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<b>BC HYDRO CAPITAL EXPENDITURES AND PROJECTS REVIEW EXHIBIT A-24</b>
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Commercial Energy Consumers Association of British Columbia  
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Mr. Christopher P. Weafer  
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**Re: British Columbia Hydro and Power Authority – Review of the Regulatory Oversight of Capital Expenditures and Projects – Project 3698877 – Information Request No. 1**

Dear Mr. Weafer:

Further to the October 5, 2018 filings of evidence on behalf of the Commercial Energy Consumers Association of British Columbia (CEC), enclosed please find British Columbia Utilities Commission Information Request No. 1. In accordance with the regulatory timetable established by Order G-193-18, please file your responses on or before Monday, December 3, 2018.

Sincerely,

*Original signed by:*

Patrick Wruck  
Commission Secretary

Enclosure  
PS/dg



British Columbia Hydro and Power Authority  
Review of the Regulatory Oversight of Capital Expenditures and Projects

**INFORMATION REQUEST NO. 1 TO COMMERCIAL ENERGY CONSUMERS OF BRITISH COLUMBIA**

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**A. INTRODUCTION**

- 1.0 Reference: SUMMARY**  
**Exhibit C3-10 (CEC evidence), pp. 1, 2, 54**  
**Exhibit C3-11, pp. 6-7**  
**Overview of CEC Cost-effectiveness Information Proposal**

On page 1 of the CEC evidence, Commercial Energy Consumers Association of British Columbia (CEC) states:

In this document the CEC provides evidence with respect to appropriate Commission information requirements in order for the Commission to effectively carry out its oversight and regulatory responsibilities with regard to BC Hydro’s capital investments.

Section 9 of the CEC evidence states:

The CEC provides in Part I of the evidence a set of templates for quantitatively representing BC Hydro’s cost-effectiveness in managing and planning capital expenditures and investments. These provide examples of types of calculations that can be made to achieve this purpose.

Section 97 of the CEC evidence states:

The CEC believes that the Commission should establish information requirements and review its information processes to allow the Commission to build an understanding of the long-term cost-effectiveness of BC Hydro’s capital investments.

In the response to Question 11 on pages 6 and 7 of Exhibit C3-11, Mr. Thomson states:

A collaborative approach to considering the various templates between BC Hydro and the Commission with input from the proposer to clarify intent would likely be most constructive in my opinion. Should the Commission wish to pursue the development of this type of information, it might consider looking at staging its implementation or

selecting one or more business units to pilot the implementation before rolling it out across the organization.

- 1.1 Please describe the form, content and timing that CEC believes would be appropriate for British Columbia Hydro and Power Authority (BC Hydro) to file the cost-effectiveness information with the British Columbia Utilities Commission (BCUC), including whether this information would be updated and filed annually and how the information filings should be coordinated with the filing of a revenue requirements application (RRA).
  - 1.1.1 Please outline the BCUC review process that CEC believes would be appropriate for a cost-effectiveness information filing.
  - 1.1.2 Please describe the nature of BCUC approval, acceptance or other response that CEC believes would be appropriate after reviewing a cost-effectiveness Information filing.
- 1.2 To illustrate how the BCUC could use cost-effectiveness information on a prospective basis, please provide examples of the nature of directives that the BCUC could make and actions that it could take, and confirm that such directives and actions are within its authority under the *Utilities Commission Act (UCA)*.
- 1.3 When speaking of “an understanding of the long-term cost-effectiveness of BC Hydro’s capital investments,” is CEC referring to investments in a particular part of the BC Hydro system such as generation, or to all of its capital expenditures?
- 1.4 Considering Mr. Thomson’s statement about staging implementation, which business unit or area of capital expenditure does CEC believe would be most suitable for trialling its cost-effectiveness information proposal?

## **B. PART I - CEC PROPOSED COMMISSION CAPITAL PLANNING OVERSIGHT**

- 2.0 Reference EVIDENCE ON BC HYDRO’S CAPITAL MANAGEMENT REVIEW**  
**Exhibit C3-10, Part I, Section A, pp. 4–5**  
**Exhibit C3-10, Part I, Section B, pp. 6-9**  
**Exhibit C3-10, Part I, Section C, pp. 13–19, 22–28, 31–36, 39–44 and 47-52**  
**Proposed BCUC Capital Planning Oversight Regulatory Information**

On pages 4 to 5 of the CEC evidence, CEC proposes the framework reproduced below for capital planning information to be made available. In addition, on pages 13–19, 22–28, 31–36, 39–44 and 47–52 of the CEC evidence, CEC provides spreadsheets quantifying capital drivers with respect to capital investment plans (Generation, Transmission and Distribution, Properties, Fleets, and Information Technology).

## FRAMEWORK FOR CAPITAL PLANNING

Drivers	Strategies	Plans
Customer Load Growth	Reduce Demand Add Supply Extend Life Enhance Performance Upgrade Capability	(1) Generation  (2) Transmission and Distribution  (3) Properties  (4) Transportation Fleets  (5) Information Technology & Telecommunication
System Sustainment Condition	Replace Rehabilitate Run to Failure Maintain Refine Standard	
External Risk Exposure	Prevention & Protection Mitigate Consequence Compensate Move Insulate Restore	
Stakeholder Condition Standards	Inform Meet Refine Stage Progress	

CEC submits the evidence does not negate the BC Hydro work but builds on it to provide a base for BCUC understanding of the cost-effectiveness of BC Hydro’s capital expenditures and investments.

