit B-16, Expert Evidence Response to CEC 2.5.2
VI. BC HYDRO EFFORTS TO OPTIMIZE CAPITAL INVESTMENT & PORTFOLIO

Evaluation of Capital Planning Portfolio and Processes

102. BC Hydro declined to directly answer the question “How can the Commission determine if the capital portfolio is ‘optimized’?”

103. Instead, a lengthy answer was provided including the statement that the capital planning process is best assessed through the ongoing achievement of BC Hydro’s Service Plan targets such as SAIFI and SAIDI, demonstrating continuous improvements to the capital planning process and its governance, as well as third party evaluation of our asset management practices.

104. The CEC notes that the Service Plan targets, relate primarily to various safety and reliability targets, affordability, and conservation and have only limited relationship to an assessment of the appropriateness of the overall capital plan.

105. The CEC submits that a review of capital planning by the Commission should not only assess the achievement of targets, but also assess the validity of the targets themselves.

106. BC Hydro’s Executive Team provides direction on long-term capital investment levels, which are established considering the balance of affordability (including long-term rate projections), system performance and the need to continue to safely manage assets. BC Hydro states that this direction is one of the many inputs into the bottom-up planning step of BC Hydro’s capital planning process.

107. BC Hydro does not use a 10-year capital plan and consequent rates as an input to capital planning. BC Hydro states the 10-year capital plan is an output of the capital planning process.

108. The CEC submits that BC Hydro’s approach does not ‘optimize’ the value of the capital portfolio as whole where long term planning is used to maximize the benefits of capital expenditures in the form of optimized long-term plans and strategies, and optimized strategies are then translated into optimized projects.

109. Rather, BC Hydro’s approach relies on the selection of a project that best meets a long-term plan or strategy, where that long-term plan or strategy may or may not optimize the value of capital spending.

110. The CEC submits that BC Hydro is likely working to optimize its long-term planning and strategic decisions and target-setting, however it is important that the Commission is able to reassure itself of this optimization in order to fully understand and endorse the value of the planning.
111. The CEC submits that under the current guidelines the Commission is unable to determine if the long-term planning and strategies are optimized, and if the plans are appropriately rationalized and optimized for those strategies.

**Capital Investment & Portfolio Optimization**

112. BC Hydro has demonstrated consistent and ongoing efforts to improve asset management and capital planning processes including the portfolio optimization function. BC Hydro has developed an enterprise-wide framework for prioritization and established a dedicated Enterprise Capital Planning Working Group with associated review and governance of the process. Within the Integrated Planning Business Group, BC Hydro has established the Portfolio Optimization and Management Department to ensure the consistent coordination and prioritization of the power system capital portfolio which makes up approximately 90 per cent of BC Hydro’s capital portfolio. BC Hydro is also continuing to improve its capital planning process through the Asset Investment Planning tool project.  

113. The CEC acknowledges that these developments are promising and that the Commission should take the opportunity to better understand the information and decision processes in these emerging developments.

114. BC Hydro believes it is necessary to consider the following in optimizing the capital portfolio:

- Comparison of a diverse set of investment benefits that are calibrated to BC Hydro’s strategic objectives on a common economic scale for all types of assets owned and operated by BC Hydro.

- Understanding how the benefits change over time and defining the optimal timing for investments.

- Factoring financial, labour resource and system operation constraints.

115. The CEC agrees with BC Hydro’s considerations for optimizing a capital portfolio.

116. BC Hydro is implementing a value-based decision-making approach. Using this tool and the enterprise value framework, the capital portfolio can be optimized by selecting the investments that will bring the highest total net economic value to BC Hydro while satisfying a variety of financial, resource, or timing constraint scenarios. These optimization scenarios will help inform the development of the capital portfolio in the future.

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42 Exhibit B-16, CEC 2.17.2
43 Exhibit B-16, CEC 2.19.1 (also refer to BC Hydro’s response to BCUC IR 2.35.3.2)
44 Exhibit B-16, CEC 2.19.2
117. The CEC submits that this is a critical development which the Commission should encourage and around which the Commission should seek BC Hydro’s cooperation in providing Commission information requirements.

118. BC Hydro states capital portfolio optimization must take changes in investment value over time into consideration when selecting investments that will bring the highest total net economic value to BC Hydro over time while meeting a variety of constraints. Risk-based investments in the portfolio address reliability risk due to asset condition degradation with time and use and the risk of asset failure increases. The investment value changes over time as the risk of asset failure increases as the asset gets closer to end of life.

119. There are investments with a primary driver to meet federal environmental regulation compliance or reliability standards in the capital portfolio, which typically have certain deadlines and the risk of non-compliance will increase over time as the deadline approaches. Investment values change over time due to the dynamic nature of customer needs such as housing starts, industrial activity, and to technology driven needs such as electric vehicle charging.\(^{45}\)

120. The CEC submits that this evidence underscores the levels of detail at which capital portfolio optimization takes place. The CEC submits that the Commission does not, and cannot, insert itself into the BC Hydro decision making, however, the Commission should have sufficient information to understand it and assess its cost-effectiveness performance.

**Capital Investment Analysis Guide**

121. BC Hydro has provided its 2018 Capital Investment Analysis Guide as an attachment.\(^{46}\) This purportedly relates to the value-based decision-making process and the prioritization framework.

122. The methodology described in this Guide is based on the notion that investments are either primarily risk-driven, or value-driven. Risk-driven investments are scored by assessing the negative impact of deferral, while value-driven investments are scored by assessing the positive impact of proceeding.

123. Value-driven investments have two categories of benefits:

   a) Economic benefits such as cost reductions, increased efficiency, avoided future costs, and increased/realized revenue.

   b) Qualitative benefits such as alignment to business goals, increased capacity, improved service quality, improved brand or reputation, improved employee engagement, stronger external relationships and improved operational flexibility.

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45 Exhibit B-16, CEC 2.19.3
46 Exhibit B-16, CEC 2.19.4.3.
124. A value assessment score is to be calculated that provides a measure of financial return on investment. However, there is no further discussion of how this score will be used in the decision-making process.47

Value Scoring: This assessment estimates internal financial benefit per dollar spent, based upon net present value (“NPV”).

Value Score = NPV / Upfront Cost; where.

NPV = Present value of hard benefits plus 25% of soft benefits less upfront and ongoing costs.

Hard benefits: Cost savings or avoidance, or revenue improvements, with relatively certain, direct and positive impact on cash flows.

Soft benefits: All other internal economic benefits. These are typically less certain and/or less quantifiable benefits, such as productivity gains, non-labour efficiency gains, avoided costs, performance improvements, and reputational gains.

125. BC Hydro worked with Copperleaf Technologies Inc. to develop the value framework.48

126. The CEC is supportive of the concepts but finds the guide itself at an early stage of development and deficient for the purposes of Commission information from which to build an understanding of these processes. There is little to no emphasis in the document on what may be “cost-effective” and on “Value-based decision-making”. There are little to no references to quantitative considerations in decision-making and little references to cost and benefit methodologies for analysis, notwithstanding the NPV discussion. The CEC submits that weaknesses in BC Hydro exist at the level of proper assessment of the data it uses. There are also few if any references to investigation of and evaluation of alternative solutions.

VII. BC HYDRO DOES NOT CURRENTLY ADDRESS THE COST-EFFECTIVENESS OF STRATEGIES & PLANS

Asset Management Strategy

127. BC Hydro says the strategies in Appendix K do not address, and were not intended to address, all of BC Hydro’s existing and future requirements. The Commission can therefore determine that the strategies listed are not comprehensive in addressing BC Hydro’s existing and future requirements.49

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47 Exhibit B-16, CEC 2.19.4.3
48 Exhibit B-16, CEC 2.19.4.5
49 Exhibit B-16, CEC 2.20.1
128. Instead, BC Hydro provides examples of the maturity of its asset management system and performance results.

129. When asked how the Commission can determine the likely cost of the various strategies (such as penstock coating and street lighting) and the importance of the issue identified, BC Hydro responded that supporting strategies, plans and studies typically do not include cost benefit analysis. BC Hydro indicated detailed assessment of cost effectiveness or comparison of cost to benefit is done for individual projects/programs and that is where the BCUC has an opportunity to review the likely cost and the importance of the issue identified.\(^{50}\)

130. BC Hydro would not explain how the Commission can determine whether or not the strategies or ‘solutions’ are the most cost-effective approach vs other strategies it may have considered and discarded for each issue.\(^{51}\) As noted above, BC Hydro says, the Commission can best evaluate the success of BC Hydro strategies by the Service Plan metrics as reported in the Annual Report to the BCUC and the Service Plan filed with the F2020 - F2021 RRA.\(^{52}\)

131. The CEC submits that the Commission should reject BC Hydro’s notion that the Commission’s understanding of BC Hydro should be limited to assessing the Service Plan. The assessment of strategies is a critically important stage of capital asset management. The CEC submits that it is appropriate that a quantitative understanding of BC Hydro strategies be available to the Commission so that it may assess prudence.

