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October 5, 2018

VIA ELECTRONIC MAIL

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

Dear Sirs/Mesdames:

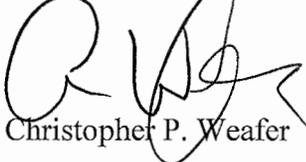
**Re: BC Hydro Electricity Purchase Agreement Renewals for Sechelt Creek Hydro,  
Brown Lake Hydro and Walden North Hydro ~ Project No. 1598969**

We are counsel to the Commercial Energy Consumers Association of British Columbia (the "CEC"). Attached please find our client's Information Requests in relation to the above-noted proceeding which were due at the end of day yesterday, October 4, 2018. We were unable to file the Information Requests until this morning. We regret the delay and the CEC is working to increase its resources so that it can respond to the very busy regulatory agenda in the month of October. The CEC apologizes for the delay and has no issue if BC Hydro requires more time to prepare responses to the Information Requests.

All of which is respectfully submitted.

Yours truly,

**OWEN BIRD LAW CORPORATION**



Christopher P. Weafer

CPW/pmj  
cc: CEC  
cc: BC Hydro  
cc: Registered Interveners

**COMMERCIAL ENERGY CONSUMERS ASSOCIATION  
OF BRITISH COLUMBIA**

**INFORMATION REQUEST #1**

**BC Hydro Electricity Purchase Agreement Renewals for Sechelt Creek Hydro, Brown  
Lake Hydro and Walden North Hydro Project No. 1598969**

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**1. Reference: Exhibit B-1, page 5**

- The levelized prices of \$ [REDACTED], \$ [REDACTED] and \$ [REDACTED] (all in 2017\$) over the term of the Sechelt Creek, Brown Lake, and Walden North EPA renewals, respectively, compare favourably to BC Hydro's opportunity cost of \$ [REDACTED] \$ [REDACTED] and \$ [REDACTED] (all in 2017\$), for each facility respectively;

- 1.1. Please explain how the levelized prices over the term of each facility compares to their alternative opportunities.
- 1.2. Please explain whether the comparison to BC Hydro's opportunity costs is the only test that is appropriate.
- 1.3. Please explain whether the Commission has used an alternate test in other circumstances such as in the Alcan decision.

**2. Reference: Exhibit B-1, page 5**

- BC Hydro negotiated the three EPA renewals on more favourable terms than the original EPAs;
- 2.1. Please explain why more favourable terms than the original EPAs would be a suitable comparison or test.
  - 2.2. Please provide the percentage improvement that BC Hydro negotiated for each of the three EPA renewals.
  - 2.3. Please describe any non-confidential terms that BC Hydro considers to be 'more favourable' than the original EPAs.
  - 2.4. Please describe BC Hydro's original rationale for entering into each of the agreements.
  - 2.5. Does BC Hydro consider that it is in a favourable negotiating position with each of the IPPs? Please explain why or why not for each. Please provide the information confidentially if necessary.

3. Reference: Exhibit B-1, Appendix B, page 3-48

- **Electricity Purchase Agreement Renewals:** As described in section 3.4.3.5., the cost of service for IPPs is one of the factors in Electricity Purchase Agreement renewal negotiations and could vary significantly among IPPs. BC Hydro is targeting renewal of contracts for those facilities that have the lowest cost, greatest certainty of continued operation and best system support characteristics. Due to the fact that Electricity Purchase Agreement renewals are related to existing projects for which the IPPs' initial capital investment has been fully or largely recovered during the term of the initial Electricity Purchase Agreement, BC Hydro expects to be able to negotiate a lower energy price than the initial Electricity Purchase Agreement. Since the 2013 Integrated Resource Plan, BC Hydro has carried out further analysis of the expected cost of service for existing projects. BC Hydro currently estimates that the renewal volumes in the plan can be acquired at or below \$85/MWh (fiscal 2013\$) although the relationship between price, volume, contract terms and other non-energy benefits has yet to be established through bilateral negotiations. As previously noted in this section, BC Hydro does

not expect to acquire all available resources up to the long-run marginal cost nor does it expect the long-run marginal cost to be the clearing price;

