IN THE MATTER OF

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

A FILING OF ELECTRICITY PURCHASE AGREEMENT
WITH ALCAN INC. AS AN ENERGY SUPPLY CONTRACT
PURSUANT TO SECTION 71

DECISION

January 29, 2008

BEFORE:

R.H. Hobbs, Chair
N.F. Nicholls, Commissioner
A.J. Pullman, Commissioner

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

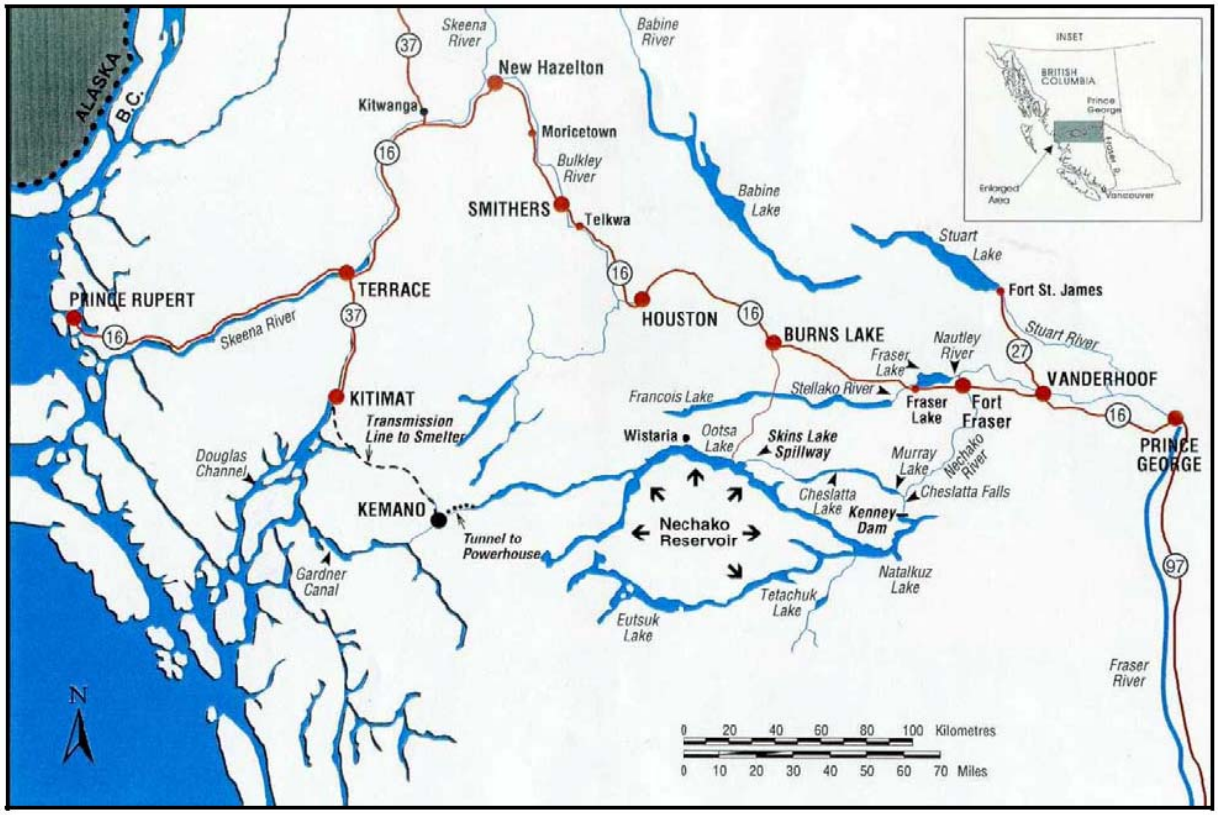
1.0 BACKGROUND AND REGULATORY REVIEW

1.1 Background

1.1.1 Kemano Generation Facilities

The Kemano Hydroelectric Generating Station (the "Kemano Powerhouse") and the Nechako Reservoir (collectively the "Kemano System") were constructed by Alcan Inc. ("Alcan") from 1950 to 1954, and have been operating on a virtually continuous basis since then (Exhibit B1-2-1, p. 2-1). The following map shows the location of the Kemano System facilities.

Location of Alcan Facilities in British Columbia



(Exhibit B2-1, p. 7, Figure 1)

The Nechako Reservoir is about 233 km long, and was formed by the construction at its eastern end of the Kinney Dam on the Nechako River. The outflow from the Kemano Powerhouse near the western end of the Reservoir discharges into the Kemano River. In addition to the water that is used to generate electricity in the Kemano Powerhouse, water can be released at the Skins Lake Spillway about 80 km west of the Kinney Dam. Water released at the Skins Lake Spillway goes into the Cheslatta River system which in turn flows into the Nechako River (Exhibit B2-1, pp. 7-15).