132. BC Hydro agrees that the strategies listed (such as penstock coating and street lighting) are generally related to condition/sustainment and risk mitigation.\(^{53}\)

133. In answer to a question about how the Commission can understand the total value of the strategies, such as how long the life extension for the penstock may be and how long the coating is expected to last, BC Hydro stated that the utility does not calculate a value for its strategies, and any alternative evaluation would be undertaken at the project level. If the BCUC has an interest in a specific aspect of a strategy such as the length of life extension for a penstock coating, it would be provided on request.\(^{54}\)

134. As examples of initiatives identified in the RRA Fiscal 2020 – Fiscal 2021, over the next ten years, Fiscal 2020 through Fiscal 2029, BC Hydro anticipates completing nine penstock coating projects. Further, once the street lighting project commences implementation, the plan is to replace approximately 95,000 street lights.\(^{55}\)

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\(^{50}\) Exhibit B-16, CEC 2.20.2  
\(^{51}\) Exhibit B-16, CEC 2.20.3  
\(^{52}\) Exhibit B-16, CEC 2.20.4  
\(^{53}\) Exhibit B-16, CEC 2.20.5  
\(^{54}\) Exhibit B-16, CEC 2.20.6 and CEC 2.20.8  
\(^{55}\) Exhibit B-16, CEC 2.20.7
135. The CEC submits that this evidence, selected on just a few examples, demonstrates that a few questions can begin to quantify the strategy and a few more estimates would enable quantitative understanding of the potential of these strategies and enable important questions about alternatives to be reviewed as part of the Commission’s oversight. The fact that BC Hydro does not assess any of its strategies should give the Commission pause for concern. The CEC submits that this is an area where the Commission can significantly benefit its oversight role by developing an understanding of this key stage of capital management.

136. BC Hydro would not confirm that it has conducted significant quantitative analysis regarding the approximately 30 plans included in Appendix K of the F2020 - F2021 RRA. BC Hydro states that it conducts quantitative analysis in the development of its facility and station asset plans when possible. However, given the long-term nature of the plans and the associated large degree of uncertainty, much of the analysis will be inherently qualitative.56

137. The CEC understands that uncertainty exists at the time of setting strategies and plans but does not understand that this is an appropriate reason for failing to make quantitative estimates for planning purposes. BC Hydro has established the management of these processes but the Commission is not constrained from informing itself about the utility and should seek to inform itself through its powers of inquiry so that it is better able to discharge its regulatory responsibilities.

138. BC Hydro states it does not maintain a record of the relationship between strategies and plans. The linkage between strategies and plans is complex, and in many cases, there is not a one to one relationship between a strategy and plan.57

139. BC Hydro further states “Given that we have a significant number of strategies and plans, and hundreds of projects and programs in various stages of their lifecycles, we do not believe that presenting this information in this format would provide meaningful insight to the BCUC into the overall performance of the investment portfolio.”

140. The CEC submits that the Commission should consider, given this answer, whether or not BC Hydro can ensure that strategies and plans are being followed when BC Hydro comes to initiating projects and programs if there is not disciplined connection between these strategies and plans with the projects and programs. While BC Hydro can and does have views on what might be meaningful to the Commission in building its understanding of BC Hydro’s asset management and capital expenditures, the CEC submits that the Commission should have a greater understanding of this information if it is going to effectively carry out its regulatory responsibilities and oversight.

141. BC Hydro states it does not prioritize the facility and substation asset plans contained in Appendix K versus each other and against other spending requirements. In BC Hydro’s view, the primary purpose of strategies, plans and studies is to document the

56 Exhibit B-16, CEC 2.21.1
57 Exhibit B-16, CEC 2.21.2
identification of system needs and risks which allows us to coordinate and optimize the development of the power system over a long time frame. The prioritization of investments resulting from the plans is done at the individual project level through the annual enterprise wide, capital planning process.58

5 Year Plan - IT

142. The CEC submits BC Hydro did not provide a meaningful explanation of how the Commission can evaluate the cost-effectiveness of BC Hydro’s Technology strategies, and whether or not they optimize the benefits/costs when compared to alternative strategies. BC Hydro indicates the Technology Strategy and 5-Year Plan provides high-level guidance and direction on technology investments. BC Hydro does not make investment decisions based on the Technology Strategy and 5-Year Plan because launching an initiative in the metrics BC Hydro uses to compare financial benefits to costs include cost savings, incremental revenue realization, reduced energy theft, reduced bad debt, and avoided costs. The metrics BC Hydro used to qualitatively compare non-financial benefits to costs include, for example, labour efficiencies, risk score and customer satisfaction index. BC Hydro uses a combination of these benefits to make quantitative and qualitative comparisons to costs.59

143. BC Hydro provided metrics from the RRA re: performance of IT systems, services and vendors.60

144. BC Hydro states that it has developed a benefits realization process for technology investments, but is unable to provide the process metrics because the benefits realization process is still in pilot stage and BC Hydro has not developed any “process metrics”.61

145. The CEC finds the lack of metrics in the IT area to be inadequate reflecting an inability to provide information because the process is in a state of early development.

Scorecards and Metrics

146. BC Hydro does not confirm that optimizing the total end benefits vs the total end cost, subject to constraints and risk management, is an appropriate definition of delivering the ‘greatest business value’? BC Hydro generally considers “greatest business value” as a portfolio of investments that will bring the highest overall net value to the organization less the costs of the investment.62

147. The CEC has no concern with BC Hydro’s definition and notes that the options presented are effectively similar, total or portfolio level optimization.

58 Exhibit B-16, CEC 2.21.3
59 Exhibit B-16, CEC 2.22.3
60 Exhibit B-16, CEC 2.22.4 & CEC IR 1.61.1
61 Exhibit B-16, CEC 2.23.2
62 Exhibit B-16, CEC 2.14.1
148. BC Hydro’s Business Impact Analysis is forward looking and uses very general metrics for projects greater than $5 million.\textsuperscript{63}

- Reliability;
- Financial;
- Constructability;
- Environmental;
- Safety; and
- Support of Stakeholders, First Nations.

149. BC Hydro says that Business Impact Analyses are reported to the Commission in the F2020 - F2021 RRA and major project filings.\textsuperscript{64}

150. The CEC agrees high level general metrics are acceptable for limited broad purpose statements but are inadequate for the task of assessing the cost effectiveness of the optimization of BC Hydro’s Capital Portfolio over time.

151. BC Hydro has provided ten pages of a comprehensive list of performance metrics for the F2020 - F2021 RRA.\textsuperscript{65}

152. The CEC has reviewed these performance metrics and understands them to be at a potentially useful level to assess management of costs and benefits. More detail is necessary to see these metrics used in a systematic assessment. The CEC submits that this evidence is at a similar level to that being proposed as a starting place by the CEC in its evidence. The CEC submits that the Commission can progress toward better information for understanding its oversight of capital for BC Hydro if it sets out a project to cooperatively work with BC Hydro to better define its appropriate information requirements.

VIII. CEC PROPOSES AN ONGOING ANNUAL PROCESS TO UPGRADE COMMISSION OVERSIGHT INFORMATION

Annual Filing

153. The CEC evidence proposes that BC Hydro file capital cost information in an annual filing that would provide a repository of performance information over time.

\textsuperscript{63} Exhibit B-16, CEC 2.14.4
\textsuperscript{64} Exhibit B-16, CEC 2.14.5
\textsuperscript{65} Exhibit B-16, CEC 2.15.4
The CEC proposes that the form of filing be a compliance filing providing Commission defined oversight information requirements.

The CEC proposes that the content of the filing include:

a) Specific reports on the main drivers of capital expenditures, being load forecast information, asset condition, performance and life expectancy information, safety and security risk profile information, and stakeholder interest information.

b) Any strategy papers that are relevant to how BC Hydro manages response to the drivers.

c) Capital plan information with regard to the portfolio of capital expenditures and investments required for the portfolio of assets being managed, which can progressively develop to include cost-effectiveness information, as developed in stages following discussion of the CEC proposed definitions, along with the cost information.

d) Business case information using sampling to identify potential issues efficiently and effectively and then specific case filings where the Commission, through oversight, believes closer examination should be made.

e) Project completion reports, and post-implementation reporting for tracking benefit realization accountability in support of Commission decision-making in its approval processes.

The CEC would propose that the timing for these filings be annual for ensuring that the Commission is properly informed about the context in which its approval hearings and processes take place.

The CEC outlines several essential components in its response to BCUC 1.7 series (Exhibit C3-13, BCUC 1.7.1-1.7.7).

The CEC provides examples of its recommendations and supporting evidence in the evidence filed by Mr. Craig and in the responses filed to BCUC, BC Hydro and Intervener IRs.

The CEC believes that the BCUC review process for oversight of capital expenditure and capital investment cost-effectiveness would be best carried out on an annual review basis, because the capital process in BC Hydro is an annual rolling forward process.

If the BCUC tracks the BC Hydro process then it will be more cost-efficient for updates and focus on improvements to the oversight information to become a continuous process building a permanent repository of capital oversight information which can be used to

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66 Exhibit C3-13, BCUC 1.1
67 Exhibit C3-13, BCUC 1.1.1
inform any of the BCUC’s approval processes without the need for BC Hydro to package subsets of materials, for an RRA filing for instance.\textsuperscript{68}

161. BC Hydro argues that the addition of an annual filing does not change the fact that at any one time they will have a significant number of strategies and plans, and hundreds of projects and programs in various stages of their lifecycle. Filing annually will not give the Commission any ‘earlier’ look at strategies, plans, projects or programs or allow the Commission to make more proactive decisions. It would at best give the Commission more ‘frequent’ looks but any attempt at decision-making is limited by the early stage of planning.\textsuperscript{69}

162. The CEC notes that BC Hydro’s argument has a logical tautology, effectively saying that at any particular date the decision-making is limited by the early stage of planning, which obviously applies to its RRA filings which are also made at a point in time.

163. The CEC’s proposition is that the Commission’s understanding of the context for its regulatory oversight role for rates and capital spending approvals can be better informed if the Commission develops a better understanding of the relevant information. This better understanding is built upon obtaining better information and understanding about the developing strategies, plans, projects and programs over time. This better understanding becomes applicable at any time the Commission is exercising its jurisdiction.

164. The CEC’s contention is that if the Commission keeps itself better informed under its section 24 obligations it will be in a better position to discharge its regulatory decision making.

**Trial**

165. The CEC considered five strategic approaches to setting or staging priorities based on the type of cost-effectiveness improvement focus as outlined in CEC Response to BCUC 1.4.