- 3.1. Please explain what opportunity any of these EPA renewals would have in the alternative to renewing with BC Hydro that would enable them to receive \$85/MWh.
- 3.2. Please discuss, for each EPA renewal, how it was evaluated against other potential EPA renewals on BC Hydro's stated objectives of seeking:
  - a) Lowest cost
  - b) Greatest certainty of continued operation
  - c) Best system support characteristics.
- 3.3. Please provide BC Hydro's assessment of whether or not the EPA renewals represent the lowest cost alternatives. Please provide a confidential response if necessary.
  - 3.3.1. If no, please explain why BC Hydro is not pursuing the lowest cost alternatives.
- 3.4. What proportion of available resources do the proposed EPAs represent? Please provide the information for each EPA and provide it confidentially if necessary.

#### 4. Reference: Exhibit B-1, page 7,8 and 9

##### 3 EPA Renewal Cost-Effectiveness

As explained in BC Hydro's recent EPA renewal filings, BC Hydro considers EPA renewal prices against an estimate of the IPP's cost of service (including a rate of return), as well as BC Hydro's opportunity cost, the IPP's opportunity cost, the

impact to BC Hydro's rates plan and system benefits and support characteristics (if applicable).

- IPP's Opportunity Cost – will generally reflect market prices; BC Hydro is using, as a proxy, the Mid-C electricity spot market value less costs for losses and wheeling to Mid-C (referred to as the BC Border sell price<sup>6</sup>);
- IPP's Cost of Service – based on forecasted operating and maintenance (O&M) costs and sustaining capital costs for continued facility operation, which is compared to industry standards; and
- BC Hydro's Opportunity Cost – reflects an upper limit for the levelized value of the energy to the BC Hydro system over the term of the EPA based on the LRMC<sup>7</sup> of firm clean energy resources [REDACTED].

The determination and usage of BC Hydro's LRMC is outlined in Chapter 3 of BC Hydro's F17-F19 RRA and summarized in Table 1 below.

**Table 1 Marginal Resources and Related Costs**

Marginal Resources	Period of Applicability	LRMC (Fiscal 2017\$)
DSM and EPA Renewals	Fiscal 2022 to Fiscal 2033	Less than \$89/MWh
Greenfield IPPs	Fiscal 2034 and beyond	\$104/MWh

It is important to note that LRMC is not a clearing price but rather it is used as a benchmark to determine the cost-effectiveness of different resources. For EPA renewals, BC Hydro expects to acquire the additional resources needed from fiscal 2022 to fiscal 2033 at prices below the LRMC of \$89/MWh, given that the EPA renewals are for existing projects for which the IPP's initial capital investment is likely to have been fully or largely recovered during the term of the original EPA.

When BC Hydro evaluates the energy price for the term of an EPA, BC Hydro's opportunity cost analysis values IPP energy at the market price during periods of surplus; whereas, during periods of deficit BC Hydro values the IPP energy at the LRMC.

4.1. Please provide the date at which BC Hydro currently expects to go from surplus to deficit, and provide the information source.

- 4.2. Did BC Hydro consider the Commission's Low Load Forecast as provided in its Site C Inquiry Report when negotiating the EPAs? Please explain why or why not.
  - 4.2.1. If yes, did BC Hydro utilize the low load forecast in determining its opportunity cost? Please explain why or why not.
- 4.3. Please provide BC Hydro's forecast of market prices that it uses for periods during its expected surplus period, and provide the evidence behind the forecast.
- 4.4. Please elaborate on why the Greenfield IPPs are relevant in Fiscal 2034 and beyond while DSM and EPA Renewals are relevant between Fiscal 2022 and 2033.
- 4.5. Please provide and elaborate on the calculation of the DSM figure used in the LRMC calculation.
- 4.6. Did BC Hydro use a single \$/MWh as its 'opportunity cost' for each or any of these EPA renewals, or did it calculate a different opportunity cost for each.
- 4.7. Please explain why BC Hydro has kept its opportunity cost confidential.
- 4.8. Please elaborate on BC Hydro's view of the difference between a 'clearing price' and a 'benchmark to determine the cost-effectiveness of different resources'.