As part of the Kemano System, Alcan also owns and operates the transmission lines from the Kemano Powerhouse to its aluminum smelting facilities in Kitimat (the "Smelter"), and the substation adjacent to the Smelter (Exhibit B1-1, Appendix 5). The Kemano Powerhouse has a generating capacity of 1,000 MW but, because of hydraulic restrictions, currently it has a peak generating capability of approximately 890 MW. British Columbia Hydro and Power Authority ("BC Hydro") states that the expected average annual output of the Kemano System is 6,950 GW.h, on the basis that recent improvements at Kemano have increased the expected annual average output above its historical average over the last 30 years of 6,400 GW.h/year (Exhibit B1-2-1, p. 2-1).

Alcan states that its final water license number 102324 authorizes the diversion and use for power generation of up to 170 cubic meters per section ("cms") (Exhibit B2-1, p. 23).

Alcan described the arrangements for the release of water to the Nechako River for protection of fish and fish habitat as follows.

> "Pursuant to the 1987 Settlement Agreement among the Province of British Columbia, Canada and Alcan and the 1997 Settlement Agreement between the Province of British Columbia and Alcan, Alcan committed to maintain certain water releases from the Reservoir to the Nechako River for fisheries purposes. The water releases are made under the direction of the Nechako Fisheries Conservation Program ("NFCP"), which was established under the 1987 Settlement Agreement and comprises representatives from Alcan, Canada, and the Province" (Exhibit B2-1, p. 27).

Alcan, at the direction of the NFCP Technical Committee, also releases additional flows in July and August for cooling purposes to protect migrating salmon. Pursuant to a protocol with the Haisla Nation, Alcan regulates the release of water into the Kemano River to protect eulachon spawning (Exhibit B2-1, pp. 27, 28).

On August 14, 2006, Alcan announced plans to modernize and expand the Kitimat Smelter (the "Modernization Project"). The implementation of the Modernization Project was subject to several conditions, including:

- the receipt of any required environmental permits,
- a successful conclusion of the power sale agreement with BC Hydro, and
- an agreement with the Canadian AutoWorkers, Local 2301 ("CAW") to extend the term of the collective labour agreement to 2012.

Once these conditions are met, the application for final approval to proceed with the Modernization Project will be submitted to Rio Tinto's Board of Directors (Exhibit B2-1, pp. 30-31; T6: 1161). Effective November 8, 2007, the common shares of Alcan were acquired by Rio Tinto; however, Alcan remains the owner of the Kemano System assets (T6: 1138, 1157, 1205, 1207).

1.1.2 Alcan Electricity Sales to BC Hydro

From 1954 to 1979, Alcan generated power from the Kemano System for its own use in its Smelter at Kitimat and for other loads within the Kitimat area supplied on a contract basis. Prior to 1979, there was no transmission interconnection between the North Coast region and the BC Hydro integrated system sufficient to permit the sale of Alcan power external to that area. However, starting in 1961, BC Hydro purchased electricity from Alcan to service local area loads, including Terrace, Kitsault and Prince Rupert (Exhibit B1-2-1, p. 2-1; Exhibit B2-1, p. 42).

By 1979, BC Hydro expanded its transmission network with the construction of a 500 kV circuit between Prince George and Terrace with the result that transmission capacity existed to permit the sale of surplus Kemano System generation to BC Hydro under various short-term agreements. These

sales were placed on a longer-term footing in 1990 when Alcan and BC Hydro entered into the Long Term Electricity Purchase Agreement dated February 27, 1990 ("LTEPA"). LTEPA is a 20-year contract that commenced on January 1, 1995 and includes provisions for early recall by Alcan. Alcan has sold surplus power to BC Hydro under the provisions of LTEPA since 1995. However, in December 2004, Alcan gave notice to recall power committed to BC Hydro pursuant to LTEPA (the "LTEPA Recall Notice"). If valid, the LTEPA Recall Notice would have permitted Alcan to stop selling power under LTEPA effective December 31, 2009. BC Hydro's rights to acquire electricity from the Kemano System under LTEPA otherwise expire at the end of 2014.

On October 27, 2006, BC Hydro and Alcan entered into the Amended and Restated Long-Term Electricity Purchase Agreement ("LTEPA+"), which revised the terms under which Alcan sold power to BC Hydro. On December 29, 2006, after reviewing the agreement in an oral public hearing, the Commission issued Order No. G-176-06 declaring LTEPA+ unenforceable (Exhibit B1-2-1, p. 2-2).

1.2 Filing of 2007 EPA

On September 5, 2007, BC Hydro filed the 2007 Electricity Purchase Agreement (the "2007 EPA") with Alcan dated August 13, 2007 pursuant to section 71(1) of the Utilities Commission Act (the "UCA"). The 2007 EPA was also filed pursuant to section 61(1) of the UCA in so far as it provides for BC Hydro to deliver electrical energy to Alcan as part of the Coordination Service arrangements (Exhibit B1-1, cover letter). BC Hydro also filed the 2007 Electricity Purchase Agreement Report (the "Report") to explain its rationale for entering into the 2007 EPA (B1-2-1, p. 1-1).

The 2007 EPA is a long-term agreement under which Alcan will provide BC Hydro with capacity, firm and non-firm energy, and new mechanisms to take advantage of the operating synergies that exist between BC Hydro's and Alcan's hydroelectric facilities, called Equichange and Coordination Services. The 2007 EPA establishes a fixed price for each product sold to BC Hydro, and the prices escalate according to formulae based on the Consumer Price Index for Canada, all items (the "CPI"). By letter dated October 24, 2007 the parties amended the LTEPA base price in section 1.1 of Appendix 2 of the 2007 EPA (Exhibit B1-8, BCUC 1.2.2).