CEC submits this proposed framework is intended to start the conversation about the importance of strategy as a driver of capital, and particularly how it will be a critical part of the BCUC’s oversight information.

- 2.1 Please provide a detailed explanation on how CEC proposes that the spreadsheets on pages 13–19, 22–28, 31–36, 39–44 and 47–52 would be populated.
  - 2.1.1 Please explain how the cost/benefit values are derived with respect to the capital investment drivers.
  - 2.1.2 Please provide clarification on whether the spreadsheet parameters would be weighted differently to reflect importance when deriving cost/benefit values.
    - 2.1.2.1 If yes, please provide suggested values and reasons.
- 2.2 As per CEC’s spreadsheets, please provide clarification on how CEC proposes that intangible or unknown metrics could be accurately quantified, such as remaining equipment lifespan, civil integrity, risk impact (people, property, environment...etc.), community concerns, environment concern management, First Nations etc.
- 2.3 Please provide further clarification on how CEC proposes that BCUC would use each capital investment driver’s cost/benefit values to assess make determinations with respect to BC Hydro’s capital expenditures.
- 2.4 Please provide a detailed description on how CEC envisions the proposed framework for capital planning would be incorporated into BC Hydro’s 2018 Capital Filing Guidelines.
- 2.5 Please provide the spreadsheets (in excel format) regarding capital investing planning on pages 13–19, 22–28, 31–36, 39–44 and 47–52.

On page 6 of the CEC evidence, CEC highlights how the Load Resource Balance contributes to BC Hydro's capital investment planning:

The data for assessing some of the issues with this driver can be found in the Load Resource Balance ("LRB") BC Hydro develops and updates regularly for internal and regulatory purposes. When the LRB is showing that BC Hydro is holding surplus energy and capacity to its customer's needs, and has acquired those capabilities at prices above what they can be sold for in the electricity markets, then the ratepayer is disadvantaged.

On page 7 of the CEC evidence, CEC recognizes BC Hydro's asset health tracking systems determine capital investments for generation, transmission and distribution assets:

BC Hydro has a process and systems for assessing the health of its generation, transmission and distribution assets. This process is used as an input to the planning for capital expenditures and other activities aimed at extending the life and performance of the BC Hydro hydroelectric system...

...The data for assessing the health of the hydroelectric system assets is contained in BC Hydro's asset health tracking system....

...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.

On page 8 of the CEC evidence, CEC highlights BC Hydro's risk assessment processes for capital investment planning:

BC Hydro has processes in place to assess a variety of risks to which its assets may be exposed and for assessing the potential for these risks to be realized into impacts on people, property, the environment, and the performance of its hydroelectric system in delivering power to its customers...

...BC Hydro has models for predicting some of the major risks at each of its dams and for predicting the downstream potential impacts of a failure caused by realization of any of these risks. BC Hydro also tracks a number of the types of risks to which its electric systems are subject and monitors baseline conditions of a number of the issues that may potentially be impacted.

On page 9 of Exhibit C3-10, CEC highlights BC Hydro's stakeholder engagement processes for capital investment planning:

BC Hydro has in place a number of processes for defining and being aware of various stakeholder concerns, and for developing strategies and approaches to satisfactorily addressing these concerns...

...How well BC Hydro understands stakeholder concerns, has processes for engaging and managing its stakeholder relationships, and works to find strategies to appropriately respond to those concerns will define the degree to which it can carry this out cost effectively.

2.6 Given that CEC highlights BC Hydro's existing capital planning processes that provide information with respect to the drivers, risks, and strategy for capital investments, please

provide CEC’s position on how CEC’s framework for capital planning provides additional value regarding the regulatory oversight of capital investments.

**3.0 Reference: DRIVER INFORMATION TO IMPROVE COMMISSION OVERSIGHT  
Exhibit C3-10, Section B, pp. 6–7  
Load Resource Balance**

On pages 6 to 7 of the CEC evidence, CEC states:

The data for assessing some of the issues with this driver can be found in the Load Resource Balance (“LRB”) BC Hydro develops and updates regularly for internal and regulatory purposes. When the LRB is showing that BC Hydro is holding surplus energy and capacity to its customers needs, and has acquired those capabilities at prices above what they can be sold for in the electricity markets, then the ratepayer is disadvantaged. When the LRB is showing a deficit then BC Hydro must access some of its contingency supply capability or decline service to some load which, if accessed at higher costs than permanent supply costs, would disadvantage its ratepayers.

The Commission’s oversight of the BC Hydro load forecasting process and results should focus on the above factors and should, on balance, not result in supply being in excess of customer requirements.

Ultimately, for a hydroelectric system with seasonal supply characteristics and a customer base demand affected significantly by seasonal demands, the customer requirements will be probabilistic as will the supply capability. Optimizing this balance is the critical factor to monitor to ensure cost-effectiveness.