166. The CEC would recommend focusing on an ease of development first (IT&C, Properties, Fleet) followed by selective development of particular cost-effectiveness metric information focused on key financial benefit opportunities (Generation) and finally on risk issues (T&D) and stakeholder issues. In each case, the priority of which metrics to work on first in each group should be defined as well so as to take on the development of Commission oversight information in an orderly process that need not be onerous on BC Hydro’s continuing management and would be part of a continuous improvement process.\textsuperscript{70}

\textsuperscript{68} Exhibit C3-13, BCUC 1.1.1  
\textsuperscript{69} BC Hydro Final Argument page 71  
\textsuperscript{70} Exhibit C3-3, BCUC 1.1.4
Capital Filing Guidelines Changes

167. In CEC’s response to BCUC 1.2.4 the CEC recommends areas for upgrading in BC Hydro’s Capital Filing Guidelines, a condensed version follows:

a) A chapter on the Nature of the Benefits Related to BC Hydro’s Capital Expenditures.
   - Each group within BC providing its understanding of the benefits of the capital expenditures it makes, the issues the capital expenditures can address, available metrics for assessing the benefits and relating them to the capital expenditures involved.

b) A chapter on Clarity About What Constitutes Significant Decisions Regarding Capital Investments.
   - Information about the significance of the drivers for capital expenditures and their validity, strategies with regard to capital expenditures as key financial decisions, benefits versus alternatives, performance assessment of capital planning, the cost-effectiveness of those plans and metrics.

c) A chapter on the Continuous Improvement of the Oversight Information Available to the Commission.
   - BC Hydro commitment to continuous improvement of the Commission’s oversight information, define and make improvements to the provisioning of information, schedule of stages and work on improvements to oversight information, specific definition of an ongoing annual compliance filing to improve the repository of information the Commission can use.

   - Project completion report filings for major projects capital expenditure, follow up reports on capital plans and projects to evaluate the ongoing capture and realization of the benefits, internal group reports assessing lessons from the capital expenditures and future improvements, internal audit reports on aspects of capital expenditure and investment management.

168. The CEC believes that such improvements to the guidelines could result in more effective Commission oversight information being available for the Commission’s approval roles under the UCA.

169. The CEC submits that these would be useful additions to the Capital Filing Guidelines.
IX. COLLECTION OF INFORMATION BY THE COMMISSION

170. In its Capital Guidelines Revised proposal BC Hydro states that:

“The UCA provides the Commission with a number of mechanisms to oversee BC Hydro’s capital investments. The key mechanisms available to the Commission are:

i. requiring BC Hydro to obtain a CPCN for extensions;

ii. reviewing BC Hydro’s applications for acceptance of capital expenditure schedules under section 44.2 of the Act;

iii. revenue requirements proceedings; and,

iv. Compliance filings, including BC Hydro’s Annual Report to the Commission.”

171. The CEC submits that the Commission has jurisdiction to avail itself of information it deems necessary to oversee the effectiveness of BC Hydro’s capital spending. The CEC submits that the decision of the British Columbia Court of Appeal British Columbia Hydro and Power Authority v. British Columbia Utilities Commission, 1996 CanLii 3048 (BCCA) has no relevance to the CEC proposals as the UCA specifically empowers the Commission to seek the type of information proposed by the CEC. Further, BC Hydro acknowledges they already can or will provide such information if requested.

172. The Court in that decision was dealing with a proposal to establish a committee consisting of interveners who would guide the BC Hydro IRP.71 Despite the Commission’s counsel in that proceeding attempting to characterize the Commission’s actions as information-seeking,72 the Court of Appeal found that directing the formation of a committee – and dictating its membership – went beyond information gathering. The CEC would agree with that finding.

173. However, the CEC submits that just because certain actions characterized as information gathering were found not to be in the Commission’s jurisdiction by the Court of Appeal in one proceeding, that finding should not stand for the proposition that all actions characterized as information gathering are beyond the Commission’s authority. There is a marked difference between a dictated proposed committee having direct input into IRP development and asking the utility to provide information in the type suggested by the CEC. As such, the decision has limited relevance to the proceedings at hand.

174. In the CEC’s response to a BCUC question regarding the Commission’s authority to review BC Hydro’s business cases, the CEC made the following reply:

“The Commission has the mandate and requirement to inform itself with regard to BC Hydro’s conduct and functioning. (UCA Section 24). The Commission has the


72 Ibid at para 19.
jurisdiction to define its processes with respect to any hearing it may be required to hold
and may specify the rules and processes for the hearing and the form and content of
materials it requires to be presented. (UCA Section 86.2). The Commission may on its
own motion inquire into anything upon which it may be empowered to conduct a hearing
or inquiry based on application or complaint. (UCA Section 82.1). The Commission has
an explicit mandate and requirement to review all information that it considers proper and
relevant and may use any formula it finds appropriate as part of setting BC Hydro’s rates
and encouraging BC Hydro’s enhanced performance. (UCA Section 60.1)

The CEC acknowledges there are constraints on the Commission’s jurisdiction from
directives issued by the LGIC or the courts. The Commission may inquire into what it
finds relevant and can require information it believes it needs and can use formulas based
on cost-effectiveness metrics to incent BC Hydro improve and enhance its performance
increasing benefits per dollar and reducing costs per level of benefit.

The CEC believes that the Commission’s oversight of BC Hydro’s capital can be
improved and that its improvement will bring demonstrable benefits for BC Hydro, BC
Hydro’s ratepayers and the broad public interest.73

175. BC Hydro confirms that the Commission has the authority to direct BC Hydro to provide
all the information it deems necessary in order to conduct its oversight, but argues that it
is not permissible to use the BCUC power to ‘gather information to interfere with the
management of the utility’.74

176. BC Hydro would not confirm that there is anything in the UCA which proscribes certain
forms of questions or the specifics of any information the Commission is permitted to
collect.75

177. BC Hydro states that under the UCA the information that the BCUC is permitted to
collect is limited in that it cannot be used to direct the management decision making
process at BC Hydro.76

178. The CEC submits that the collection of the information and use by the Commission in
evaluation does not equate to directing the management decision-making process.

179. As noted, BC Hydro states that it already files the “types of information” Mr. Craig
lists.77

180. BC Hydro confirms that it retains records containing performance information used to
monitor performance (and where appropriate inform management decisions) to manage
the company and capital investments, and to respond to questions from the BCUC.78

73 Exhibit C3-13, BCUC 1.10.1
74 Exhibit B-16, CEC 2.3.1
75 Exhibit B-16, CEC 2.3.2
76 Exhibit B-16 CEC 2.3.2
77 Exhibit B-16, BCOAPO 2.30.1
78 Exhibit B-16 CEC 2.4.5
181. BC Hydro states that it does not generate the detailed information requirements that Mr. Craig proposes be codified. For instance, (they) provide information on the drivers of (their) capital spending, but (they) do not have the detailed spreadsheets attempting to quantify cost-effectiveness of drivers of capital in the manner that Mr. Craig proposes. BC Hydro believes that Mr. Craig’s proposal represents an inferior approach to managing capital, and that his information requirements, in substance, seek to dictate to BC Hydro how it should be managing its capital.79

182. BC Hydro also states that if information the BCUC requires is coupled with the threat that expenditures be disallowed if they are not deemed cost effective then management could be forced to make business decisions based on that information.80

183. The CEC submits that requesting information, particularly that already available to the utility, in a particular format does not ‘interfere with the management of the utility,’ nor imply threats to the utility. Rather, it allows the BCUC to properly assess the capital decisions made by the utility under their own management processes.

184. The CEC considers that collecting information in a format which can be readily interpreted and rationalizing that information in a manner which demonstrates the rationale behind key capital spending is important to an ongoing understanding and evaluation of the utility capital decision-making processes.

185. The CEC submits that the BCUC should be focused on working with BC Hydro and interveners to arrive at clear understandings for the description of the Commission’s oversight cost-effectiveness information to be filed. The Commission can exercise its authority and jurisdiction under the UCA to require information it believes necessary to inform itself to support is primary approval rate setting, CPCN and section 44.2 approval roles.81

186. The CEC believes that the Commission can start with the metrics BC Hydro has provided in response to questions in its ongoing RRA and or the metrics the CEC has laid out, rationalize the information it would find beneficial and then progress toward continuous improvement on what has been provided by the parties.

X. COST EFFECTIVENESS EVALUATION CRITICAL TO COMMISSION OVERSIGHT RESPONSIBILITY

187. The CEC is of the view that a primary guiding principle for the information to be obtained with respect to the Commission’s regulatory oversight of capital should be to understand the cost-effectiveness of capital expenditures and investments.

79 Exhibit B-16, BCOAPO 2.30.1
80 Exhibit B-16 CEC 2.3.3
81 Exhibit C3-13, BCUC 1.1.2
188. The CEC submits that in order to understand the cost effectiveness of capital expenditures, two key components of information are required – costs and benefits.\(^{82}\)

189. In section 4.2 of its rebuttal evidence, BC Hydro states that its definition of cost effectiveness aligns with its understanding of the Commission’s use and definition of the term as referenced in a number of Decisions. BC Hydro refers to its understanding of the Commission’s use of the term “cost effective” and that it considers not just the economic cost of a capital investment but also the non-quantifiable or non-economic considerations\(^{83}\) such as safety and environmental risks.\(^{84}\) BC Hydro makes reference to a Commission Panel distinction between cost-effective and least cost.\(^{85}\)

190. BC Hydro considers that its projects, such as risk-based or IT projects, are assessed in alignment with the Commission’s use of the term “cost-effective” which considers both quantifiable and non-quantifiable factors.\(^{86}\)

191. BC Hydro confirms that many projects are not necessarily justified on a quantitative cost/benefit analysis, such that verifiable quantitative benefits exceed the anticipated costs.\(^{87}\)

192. BC Hydro also confirmed that comparing the actual project cost to the original project cost does not provide any assessment of the success of the project in realizing benefits or its ultimate cost-effectiveness. BC Hydro acknowledged that the assessment of the success of a project in realizing benefits or its cost-effectiveness requires more than comparing the actual project cost to the original project cost.\(^{88}\)

193. The CEC submits that the Commission’s use and definition of cost effectiveness, as discussed, in no way precludes quantifiable cost and benefit analysis. The CEC further submits that quantifiable cost and benefit analysis is in alignment with the Commission’s use and definition of the term cost-effectiveness.