5. **Reference: Exhibit B-1 page 9**

**4 Sechelt Creek EPA Renewal**

The Sechelt Creek project is located northeast of Sechelt B.C., on Salmon Inlet. The project has an installed capacity of 16.7 MW with average annual generation of 85 GWh. The project is owned by MPT Hydro LP, a subsidiary of Capstone Infrastructure Corporation, and is operated by Regional Power Inc. Earlier this year, BC Hydro was advised that the Sechelt Creek IPP and the shísháhlh Nation entered into an agreement that results in collaborative decision-making and governance, and will result in shísháhlh Nation equity ownership and profit sharing for the project.

The Sechelt Creek project is located close to BC Hydro's load centre, delivers a relatively high proportion of its annual energy during BC Hydro's peak load months (December and January), and has a high annual capacity factor. The project has been recognized for its environmental stewardship, including efforts to enhance the salmon run in Sechelt Creek, and was the recipient of a United Nations Educational, Scientific and Cultural Organisation (commonly known as **UNESCO**) prize for excellence in sustainable hydropower development.

- 5.1. Please provide a quantitative value for 'relatively high proportion' of the project's annual energy.

- 5.2. Please explain what the 'relatively high proportion' is relative to.
- 5.3. Did the Sechelt Creek IPP and Shishalh Nation agreement have any bearing on BC Hydro's decision to renew?
  - 5.3.1. If yes, please explain why it was relevant and how it affected BC Hydro's decision making.
- 5.4. Please explain the value to BC Hydro of having the annual energy being delivery during peak load months and relate to BC Hydro's capacity requirements over the duration of the contract.
  - 5.4.1. Please provide quantification of the value.

**6. Reference: Exhibit B-1, page 9**

The current energy price under the original EPA was \$ [REDACTED] (2017\$), escalating at [REDACTED] per cent per annum. The EPA had an evergreen provision allowing

the contract to continue from year-to-year after March 2017 unless terminated by either party after providing six months' notice. Following the expiry of the original 20-year EPA term on March 1, 2017, the contract continued on a year-to-year basis under the evergreen provision. BC Hydro terminated the original Sechelt Creek EPA effective March 1, 2018, immediately prior to the effective date of the Sechelt Creek EPA renewal.

- 6.1. What factors does BC Hydro consider when negotiating escalation rates? Please explain.

7. Reference: Exhibit B-1, page 11

Table 2 Sechelt Creek EPA Renewal Commercial Terms

Description	EPA Section	Sechelt Creek EPA Renewal
Seller	Page 1	MPT Hydro LP
Effective Date	Page 1	March 1, 2018
Term of EPA	2.1	[REDACTED]
Regulatory Condition Expiry Date	3.2	Either party may terminate the EPA if Commission acceptance is not issued by August 28, 2018 (i.e., 180 days after the Effective Date of the EPA renewal).
Energy	5.1	Expected generation of 84.6 GWh/year
Hourly Limit	5.2	[REDACTED] MWh per hour
Energy Price	6.1	[REDACTED]

Similar to the other recently filed EPA renewals, the Sechelt Creek EPA renewal has an hourly delivery limit. The hourly delivery limit caps BC Hydro's financial commitments for energy purchases and is aligned with [REDACTED]. In lieu of the two step pricing structure contained in other recently filed EPA renewals, a low initial energy price was negotiated with a [REDACTED].