The Commission’s oversight can focus on whether or not the optimization is cost-effectively being achieved and whether or not the utility is improving over time.

The Commission’s oversight can also focus on the appropriate response to over-supply and how best to mitigate the ratepayer disadvantages.

3.1 Please describe the form, content and timing that CEC believes would be appropriate for BC Hydro to file information on the LRB.

3.1.1 Please clarify the review process that CEC believes would be appropriate for the LRB, in the context of the BCUC’s existing regulatory jurisdiction.

3.1.2 Please provide the position of the CEC as to whether the “optimization” of the LRB is an achievable objective for BC Hydro. Please explain how this would be measured.

3.1.3 Please clarify, in general terms, what “response to over-supply” the CEC submits that the BCUC could consider.

**4.0 Reference: DRIVER INFORMATION TO IMPROVE COMMISSION OVERSIGHT  
Exhibit C3-10, Section B, p. 8  
Exhibit B-7, p. 5  
Exhibit C3-11, p. 6  
Risk and Security Assessment**

On page 8 of the CEC evidence, CEC states:

BC Hydro’s assessment of the safety risks and the security risks around and pertaining to its capital asset investments is critical to understanding the connection that the potential capital expenditures and investments, which may be required in response to

these risks, has to reduce, minimize or eliminate the risk and/or prevent, mitigate, or eliminate the impact of a realized risk. Cost-effectively managing these risks is important to delivering the main intended value of the assets exposed to these risks.

On page 5 of Exhibit B-7, BC Hydro states:

BC Hydro uses the term risk-based capital expenditures to refer to investments made primarily for the purpose of reducing operational risk. Most of BC Hydro's capital investments are risk based. Risk-based investments are assigned a risk score based on an assessment in one or more of the following risk categories: safety, reliability, financial performance, environmental performance, and reputational. This type of qualitative assessment of risk reduction benefits is reasonable given the difficulty in quantifying such benefits.

On page 6 of Exhibit C3-11, Mr. Scott Thomson states:

When considering reporting such cost/benefit information on an historic basis for example, if the cost actually incurred to meet a risk reduction objective could be captured, that could be compared to the change in the risk score as reported from time to time. But as noted, the assessments themselves are somewhat subjective. On a prospective basis (i.e. the forecast period shown in the templates), management would have to estimate the change that would be expected in the risk assessment based on the planned expenditures. It may or may not occur and again would be subjective, so such forecasts may have less value compared to say a more objective measure; for instance, an investment in the life extension of a generating asset that could be translated into the expected cost/MWh of capacity vs the investment in replacement assets cost/MWh of capacity.

- 4.1 Please provide CEC's position on whether it is feasible to quantify risk to a level that is sufficiently robust, for the purposes of evaluating "cost-effectiveness."
  - 4.1.1 Please explain any limitations of applying a cost-effectiveness evaluation to risk-based capital expenditures.
- 4.2 Please explain how, in the view of the CEC, underlying uncertainties related to risk assessments can be effectively assessed by the BCUC.
- 4.3 Please explain, in the view of CEC, whether BC Hydro's propensity to invest in risk based capital investments limits the applicability of a "cost-effectiveness" based approach to BCUC's oversight.

## **C. PART II - CEC REVIEW OF THE CURRENT COMMISSION CAPITAL PLANNING OVERSIGHT**

- 5.0 Reference: PART II - CEC REVIEW OF THE CURRENT COMMISSION CAPITAL PLANNING OVERSIGHT  
Exhibit C3-10, Section 92, p. 53  
Exhibit B-4, Response to BCUC information request (IR) 1.12.2  
BCUC Review of Capital Expenditure Plans in RRA Process**

On page 53 of the CEC evidence, CEC states:

While the RRA process determines the expenditures that are permitted to be reflected in rates over a future period, it is typically limited to three years and limits the Commission's opportunity to assess the overall long-term capital expenditure plan and

the processes which resulted in those plans. The Commission's scope to provide oversight of the cost effectiveness of capital expenditures is constrained since denial of expenditures at the point of an RRA can result in wasted spending by BC Hydro.

BC Hydro's response to BCUC IR 1.12.2 stated:

The Amortization of Capital Additions Regulatory Account is the only regulatory account related to the capital costs of projects. This regulatory account defers the variance between the actual amortization of capital additions and the forecasted amortization of new capital additions planned during the test period.

- 5.1 Please clarify whether CEC believes that BCUC denial of a capital expenditure in an RRA process means that the expenditure will not be made, or alternatively that the expenditure will not be included in the calculation of rates for the RRA test period, and explain the reasons supporting the response.
- 5.2 Considering the function of the Capital Additions Regulatory Account, please clarify whether the "wasted spending" that would result from BCUC denial in an RRA process of a capital expenditure would eventually be recovered from utility ratepayers or would be absorbed by BC Hydro's shareholder.

**6.0 Reference: PART II - CEC REVIEW OF THE CURRENT COMMISSION CAPITAL PLANNING OVERSIGHT  
Exhibit C3-10, pp. 53–54  
Exhibit C3-11, p. 3  
Prospective Information Component of Annual Reports to BCUC**

On page 53 of the CEC evidence, CEC states:

The Annual Report to the Commission largely focuses on documenting historical spending activity.