194. Brown and Carpenter consider that in order to assess cost-effectiveness in the context of a section 44.2 or CPCN application, the BCUC would need reliable information on anticipated costs and benefits. Furthermore, they state that the BCUC might want to assess the prudence of a utility’s decision to continue with an approved project, rather than delaying or re-designing the project, if circumstances changed in a way that made the project less cost-effective. Such an assessment would not use hindsight but would rely on the information available to utility management at the time the decision being assessed was made.\(^{89}\)

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\(^{82}\) Exhibit C3-10, Page 3, Para 13
\(^{83}\) Exhibit B-15, section 4.2, A16
\(^{84}\) Exhibit B-16, CEC 2.9.2
\(^{85}\) Exhibit B-15, section 4.2, A16
\(^{86}\) Exhibit B-16, CEC IR 2.8.1
\(^{87}\) Exhibit B-16, CEC IR 2.8.1
\(^{88}\) Exhibit B-16, CEC IR 2.8.1
\(^{89}\) Exhibit B-16 Expert Evidence CEC 2.2.2

{01361729.1}
Brown and Carpenter agree that projects should not be undertaken if the benefits of the project are less than the costs. However, they also consider that there will be many projects for which it will not be necessary to estimate absolute benefits in a formal sense. For example, if there is a need to upgrade the system in order to continue to provide safe and reliable service to a group of customers, doing nothing will not be an option. It may therefore only be necessary to estimate costs and benefits of options in a relative sense.  

The CEC notes that Brown and Carpenter, in the example of need to upgrade, should not exclude “doing nothing” from analysis, particularly for timing of an upgrade and depending upon potential operating alternatives which may provide timing options.

The CEC agrees that quantification of benefits may seem less necessary at times and submits it is reasonable for BC Hydro to provide estimates, including quantitative estimates of benefits where necessary. The CEC pointed out in its response to BCUC 1.2.2 that nearly all intangible or unknown metrics have methodologies through which it is possible to have useful information. Tracking such estimates and realization of benefits over time can provide the Commission and BC Hydro with important information in understanding how benefits are realized and whether or not estimating may need to be improved upon.

Benefits Realization

The CEC submits that benefits realization and tracking are key elements of evaluating cost-effectiveness, and are not well addressed by BC Hydro’s planning guidelines.

The CEC submits that additional benefits quantification and tracking over time would be beneficial to the Commission.

BC Hydro states that impacts and benefits realization are documented for capital projects or initiatives greater than $20 million. This is to establish project objectives, which are used to evaluate the project upon completion. Impacts and benefits realization will be reported in the Project Completion and Evaluation Report (“PCER”) at project completion for evaluation of the actual impacts and benefits compared to baseline and forecast values.

In response to a question about how the Commission can assess the value of completed projects against the values anticipated in the original project applications in projects in which there is no benefits realization process, BC Hydro states an impacts and benefits realization evaluation is not required in the PCER for projects less than $20 million. The PCER would provide the information to review the project’s objectives, implementation, and deliverables. The PCER can be provided on request in a RRA proceeding.

90 Exhibit B-16 Expert Evidence CEC 2.7.3
91 Exhibit C3-13, BCUC 1.2.2
92 Exhibit B-16 CEC 2.23.3
93 Exhibit B-16 CEC 2.23.4
202. BC Hydro confirmed that benefit realization can be an ongoing process and may not be definitive at a particular point in time.  

203. BC Hydro states that the BCUC can assess the durability of benefit realization over time by referring to BC Hydro’s Service Plan. Through information requests, the Commission can review various metrics that may be applicable to understanding the durability of project benefits once in service.  

204. The CEC submits that it would be more appropriate and useful for the Commission to establish guidelines that could be developed to improve benefits analysis and quantification and ongoing tracking, particularly tracking over time.

XI. BC HYDRO PLANNING COMPONENTS

A. SERVICE PLAN

205. In its Rebuttal Evidence BC Hydro states that

“BC Hydro already collects performance information over time. Our performance is primarily benchmarked through our Service Plan which sets four goals (Reliable and Responsive Service, Affordability, Commitment to Clean Power, and Safety) that align with our mission.”

206. BC Hydro goes on to review the various performance metrics such as SAIDI, SAIFI, Customer Satisfaction Index among others.

207. Additionally, BC Hydro states that that more detailed measurement and performance information is provided to the BCUC through applications such as RRA and is provided in the Service Plan.

208. The CEC notes that the key metric that is used to evaluate BC Hydro’s performance in the delivery of capital projects is to compare the actual project costs for in-service projects to the Original Approved Expected Cost, over an aggregated five-year period. This performance measure is included in BC Hydro’s Service Plan, with a target of actual costs falling within +5 per cent to -5 per cent of the original approved expected cost (First Full Funding) in aggregate, excluding project reserve amounts.

94 Exhibit B-16 CEC 2.23.5
95 Exhibit B-16 CEC 2.23.6
96 Exhibit B-15, page 9
97 Exhibit B-16 CEC 2.4.4
98 Exhibit B-16, BCOAPO 2.31.1
99 Exhibit B-16, BCUC 2.36.2
209. BC Hydro states that:

“On this metric, we perform very well.”

210. The CEC submits that while assessing oneself against performance metrics such as actual costs for delivery of projects compared approved costs may be valuable in assessing project delivery, it does little to determine if the expected costs could have been reduced or improved over time.

211. In BCUC IR 2.41.1 the BCUC notes that the performance information collected is primarily benchmarked through the Service Plan and questions whether performance changes should affect the degree of regulatory oversight. BC Hydro considers that the degree of regulatory oversight could change in response to declining performance, but that it is difficult to determine in advance what particular changes in oversight might be appropriate.

212. As noted above, the Service Plan is a very high-level document that does not provide for sufficient analysis to ensure the cost-effectiveness and appropriateness of BC Hydro’s capital spending.

213. BC Hydro’s Service Plan is prepared for presentation to the BC Legislature under the Budget Transparency and Accountability Act. The latest plan outlines BC Hydro’s mission, goals, strategies and performance measure in the period from 2019/2020 to 2021/2022.

214. The CEC notes that BC Hydro has substantially reduced the number of performance metrics included in the service plan. In the CEC’s view, they are now very general and non-specific, whereas past metrics (until 2016) were much more detailed and specific.

B. INTEGRATED RESOURCE PLAN

Foundation for Long-Range Planning

215. The Integrated Resource Plan is a key document driving many of BC Hydro’s spending decisions including IPP spending, DSM spending and others. A subset of recommended IRP actions feed into the development of strategies, plans and studies.

216. The Integrated Resource Plan does not include a review of the Capital Plan.

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100 Exhibit B-16, BCOAPO 2.31.1
101 Exhibit B-16, BCUC 2.41.1
102 BC Hydro website
103 Exhibit B-16 CEC 2.4.3
104 Exhibit B-16, CEC 2.1.2
105 Exhibit B-16, CEC 2.13.5
217. Brown and Carpenter understand that the IRP process includes reviewing BC Hydro’s resource planning strategies but are not aware of other proceedings in which the BCUC exercises oversight of BC Hydro strategies.\textsuperscript{106}

218. The CEC submits that the IRP is a significant and integral part of the overall capital planning process in that it lays the foundation for the potential spending of hundreds of millions of dollars.

219. The Brattle Group notes that consideration of significant strategic options typically takes place in an IRP process\textsuperscript{107}, and agrees that adoption of a strategy can have significant financial implications for future capital expenditures.\textsuperscript{108}

220. BC Hydro states that the Commission can use the IRP to assess cost-effectiveness of BC Hydro’s long-term resource strategies by testing the underlying assumptions and analysis that leads to the plan recommendations. BC Hydro considers that this process allows for an appropriate level of transparency and rigor for an effective review.\textsuperscript{109}

221. BC Hydro provides only general factors, such as cost, reliability and BC Energy Policy that the BCUC should use in evaluating the IRP.\textsuperscript{110}

222. The CEC submits capital planning and the IRP should not be considered in isolation of each other, and that BC Hydro’s unwillingness to provide details of how the IRP should be assessed in a review of Capital Review guidelines is problematic.

223. An understanding of how a significant long-term planning document might be appropriately evaluated is important in establishing a foundation for the assessment of all the spending decisions to be made within those parameters.

224. The CEC submits that BC Hydro’s preference to divorce the review of broad strategic planning from capital spending evaluation is a key problem in enabling comprehensive review opportunities for the Commission.

225. The CEC requested information as to whether or not BC Hydro conducted ongoing analysis of its historical decision-making in the IRP.

226. BC Hydro states that:

\begin{quote}
“The Integrated Resource Plan (IRP) does not review the success/failures of historical strategies because the IRP is a forward-looking strategic plan. However, the preparation of the IRP involves reviewing the input assumptions and methodologies used in preparing
\end{quote}

\textsuperscript{106} B-16 CEC Expert Witness 2.4.8
\textsuperscript{107} Exhibit B-15-1, Expert Evidence page 6
\textsuperscript{108} Exhibit B-16, CEC 2.1.4
\textsuperscript{109} Exhibit B-16, CEC 2.1.2
\textsuperscript{110} Exhibit B-16, CEC 2.1.4
past plans, which ensures the most current thinking is incorporated into each planning process.\textsuperscript{111}

227. In response to the CEC’s inquiry as to why or why not, BC Hydro explains that the IRP is a “forward looking document”.\textsuperscript{112}

228. The CEC submits that the fact that a document is ‘forward looking’ should not preclude a review of past decision-making and its effectiveness. The CEC submits that it is a fundamental principle of learning that the past is the source of a feedback loop for learning. The CEC contends that there is much to be learned from the past and existing record of planning, some of which provides substantial grounds for improvements.

