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April 20, 2017

British Columbia Utilities Commission  
6<sup>th</sup> Floor, 900 Howe Street  
Vancouver, B.C.  
V6Z 2N3

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

Dear Sirs/Mesdames:

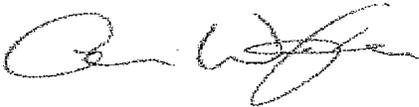
**Re: BC Hydro Supply Chain Application – Project No. 3698901**

We are counsel to the Commercial Energy Consumers Association of British Columbia (CEC). Attached please find the CEC's second set of Information Requests to BC Hydro with respect to the above.

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  
Enclosures  
cc: CEC  
cc: BC Hydro  
cc: Registered Interveners

**COMMERCIAL ENERGY CONSUMERS ASSOCIATION  
OF BRITISH COLUMBIA**

**INFORMATION REQUEST #2**

**BC Hydro Supply Chain Application - Project No. 3698901**

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**75. Reference: Exhibit B-4, CEC 1.3.1.1**

1.3.1 Please confirm that BC Hydro's criteria for a material change would not include the situation in which the revised cost range met the upper cost range, and the revised benefit met the lower end of the benefit range.

1.3.1.1 Please provide the NPV of such a situation.

**RESPONSE:**

As listed in Table 2-10 in the Application, this is the "Upper Bound Cost Estimate – Low Benefits" scenario. It has an NPV of Discounted Cash Flows of \$6.4 million and an NPV of Revenue Requirement Impact of \$(4) million.

BC Hydro believes this scenario is unlikely, for the reasons described in the Application.

75.1. How would the Commission and interveners become aware of such a situation, if such a situation were to occur?

**76. Reference: Exhibit B-4, CEC 1.4.2**

1.4.2 How has BC Hydro accounted for the likelihood of 'effort' savings not translating into \$ savings, in that FTE's may not necessarily be reduced, but are instead replaced with other activities. Please explain.

**RESPONSE:**

The implicit assumption in this question is that other activities are non-value added, whereas it is BC Hydro's view that any replacement work would be necessary work that would otherwise require hiring new employees.

If FTEs are diverted to other activities based on operational requirements, this would still represent a dollar savings in that it will have avoided the need to hire incremental staff and contractors. Please also refer to BC Hydro's response to BCUC IR 1.30.13.

BC Hydro has run a low-benefit scenario as part of its sensitivity analysis, which assumes that only 30 per cent of the potential benefits are realized (as opposed to 50 per cent for the mid-benefit scenario). As shown in Appendix F, Tab G1 – NPV DCF, Table 2: SAP Mid Cost Low Benefit, even with this lower level of monetized savings in this scenario, the project has a NPV of Discounted Cash Flow of \$23 million.

76.1. Does BC Hydro expect to reduce FTEs or divert FTEs to other activities as a result of the Supply Chain project? Please provide a ballpark proportion for each, and provide quantification of the dollar value of each.

**77. Reference: Exhibit B-1, page 2-30 and Exhibit B-4, CEC 1.3.1.1 and CEC 1.6.1 and CEC 1.6.2 and CEC 1.14.1**

**Table 2-10 NPV Sensitivity Analysis Results**

	<b>NPV of Discounted Cash Flows (\$ million)</b>	<b>NPV of Revenue Requirement Impact (\$ million)</b>
Upper Bound Cost Estimate - Low Benefits	6.4	(4.0)
Mid-Range Cost Estimate - Mid-Range Benefits	74.4	59.0
Lower Bound Cost Estimate – High Benefits	111.6	94.0

1.3.1 Please confirm that BC Hydro's criteria for a material change would not include the situation in which the revised cost range met the upper cost range, and the revised benefit met the lower end of the benefit range.

1.3.1.1 Please provide the NPV of such a situation.

**RESPONSE:**

As listed in Table 2-10 in the Application, this is the "Upper Bound Cost Estimate – Low Benefits" scenario. It has an NPV of Discounted Cash Flows of \$6.4 million and an NPV of Revenue Requirement Impact of \$(4) million.

BC Hydro believes this scenario is unlikely, for the reasons described in the Application.

1.6.1 Please provide BC Hydro's evidence supporting the assumption of 1.5 hours per transaction.

In recognition that soft benefits are often difficult to quantify, BC Hydro applied a 50 per cent discount to its total assessed benefits for its base case (Mid Benefits scenario). For the high and low benefit scenarios, 60 per cent and 30 per cent respectively of the total assessed benefits were assumed to be realizable. The NPV calculated for the "High Benefits – Mid-Range Cost", "Mid Benefits – Mid-Range Cost", and "Low Benefits – Mid-Range Cost" scenarios for the project are approximately \$101 million, \$74 million, and \$23 million, respectively.