The 2007 EPA:

- replaces power sales under Transaction Letters made pursuant to the Power Purchase Framework Agreement between Alcan and Powerex Corp. entered into September 28, 2001;
- formally terminates LTEPA; and
- so long as the 2007 EPA remains in effect, places LTEPA in suspension for the balance of the LTEPA term.

In the event that the Modernization Project proceeds, the 2007 EPA provides BC Hydro with all electricity generated at the Kemano System that is not required for Alcan's smelter operations and which is capable of being delivered to the BC Hydro system over the existing interconnecting transmission facilities. BC Hydro submits that it and Alcan structured the 2007 EPA to extract the maximum value practicable from the Kemano System, which is a large hydro storage facility in a watershed separate from watersheds that contribute significantly to BC Hydro's generation capacity (Exhibit B1-2-1, p. 3-3).

Section 5.13 of the 2007 EPA permits BC Hydro to adjust the Tier 1 Quantity Table (for firm energy) to accommodate the impact of revisions to the construction schedule for the Modernization Project, finalization of the design of the Modernization Project, and/or the ramp up of the project from AP 37 to AP 39, subject to certain conditions. AP means Aluminum Pechiney, and AP 37 and AP 39 refer to applications of Alcan's aluminum smelting technology (Exhibit B1-1, p. 12; Appendix 1, p. 32).

Section 5.14 of the 2007 EPA provides Alcan with a carve out option, in the event the Modernization Project does not proceed, to sell to a third party or to BC Hydro under a separate agreement, the additional capacity and energy that would have been used by Alcan in the Modernization Project. Alcan is nevertheless obliged under the 2007 EPA to supply BC Hydro with the same volume of products and services that would have been provided if the Modernization Project had proceeded (Exhibit B1-1, pp. 12, 13; Exhibit B1-2-1, p. 3-40).

The 2007 EPA commences October 1, 2007 and continues for the balance of the original term of LTEPA plus an additional 20 years, to December 31, 2034 (Exhibit B1-2-1, p. 3-4). The 2007 EPA has a Regulatory Condition Subsequent, which provides that if the Commission fails to accept the contract for filing by January 31, 2008, the contract will terminate as of March 31, 2008. If the 2007 EPA terminates pursuant to this provision, the suspension of the LTEPA will end, and that agreement will continue in effect to the end of its term (Exhibit B1-1, section 2, pp. 3, 4).

With respect to actions that BC Hydro requests the Commission take in response to the filing of the 2007 EPA, BC Hydro states:

> "In conclusion, BC Hydro respectfully submits that the Commission ought to accept the 2007 EPA for filing without condition under section 71 of the *Utilities Commission Act* and take no steps under section 61 in connection with the rate charged to Alcan when energy is supplied to it under the coordination arrangement contemplated by the 2007 EPA" (BC Hydro Argument, p. 41).

1.3 Regulatory Process

1.3.1 Review Process for 2007 EPA Filing

In response to the filing of the 2007 EPA, the Commission by Order No. G-100-07 dated September 7, 2007 established a Procedural Conference on September 26, 2007 to hear submissions on the regulatory process for the review of the filing. In the Procedural Conference, the Chair ruled that the LTEPA+ record that resulted in Order No. G-176-06 was included in the record of this proceeding (T1: 125).

Following the Procedural Conference, Commission Order No. G-120-07 established a second Procedural Conference on October 5, 2007 regarding the scope of the proceeding, an oral public hearing into the 2007 EPA commencing November 19, 2007, and the Regulatory Timetable for the proceeding.

Following the second Procedural Conference, by Letter No. L-83-07 dated October 10, 2007 (the "Scoping Order"; Appendix C), the Commission Panel defined the scope of the oral hearing. In the Scoping Order, the Commission Panel also confirmed that the LTEPA+ record should not be duplicated in this proceeding. The Commission Panel further concluded that the duty of the Crown to consult and, if necessary, accommodate First Nations was not within the scope of the proceeding, but that otherwise the written process might include all matters that are within the public interest (Exhibit A-9).

By letter dated October 30, 2007, the Commission responded to a submission from BC Hydro dated October 22, 2007 that certain exhibits were rendered moot by the Scoping Order, and removed Exhibits C3-5, C3-6, C3-7, C3-8 and C3-9 filed by the Haisla Nation and Exhibits C12-5, C12-7, C12-8, C12-9, C12-10, C12-11 and C12-12 filed by the Haisla Hereditary Chiefs ("HHC") (Exhibit A-15).

By letter dated October 31, 2007, the Commission responded to a request dated October 31, 2007 from BC Hydro, and withdrew certain Commission information requests ("IR") on the Direct Evidence of Dr. Shaffer that was filed on behalf of the District of Kitimat ("DoK") (Exhibit A-16).