229. The CEC submits that an understanding of the success/failures of historical decision-making is highly valuable in improving the quality of decisions, and should be considered when the Commission assesses and approves or rejects the IRP.

230. The CEC recommends that the Commission require that BC Hydro conduct a review and identify areas of historical strengths and weaknesses when developing the IRP, and that this should be presented along with the document for approval.

231. The CEC submits that neither the Commission nor BC Hydro should consider the identification of areas of weakness as being negative but instead as an opportunity for BC Hydro to further develop its planning and decision-making processes.

C. STRATEGIES, PLANS AND STUDIES

232. In section 7 of its Revised Guidelines BC Hydro states that strategies, plans and studies are developed to seek solution to effectively invest in the power system and infrastructure. These strategies, plans and studies investigate and/or implement broader regional, system or business unit solutions or policies.\textsuperscript{113}

233. In an RRA BC Hydro proposes to indicate which particular strategy, plan or study to which a project is linked (Appendix I).\textsuperscript{114}

234. The CEC submits that such an approach does not provide an adequate review of the appropriateness and cost-effectiveness of the strategies themselves.

Strategies

235. The CEC’s submits that Strategies are important financial decisions which can have the effect of directing large amounts of spending over the years.

\textsuperscript{111} Exhibit B-16, CEC 2.1.3
\textsuperscript{112} Exhibit B-16, CEC 2.1.3.2
\textsuperscript{113} Exhibit B-7, page 51
\textsuperscript{114} Exhibit B-7, page 54
236. In its evidence at Exhibit 3-10, the CEC has provided an overview of Strategy information that the CEC submits the Commission should have available for review.

237. BC Hydro states that its strategies, such as those related to IT, are not significant drivers for expenditures, but confirms it is aware that the Commission deems at least certain strategies to be a financial decision of potentially significant impact. BC Hydro is aware that in the SAP Inquiry Final Report, the Panel found that the SAP Decision was a financial decision and recommended BC Hydro should operate under the expectation that many strategic decisions have a financial impact.

238. The CEC submits that strategic decisions which drive significant expenditures should be treated as financial decisions at all times and should not be selected as an option from time to time. Failure to do so results in the potential for poor strategic decision-making, and increased risk of confining project alternatives unnecessarily.

239. BC Hydro would not confirm that optimization of values for strategies and plans is an ongoing requirement for BC Hydro’s capital investment planning and management. Instead BC Hydro stated that strategies, plans and studies typically do not include cost-benefit analysis, a pre-requisite for value assessment and value optimization.

240. Brown and Carpenter also consider that it is not part of the Commission’s role, when approving BC Hydro revenue requirements, to “evaluate if the strategy is the best strategy available and whether or not it would optimize value to BC Hydro’s customers and the public interest”.

241. However, Brown and Carpenter do consider that, to the extent the Commission needs to understand BC Hydro strategies and how they change over time in order to discharge the BCUC’s approval role (for example, approval of CPCN applications, section 44.2 applications, or revenue requirements applications), the BCUC will obtain the needed understanding of BC Hydro strategies and how they change over time from the information presented in the various applications and attendant regulatory processes.

242. BC Hydro states that:

> “The Commission can best evaluate the success of BCH strategies by the Service Plan metrics as reported in the Annual Report to the BCUC and the Service Plan filed with the Fiscal 2020 to Fiscal 2021 RRA.”

243. The CEC submits that an understanding of whether or not the strategies are the best strategies, and whether or not they change over to time to reflect current and future

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115 Exhibit B-16, CEC 2.8.2
116 Exhibit B-16 CEC 2.12.2
117 Exhibit B-16 CEC 2.8.6
118 Exhibit B-16, Expert Evidence CEC 2.4.4
119 Exhibit B-16, Expert Evidence CEC 2.4.2
120 Exhibit B-16, CEC 2.20.4
circumstances is an important part of the Commission responsibility in overseeing BC Hydro capital spending.

244. The CEC notes that Brown and Carpenter consider that the prudence standard is applied when reviewing costs for inclusion in rates, but consider that the prudence standard is not relevant for assessing utility strategies.121

245. The CEC submits that this approach is contrary to the Commission’s finding that strategies which drive spending should be considered financial decisions. The CEC submits that the Commission will significantly enhance its understanding of BC Hydro’s business by inquiring into and developing information requirements to assess BC Hydro’s strategies and plans. This understanding will enable the Commission to substantially improve its regulatory oversight role and its regulatory decision-making roles.

246. The CEC recommends that the Commission engage BC Hydro in a process for upgrading Commission information in regard to the Commission’s responsibilities for oversight of capital expenditure and capital investment regulatory decision-making.

Strategies and Cost-Effectiveness

247. The CEC notes that strategies, plans and studies typically do not include cost-benefit analysis.122

248. BC Hydro would not explain how the Commission can determine whether or not the strategies or ‘solutions’ are the most cost-effective approach vs other strategies it may have considered and discarded for each issue.123

249. Additionally, BC Hydro would not confirm that programs and plans may be more or less cost-effective under one strategy alternative or another,124 and declined to describe how it evaluates strategy alternatives when adopting a strategy.125

250. Similarly, Brown and Carpenter state that they are unsure whether the concept of cost-effectiveness is applicable to reviewing utility strategies, because cost effectiveness addresses individual projects whereas strategies typically do not.126

251. The CEC is concerned that ‘strategies’ are not generally reviewed for cost effectiveness by the Commission.

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121 Exhibit B-16, Expert Evidence CEC 2.4.6
122 Exhibit B-16, CEC 2.8.6
123 Exhibit B-16, CEC 2.20.3
124 Exhibit B-16, CEC 2.8.4
125 Exhibit B-16, CEC 2.8.5
126 Exhibit B-16, Expert Evidence CEC 2.4.7
252. The CEC submits that BC Hydro’s and Brown and Carpenter’s approach is evidence of a deficiency in the utility’s approach to comprehensive planning, and is evidence of an approach to regulation that serves to stifle appropriate Commission oversight by diminishing the importance of strategic decision-making and taking a later project only approach to requesting approvals.

253. The Brattle Group agrees that adoption of a strategy can have significant financial implications for future capital expenditures. For example, an IRP in which the costs and benefits of strategic choices could be different (e.g. future fuel mix).\textsuperscript{127}

254. Aside from the IRP process, Brown and Carpenter are not aware of other proceedings in which the BCUC exercises oversight of BC Hydro strategies.\textsuperscript{128}

255. The CEC submits that it is important that the Commission exercise its oversight in all aspects of key decision-making, which includes the review of strategies, and the linkage of these strategies to spending decisions.

**Plans**

256. BC Hydro declined to explain how the Commission can track the cost-effectiveness of the various plans over time.\textsuperscript{129}

257. BC Hydro declined to explain how the Commission can understand and assess the cost-effectiveness of the various plans in Appendix K to the BC Hydro F2020 – F2021 RRA based on the information provided when there are no quantitative measures included in the information presented. BC Hydro referred to their answer to CEC 2.20.2 which said that plans typically do not include cost benefit analysis.\textsuperscript{130}

**XII. CEC PROPOSES IT CAPITAL EXPENDITURE IS APPROPRIATE INITIAL FOCUS FOR COMMISSION INFORMATION NEEDS**

**IT CAPITAL**

258. BC Hydro describes its capital investments in Technology as being generally different to other types of capital investment in the following aspects:

- On average Technology projects have a lower project cost and shorter project duration;
- On average Technology projects have a shorter asset life; and

\textsuperscript{127} Exhibit B-16, Expert Witness CEC 2.4.1
\textsuperscript{128} Exhibit B-16, Expert Witness CEC 2.4.8
\textsuperscript{129} Exhibit B-16, CEC 2.21.5
\textsuperscript{130} Exhibit B-16, CEC 2.21.4
- 38 -

- Technology projects tend to have higher delivery risk.\textsuperscript{131}

259. Prior to the introduction of the 2010 Capital Project Filing Guidelines, the threshold for all projects was $50 million. BC Hydro later created a different asset category for IT&T projects with a $20 million threshold.\textsuperscript{132}

260. In BCUC 2.37.3 the Commission inquired if lower materiality thresholds for IT projects might also be appropriate for the information filed in Appendices I and J in an RRA.

261. BC Hydro responded that Technology projects use a materiality threshold of $20 million for Appendix J in RRA filings, which is the same threshold used for other projects, and a threshold of $2 million for Appendix I detail, which is below the $5 million threshold used for other projects.

262. BC Hydro believes the materiality threshold of $2 million for information filing in Appendix I is appropriate and notes that it accounts for two-thirds of the total Technology capital additions in the current RRA, and is comparable to that of Generation and Transmission projects.

263. While BC Hydro believes that $20 million is a reasonable threshold for Appendix J in a RRA, they are open to reducing this threshold to $10 million for Technology projects.\textsuperscript{133}

\textit{IT Strategies}

264. BC Hydro did not provide a meaningful explanation of how the Commission can evaluate the cost-effectiveness of BC Hydro’s Technology strategies, and whether or not they optimize the benefits/costs when compared to alternative strategies. BC Hydro indicated the Technology Strategy and 5-Year Plan provides high-level guidance and direction on technology investments. BC Hydro does not make investment decisions based on the Technology Strategy and 5-Year Plan because launching an initiative in support of any element of the strategy requires further technical and financial analysis to provide the appropriate business justification.