On page 54 of the CEC evidence, CEC states:

In the CEC's view, the RRA and Annual Report to the Commission appear in the capital review process at a stage where the Commission has limited opportunities to add oversight value. Both the RRA and the Annual Report to the Commission provide an historical view of spending with only a limited review of future spending, such that neither process provides an opportunity to assess planned future spending.

The response to Question 5 on page 3 of Mr. Thomson's evidence in Exhibit C3-11 states:

The right strategy poorly executed doesn't ensure cost effectiveness. The wrong strategy flawlessly executed similarly doesn't ensure cost effectiveness. That said, for the commission to effectively perform its oversight role, I think it is imperative that they understand the drivers and, on an evolving basis, the strategies and evaluations that BC Hydro makes to address those drivers. In other words, it would be most effective if that understanding is developed prospectively rather than reactively after the money is spent.

Section 45(6) of the *Utilities Commission Act* states:

A public utility must file with the Commission at least once each year a statement in a form prescribed by the Commission of the extensions to its system that it plans to construct.

- 6.1 Please confirm that BC Hydro's current Annual Reports to the BCUC contain a statement of planned extensions, in compliance with section 45(6) of the UCA.

- 6.2 Please confirm that the BCUC can use the statement of planned extensions in the Annual Report to identify any planned extensions that the BCUC considers it should, pursuant to s.45(5) of the UCA, require BC Hydro to file a Certificate of Public Convenience and Necessity (CPCN) application for, or explain otherwise.
- 6.3 Please discuss whether, in the view of the CEC, the BCUC could use the annual statement of planned extensions and the requirement for a CPCN for specified projects as an oversight process for a tier of extension projects with capital expenditures that are significant, but less than the CPCN application thresholds in the BC Hydro 2018 Capital Filing Guidelines (2018 Guidelines).
- 6.4 What changes (if any) does CEC believe should be made to the content of the annual statement of planned extensions, the timing when it is filed, or the process to review it, in order to facilitate the use of the statement in the prospective review by the BCUC of a significant portion of BC Hydro's capital expenditure plans?
- 6.5 Does CEC believe that it would be useful and appropriate for the annual statement to include the information set out in Appendix J of BC Hydro's Revised Proposal filed as Exhibit B-7 (Revised Proposal) for each planned extension with forecast expenditure above a reasonable threshold?
- 6.6 Does CEC believe that the annual statement should include the results of a cost/benefit analysis as a measure of cost-effectiveness for each planned extension, with a forecast expenditure above a reasonable threshold? Please explain the reasons supporting the response.

**7.0 Reference: PART II - CEC REVIEW OF THE CURRENT COMMISSION CAPITAL PLANNING OVERSIGHT Exhibit C3-10, Part II Sections A, B, J pp. 64, 67, 69, 76, 135 BC Hydro Inquiry of Expenditures related to the adoption of the SAP Platform Final Report, p. 109 CEC Proposal for BCUC Reviews of BC Hydro 10 Year Long-Term Capital Plans**

On page 64 of the CEC evidence, CEC states:

The CEC submits that it would be useful for the Commission to have the opportunity to review the 10 Year Long-Term Capital Plans portfolios in conjunction with the strategies and drivers in order to adequately assess the short-term RRA expenditure recovery requests and provide a suitable context to understand those revenue requirement decisions.

On page 67 of the CEC evidence, CEC states:

The CEC submits that the RRA does not provide a sufficient opportunity for the review of the capital planning process because the Commission has limited opportunity at that stage to evaluate the adequacy of the long-term plans. The CEC submits that an understanding and assessment of the validity of BC Hydro's capital planning and planning processes is of such significance as to warrant a substantial and independent review, at a period which precedes the RRA.

On page 69 of the CEC evidence, CEC states:

Forecast data to understand the generation capital requirements, if they were to be met by BC Hydro assets, would be provided in an Integrated Resource Plan ("IRP") load resource balance planning.

On page 76 of the CEC evidence, CEC states:

The CEC proposes that the Commission request that BC Hydro incorporate into its oversight process an annual overview of BC Hydro's capital driver assessment processes,

with analytical metrics which may be used for assessment of each for its validity and integrity in driving capital expenditures.

On page 135 of the CEC evidence, CEC states:

The CEC's view is that requiring annual Capital Reports which address the various CMS processes and documents will provide the Commission with important information in its assessment of Revenue Requirements, and can also stimulate improvements in the CMS themselves, thereby generating significant benefits in the larger streams of capital planning.

Page 109 of the BCUC's Report on the Inquiry of Expenditures related to the adoption of the SAP Platform dated September 7, 2018 states:

The Panel notes the CEC's recommendation that the BCUC exercise "staged oversight on all BC Hydro IT&T expenditures, if not all BC Hydro capital expenditures in a Capital Plan Requirement Application (CPRA) review process separated from the usual RRA process."