By letter dated November 7, 2007, the Commission denied a request from Mr. McLaren for reconsideration of the Commission determination in a letter dated November 2, 2007 regarding a presentation that he wished to make in the oral hearing (Exhibit A-18).

By letter dated November 8, 2007, the Commission removed the letter dated October 2, 2007 that was attached to Exhibit C3-4 filed by the Haisla Nation and Exhibit C12-4 filed by the HHC, from the hearing record (Exhibit A-20).

By letter dated November 15, 2007, the Commission established that the request of B.C. Sustainable Energy Association, Sierra Club of Canada (British Columbia Chapter), and the Peace Valley Environment Association ("BCSEA") for an adjournment of the oral hearing for reasons related to Participant Assistance/Cost Award funding would be considered at the commencement of the oral

proceeding on November 19, 2007. During the oral hearing, the Chair denied the BCSEA application for an adjournment (T3: 272).

The oral hearing commenced on November 19, 2007 and continued for five days, until November 23, 2007.

During the hearing, the Commission Panel confirmed that an issue for the hearing was whether or not the 2007 EPA impacts water flows on the Nechako River (T5: 695). Evidence on the matter was heard in the hearing, and oral argument on the subject was heard on November 27, 2007. By Letter No. L-95-07 dated November 29, 2007 (Appendix D), the Commission Panel released its determination on the matter.

In a matter that was discussed in the hearing, the HHC replaced Exhibit C12-2 with a revised version of the exhibit (T7: 1403). By letter dated December 11, 2007, the Commission Panel determined that no portion of Exhibit C3-10 would be removed from the hearing record and that the letter identified by the HHC as Exhibit C12-25 would not be added to the record, as the evidentiary record was closed.

Final Argument was by written submissions, and Intervenors were provided with an opportunity to submit comments on the submissions of other Intervenors. BC Hydro and Alcan made oral Reply Argument on December 18, 2007. There was no Oral Phase of Argument.

1.3.2 Duty to Consult with First Nations

The Haisla Nation registered as an Intervenor on September 13, 2007, and the HHC registered as an Intervenor on September 26, 2007. By letter dated September 26, 2007, the Commission established a process with respect to the Commission's role regarding the adequacy of consultation and, if necessary, accommodation of First Nations (Exhibit A-3). The Regulatory Timetable established by Order No. G-120-07 following the September 26, 2007 Procedural Conference included dates for filing submissions regarding duty to consult. Based on the submissions it received, in the Scoping Order the Commission Panel made the following determination:

> "Therefore, the duty of the Crown to consult and, if necessary, accommodate is not within the scope of this proceeding because it is not relevant to the proceeding."

The Scoping Order went on to say:

> "The Commission will continue to hear from the Haisla Nation during this proceeding, provided that such participation is subject to this decision to limit the scope of the oral hearing to cost-effectiveness."

On October 29, 2007 the Carrier Sekani Tribal Council (the "CSTC") requested late Intervenor status (Exhibit C21-1). The Commission responded as follows:

> "The Commission Panel has reviewed your request and has granted you Intervenor status on the understanding that you agree to join the process at this point in time and will adhere to the filing dates set out in the Regulatory Timetable. By Commission letter dated October 10, 2007 (Exhibit A-9), the Commission determined that the duty of the Crown to consult and, if necessary, accommodate is not within the scope of this proceeding" (Exhibit A-22).

At the commencement of the oral hearing, in their Opening Statement the CSTC requested a reconsideration of the Scoping Order with respect to the duty of the Crown to consult (T3: 305, 306; Exhibit C21-2). The Commission Panel heard submissions on the CSTC application according to its normal two phase reconsideration procedure, whereby in Phase I the Commission considers whether a reconsideration is justified on a *prima facie* basis. In the hearing, the Commission Panel concluded that the CSTC had established a *prima facie* case sufficient to warrant a reconsideration of the Scoping Order on the ground identified in item 5(d) of the motion in Exhibit C21-2 (T5: 695). This ground states:

> "The determination of the Commission is an error of law going to jurisdiction (absent consent from all other affected First Nations)."

By Letter No. L-96-07 dated November 30, 2007, the Commission established a timetable for written submissions for the Phase II review of the CSTC reconsideration application. In Phase II of the Commission's reconsideration procedure, an application that has been accepted for reconsideration in Phase I is considered on its merits.

By letter dated December 17, 2007, the Commission dismissed the CSTC application for reconsideration, with Reasons to follow. The Reasons for Decision are provided in Section 8 of this Decision.

2.0 JURISDICTION AND OTHER LEGAL ISSUES

Introduction

This Section of the Decision first considers whether or not the Commission has jurisdiction to consider opportunity cost as well as avoided costs, and then makes certain comments that may assist utilities and other stakeholders in future section 71 filings. This Section of the Decision then turns to a different issue, namely, the appropriate public interest considerations relevant to the review of the 2007 EPA.

2.1 Opportunity Cost Considerations and Applicable Jurisdiction

In its Report, BC Hydro states:

> "BC Hydro believes that the opportunity cost of the seller should not influence the BCUC's decision when exercising its discretion under section 71 of the UCA. However, to the extent the BCUC does consider opportunity cost, BC Hydro believes the BCUC should nevertheless conclude the 2007 EPA is in the public interest" (Exhibit B1-2-1, p. 8-2).