1.6.2 How did BC Hydro arrive at the 50% level of possible automation?

In the course of responding to this information request, BC Hydro identified that the calculation of this benefit in the model did not factor in that approximately 25 per cent of purchase order and contract order transactions are already automated. By factoring in the number of transactions that are already automated, the mid-range value of this benefit is reduced by approximately \$369,000, and, in addition, reduces the mid-range value of benefit 3 in Tab F-1 in Attachment F of the Application by approximately \$246,000. These corrections result in a reduction of \$3.1 million to the mid-range net present value calculation in the Application.

BC Hydro does not consider this impact, whether in isolation or in combination with the other correction discussed in BC Hydro's response to CEC IR 1.14.2, to be material to the justification for the Project, given the high net present value of the Project and the conservative approach taken to calculating the benefits. The change does not impact the alternatives analysis as it affects both the PassPort and SAP alternatives. BC Hydro will continue to refine the benefits analysis in the Definition Phase of the project and will be filing an updated benefits analysis as part of the verification report in Phase Two of the regulatory process.

1.14.1 Please provide the basis for BC Hydro's estimate of 5,000 'long lead times' per year.

In the course of responding to this information request, BC Hydro identified a data input error in the calculation of this benefit in the model. The benefit should have referenced 100 long lead-time items, rather than 5,000. Using the correct number of long lead-time items reduces the mid scenario benefit by \$101,000 per year, resulting in a reduction of \$510,000 to the mid-range net present value calculation in the Application.

BC Hydro does not consider this impact, whether in isolation or in combination with the other correction discussed in the response to CEC IR 1.6.2, to be material to the justification for the Project, given the high net present value of the Project and the conservative approach taken to calculating the benefits. The change does not impact the alternatives analysis as it affects both the PassPort and SAP alternatives. BC Hydro will continue to refine the benefits analysis in the Definition Phase of the project and will be filing an updated benefits analysis as part of the verification report in Phase Two of the regulatory process.

- 77.1. In its application, BC Hydro identified a Mid Range cost Estimate- Mid Range Benefits as having an NPV of \$74.4 million and Upper Bound Cost Estimate and Lower Bound Benefits as having an NPV of (\$4 million). In response to CEC 1.3.1.1 BC Hydro reiterates the (\$4 million). The \$74 million was also reiterated in CEC 1.6.1. In CEC 1.6.2 and CEC 1.14.1 BC Hydro identifies an error and reduction of NPV in the order of 3.1 million and \$500,000.
- 77.2. Please confirm that when responding to CEC 1.3.1.1 and CEC 1.6.1, BC Hydro did NOT factor in the revisions identified in CEC 1.6.2 and 1.14.1.
- 77.3. Please identify any other IR responses in which BC Hydro has not factored in these or other corrections to its financial or other analyses.
- 77.4. Please provide the revisions to all the NPVs for all the scenarios based on the changes identified in the CEC and/or any other IR responses.

- 77.5. Please explain why BC Hydro does not consider a \$3.6 million change (\$3.1 million + \$0.5 million) to be material to the justification of the project. Please consider the impact to the low benefits NPVs in its response.

**78. Reference: Exhibit B-4, CEC 1.9.1**

- 1.9.1 Please provide examples of when BC Hydro has experienced a financial risk and/or reputational risk as a result of business users seeking higher prices.

**RESPONSE:**

BC Hydro notes the benefit is not referring to business users seeking higher prices. The benefit relates to a situation when an employee purchases a material or service for which BC Hydro has a contract, but which the employee chooses not to use believing they are able to purchase the item at a lower price from an alternate source. This can result in BC Hydro being unable to achieve volume discount levels (financial risk) and / or not being able to meet its contractual targets (reputational risk).

- 78.1. Please provide examples of when BC Hydro has experienced financial risk as a result of the employee choosing alternative sources and provide quantification in these examples.
- 78.2. Please provide examples of BC Hydro failing to meet its contractual targets and experiencing reputational risk as a result of an employee attempting to purchase items at a lower price from an alternate source, and provide quantification in these examples.

**79. Reference: Exhibit B-4, CEC 1.9.3**

- 1.9.3 Are there no other simple options, such as flags or notes in the system to alert business users that there are outstanding volume contracts associated with the unit price? Please explain.

**RESPONSE:**

While other options such as the examples provided in the question do exist, they would not fully address the root cause of the problem, or achieve BC Hydro's objective. BC Hydro's goal is to use improved data collection and analysis to enable us to negotiate better unit prices up front for materials and services. The current approach is to negotiate potential volume discounts which are applied retroactively once a negotiated volume level has been reached. With the Supply Chain Applications Project in place, BC Hydro will have a better understanding of the volumes we require, allowing us to negotiate a lower overall unit price.