- 7.1. Please discuss the factors that BC Hydro considers to be important when negotiating the 'term of EPA'. Please be specific as to the time periods that BC Hydro views as favourable or unfavourable to itself. Please provide the information confidentially if necessary.
- 7.2. Please provide BC Hydro's view of what constitutes a 'low initial energy price'. Please provide the information confidentially if necessary.
- 7.3. Please discuss the Hour Limits that BC Hydro would consider favourable and please explain why. Please provide the information confidentially if necessary.

8. Reference: Exhibit B-1, page 12

4.6 Sechelt Creek EPA Cost Effectiveness

For the Sechelt Creek EPA renewal, the key cost-effectiveness benchmarks over the term of the EPA renewal are as follows:

Table 3 Sechelt Creek EPA Renewal Cost-Effectiveness Benchmarks

	Levelized Energy Price (\$2017/MWh) <sup>10</sup>
Original EPA (if original EPA price is applied to entire renewal term)	█
IPP's Opportunity Cost (based on BC Border Sell Price) <sup>11</sup>	█
BC Hydro's Opportunity Cost <sup>12</sup> █	█
Renewed EPA	█

As shown above, the negotiated energy price of \$ █ (levelized)<sup>13</sup> for the Sechelt Creek EPA renewal is below BC Hydro's opportunity cost of \$ █ which is viewed as the upper benchmark of cost-effectiveness. BC Hydro is of the view that the levelized EPA energy price is reasonable relative to the estimated cost of service for the Sechelt Creek IPP, given the risks borne by the IPP (see section 4.7).

Also, if the original EPA price and escalation terms were to be applied to the entire renewal term, the levelized energy price would be \$ █ (2017\$). The levelized energy price for this renewed EPA is approximately █ per cent lower than the levelized price under the original EPA's evergreen clause.

<sup>10</sup> To facilitate comparison with the most recent EPA renewal filing, Doran Taylor, BC Hydro has used \$2017.

<sup>11</sup> Adjusted for project-specific product characteristics such as time of delivery and losses to the Lower Mainland.

<sup>12</sup> Adjusted for project-specific product characteristics such as time of delivery, losses to the Lower Mainland and portion of energy considered firm (25 per cent freshet firm energy cap).

<sup>13</sup> BC Hydro calculates the levelized cost of energy of an EPA as the present value of the unit cost of energy over the term of the EPA.

8.1. Please confirm or otherwise explain that the Sechelt Creek EPA has been terminated and the Evergreen Clause is no longer applicable.

- 8.2. Please confirm that the price paid for the Sechelt Creek EPA Renewal is above that of BC Hydro's DSM cost. Please provide confidentially if necessary.
- 8.3. Please confirm, or otherwise explain, that the BC Hydro 'sell price' would roughly equate to the IPP opportunity cost, being calculated at the Border Sell price.
- 8.4. Please confirm that as long as BC Hydro is in surplus and the BC Hydro Renewed IPP exceeds the IPP's Opportunity cost, BC Hydro is acquiring energy and incurring a loss.
  - 8.4.1. If not confirmed, please explain why not.

**9. Reference: Exhibit B-1, page 13**

(a) Attrition

The attrition risk is considered to be very low given that the Sechelt Creek facility has been operating reliably since 1997.

- 9.1. Please describe what BC Hydro means by 'Attrition Risk' and why twenty years of reliable operation is indicative of low attrition risk.

**10. Reference: Exhibit B-1, page 13**

(b) Financial

The Sechelt Creek IPP submitted forecasted capital and O&M costs for the facility, as well as a 5-year history of these costs. BC Hydro believes that the submitted O&M costs are within the range of overall industry practice. At BC Hydro's request, the O&M and capital plans were reviewed by an independent third-party consulting firm retained by the IPP. The consultant found that the forecasted O&M costs are "generally consistent with good engineering practice and generally meet hydroelectric industry practice". As well, the capital plans appear to address facility needs for continued reliable operation and the estimated expenditures appear to be "adequate and appropriately conservative".