265. The Commission can evaluate the cost-effectiveness of projects over the major project threshold through a section 44.2 application.\textsuperscript{134}

266. BC Hydro states it provides evidence in RRA’s to satisfy the BCUC that its forecast Technology investment spending over a test period is reasonable and appropriate. BC Hydro believes this information is sufficient and if the BCUC requires further information the RRA process provides opportunities for further information to be requested.\textsuperscript{135}

\textsuperscript{131} Exhibit B-16, BCUC 2.37.1
\textsuperscript{132} Exhibit B-16, BCUC 2.37.2
\textsuperscript{133} Exhibit B-16, BCUC 2.37.1
\textsuperscript{134} Exhibit B-16  CEC 2.22.1
\textsuperscript{135} Exhibit B-16  CEC 2.22.2
267. The CEC notes that a ranking of the Technology capital portfolio is not included in BC Hydro’s RRAs.\(^{136}\)

268. BC Hydro does not believe that the ranking information would improve the effectiveness of the BCUC’s oversight of Technology capital projects. The ranking is only an initial input into the prioritization process for Technology capital projects and does not capture other prioritization factors.\(^{137}\)

269. BC Hydro provided metrics from the RRA re: performance of IT systems, services and vendors in responses to CEC 1.61.1 and CEC 2.22.4.\(^{138}\)

**IT Benefits Realization**

270. BC Hydro states that:

Information Technology (“IT”) initiated a pilot program in fall 2017 as a first step in establishing a formal benefits realization process. The objective of the pilot is to evaluate the feasibility and effectiveness of using a standard methodology to assess the results of IT-enabled business initiatives. The pilot focuses on business outcomes and seeks to improve the identification, tracking, protection and expansion of related business benefits over time. The new benefits realization methodology will be fully rolled out by July 2018.

271. BC Hydro states that it has developed a benefits realization process for technology investments, but is unable to provide the process metrics because the benefits realization process is still in pilot stage and BC Hydro has not developed any “process metrics”.\(^{139}\)

272. BC Hydro also states that:

“the benefits realization process is by its nature retrospective, which limits the value to the regulatory oversight of planned or active projects. However, the process could inform the BCUC on projects benefits realized.

The purpose of the benefits realization process is to more fully understand the effectiveness of Technology capital investments to better inform management decisions and promote improved benefits identification and analysis. In turn, this could provide management greater confidence in the selection of new projects”.\(^{140}\)

273. The CEC submits that the benefits realization process is an important development of BC Hydro’s capital planning, in that, if properly tracked, can be valuable in informing future decision-making.

\(^{136}\) Exhibit B-16, BCUC 2.37.5  
\(^{137}\) Exhibit B-16, BCUC 2.37.5.1  
\(^{138}\) Exhibit B-16 CEC 2.22.4  
\(^{139}\) Exhibit B-16 CEC 2.23.2  
\(^{140}\) Exhibit B-16, BCUC 2.37.4.1
XIII. REGULATORY REQUIREMENTS

274. As noted above under BC Hydro’s proposal, BC Hydro’s key regulatory information is primarily provided in major project applications such as CPCNs and section 44.2 applications, and in periodic RRA’s.

275. BC Hydro says that Business Impact Analyses are reported to the Commission in the RRA and major project filings.141

RRAs

276. In section 9 of the Revised Proposal BC Hydro reviews ‘Matters Related to the Form and Content of Revenue Requirements, CPCN and section 44.2 Filings’. This includes naming conventions, additional project information (Appendix I) relating to implementation and risk (Appendix J).

277. BC Hydro argues that much of the information recommended for collection and review by Mr. Craig is already included in RRAs142, or can be developed through information requests.

278. BC Hydro considers that this is the appropriate proceeding for the Commission to review capital planning.

279. BC Hydro states that it has provided a comprehensive list of performance metrics for the F2020 - F2021 RRA.143

280. BC Hydro includes information on the Capital Plan on RRA in the form of a briefing note. BC Hydro does not file long-term capital plans as part of other regulated processes.144

281. Mr. Craig and Mr. Thomson have pointed out that review of expenditures at the time of an RRA can be ‘too late’145 and result in ‘wasted’146 expenditures.

282. BC Hydro argues that:

“…at the time of the RRA the Commission can make determinations with respect to whether projects are in the public interest before significant dollars have been spent. If the Commission believes it is warranted in a revenue requirements application it can inquire into the public interest of projects that are in their early stages, before significant dollars are spent.”

141 Exhibit B-16 CEC 2.14.5
142 Exhibit B-15, page 20
143 Exhibit B-16 CEC 2.15.4
144 Exhibit B-16 CEC 2.13.5
145 Exhibit C3-15 CEC Response to CEABC 1.2.2
146 Exhibit C3-10 CEC para 92
283. BC Hydro then goes on to discuss how the ‘prudence standard’ cannot be applied to dollars that have not yet been spent but the incentive is for the utility to act prudently to avoid the disallowance of costs in the future.

284. The CEC submits that relying on the Commission to assess the public interest of projects during an RRA is not feasible in an RRA, and is better conducted on an ongoing basis.

285. Similarly, relying on a ‘prudence’ review to potentially disallow imprudent spending after the fact is clearly not an ideal response, when the spending could be better reviewed before it occurs.

286. As noted in the CEC’s response to BCUC 1.9.4.1:

“"There is a perspective that the Commission has a chance to review the prudence of capital expenditures in the RRA process but experience in the RRA process does not provide much confidence that there is a process for testing which expenditure processes in BC Hydro may be less than prudent and in need of improvement or perhaps consequences particularly related to recovery of costs from ratepayers.

The CEC believes that the Commission’s oversight information and oversight processes could be significantly strengthened over time by adopting inclusion of this information in stages into the Annual Report to the Commission.""\textsuperscript{147}

RRA Appendices

287. BC Hydro includes individually identified projects in Appendix I with planned capital expenditures or additions in the test period and planned total capital expenditures or additions greater than $5 million. BC Hydro then indicates in Appendix I if these projects are part of a Program of Projects for project delivery efficiency purposes.\textsuperscript{148}

288. BC Hydro includes also an Appendix J summary sheet for Programs of Projects that are indicated in Appendix I.\textsuperscript{149}

289. In BCUC 2.38.1 and 2.38.1.1 the BCUC inquired as to how the proposed guidelines ensure that the entire cost of programs, including the costs of all related projects are reviewed by the BCUC if all forecasted programs of projects are included in Appendix I of the RRA, regardless of whether or not the individual projects meet the materiality threshold.

290. BC Hydro replied that:

“"The concept of a Program of Projects is to create project delivery efficiencies rather than an approval mechanism as each project can deliver individual benefits…””

\textsuperscript{147} Exhibit C3-13, BCUC 1.9.4.1
\textsuperscript{148} Exhibit B-16, CEC 2.38.1
\textsuperscript{149} Exhibit B-16, CEC 2.38.1
And:

“A review by the BCUC of the entire cost of Programs of Projects is not useful because the projects that form a Program of Projects are typically independent of one another (i.e., implementation of one project does not rely on the other projects for precedence, have different timing as the projects may start at different times, be deferred or cancelled, new projects may be added, and/or the timing of projects may be revised over time due to changing system risks and needs).

Through the identification of those projects included in Appendix I that are anticipated to be delivered as part of Programs of Projects, the BCUC has increased visibility into how BC Hydro is grouping Projects into a Program of Projects to achieve delivery efficiency.”

291. The CEC submits that the BC Hydro position continues to provide for something of a piecemeal analysis that could be improved with additional information which rationalizes all the projects and assesses the success of strategies and planning processes.

292. The CEC reiterates its view that RRAs are not the appropriate forum for assessing capital planning processes.

293. BC Hydro confirms that the BCUC can only disallow capital additions in a test period that it finds to be imprudent expenditures.

294. Brown and Carpenter understand that if the BCUC identified a lower-cost solution for a project or projects presented in an RRA, the BCUC would not approve the requested revenue.

295. In addition to denying the Commission context for individual project approval, it would be highly difficult for the Commission and interveners to pursue a significant understanding of the long-term planning processes underlying the RRA whilst simultaneously assessing the RRA itself.

296. The CEC submits that an independent reporting process is necessary to generate a complete and ongoing analysis of BC Hydro’s capital planning processes.

**CPCN and Section 44.2 Applications**

297. BC Hydro states that major project filings (either a CPCN or section 44.2 applications) provide the primary means for the BCUC to review projects prior to implementation.

298. They consider that the major projects thresholds single out the projects that are most significant and will have the largest impact on rates for detailed public interest review.
The BCUC can also direct that a CPCN will be required for any extension project below the thresholds, including those that have a significant public interest component.\footnote{BC Hydro Final Argument page 26-27}

299. Brown and Carpenter consider that it is not necessary for the BCUC to give an assessment of BC Hydro’s planning processes as part of its review of CPCN or section 44.2 applications.\footnote{B-16 Expert Evidence CEC 2.8.3}

300. Brown and Carpenter also consider that if the BCUC identifies more cost-effective options than those brought forward by BC Hydro, the BCUC would not approve a CPCN or section 44.2 application. Brown and Carpenter consider that the BCUC would not need to examine BC Hydro’s management processes as part of its assessment of the CPCN or section 44.2 application, since it would be focusing on the project itself being put forward for approval in the application.\footnote{B-16 Expert Evidence CEC 2.10.1}

301. The CEC agrees that it is not appropriate for the BCUC to develop an understanding of the planning processes in a CPCN or section 44.2 proceeding, which is designed to approve a project.

302. The CEC disagrees with the premise that identifying more cost-effective options that could arise from higher level planning changes is through Commission analysis in a CPCN application.

303. The CEC submits that comfort as to the full context for the project should already be available to the Commission during project review.

304. At the time of a CPCN or section 44.2 application considerable effort and costs will have already been expended in pursuit of a particular alternative and it would be ineffective for the Commission to have to consider how higher level planning alternatives might result in project changes.