**Recommendation: BC Hydro should consider the CEC's suggested Capital Plan Requirement Application review process as part of the BC Hydro Review of the Regulatory Oversight of Capital Expenditures and Projects proceeding currently underway with the BCUC.**

- 7.1 Please outline the essential components that CEC believes should be included in the 10 Year Long-Term Capital Plans, which CEC recommends BC Hydro file and the BCUC review on an annual basis.
  - 7.1.1 Please include a discussion of the proposed form and content of information pertaining to "strategies and drivers" that CEC submits should be reviewed in conjunction with 10 Year Long-Term Capital Plans.
- 7.2 Please confirm that the recommended 10 Year Long-Term Capital Plans are similar to what CEC referred to a "Capital Plan Requirement Application" in the Inquiry of Expenditures related to the adoption of the SAP Platform, or explain any substantial differences.
- 7.3 Please confirm whether the recommended 10 Year Long-Term Capital Plans are generally similar to BC Hydro's 10 Year Capital Forecasts, such as the document that BC Hydro filed in Appendix G of its F2017-F2019 Revenue Requirements Application as referred to on page 61 of CEC's evidence.
  - 7.3.1 Please identify any significant differences.
- 7.4 Please explain the extent to which CEC recommends that an annual 10 Year Long-Term Capital Plan include and be supported by an assessment of cost-effectiveness such as CEC describes in Part I of its evidence.
- 7.5 Please explain the extent to which a 10 Year Long-Term Capital Plan should be coordinated with an Integrated Resource Plan (IRP) load forecast; the extent to which it would be dependent on a reasonably current IRP and how the lack of a current IRP load forecast may be accommodated.
- 7.6 Please outline the filing schedule and the BCUC review process that CEC believes would be appropriate for an annual 10 Year Long-Term Capital Plan.
- 7.7 Please describe the nature of BCUC approval, acceptance or other response that CEC believes would be appropriate after reviewing a 10 Year Long-Term Capital Plan, in the context of BCUC's regulatory jurisdiction.

**8.0 Reference: PART II - CEC REVIEW OF THE CURRENT BCUC CAPITAL PLANNING OVERSIGHT  
Exhibit C3-10, Part II Section D, p. 99  
BCUC Oversight of Generation Capital Planning**

On page 99 of the CEC evidence, CEC states:

The CEC expects that the Commission’s oversight of generation capital planning and its cost effectiveness would be well-served by increased understanding of generation planning at the objective measurement level, and subsequently at a level assessing strategies and improvements in the overall lifecycle value contributions of BC Hydro’s generation assets and the cost effectiveness of capital expenditure investments in delivering linking improved lifecycle value contributions.

- 8.1 When CEC refers to “increased understanding of generation planning at the objective measurement level,” please clarify whether CEC proposes that the assessment should be developed on a standardized basis using the four expenditure drivers of Customer Load Growth, System Sustainment Condition, External Risk Exposure, and Stakeholder Condition Standards referred to in section 18 on page 4 of CEC's evidence, or discuss otherwise.
- 8.2 Please confirm, or otherwise explain, whether CEC believes that developing this increased understanding would require a cost/benefits determination of cost-effectiveness for each objective or driver for each significant generation unit?
- 8.3 Considering that cost/benefits for the four “drivers” are expressed in different units, please discuss how CEC proposes that an overall measure of cost-effectiveness would be determined for each significant generation unit, and for generation capital expenditures in total.

**9.0 Reference: HOW WELL THE PROJECT/PROGRAM SPECIFICATION FOR CAPITAL INVESTMENTS PERFORM WITH RESPECT TO EACH CAPITAL PLAN  
Exhibit C3-10, Part II Section E, pp. 114–117; Exhibit B-7-1, Appendix D, pp. 1-2;  
BC Hydro’s Capital Expenditure and Projects Guidelines**

On pages 116 to 117 of the CEC evidence, CEC states:

[T]he CEC is not focused on proposing changes to the BC Hydro Guidelines, but rather is focused on the need for additional guidelines to supply context to Commission oversight of BC Hydro capital expenditures and investments. The CEC is focused on having before the Commission information that may lead to an understanding of the benefits of capital deployment and the matching of those benefits to costs to provide the cost-effectiveness of BC Hydro’s capital expenditures and investments.

- 9.1 Please discuss how the relative cost-effectiveness of a project would be assessed by the BCUC (for example, benchmarked against a similar project, cost-effective thresholds, on a project by project basis, etc.).
- 9.2 Please explain specifically how the BCUC could use cost-effectiveness in the review of:
  - i. Revenue requirements proceeding;
  - ii. CPCN application;
  - iii. Capital expenditure schedule under section 44.2 of the UCA; and
  - iv. Compliance filings.
- 9.3 Please explain whether there are any instances where the cost-effectiveness of a capital project or investment would not be an essential metric for the review of capital expenditures and investments (e.g. capital projects undertaken to ensure compliance with codes or standards).
  - 9.3.1 If so, please provide examples of such instances.

- 9.3.2 If not, please discuss whether the significance of cost-effectiveness should be weighted according to the type of capital expenditure. In your response, please provide examples of any weighting that would be applied.