While it may be possible to alert a business user that a volume discount is potentially available, a business user's cost centre is still charged the pre-discount price, even if the volume level is later reached to trigger the discount. As a result, while a flag or note might improve the situation, some business users may still look to procure items directly if they can do so for a lower up-front unit price.

- 79.1. Please confirm that training and policy adaptation remain viable options in ensuring business users minimize costs corporately.

## 80. Reference: Exhibit B-4, CEC 1.13.1 and 1.13.3

### 13.0 Exhibit B-1, Appendix F1

2. Hour contract management	Limited data model for contracts does not include extension options and status.	IP&E	No system ability to forecast and manage contract expiry and extension processes increases the manual effort required to manage these processes. People have to read through contracts to look for standard data points (for expiry and extensions).	Reduction in effort reviewing contracts through better access to standard terms and conditions.	Approximately 2,000 contracts expire per year. Assume 2 hours per contract to review using current conditions. When information required to renew the contract is missing it takes an additional 30 hours (for a total of 32 hours). It is estimated that information is missing from roughly 1/3 of all contracts (500/1500).
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1.13.1 On what basis has BC Hydro assumed that information is missing from 1/3 of BC Hydro contracts?

#### RESPONSE:

This assumption is based on feedback from individuals responsible for processing contract extensions. Please refer to BC Hydro's response to CEC IR 1.6.1.

To clarify, the reference to information missing from roughly 1/3 of all contracts is a reference to information available in the current system. The information is available in the contract documents, but requires manual scanning through the documents to be retrieved.

1.13.3 Please confirm that missing information can be attributable to human error in inputs that would not necessarily be recoverable with new IT technologies.

#### RESPONSE:

Not confirmed. The missing data is not due to human error but is due to limitations with the current technology.

As explained in BC Hydro's response to CEC IR 1.13.1, the missing information exists in the actual contract documents but is not readily accessible in the current system.

The new SAP supply chain system will have a data model that includes contract extension options and status, and therefore will provide better ability to forecast contract expiry and manage contract extension processes, with reduced manual effort.

80.1. Please confirm that it is BC Hydro's position that the information could not possibly have been recorded in the current system, even if BC Hydro policy were to dictate the requirement to include the information under a Note or other open type of category.

**81. Reference: Exhibit B-4, CEC 1.15.1**

1.15.1 What is the basis for BC Hydro's estimate of the increase in stock turn?  
Please explain.

**RESPONSE:**

BC Hydro's estimate of the possible increase in inventory turns is based on results of a 2011 Utility Materials Management Benchmarking Survey conducted by Scott Madden Management Consultants, which confirmed that participating North American Utilities achieved an average of 2.79 inventory turns, with the median being 2.41. The benchmarking survey is confidential to Scott Madden Management Consultants, and therefore we have not attached it to this response.

- 81.1. Please provide the full range of the stock turns for the utilities.
- 81.2. Please provide information related to the types of utilities included in the study.
- 81.3. Are there any updated studies available to BC Hydro? If so, please provide.

**82. Reference: Exhibit B-4, CEC 1.17.1**

1.17.1 Does BC Hydro not typically account for supply lead times in its work approvals?

**RESPONSE:**

BC Hydro does incorporate lead time methodologies in its work approval/order placement processes. Where possible, lead time requirements for major commodity groups are periodically communicated to end users. The current PassPort system provides warnings to users upon entry of material requirements to alert them to anticipated shortages and to suggest an alternative requirement date based on replenishment lead times. However, for various reasons, not all of them related to technology, the demand is not always visible to the planners, leading to the risk referenced in the question. The scope of the Supply Chain Applications Project includes improving visibility into supply chain lead times and materials expediting process.

- 82.1. What are the non-technology reasons for the demand not being visible to planners?
  - 82.1.1. Please confirm that SAP would not, in and of itself correct such problems.

**83. Reference: Exhibit B-4, CEC 1.18.1 and 1.18.3**

1.18.1 Is it BC Hydro's intention that it would pay suppliers without receiving an invoice?

**RESPONSE:**

Yes, as long as BC Hydro has an agreement with the supplier to use Evaluated Receipt Settlement (ERS).

ERS produces an automated payment to suppliers on delivery of goods or services without the requirement for a paper invoice from the supplier. When the supplier delivers the goods or service, a goods receipt is raised in the system to confirm that the goods or service have been received. The ERS program then generates an invoice on the basis of the price in the purchase order and the quantity as measured in the goods receipt.

The system also establishes tax information and terms of payment from the purchase order. This information allows the system to generate, post and pay an invoice, negating the need for a vendor invoice to be submitted to Accounts Payable.