Section 71(2) follows:

> **Energy supply contracts**
>
> **71** (2) The commission may make an order under subsection (3) if the commission, after a hearing, finds that a contract to which subsection (1) applies is not in the public interest by reason of
>
> (a) the quantity of the energy to be supplied under the contract,
>
> (b) the availability of supplies of the energy referred to in paragraph (a),
>
> (c) the price and availability of any other form of energy, including but not limited to petroleum products, coal or biomass, that could be used instead of the energy referred to in paragraph (a),
>
> (d) in the case only of an energy supply contract that is entered into by a public utility, the price of the energy referred to in paragraph (a), or

(e) any other factor that the commission considers relevant to the public interest.

BC Hydro submits that the Commission does not have jurisdiction to consider a seller's opportunity cost in determining whether or not an energy supply contract is in the public interest. BC Hydro is of the view that the cost of alternative resources is the issue, rather than whether the price under the 2007 EPA could have been lower (BC Hydro Argument, para. 50). BC Hydro submits that a careful reading of section 71 confirms that the legislature intended to maintain its focus on avoided costs rather than ensuring the lowest price in the EPA under review (BC Hydro Argument, para. 51). BC Hydro submits that considering a seller's opportunity cost would create an unfortunate and unnecessary obstacle to public utilities acquiring a supply portfolio that meets the needs of their customers (BC Hydro Argument, para. 35)

The BC Old Age Pensioners Organization *et al*. ("BCOAPO") submits the purchaser's avoided cost represents a price ceiling and that the seller's opportunity cost represents a price floor. BCOAPO is of the view that the Commission must consider both the floor of the range of potential price outcomes as well as the ceiling, and that where the price falls in the range will depend on the circumstances of each party to the contract (BCOAPO Argument, pp. 10-11). BCOAPO disagrees with BC Hydro's submissions regarding opportunity cost and section 71, and submits that common sense and the language of section 71 establish jurisdiction to consider opportunity cost so as to ensure negotiated agreements capture actual advantages for ratepayers (BCOAPO Argument, p. 12).

The DoK submits that Dr. Brander's evidence should have no impact on the Commission's pricing assessment, and that his argument that it is administratively costly to assess opportunity completely ignores the benefit to ratepayers (DoK Argument, para. 42). The DoK submits that Dr. Brander does not say that an opportunity cost standard cannot be used, only that it is potentially more costly than an avoided cost standard (DoK Argument, para. 43). The DoK submits that there is no competitive benchmark against which to measure the price to be paid by BC Hydro under the 2007 EPA. The DoK further submits that where there is no competitive benchmark against which to measure the price set out in the 2007 EPA, Alcan's opportunity cost is the best and most accurate way to assess the cost-effectiveness of the contract (DoK Argument, para. 48).

Independent Power Producers Association of British Columbia ("IPPBC") submits that it is very strongly in favour of supply being acquired through open competitive bidding (IPPBC Argument, p. 4). IPPBC further submits that both opportunity and avoided cost can be considered in a review of a bilateral negotiated EPA, and that an appropriate approach has to be determined for each energy supply contract. IPPBC is of the view that if one factor is missed in the calculation of both opportunity and avoided cost, the exercise may be meaningless (IPPBC Argument, p. 6).

BC Hydro submits that the purposive approach to statutory interpretation should be undertaken (BC Hydro Argument, para. 40). In this regard, BC Hydro submits that the location of section 71 in Part V of the UCA is significant (BC Hydro Argument, para. 47). BC Hydro further submits that Part V extends the role of the Commission beyond its core mandate, and that "…[t]he general focus of Part V is on ensuring the integrity and dependability of the supply system, rather than on scrutinizing in detail the activities of public utilities" (BC Hydro Argument, para. 49).

BC Hydro submits that the first four factors ((a) through (d)) under section 71 are specific in nature and the fifth factor (e) is general. BC Hydro therefore submits that section 71(2)(e) must be construed as including only items which are different from those already mentioned in items (a) through (d) (BC Hydro Argument, para. 52, 53); therefore, section 71 does not provide jurisdiction to consider opportunity cost. No Intervenor made contrary submissions regarding whether or not section 71(2)(e) provides jurisdiction to consider opportunity cost.

In Reply, counsel for BC Hydro further submits that section 71(2)(d) does not provide jurisdiction to consider opportunity cost; in part, because (a) to (d) only reference avoided cost, and do not reference opportunity cost. Further, that (d) needs to be read in the context of (c), and that neither (c) nor (d) contemplates the consideration of another price for the same energy under the EPA being reviewed (T9:1500). Further that this statutory construction needs to be done in the context of Part V, as described by BC Hydro and referred to above. BC Hydro therefore concludes that the Commission does not have jurisdiction to consider opportunity cost.

Counsel for BCOAPO submits that section 71(2)(c) does not fully establish avoided cost as a standard, and that it says only that the Commission needs to consider other sources of energy to determine if there is a less expensive alternative (T9:1588). BCOAPO submits that section 71(2)(d) is the key to understanding section 71, and that it requires the Commission to consider the price of the 2007 EPA. Further, that there is nothing in section 71 that deprives the Commission from considering the opportunity cost of the vendor. Counsel for the DoK supports the submissions of BCOAPO and is of the view that section 71 does not mandate either an avoided cost approach or an opportunity cost approach (T9:1596).