On page 117 of the CEC evidence, CEC states:

Specifically, the additional guidelines could focus on the following:

- a) Review of BC Hydro's **driver documentation** as it relates to driving capital spending and specifically how cost-effectively they drive capital.
- b) Review of BC Hydro's **strategy papers** as they relate to driving capital spending and specifically how cost-effectively they drive capital.
- c) Review of BC Hydro's full **capital plan portfolios** and specifically how cost-effectively they arrange for and drive capital.
- d) Review of BC Hydro's **business cases** for any of its capital expenditure plans or investments and specifically the evidence that the decision for approval is based on cost-effective plans.
- e) Review of BC Hydro's **post-implementation reports** on capital expenditures additions and specifically how cost-effective the resulting capital investments will be.
- f) Review of BC Hydro's overall **CMS** and specifically the degree to which it is improving over time in delivery of cost-effective capital expenditures and investments.

#### **CEC CONCLUSIONS WITH RESPECT TO BC HYDRO'S CAPITAL EXPENDITURE AND PROJECTS GUIDELINES**

In the CEC's view the BC Hydro Guidelines are necessary but not sufficient. The contextual elements outlined above regarding capital expenditures and investments could be added to the Commission oversight process and would likely best be handled as permanent annual documentation of the capital planning process.

- 9.4 Please confirm, or otherwise explain, whether CEC is proposing that BC Hydro's Annual Report to the BCUC includes the following documents:

- a) Driver documentation;
- b) Strategy papers;
- c) Capital plan portfolios;
- d) Business cases;
- e) Post-implementation reports; and
- f) BC Hydro's CMS (as defined by the CEC).

- 9.4.1 If not confirmed, please explain the process by which the documents identified in items a) to f) would be filed with the BCUC.

**10.0 Reference: HOW WELL THE AUTHORIZATION DECISION MAKING FOR CAPITAL INVESTMENTS IS WORKING FOR CAPITAL PROJECTS/PROGRAMS Exhibit C3-10, Part II Section F, pp. 118–121; Exhibit B-7-1 (Revised Proposal), Section 2.3.1, pp. 9–16; Section 3.2.1, pp. 20–21 BC Hydro Business Cases and Importance of Oversight**

On page 118 of the CEC evidence, CEC states that it considers there to be considerable value in the BCUC having awareness and information on BC Hydro's business cases. CEC explains:

Commission understanding of the effectiveness of the business cases BC Hydro uses to support its internal decision making in regard to its capital expenditures and investments will be very important for the Commission's ability to add value through its approval and ratemaking decisions. As such, business cases warrant significant regulatory attention.

CEC further states:

Business cases for capital expenditure projects should be a requirement for decision making regarding proceeding with projects.

In understanding the effectiveness of the business cases prepared by BC Hydro for justification of various levels of capital expenditure, there is not an ability to access an analysis of BC Hydro's business case process.

Such an analysis would rely on a sampling basis and a set of criteria for evaluating specific business case issues.

On page 121 CEC states:

The CEC's view is that the strong business cases developed would have the opportunity of documenting cost-effective capital expenditures and investments to be made by BC Hydro. Improving the business cases would have the potential to improve the decision making with regard to improving BC Hydro's cost-effectiveness in deploying capital.

- 10.1 Please discuss CEC's interpretation of the BCUC's jurisdiction with respect to reviewing BC Hydro's business cases.
- 10.2 Please provide examples of the proposed sampling and the criteria used for evaluating business cases.

On pages 9 to 16 of the Revised Proposal, BC Hydro provides an overview of the types of capital work it implements according to its two Business Units: Power System Investments and Other Capital Investments. BC Hydro submits that Power System Investments comprises the following capital work: Generation, Dam Safety, Transmission and Distribution, Properties, Information Technology and Vehicle Fleet and Equipment. Other Capital Investments is stated to include Other Capital Investments includes "capital expenditures related to Materials, Management upgrades, Field Operations tools and equipment, Control Centre systems upgrades, and workforce training equipment."

- 10.3 Please confirm, or otherwise explain, whether the proposed sampling would include business cases for all types of capital work implemented by BC Hydro.
  - 10.3.1 If not confirmed, please explain the types of capital work that would not require a business case.

On pages 20 to 21 of the Revised Proposal, BC Hydro provides a summary of its governance and oversight structure. BC Hydro states:

The governance over BC Hydro's capital investment involves the Board of Directors, the Executive Team, business unit leadership teams, and portfolio managers.

- The Board of Directors issues two types of approvals for capital projects whose costs are expected to be greater than \$50 million (\$20 million for Information Technology projects). The first approval is of the Preferred Alternative and is sought before the project can proceed to Definition Phase. The second approval is of the project itself, including forecast

cost, and is sought before the project can proceed to Implementation Phase.

- The Capital Projects Committee is a sub-committee of the Board of Directors. It provides strategic and policy level advice and direction on the long-term capital plans and capital projects. This sub-committee reviews and recommends for the full Board of Directors approval any changes in total authorized cost (a cost estimate that includes the expected cost and the management 1 reserves) for Board-approved projects.
- The Capital Delivery Management Committee includes members of the executive team and senior managers across the organization. It provides advice and direction: on the planning and delivery of BC Hydro's capital investments; BC Hydro's adherence to its regulatory requirements, standards, and long-term strategies; and the capital planning processes and re-alignment of priorities as needed.
- The Capital Delivery Management Committee Working Team is composed of managers and directors responsible for managing assets, managing resources, and implementing capital projects. It provides feedback and recommendations to the Capital Delivery Management Committee to enable them to make informed decisions as part of the portfolio management process.