305. The CEC submits that a review of capital planning processes outside of the RRA or other projects such as CPCNs or section 44.2 applications can provide a valuable foundation for assessing the RRA or individual projects.

**XIV. PRUDENCE REVIEW**

306. Brown and Carpenter confirm that the regulators have a responsibility to ensure that the Utility has an opportunity to achieve a fair return on its investment and a responsibility to ratepayers to ensure that rates are fair, just and not unduly discriminatory.\footnote{B-16 Expert Evidence CEC 2.6.1}

307. Brown and Carpenter understand that utility regulators, including the BCUC, will approve just and reasonable rates, and that just and reasonable rates would not include
recovery of costs that were imprudently incurred. They understand that the RRA process provides the opportunity for the BCUC to assess prudence of past capital expenditures.

Brown and Carpenter consider that imprudent expenditures would, for example, be those that could reasonably be described as extravagant, unnecessary, inefficient or improvident. They are expenditures which a reasonable utility management would not have made, in the circumstances and taking into account the information available to management at the time. Brown and Carpenter consider that if a project is implemented within an approved budget, that project would ordinarily be considered prudent without further inquiry, unless circumstances had changed since approval was given (in which case prudence would be assessed in light of the information about the changed circumstances available to management at the time of the decision being assessed).

In the view of Brown and Carpenter, the appropriate consideration for a regulator in a prudence review is whether, using the information reasonably available to the utility at the time decisions were made, the decisions were reasonable.

Brown and Carpenter provided a discussion of the concept of “cost-effectiveness” and the relevance of that concept to the BCUC’s approval processes in their evidence. Brown and Carpenter consider that this concept is not relevant for evaluating prudence. When the BCUC reviews utility decision-making for prudence, the prudence standard does not require the BCUC to identify optimal outcomes because that would be to second-guess the function of utility management. The prudence standard is one of reasonableness, not one of optimization.

The CEC inquired if, in the Brattle Group’s view, a regulator had approved a project with inadequate information or misleading information, and the project turned out to be ill-conceived in light of adequate information available at the time but not provided to the Commission, though properly executed, should the regulator reject the expenditures as being imprudent?

Brown and Carpenter replied that, in the circumstances of the request, it would be reasonable for the BCUC to assess the prudence of the expenditures. The outcome of that assessment would depend on the circumstances and the new information provided.

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158 B-16 Expert Evidence CEC 2.2.1
159 B-16 Expert Evidence CEC 2.6.2
160 B-16 Expert Evidence CEC 2.3.2
161 B-16 Expert Evidence CEC 2.3.
162 B-16 Expert Evidence CEC 2.4.5
163 B-16 Expert Evidence CEC 2.9.1
CEC RESPONSE TO BC HYDRO’S ARGUMENT WHICH MISCHARACTERIZES THE CEC EVIDENCE

313. BC Hydro makes numerous statements in its arguments that the CEC proposes to involve the BCUC in the management of BC Hydro.\[^{164}\]

314. The CEC went to great lengths in its evidence to recognize that it could not propose any such control of the management of BC Hydro by the Commission.

315. The CEC sets out its overview for improving the Commission’s oversight information in Exhibit C-13 at page 3\[^{169}\], and reiterates that the Commission should exercise its authority to require such information as allows the Commission to effectively and comprehensively exercise its oversight authority.

316. It is clear that the intent of the CEC evidence is to build the Commission’s understanding of the cost effectiveness of BC Hydro’s capital spending and management, and that its use of the information and understanding would be to improve the Commission’s exercise of its authority to support its primary regulatory responsibilities and areas of direct decision-making responsibility.

317. The CEC evidence is that the BC Hydro evidentiary information with respect to its management of capital can be improved and should be a work in progress.\[^{170}\]

318. The CEC evidence goes on to explicitly define the Commission’s jurisdiction for obtaining information and the ways in which that information can be used within the Commission’s jurisdiction. The CEC evidence is explicit with respect to the fact that the Commission may not insert itself into BC Hydro’s actual management process. The CEC provides clear evidence that the Commission must, pursuant to and in accordance with its authority granted by its enabling statute, inquire in any and all aspects of the utility to inform itself about the utility’s business and that it can use the information to carry out its regulatory responsibilities directly.\[^{171}\]

\[^{164}\] BC Hydro Final Argument, page 64, clause 161
\[^{165}\] BC Hydro Final Argument, page 76, clause 182
\[^{166}\] BC Hydro Final Argument, page 76, clause 183
\[^{167}\] BC Hydro Final Argument, page 79, clause 188
\[^{168}\] BC Hydro Final Argument, page 79, clause 189

\[^{169}\] Exhibit C3-13, Page 3
\[^{170}\] Exhibit C3-13, Page 3
\[^{171}\] Exhibit C3-13, Page 3
319. The CEC explicitly summarized the Commission’s jurisdiction and appropriate use of oversight information and then provided excerpts of the UCA sections supporting the summary.\textsuperscript{172}

320. While BC Hydro characterizes the CEC’s position as the BCUC directing the affairs of the utility,\textsuperscript{173} the CEC has explicitly acknowledged that the CEC is not recommending that BCUC-led decision making should be inserted into BC Hydro’s management of the utility\textsuperscript{174} (reference: Exhibit C3-14, MoveUP IR 1.1.).

321. The CEC makes no assertion with respect to the BCUC taking the seat of management. The CEC also has proposed that its proposals are illustrative and not an attempt to provide an end position but a beginning for discussion of appropriate Commission oversight information.

322. The Brattle Group’s review of the CEC evidence characterizes the CEC’s position as one which seeks to “control costs” rather than working towards improving cost-effectiveness, noting that “success in controlling costs would benefit ratepayers, but this is a function of utility management”\textsuperscript{175} (reference Exhibit B-15-1, pp. 9-10).

323. The CEC in the identified paragraph is not in the least suggesting controlling costs. The words control or manage directly do not appear. Instead, the paragraph refers to Commission oversight of BC Hydro and explicitly BC Hydro’s cost-effectiveness. It suggests that BC Hydro may be able to improve its cost-effectiveness. This is a fundamental purpose of the Commission’s regulatory decision-making authority.

\textbf{Prudence}

324. BC Hydro recognizes that all of its expenditures can be subject to Commission review and rejection from cost-recovery from rates.\textsuperscript{176} This is precisely how the CEC evidence proposes, as one example, that the Commission can in its regulatory role improve the cost-effectiveness of BC Hydro’s capital expenditures.

325. The CEC’s evidence simply says that better oversight information is needed by the Commission to enable it to make better regulatory decisions.

326. BC Hydro notes that the prudence standard – applied to information as currently filed with the Commission - is currently sufficient incentive to incur only those costs which are prudently incurred, including avoiding deviations from the expected return of the utility’s shareholder, the BC Government.\textsuperscript{177,178,179}

\textsuperscript{172} Exhibit C3-13, Page 4

\textsuperscript{173} BC Hydro Final Argument, page 81, clause 191

\textsuperscript{174} BC Hydro Final Argument, page 77, clause 186

\textsuperscript{175} BC Hydro Final Argument, page 82, clause 191

\textsuperscript{176} BC Hydro Final Argument, page 68, clause 169

\textsuperscript{177} BC Hydro Final Argument, page 70, clause 174
327. The evidence before the Commission is that the BC Government itself has recently intervened with BC Hydro’s management to precipitate improvement in the cost-effectiveness of BC Hydro’s proposed capital expenditures, leading to substantial reductions in costs while maintaining required levels of benefit. These reductions have direct consequences on BC Hydro rates paid by its ratepayers.

Cost Effectiveness

328. The CEC has advanced cost-effectiveness as the defining principle for improving the Commission’s oversight information and seeks to advance the discussion working toward continuous improvement of the information and the cost-effectiveness of the capital management. Both cost-effectiveness evaluation and continuous improvement are well-understood business practices with strong foundations in management theory as well.\textsuperscript{180}

329. The CEC’s evidence clearly identifies cost effectiveness as a general framework, for instance, covering capital requirements responding to need for:

a) Growth or Supply;

b) Condition Assessment or Life Extension;

c) Performance or Reliability;

d) Risk and Consequence of Risk;

e) Security and or Consequences of Insecurity; and

f) Stakeholder Concerns.

330. The CEC also clearly identifies that in all cases the costs of capital expenditures can be matched up with the related benefits of addressing these needs. The CEC is clear that cost-effectiveness covers the broad range of factors that contribute to a complete understanding of what will drive the need for capital investment.

331. In BC Hydro’s submission, the CEC’s pervasive use of the familiar concept of “cost-effectiveness” conflates several related ideas and concepts, which clouds the issues.\textsuperscript{181} Cost-effective is not the same as least cost.\textsuperscript{182} Cost-effective is not the same as prudent.\textsuperscript{183}

\textsuperscript{178} BC Hydro Final Argument, page 70, clause 174
\textsuperscript{179} BC Hydro Final Argument, page 70, clause 174
\textsuperscript{180} Exhibit C3-10, page 2, clause 11
\textsuperscript{181} BC Hydro Final Argument, page 80, clause 190
\textsuperscript{182} BC Hydro Final Argument, page 80, clause 190
\textsuperscript{183} BC Hydro Final Argument, page 80, clause 190

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332. BC Hydro, in their evidence from the Brattle Group, summarizes the CEC’s position as allowing the Commission to determine on a prospective basis what expenditures are prudent based on quantitative cost-effectiveness calculations, and posits that the CEC has conflated cost-effectiveness with prudence.\(^\text{184}\)

333. The CEC makes no such conflation. The CEC has participated in numerous CPCN, section 44.2, and Revenue Requirement regulatory proceedings, where prospective capital expenditures are potentially reviewed for cost-effectiveness and, if found not to be adequately so, are denied and not included in rate setting for recovery from customers.

334. The CEC evidence is exclusively focused on the Commission developing its understanding of appropriate oversight information which it may use to continuously improve its abilities to regulate BC Hydro effectively.