The ERS function has the following advantages:

- Reduces the number of invoices received at Accounts Payable;
- Ensures payment is made at the contracted rate; and
- Payment to suppliers can be accelerated as they do not need to send a separate invoice which may require separate approval.

1.18.3 Please confirm or otherwise explain that suppliers maintain their own records in order to generate invoices.

**RESPONSE:**

Confirmed. Suppliers maintain their own records, but under Evaluated Receipt Settlement, they are not required to send invoices to their customers in order to receive payment.

- 83.1. Please explain why BC Hydro would not consider it vendor's role to issue Invoices.
- 83.2. Please confirm that a short delay in paying invoices could be beneficial to BC Hydro in terms of carrying costs.
- 83.3. What, if any, cost discount does BC Hydro expect to achieve from its vendors as a result of using ERS? Please quantify.

**84. Reference: Reference: Exhibit B-4, CEC 1.26.2**

1.26.2 Has BC Hydro considered any other options for developing a Service Catalogue?

**RESPONSE:**

BC Hydro believes that other options for developing a Service Catalogue are not feasible. Other options could be the use of a stand-alone Service Catalogue (or a partially interfaced option), or significant custom development within PassPort.

Any stand-alone Service Catalogue would require users to work in different systems and manually extract and analyze the underlying data. Additionally, the cost and effort to integrate a Service Catalogue into PassPort would likely outweigh any benefits realised. Finally, full custom development within PassPort appears impractical given the extent and complexity of Service Catalogue requirements, and associated challenges integrating the functions into PassPort.

84.1. What, if any, cost discount does BC Hydro expect to achieve from its vendors as a result of using ERS? Please quantify.

**85. Reference: Exhibit B-4, CEC 1.32.1 and 1.70.2****RESPONSE:**

BC Hydro considers the following risks to be possible with the proposed offshore development model:

- Privacy restrictions under the Freedom of Information and Protection of Privacy Act (FOIPPA) and significant overhead to address FOIPPA requirements;
- Issues with quality of deliverables;
- Improperly interpreted requirements and design due to little or no ability to ask clarifying questions;
- Potential for communication issues. Remote delivery does not facilitate discussion and early identification of issues and defects;
- Poor coordination of individual development streams resulting in additional effort to integrate the developed code into BC Hydro environment;
- Lack of transparency and visibility into development progress and the resulting potential issues; and

- Model may require BC Hydro team members to travel overseas for an extended duration, with the associated costs and the need to backfill critical team members.

The above items could result in an increase in the time and effort required to complete the development, particularly for the BC Hydro team members, and may also lead to a reduced level of solution quality, increased rework, and additional testing.

1.70.2 Has BC Hydro had custom program code undertaken offshore before?

**RESPONSE:**

Yes, BC Hydro has had custom code development and testing undertaken offshore before. In at least one case, BC Hydro brought the development back onshore due to risks similar to those described in CEC IR 1.32.1 materializing.

- 85.1. Please provide the anticipated costs of the Offshore Development model.
- 85.2. Please break out the travel budget for the Offshore Development model.
- 85.3. Please provide a list of the Pros and Cons of the Offshore development model vis a vis having the development completed locally, including quantification of the costs and benefits where possible.
- 85.4. Is it anticipated that any BC Hydro team members will likely be required to travel offshore as a result of this project?
  - 85.4.1. If yes, please describe the anticipated travel that will be required as a result of the project.

**86. Reference: Exhibit B-4, CEC 1.38.1**

- BC Hydro does not use competitive tendering to identify technology options and alternatives in areas in which it already has an established technology standard. In areas where there is not an established standard, or there is a need to refresh its technology standard, competitive tendering may be used.
- 86.1. What criteria does BC Hydro use to determine if there is a need to 'refresh its technology standard'?

87. Reference: Exhibit B-4, CEC 1.49.2

Capability Gap	Application Responsibility Area	SAP Justification	Passport Functional Justification	Dependencies on other systems	SAP Score	Passport Functional Score	Integration Maturity/Score	Passport Score	Rate
External service management	1 - inability to manage service related spend	* SAP provides more options for how unitized services are managed including the Service Master concept which is not available in Passport	* Passport could be configured to support unitization of some services through the catalog master. Not all types of services could be well managed through this mechanism in Passport, notably hours based services, and as such Passport does not receive a full score.	* The ability to plan and accept services is dependant on integration with both work management and project management as this is where most services are 'consumed'. * Ability to auto accrue services is dependant on integration with finance. * SAP option also allows for integration with Contractor Timesheets. * Today all workorders and projects already exist in SAP.	4	3	High	2	0.5

87.1. Please provide further clarification regarding the difference between the Passport Functional Score and the Passport Score.