Based on a critical assessment of the financial submissions made by the IPP and its project-related risks, BC Hydro is of the view that the proposed EPA renewal price reasonably represents the cost of service for the Sechelt Creek facility, including an acceptable rate of return given the risk borne by the IPP. Examples of the risks borne by the IPP include uncertainty regarding water rental and property tax increases, equipment failure, diversion restrictions, and reduced water flows.

- 10.1. Please confirm that the five years history provided was for the most recent five years.

- 10.2. Were there any significant changes to the capital and/or O&M during the five years? Please explain and provide quantification for significant capital or O&M changes. Please provide confidentially if necessary
- 10.3. Please provide the range of industry practice for capital and O&M costs.
- 10.4. Please provide the name of the independent consultant.
- 10.5. Why did BC Hydro not engage the consultant itself?
- 10.6. What practices did BC Hydro follow to ensure that the independent consultant was properly qualified and truly providing information on a neutral basis?
- 10.7. Did BC Hydro receive a full copy of the Consultant's report? If so, please provide and do so confidentially if necessary.
- 10.8. Did the consultant offer any qualifiers or other comments related to its final determination that could negatively impact BC Hydro's assessment of the risk? Please explain.

11. **Reference:** Exhibit B-1, page 14

(d) Technical

The consulting firm retained by the Sechelt Creek IPP conducted a condition assessment of the facility and concluded that the facility is in "generally good condition for structures of this age" and, as noted in sub-paragraph (b) above, O&M procedures and practices are "generally consistent with good engineering practices and generally meet accepted hydroelectric industry practices". The consultant also stated that with on-going management consistent with normal industry practice and implementation of the recommended capital plan it was of the view that the facility should be sustainable for another [REDACTED]. The recommended capital improvements were incorporated into the capital plan submitted by the Sechelt Creek IPP.

- 11.1. Please provide the normal life of facilities similar to those of Sechelt Creek IPP.

**12. Reference: Exhibit B-1, page 15**

(e) Network Upgrade Costs

As part of its EPA renewal process, BC Hydro is also ensuring that the existing transmission infrastructure supporting these IPP interconnections meets current standards and requirements. Some of the IPPs renewing their EPAs with BC Hydro require upgrades to their system (which is a cost borne by the IPP) and/or upgrades to BC Hydro's network system (which is a network upgrade cost covered by BC Hydro pursuant to its Standard Generator Interconnection Agreement). Generally these upgrades are minor, such as upgrades to the communications and protection systems or metering equipment. This is the case with the required Sechelt Creek upgrades, and the network upgrade costs that BC Hydro is responsible for are estimated at \$ [REDACTED]<sup>14</sup>.

12.1. Does BC Hydro include the costs of network upgrades when evaluating the cost effectiveness of its EPA renewals?

12.1.1. If yes, please explain where these costs are incorporated in the analysis.

12.1.2. If no, please explain why not.

**13. Reference: Exhibit B-1, page 16**

**5 Brown Lake EPA Renewal**

**5.1 Brown Lake Project**

Located by the Ecstall River near Prince Rupert B.C., Brown Lake is a 7.2 MW hydro project with storage that provides average annual energy generation of 52.3 GWh. Innergex Renewable Energy Inc. (**Innergex**) purchased Brown Lake in 2012 from Capital Power Corporation.

The Brown Lake project has a high annual capacity factor and delivers a high proportion of its annual energy during BC Hydro's peak load months and a low proportion of its annual energy during the freshet season.

13.1. Please provide BC Hydro's views as to what constitutes a 'high annual capacity factor'.

13.2. Please provide BC Hydro's views as to what constitutes a 'high annual proportion of its annual energy during BC Hydro's peak load months, and a low proportion during the freshet.

- 13.3. Please explain the quantitatively value difference from the average intermittent IPP supply that these qualities provide to the BC Hydro system.

**14. Reference: Exhibit B-1, page 16 and 17**

BC Hydro's transmission line connecting the Prince Rupert area to BC Hydro's integrated system covers mountainous terrain and is subject to significant natural hazard risk (e.g., avalanche, landslides), which has resulted in extended forced outages for the Prince Rupert community. The transmission line also requires planned outages to conduct annual maintenance work. The storage capability at the Brown Lake facility allows BC Hydro to support local reliability in the Prince Rupert area, acting as standby resource in case of an outage (both forced and planned) for BC Hydro's transmission line.