335. In BC Hydro’s submission the CEC’s proposal does not offer the potential benefits to justify the increase in information filed and increased regulatory process.\(^\text{185}\)

336. Therefore, in BC Hydro’s submission, the CEC’s proposal is not needed. The BCUC’s existing processes reflect a standard approach and have been proven to provide effective oversight over capital investments, and there is no demonstrable benefit or need to add the CEC’s proposed Annual Capital Report.\(^\text{186}\)

337. There is little question that BC Hydro does not want to make anything other than minor changes to its guidelines and the result is largely the same level of information as has been available in the past. However, there are some projects contemplated by BC Hydro which show hopeful signs that they might lead to improved information, such as the value decision making based information BC Hydro has been considering.

338. The CEC submits that the Commission should conclude that its oversight information as filed by BC Hydro is not adequate and needs significant improvement. The CEC submits that for the Commission to agree with BC Hydro and adopt the status quo would not lead the Commission to better understanding BC Hydro capital spending and being better able to exercise its regulatory responsibilities.

339. A key part of the CEC’s evidence is the spreadsheets or templates that the CEC proposes as information requirements to ensure that the BCUC’s oversight is more effective and to evaluate cost effectiveness.\(^\text{187}\) BC Hydro presented tables of information refuting the CEC’s proposed templates.

340. The CEC has clearly stated the templates were intended as a starting point and not an end solution.

\(^{184}\) BC Hydro Final Argument, page 81, clause 191
\(^{185}\) BC Hydro Final Argument, page 75, clause 179
\(^{186}\) BC Hydro Final Argument, page 76, clause 181
\(^{187}\) BC Hydro Final Argument, page 66, clause 198
341. BC Hydro’s Rebuttal Evidence, as well as Chapter 6 of its F20-F221 RRA, demonstrates that BC Hydro has been continually improving its asset management practices and that BC Hydro has been performing well as measured by the metrics in its Service Plan. BC Hydro submits that there is no compelling reason to believe that the CEC’s approach would or could improve BC Hydro’s performance.188

342. The CEC submits that the Service Plan level information is a wholly inappropriate level for the Commission’s oversight responsibilities. From BC Hydro’s submissions in their present form, the Commission cannot draw sufficient comfort that more inadequacies, such as were identified in the SAP inquiry or in the Government’s review of BC Hydro’s capital expenditures, will not continue to be substantial risks with respect to the cost-effectiveness of capital spending at BC Hydro.

XV. CONCLUSION

343. BC Hydro opens its proposed guidelines with the following statement:189

“To ensure economic and social benefits for ratepayers, BC Hydro manages our capital portfolio with an emphasis on cost-consciousness, respect for the environment and communities in which we work, and strengthening our relationships with First Nations communities. The size and extent of BC Hydro’s capital investments underscores the importance of efficient and effective British Columbia Utilities Commission (BCUC or Commission) review processes and oversight”190 (Exhibit B-7-1, Page 1).

344. The CEC agrees that efficient and effective Commission review and oversight is very important. This leads the CEC to recommend that the Commission needs a continuous improvement process for improving its information and understanding of the cost-effectiveness of BC Hydro’s capital expenditures. This is the essential proposal and recommendation the CEC provides to the Commission in this process.

345. The CEC identifies the importance of having cost-effectiveness information at the level of the drivers for capital expenditure and investment as well as at the level of the strategies shaping the capital expenditures and investments.191

346. The CEC has advanced cost-effectiveness as the defining principle for improving the Commission’s oversight information and seeks to advance the discussion working toward continuous improvement of the information and the cost-effectiveness of the capital management. Both cost-effectiveness evaluation and continuous improvement are well-understood business practices with strong foundations in management theory as well.192

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188 BC Hydro Final Argument, page 90, clause 201
189 Exhibit C3-10, page 114, clause 352
190 Exhibit B-7-1, Page 1
191 Exhibit C3-10, page 2, clause 10
192 Exhibit C3-10, page 2, clause 11
347. For instance, the connection between the load forecasting and the capital planning needs to be clearly and better understood in order to avoid planning for capital or power acquisition prior to need or customer demand, or too late to meet the customer needs or demand.\textsuperscript{193}

348. BC Hydro’s load forecasting has been critiqued significantly in previous revenue requirement hearings and in the Site C inquiry, among other processes. The evidence in these prior proceedings has shown that BC Hydro’s load forecasts have been over-forecasting demand for some time and that BC Hydro ratepayers have been disadvantaged through early acquisition of capital and power at prices higher than appropriate alternatives.\textsuperscript{194}

349. In the area of condition assessment, the validity of this assessment as a driver of capital depends upon how well the assessment effectively predicts the remaining life before failure and how well it can be relied upon to signal a dangerous increase in the probability of a failure. Where validity is firmly understood and the connection to the need for and timing of capital investment is well defined, then the predictive maintenance will support maximizing the lifecycle of the assets. Where the validity is only general and the connections to the need for capital expenditures to sustain health are weak, there will be a distinct possibility that the lifecycle values may not be maximized.\textsuperscript{195}

350. Maximizing lifecycle value is a key objective. The CEC submits that Commission oversight should seek to determine whether or not BC Hydro is maximizing its generation lifecycle value. Additionally, Commission oversight should include assessing if BC Hydro knows whether or not BC Hydro is maximizing its lifecycle value and whether or not BC Hydro is improving its maximization of value.\textsuperscript{196}

351. The CEC believes that it is highly valuable to the Commission to have a clear view of the effectiveness of BC Hydro’s understanding, assessment and treatment of its capital drivers in properly allocating capital for capital expenditures and investments. Understanding the effectiveness of the capital driver processes provides an important foundation to the Commission’s assessment of why it should make capital expenditure approvals and whether or not the expenditures are soundly justified and should be recovered in rates.\textsuperscript{197}

352. The improvement in information for each of the key assets in terms of extended life, enhanced capabilities, risk management and mitigation, increased efficiency, and cost effectiveness may be known quantitatively but is not clearly available to the Commission’s oversight. Collectively, these strategies are critical to improving the performance of the assets in terms of lifecycle value contribution. Together on a

\textsuperscript{193} Exhibit C3-10, page 6, clause 24
\textsuperscript{194} Exhibit C3-10, page 6, clause 25
\textsuperscript{195} Exhibit C3-10, page 7, clause 37
\textsuperscript{196} Exhibit C3-10, page 98, clause 302
\textsuperscript{197} Exhibit C3-10, page 68, clause 184
planning basis, better Commission oversight information represents the potential for capital investment behind these strategies to deliver greater value. Understanding the connection between these strategies and the overall performance metrics is critical to the Commission’s understanding of the overall cost effectiveness.  

353. The CEC makes the point that in the area of DSM oversight, the Commission has much better information and review process capabilities and is better able to regulate such expenditures than in areas where it does not have better cost-effectiveness information. With reference to DSM programs, CEC states - The expenditures and the related benefits (savings) are matched and shown at the program level. It is seen as relevant to show the whole plan and not just breakout the large programs for review and approval. This enables a cost-effectiveness perspective on every aspect of the capital spending.

354. There is a clear focus on cost-effectiveness of capital spending, showing the $/MWh values and the Benefit Cost Ratio tests at the detail levels.

355. If this level of and approach to information requirements for Commission oversight is justified and working for DSM then it would seem to follow logically that this level and approach to information requirements regarding other areas of BC Hydro capital investments may well be warranted and justified for the same reasons.

356. The CEC submits that BC Hydro’s rejection of a more substantial process for continuous improvement of the Commission’s oversight information in the area of capital expenditure cost-effectiveness would be a very unfortunate position for the Commission to adopt. At some level the CEC recommends that the Commission seek to establish a process for continuously improving its oversight information.

357. At the commencement of this proceeding in 2016:

   a) there were high levels of Provincial Government and ratepayer concern around BC Hydro rates and financial performance. At the time BC Hydro was carrying significant deferral account balances which caused high levels of concern around the province’s credit ratings and, pertinent to this proceeding and the Commission’s jurisdiction, affordability for ratepayers;

   b) the Provincial Government had in place, through Special Directions, significant harnessing of the oversight role of BC Hydro by the Commission;

   c) the Commission was initiating an important Inquiry into the conduct of BC Hydro at its last Revenue Requirement proceeding; and

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198 Exhibit C3-10, page 99, clause 304(b)
199 Exhibit C3-10, page 131, clause 440
200 Exhibit C3-10, page 132, clause 441
201 Exhibit C3-10, page 134, clause 445
d) the Provincial Government took on the role of conducting a detailed assessment of BC Hydro’s operations and capital expenditures.

358. In the intervening three-year period since the commencement of this proceeding:

a) the Provincial Government has transferred significant BC Hydro deferral account balances to the taxpayers account and off BC Hydro’s books, mitigating the credit rating risk and ratepayer impacts;

b) the Provincial Government has removed the restrictive Special Directions with a view to empowering the BCUC to reestablish more effective regulatory oversight of BC Hydro, including transferring of the responsibility/jurisdiction for effective review of the IRP;

c) the Commission has concluded the Inquiry into SAP and has issued a report in which significant findings were made chastising the inaccurate and incomplete reporting made by BC Hydro to the BCUC in the 2009 RRA. BC Hydro has appropriately and responsibly publicly acknowledged its deficiencies in providing inadequate information to the Commission and has committed to do better; and

d) as a result of the Government's review of BC Hydro, $2.7 Billion in capital savings and deferrals were identified and implemented.

359. In CEC's submission, these contextual factors all point in the direction that the Commission should be pursuing more aggressive, effective assessments of capital planning to protect ratepayer interests, as well as that of the shareholder. The Commission, as would be implied by the Governments empowerment of the Commission, should strive for continued improvement in its regulatory oversight of BC Hydro, including with respect to its capital expenditures.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

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