Commission Determination

The Commission Panel accepts the submissions of BC Hydro that Part III and Part V have different purposes. By operation of the definition of "energy supply contract" in Part V, contracts that are approved under Part III, section 61, are not energy supply contracts. Section 61 provides for the filing of rate schedules that are to be collected or enforced by a public utility. Part III contemplates the provision of "services" by a public utility and Part V contemplates, in part, the provision of "services" to a public utility.

The definition of "energy supply contract" in Part V, section 68, contemplates two types of energy supply contracts: contracts with a public utility and with "another buyer". This distinction is also reflected in section 71(1.1) regarding the sale of natural gas. More importantly to the instant case, this distinction is reflected in section 71(2)(c) and section 71(2)(d). The Commission Panel finds that that distinction between section 71(2)(c) and section 71(2)(d) provides the answer to the question as to why section 71(2)(d) is not redundant, which it may be if, as BC Hydro submits, "the general focus of Part V is on ensuring the integrity and dependability of the supply system". Section 71(2)(d) goes beyond ensuring the integrity and dependability of the supply system and, in only the case of a public utility, ensures the Commission has jurisdiction necessary to consider the price of the contract as a separate issue from the integrity and dependability of the supply system. In this regard, the reference to "price and availability" in section 71(2)(c) and not in section 71(2)(d) is significant. It follows that the purpose of Part V with respect to the review of energy supply contracts with public utilities is different than the purpose of the review of all other energy supply contracts.

The Commission Panel also does not accept the proposition of BC Hydro that section 71(2)(c) establishes avoided cost and that it therefore follows that section 71(2)(d) is restricted to avoided cost. First, section 71(2)(c) cannot be read to establish an avoided cost standard, and certainly not an avoided cost standard to the exclusion of opportunity cost considerations. In this regard, the Commission Panel accepts the submissions of both BCOAPO and the DoK that section 71(2)(c) only says that the Commission needs to consider other sources of energy to determine if there is a less expensive alternative. Second, for the reasons previously stated, section 71(2)(d) has a distinct and separate purpose from section 71(2)(c) and therefore even if it established an avoided cost standard it does not follow that section 71(2)(d) is thereby restricted to the consideration of avoided cost as the sole criterion.

In setting (approving) a rate under Part III, all matters that the Commission *considers proper and relevant affecting the rate* are relevant (section 60(1)(a)). In accepting a contract under Part V, the Commission may find a contract not to be in the public interest by reason of certain identified considerations and then *any other factor that the commission considers relevant to the public interest* (section 71(2)(e)). The Commission Panel does not accept the proposition of BC Hydro that the purposive approach to statutory interpretation supports the conclusion that Part V extends the role of the Commission beyond its core mandate with respect to the review of energy supply contracts with public utilities. Part V may extend the role of the Commission beyond its core mandate regarding other energy supply contracts, but that is not the instant case.

The different purposes of Part III and Part V result in very different issues being considered. Neither avoided cost nor opportunity cost are likely to be considerations under Part III. The different purposes of Part III and Part V do not assist in determining whether or not opportunity costs can be considered under Part V. The different purposes of Part III and Part V may be reflected in the considerations that are within the jurisdiction of the Commission under each Part, but the Commission Panel is of the view that the important distinction between Part III and Part V is a distinction based on who is providing the service, rather than a distinction between avoided cost and opportunity cost. The Commission Panel does not accept the proposition that jurisdiction should be construed to be narrower merely because the public utility is a buyer (Part V) rather than the seller (Part III) of the service. Ratepayer impacts can be

more significant when the utility is the buyer of the service. In both circumstances, "scrutinizing in detail the activities of public utilities" may be in the public interest, and for that reason the purposive approach to statutory interpretation supports a conclusion that is contrary to BC Hydro's submission. That is, the review of energy supply contracts with public utilities may, at the discretion of the Commission, include consideration of both avoided costs and opportunity costs.

The different purposes of Part III and Part V may provide for broader discretion to determine the appropriate process to review a section 71 filing as compared to a section 61 application, but once the Commission determines the scope of the review that is necessary the Commission's jurisdiction is not as a matter of law narrower in one proceeding than the other. The submissions of Dr. Brander related to the cost and expertise required to consider opportunity cost will still be important to the question of the appropriate scope of the review of an energy supply contract. Further, BC Hydro submissions concerning the importance of the perception of the vendor and the significant limitations of the regulator to discern the perceptions of the vendor will also be important to the question of the appropriate scope of review of an energy supply contract. But as a matter of law, the Commission Panel concludes that it may consider, pursuant to section 71(2)(d), opportunity costs in a section 71 review, and thereby rejects the proposition of BC Hydro that avoided cost is the sole criterion.

As discussed further below, this finding does not mean the vendor's opportunity cost will be relevant in every section 71 review. The Commission Panel, however, does consider it may be a reasonable consideration, particularly in the case of a bilateral negotiation. This is discussed further below.