- 14.1. Please provide the evidence demonstrating the risk of extended forced outages and their size and duration relative to other areas of the province.
- 14.2. Please provide further details of the planned outages to conduct annual maintenance work.
- 14.3. What alternatives are available to BC Hydro to provide local reliability in the Prince Rupert area? Please describe.

15. Reference: Exhibit B-1, page 17

**Table 4      Brown Lake EPA Renewal Commercial Terms**

Description	EPA Section	Brown Lake EPA Renewal
Seller	Page 1	Brown Miller Power Limited Partnership
Effective Date	Page 1	April 1, 2018
Term of EPA	2.1	[REDACTED]
Regulatory Condition Expiry Date	3.2	Either party may terminate the EPA if Commission acceptance is not issued by September 28, 2018 (i.e., 180 days after the Effective Date of the EPA renewal).
Energy	5.1	Expected generation of 52.3 GWh/year
Hourly Limit	5.2	[REDACTED] MWh per hour
Energy Price	6.1	[REDACTED]
Local Reliability	5.9	In connection with a Reliability Request by BC Hydro to support local load conditions in the Prince Rupert Area, the Seller shall [REDACTED]

- 15.1. Please provide a quantitative description of the reliability back-up alternatives to the grid power connection into the area.
- 15.2. Please provide the capability of each back-up alternative to supply the area for the duration of potential outages of the grid power connection.
- 15.3. Please provide any transmission system dependency required to deliver this energy to back-up the local supply and the reliability of those interconnections.

**16. Reference: Exhibit B-1, page 20**

(b) Financial

The Brown Lake IPP submitted forecasted capital and O&M costs for the facility, as well as historic O&M costs. BC Hydro believes that the submitted O&M costs are within the range of overall industry practice.

Based on a critical assessment of the financial submissions made by the IPP and its project-related risks, BC Hydro is of the view that the proposed EPA renewal price reasonably represents the cost of service for the Brown Lake facility, including a rate of return given the risk borne by the IPP. Examples of the risks borne by the IPP include uncertainty regarding water rental and property tax increases, equipment failure, diversion restrictions, and reduced water flows.

- 16.1. Please provide the 'range of overall industry practice' for O&M costs and how it is determined.
- 16.2. Please provide the 'range of overall industry practice' for capital costs and how it is determined.
- 16.3. Does BC Hydro believe that the submitted capital costs are within the range of overall industry practice? Please explain why or why not.
  - 16.3.1. If not, please explain why BC Hydro is considering renewing a project when capital costs are not in line with industry practice.
  - 16.3.2. If not, please explain how BC Hydro considered this information and compensated for it when conducting its negotiations.
- 16.4. Please provide quantitative context for size of risks faced by the IPP including:
  - A) Water rental and property tax increases
  - B) Equipment failure
  - C) Diversion restrictions
  - D) Reduced water flows
- 16.5. Please discuss whether any of the risks borne by the IPP may also result in risks to BC Hydro.
- 16.6. If the risks borne by the IPP also result in risks to BC Hydro, how does BC Hydro compensate for this in its negotiations? Please explain.

**17. Reference: Exhibit B-1, page 21**

(d) Technical

A consulting firm retained by the Brown Lake IPP conducted a condition assessment of the Brown Lake facility and concluded that “all mechanical equipment that have been inspected and necessary for the operation of the power plant are in very good condition and all civil equipment that have been inspected and necessary for the operation of the power plant are in apparent good condition.” The consultant’s report further states that “proper operation of power plant can be assured for [REDACTED] [REDACTED]”. The Brown Lake IPP also provided a Long Term Operating Reliability Report that concluded “the Brown Lake Generating Station has a proven historical record of reliable operation which can be maintained through adherence to the preventive maintenance program, proactive repair to damaged mechanical equipment, replacement and refurbishment of aging electrical components, and modernization of the control and protection systems. If these conditions are maintained, similar levels of reliability can be achievable for an additional 40 years.”