10.4 In consideration of BC Hydro's governance and oversight structure, please explain in what capacity CEC proposes that the BCUC would review the business cases (for example, BCUC internal review, as part of an application, etc.).

10.5 Please explain further how the review of BC Hydro's business cases would "improve the decision making with regard to improving BC Hydro's cost-effectiveness in deploying capital."

**11.0 Reference: HOW WELL THE ACCOUNTING PROCESS FOR ADDITIONS & RETIREMENTS AND PERFORMANCE FOR CAPITAL INVESTMENT IS WORKING FOR THE APPROPRIATE RECOVERY OF CAPITAL INVESTMENT COSTS  
Exhibit C3-10, Part II Section G, p. 124; Exhibit B-7-1, Section 2.3.1, pp. 9–16;  
BCUC Processes for Oversight for BC Hydro Capital**

On page 124 of the CEC evidence, CEC states:

The CEC finds that the CPCN and 44.2 application are characterized by the principle of cost-effectiveness, which is consistent with the CEC's view that this principle should apply throughout all of BC Hydro's capital planning.

The CEC finds that key drivers and strategies for replacement of component of generating facilities and therefore life extension for the remaining components is an important aspect of BC Hydro's capital planning.

The CEC concludes that Commission oversight of BC Hydro's capital plans with metrics based on the cost-effectiveness principles would produce significant benefits for ratepayers.

On pages 9 to 16 of the Revised Proposal, BC Hydro provides an overview of the types of capital work it implements according to its two Business Units: Power System Investments and Other Capital Investments.

11.1 Please provide examples of metrics based on the principles of cost-effectiveness.

11.2 Please provide examples of the significant benefits that would arise as a result of the BCUC's oversight of BC Hydro's capital plans with metrics based on the cost-effectiveness principles.

**12.0 Reference: HOW WELL THE POST-IMPLEMENTATION PROCESS FOR CAPITAL INVESTMENTS IS WORKING FOR THE FEEDBACK TO IMPROVE CAPITAL MANAGEMENT Exhibit C3-10, Part II Section H, pp. 128; Exhibit B-7-1, Section 3.1.3, pp. 19–20 BC Hydro Business Case Post Implementation Follow up**

On page 128 of the CEC evidence, CEC states:

The CEC’s view is that good quality post-implementation reports would have the opportunity of documenting cost-effective capital expenditures and investments made by BC Hydro. Improving the post-implementation reports would have the potential to improve the decision-making with regard to improving BC Hydro’s cost-effectiveness in deploying capital.

The CEC’s view is that post-implementation reporting will need continuing follow-up in order to track the follow through on capturing the benefits from given capital expenditures and investments, and therefore ensuring the cost-effectiveness of the capital expenditures and investments is maximized.

The CEC expects that improving the Commission’s oversight information with respect to the BC Hydro post-implementation reports would lead increased cost-effectiveness of BC Hydro’s capital expenditures and capital investments.

On page 19 of the Revised Proposal, BC Hydro states:

BC Hydro undertakes compliance reporting and files information on a regular basis to assist in the review of BC Hydro’s capital expenditures and projects. Reporting includes BC Hydro’s Annual Report and project-specific compliance reports filed on a schedule determined by the applicable Commission order.

BC Hydro further states:

BC Hydro also files with the Commission project-specific compliance reports during the project’s Implementation Phase and at the conclusion of the project.

- Periodic project-specific progress reports for all projects that have been granted a CPCN from the Commission or where the Commission has accepted the project’s capital expenditure schedule. The project-specific compliance reports are submitted on a schedule as directed by the Commission in the applicable order. The progress reports keep the Commission informed on the progress of project activities and any impact to costs and schedule. The Commission is also notified of any potential or outstanding issues, and when and how those issues are resolved; and
- At a specified period after the project’s close, at substantial completion of the project, or a milestone specified by the Commission’s Order, BC Hydro is normally directed to file with the Commission a final project report. The final project report provides the final update on the project, a reconciliation of final costs and schedule changes, and the realized project impacts and benefits.

12.1 Please explain whether CEC considers that post-implementation reports would be required for all of BC Hydro’s capital projects and capital investments.

12.1.1 Please identify any circumstances where a post-implementation report would not be required.

12.2 Please explain whether post-implementation reports would be required in addition to the project-specific compliance reports currently filed with the BCUC.

- 12.2.1 If not, please discuss any revisions that could be made to the content or form of project-specific compliance reports.
- 12.3 Please outline the key information that a post-implementation report would be required to include.
- 12.4 Please discuss further how the information provided in a post-implementation report would be used to improve the decision-making with regard to improving BC Hydro's cost-effectiveness in deploying capital.

**13.0 Reference: HOW WELL THE ACCOUNTABILITY PROCESS FOR CAPITAL INVESTMENTS IS WORKING FOR THE FEEDBACK TO IMPROVE CAPITAL MANAGEMENT  
Exhibit C3-10, Part II Section I, pp. 129–134; Exhibit B-7-1, Section 4.3.1, p. 28;  
Appendix B, p. 2  
Example of Demand Side Management (DSM) Capital Expenditure Oversight**

On page 129 of the CEC evidence, CEC states:

The Commission's opportunity to enhance its value in the capital expenditure and investment processes could be engaged by separating its main oversight from the RRA process, ensuring that the oversight is carried out in advance of, but integrated into, the RRA decision-making.