2.2 Opportunity Costs and the 2007 EPA

BC Hydro submits that, if the Commission concludes it does have broad enough discretion under section 71 to consider opportunity cost, it should not exercise it (BC Hydro Argument, para. 63) In Section 6 of this Decision, the Commission Panel does consider opportunity cost and concludes that the actual price paid is somewhere between the avoided cost and the opportunity cost, and that no further consideration of opportunity cost is necessary. BC Hydro requests that the Commission reach a decision on the "point of principle" on the opportunity cost issue to assist BC Hydro and all stakeholders in the

context of future section 71 processes (BC Hydro Argument, para. 93). This subsection endeavours to respond to that request.

Evidence regarding opportunity cost was provided by Dr. Brander, who was retained by counsel for BC Hydro. The retainer letter identified the central issue, which was repeated by Dr. Brander in his evidence as follows:

> "… the economic effects of a regulator imposing requirements on a utility to demonstrate that the price it agrees to pay for a commodity not only is less than the value of the commodity to the utility, but also that the price obtains an appropriate proportion of the difference between that value and the opportunity cost of the seller" (Exhibit B1-8, BCUC 1.10.6; T6:949).

Dr. Brander then adopted the expression "opportunity cost standard" as a label for this central issue (T6:950). However, during the proceeding the expressions "opportunity cost standard" and "avoided cost standard" were often used to describe non-overlapping concepts. Moreover, Dr. Brander did not assert that the Commission has in fact sought to impose an opportunity cost standard (T6: 951-53). He then went on to say that in all cases the "seller's costs" are relevant, and that even when an avoided cost standard is used the "seller's costs" and the "avoided costs" are relevant (T6:999).

BC Hydro stated:

> "…the assessment of the cost-effectiveness of the 2007 EPA should ultimately turn on the costs offered under the agreement relative to the avoided cost of other sources having regard to all characteristics of each" (Exhibit B1-2-1, p. 7-1; T5:845).

BC Hydro submits that the inquiry into opportunity cost is fundamentally different from the inquiry into avoided cost for at least two fundamental reasons. First, the Commission has regulatory authority over the utility. Second, the seller's not the Commission's view of its opportunity costs is what is important (BC Hydro Argument, para. 65). Moreover, the Commission does not have the expertise to anticipate how the seller will evaluate the options it has (BC Hydro Argument, para. 72). BC Hydro further submits that the Commission is in a much better institutional position to evaluate avoided cost than it ever will be with respect to opportunity cost (BC Hydro Argument, para. 73).

Commission Determination

The consideration of opportunity costs first arises regarding LTEPA+, which was negotiated in unique circumstances as identified in the LTEPA+ Decision, Section 3. The LTEPA+ Decision should not be read to establish an "opportunity cost standard".

The Commission Panel finds the use by Dr. Brander of the expressions "opportunity cost standard" and "avoided cost standard" to be confusing and perhaps even misleading. The use of the word "standard" suggests a clear, robust definition and established practice that is not supported by the evidence in this proceeding. Given Dr. Brander's testimony that the seller's costs are always relevant, the expressions may have suggested more than was intended by Dr. Brander.

The Commission Panel does not agree with the views of BC Hydro and the evidence of Dr. Brander regarding the central issue, as defined by counsel for BC Hydro and then accepted by Dr. Brander. Specifically, there may be section 71 filings when it is necessary that the price obtains an appropriate proportion of the difference between the avoided cost and the opportunity cost of the seller; however, the Commission Panel does not accept the central issue as a general proposition. In other words, the Commission Panel concludes that opportunity costs will not always be relevant; however, opportunity costs may be relevant, as they are in this case. In most circumstances, it is expected that opportunity cost and avoided cost will either be the same or very close to converging so that evidence of opportunity costs are not of assistance to the Commission.

Utilities filing energy supply contracts that are a result of negotiations as opposed to a competitive process will need to consider the evidence that is necessary regarding opportunity costs in the circumstances of the energy supply contract being filed. For EPAs that are the result of bilateral negotiations, the utility should provide evidence that it considered the seller's opportunity cost before entering into the negotiations. If the seller's access to competitive markets is restricted in some way, then it may also be necessary to provide evidence of the cost of eliminating the restriction or other relevant evidence of opportunity costs. If the seller's access to competitive markets is not restricted, then in most cases it will be presumed that opportunity cost and avoided cost for the commodity converge to relevant benchmarks after location adjustments.

It is the location adjustments that concern the Commission Panel and that may require some analysis, particularly in a bilateral negotiation. BC Hydro consistently adds charges for wheeling and losses to external market prices forecasts (e.g., prices at Mid-C) as one of its benchmarks. This is a reasonable approximation of BC Hydro's avoided costs when BC Hydro is in a long-term net import situation. The Commission Panel notes that BC Hydro may not always be in a net import position on average, particularly if SD10 requires an additional quantity of generation as "insurance" within B.C. In these circumstances, BC Hydro's avoided costs (or opportunity costs for selling excess power) would be the market index less wheeling and losses from the B.C. border to the relevant market (e.g., Mid-C). Furthermore, the Commission Panel notes that producers in B.C. would have to pay wheeling and losses to both British Columbia Transmission Corporation ("BCTC") and neighbouring transmission providers, resulting in a significantly lower net back price to the producer relative to the benchmark. In the Commission Panel's view, a competitive process among existing producers in B.C. to supply BC Hydro is likely to result in prices below the benchmark, assuming sufficient competition, all things being equal. In the absence of a competitive process, the Commission Panel considers it reasonable to expect a contract that reflects a value somewhere between the external market indexes with and without wheeling charges.