- 17.1. Please provide the name of the consulting firm.
- 17.2. Please identify what steps BC Hydro took to ensure that the consulting firm provided an independent, unbiased view of the facility.
- 17.3. Please explain the difference between ‘very good condition’ and ‘apparent good condition’.
- 17.4. Please provide the Consultant’s report, confidentially if required.
- 17.5. What party conducted the Long Term Operating Reliability Report?
- 17.6. Please provide the Long Term Operating Reliability Report, confidentially if required.
- 17.7. Please identify what steps BC Hydro took to ensure that the Long Term Operating Reliability Report was independent and unbiased.

**18. Reference: Exhibit B-1, page 21**

(e) Network Upgrade Costs

As discussed in section 4.7(e) above, BC Hydro is also ensuring that the existing transmission infrastructure supporting these IPP interconnections meets current standards and requirements. The Brown Lake facility requires minor upgrades, and the BC Hydro network upgrade costs for the Brown Lake facility is estimated to be \$ [REDACTED]<sup>20</sup>.

- 18.1. Please confirm that BC Hydro will pay the network upgrade costs.
- 18.2. Please describe the network upgrades for the Brown Lake facility.
- 18.3. Why does the network require upgrades when the facility has been operating successfully for many years? Please explain.

**19. Reference: Exhibit B-1, page 23 and page 24**

**6 Walden North EPA Renewal**

**6.1 Walden North Project**

The Walden North project is a run-of-river hydroelectric facility on Cayoosh Creek about five kilometers west of Lillooet, B.C. The project is located near the confluence of Cayoosh Creek and the Seton River which is just downstream of BC Hydro's Seton Dam. Appendix G provides a site layout for the Walden North project and adjacent BC Hydro facilities. The Walden North project has five generating units with total installed capacity of 16 MW producing an average of 33.8 GWh per year.<sup>21</sup>

- Additional generation from the water diverted by the Cayoosh Diversion Tunnel into Seton Lake. On average, approximately [REDACTED] is generated from water diverted through the Cayoosh Diversion Tunnel after consideration of other Bridge River system constraints. A portion of this incremental generation is outside of the freshet season.

- 19.1. What proportion of the incremental generation is outside of 'freshet' season?
- 19.2. Please confirm or otherwise explain that generation during freshet season may typically be sold at a loss to BC Hydro if its reservoirs do not have the capacity to store such energy.
- 19.3. Please provide the probability that the BC Hydro reservoirs are not able to store all of the freshet energy provided by IPPs

**20. Reference: Exhibit B-1, page 24**

- Diversion of Cayoosh Creek water facilitates maintenance of the dilution ratio of Seton River water to Cayoosh Creek water below the Cayoosh confluence which we understand facilitates salmon migration to spawning areas in the Bridge River system, via Seton River and Seton Lake. In 2001, the Department of Fisheries and Ocean provided guidance for BC Hydro and the Walden North IPP on the minimum discharges for Seton River and the prescribed Cayoosh Creek flows in order to support the dilution ratio of Cayoosh Creek to Seton Creek water below the Cayoosh confluence. This guidance was provided to facilitate salmon migration to spawning areas in the Bridge River system during the salmon migration period. In 2017, BC Hydro commissioned a study to assess the impact of the dilution ratio on salmon migration, and it was confirmed that maintaining the dilution ratio facilitates salmon migration during spawning.

- 20.1. How would a non-renewal of the Walden North EPA be expected to affect the dilution ratio?
- 20.2. How would a non-renewal of the Walden North EPA be expected to affect the salmon migration? Please explain and provide quantification.
- 20.3. Please provide evidence of the size and relative importance of the salmon migration that is influenced by the dilution ratio.