The CEC's view is that reforming the Annual Report on Capital and making it a focus of regulatory process would enable the proposed emphasis on Drivers, Strategies, Plans, Business Cases, and Feedback to become effective for informing the Commission's approvals of expenditures and ratemaking processes.

On page 28 of the Revised Proposal, BC Hydro states:

BC Hydro normally includes in revenue requirement applications information on all such projects exceeding the materiality limit with forecast expenditures or additions in the test period.

BC Hydro explains on page 2 of Appendix B to the Revised Proposal that "[h]istorically, the materiality limits have been determined through dialogue between BC Hydro and the [BCUC]."

- 13.1 With respect to CEC's position on "reforming the Annual Report on Capital and making it a focus of regulatory process", please clearly explain what is meant by "regulatory process." Please comment on how such regulatory process would align with the BCUC's regulatory jurisdiction.
- 13.1.1 Please provide CEC's position on the regulatory efficiency of its proposed approach, with respect to the RRA review process.
- 13.2 Please explain whether the existing method of establishing materiality limits would be applied to the proposed regulatory process for the Annual Report on Capital.
- 13.2.1 If not, please explain the thresholds, materiality limits or other process by which BC Hydro would report on its capital expenditures and investments.

On page 134 of the CEC evidence, CEC states:

If this level of and approach to information requirements for Commission oversight is justified and working for [Demand-Side Management] 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.

The CEC would not suggest that the DSM level of and approach to capital investment planning is a final ideal and, on the contrary, would expect that significant improvements can be sought over time.

However, the CEC submits that the approach to DSM expenditure reporting is a substantial validation of the information requirement concepts proposed by the CEC for effective Commission oversight of BC Hydro's capital expenditures and investments.

Section 4 of the Demand-Side Measures Regulation<sup>1</sup> prescribes the cost-effectiveness testing of demand-side measures included in expenditure schedule applications, pursuant to section 44.2(5)(d) of the UCA.

13.3 Given the specific regulatory framework that applies to DSM, please discuss to what extent the capital expenditure oversight that applies to DSM is a representative example of the oversight that applies to BC Hydro's capital work.

**14.0 Reference: HOW WELL THE ANTICIPATED PROCESS FOR REGULATORY OVERSIGHT IS WORKING FOR IMPROVING THE COST-EFFECTIVENESS OF THE COMMISSION'S OVERSIGHT Exhibit C3-10, Part II Section J, p. 135; Exhibit B-7-1, Section 8.1, p. 56 Capital Report**

On page 135 of the CEC evidence, CEC states:

The CEC's view is that requiring annual Capital Reports which address the various [Capital Management System] processes and documents will provide the Commission with important information in its assessment of Revenue Requirements, and can also stimulate improvements in the CMS themselves, thereby generating significant benefits in the larger streams of capital planning.

On page 56 of the Revised Proposal, BC Hydro states:

The Annual Report has historically included the following information on capital expenditures and projects:

- a) a summary of capital expenditures by capital category;
- b) a listing of the planned expenditures in the current fiscal year for projects over the materiality limit (\$2 million for Information Technology projects, \$5 million for all other capital projects), and Demand Side Management;
- c) an indication of which projects are considered extensions, pursuant to section 45(6) of the UCA for all projects over the materiality limit; and
- d) a listing of projects over the major project threshold and the anticipated type of regulatory filings.

Starting in fiscal 2017, changes to the Annual Report have increased the transparency, improved efficiency, reduced redundancy, and provided more relevant information on capital expenditures and projects.

14.1 Please confirm, or otherwise explain, whether "Capital Reports" referenced on page 135 of the CEC evidence is the same as the "Annual Report" referenced on page 56 of BC Hydro's Revised Proposal.

14.1.1 If not confirmed, please explain how Capital Reports would vary from Annual Reports.

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<sup>1</sup> [http://www.bclaws.ca/civix/document/id/complete/statreg/326\\_2008](http://www.bclaws.ca/civix/document/id/complete/statreg/326_2008)

14.1.2 If not confirmed, please explain the process by which the Capital Reports would be filed and reviewed by the BCUC.

14.2 Please detail the CMS processes and documents which would be required as part of the Capital Reports.

**D. EVIDENCE OF MR. SCOTT THOMSON**

**15.0 Reference: EVIDENCE OF MR. SCOTT THOMSON  
Exhibit C3-11, cover letter, Appendix A**

On the cover letter of Exhibit C3-11, CEC states:

The CEC retained Mr. Scott Thomson to provide an expert opinion on Part I of the CEC Evidence prepared by Mr. David Craig.

Mr. Thomson's Curriculum Vitae is attached as Appendix A.

15.1 Please provide further explanation on how the experience of Mr. Thomson should be viewed as verifying the applicability of CEC's evidence to the specific situation of BC Hydro's capital planning processes, and the BCUC's regulatory oversight.