**21. Reference: Exhibit B-1, page 25**

Nevertheless, BC Hydro wanted to maintain the incremental generation and environmental benefits it received as a result of the Diversion Agreement and without the EPA the Diversion Agreement would terminate. Parallel to these EPA discussions, BC Hydro and FortisBC Energy Inc. (an affiliate of ESI) there were confidential negotiations in relation to a suite of agreements, including the gas arrangements in relation to the Burrard Generating Station. The gas-related issues were resolved by Order in Council 749 issued in December 2014. Around this same time period, BC Hydro also wished to resolve the outstanding Walden North EPA

and Diversion Agreement issues, and we entered into the Forbearance Agreement with an effective date of April 1, 2014 with the following key terms:

- 21.1. What alternatives does BC Hydro have to acquiring the incremental generation? Please explain and provide quantification of the costs of the alternatives.
- 21.2. Please list and discuss the environmental benefits and any other benefits that BC Hydro receives as a result of the Diversion Agreement and their relevance to the company and ratepayers.
- 21.3. Please briefly discuss the Walden North EPA and Diversion Agreement Issues that were outstanding in 2014.

**22. Reference: Exhibit B-1, pages 26 and 27**

and Diversion Agreement issues, and we entered into the Forbearance Agreement with an effective date of April 1, 2014 with the following key terms:

- BC Hydro agreed to forebear for a minimum of [REDACTED] from exercising its right to terminate the Walden North EPA which then allowed the continuation of the Diversion Agreement;

acceptance of the Walden North EPA renewal. If the Walden North EPA renewal is not accepted, original EPA and the Forbearance Agreement will remain in effect until at least [REDACTED] at which time either party may exercise their right to terminate the original Walden North EPA with six months' notice. The Diversion Agreement also remains in effect at this time and, upon acceptance of the renewed Walden EPA, it will be amended to continue during the term of the renewal.

### **6.3 Walden North EPA Renewal**

BC Hydro and CCPLP have entered into a [REDACTED] Walden North EPA renewal which will replace the original Walden North EPA subject to Commission approval. The effective date of the Walden North EPA renewal is April 1, 2018. Further details of the Walden North EPA renewal are provided below.

The IPP is planning to undertake certain refurbishments of the Walden North facilities once the Walden North EPA renewal has received Commission acceptance. The refurbishment includes a new sluice gate to manage gravel at the intake and associated work, penstock/manifold recoating, civil upgrades for the powerhouse and tailrace area and the decommissioning of an old penstock. The purpose of the refurbishment is to restore the facility to its original condition, and bring other aspects of the facility to current standards, but not to increase the generating capacity.

- 22.1. Please confirm or otherwise explain whether or not if the Walden North EPA is not accepted, then BC Hydro must forebear from exercising its right to termination and the IPP will not undertake the refurbishments to its facilities.
- 22.2. If confirmed, please discuss the risk to BC Hydro if it is not entitled to terminate its agreement and the facility is not adequately refurbished to current standards.

**23. Reference: Exhibit B-1, page 29**

The Bridge River generation system is currently curtailed or restricted by transmission system constraints during the summer period (June, July, August, September) and/or water management issues during the freshet period (May, June, July). From time to time, at BC Hydro's discretion and as defined in the EPA, the Walden North facility's generation may need to be turned-down (for energy management) or the Cayoosh Diversion Tunnel may need to be closed (for water management) in support of BC Hydro's Bridge River generation system. The Walden North EPA renewal provides more robust rights for BC Hydro to turn-down Walden North generation and to close the Cayoosh Diversion Tunnel (which is normally open). Including the right for BC Hydro to close the Cayoosh Diversion Tunnel (temporarily or permanently) in the EPA renewal is a risk mitigation feature to [REDACTED]

- 23.1. Please explain and quantify the value to BC Hydro of the right to turn-down the generation and to close the Cayoosh Diversion Tunnel and compare this to the conditions under an alternative of not proceeding with the EPA renewal.