The Commission Panel notes the following comments made by the Commission in the BC Hydro Revenue Requirements Decision, Commission Order No. G-96-04 dated October 29, 2004, at page 119:

> "The Commission Panel recognizes that the appropriate regulatory review of an executed EPA awarded following a competitive process needs to be determined with consideration given to transaction costs and the need for the parties to the contract to proceed as efficiently and expeditiously as possible. In most circumstances, the competitive process should be sufficient to establish that the awarded contract was the most cost-effective bid."

The Commission Panel has not accepted and does not now accept the submissions of BC Hydro that "… BC Hydro should not have an *artificial incentive* to avoid employing bilateral negotiations where it believes that is the best way to obtain cost-effective power" (BC Hydro Argument, para. 85; emphasis added). In circumstances where BC Hydro concludes that bilateral negotiations may be the best way

to obtain cost-effective power, the Commission Panel expects BC Hydro to employ bilateral negotiations. And it then should file the EPA with the appropriate cost-effectiveness analysis, and in some circumstances opportunity cost evidence. The benefits of bilateral negotiation notwithstanding, the standards for such a review can be and should be more onerous then in the case of a competitive outcome, in order to replace some of the pricing pressure that would have been provided by competition.

The Commission Panel confirms the following comments in the LTEPA+ Decision, at page 42:

> "Given LTEPA+ is the outcome of a negotiation, the Commission Panel expects BC Hydro would have conducted an analysis of Alcan's opportunity costs to support its negotiations. Furthermore, the Commission Panel finds that BC Hydro should have demonstrated it had done so. The Commission Panel was provided with insufficient evidence by BC Hydro of Alcan's opportunity costs, and indeed heard evidence that BC Hydro did not even consider Alcan's opportunity costs in its negotiations. The Commission Panel also rejects BC Hydro's submissions that there was "no transparent way for BCH to determine Alcan's opportunity cost" (BC Hydro Argument, para. 74; T6:876-77). The determination of Alcan's opportunity costs does not require special insights on Alcan's production costs, financial status or corporate strategy. A reasonable assessment of Alcan's opportunity costs (albeit with some inevitable uncertainty) is available with reference to external facts readily available to BC Hydro."

Although the Commission has expressed some concerns with the opportunity cost evidence, in this Decision, unlike in the LTEPA+ Decision, the Commission Panel has accepted that the opportunity cost evidence was sufficient, and demonstrated that the 2007 EPA is priced between the BC Hydro's avoided cost and Alcan's opportunity cost.

As stated in the previous Section, the submissions of Dr. Brander related to the cost and expertise required for the development and review of opportunity cost evidence will be important to determine the opportunity cost evidence that should be filed. This will be particularly important regarding the evaluation of opportunities outside of the competencies of the utility, in this case, aluminum production as opposed to power sales. Only in very unique circumstances, would a utility be expected to file opportunity cost evidence related to non-power sales opportunities. The Commission Panel acknowledges that the absence of such evidence may render the evidence regarding opportunities for

power sales to be of limited value. BC Hydro submissions concerning the importance of the perception of the vendor and the significant limitations of the regulator to discern the perceptions of the vendor will also be important to determine the opportunity cost evidence that should be filed.

The Commission Panel does not accept the submissions of BC Hydro regarding the fairness of exercising market power (BC Hydro Argument, para. 81). Open access transmission provides non-discriminatory access to markets. Transmission constraints may limit access to markets, and may reduce the prices that may be obtained by a seller to those markets. Considering the circumstances of the seller is not unfair as suggested by BC Hydro. The Commission Panel considers this somewhat analogous to and no less fair then the practice of offering bypass transmission rates to natural gas users when they have lower cost opportunities to access natural gas.

The Commission Panel also concludes that in most filings where evidence of opportunity costs is required, then such evidence, for convenience and consistency, should be considered separately from factors that have been identified to form part of cost-effectiveness analysis. This will be a matter of convention, rather than a conclusion supported by the definition of cost-effectiveness. The factors to be included in cost-effectiveness analysis have been the subject of Commission comment in the VIGP Decision and the VITR Decision.

The Commission Panel considers BC Hydro's evidence with respect to Alcan's opportunity cost and cost-effectiveness of the 2007 EPA in Section 6 of this Decision.

2.3 The 2007 EPA and the Modernization Project

BC Hydro submits that the public interest test developed in section 71 is, and should be, focused on the acquisition of power for BC Hydro's ratepayers (BC Hydro Argument, para. 100). Further, that conclusions that can be drawn from the cost-effectiveness analysis suggest that the inclination of Alcan to proceed with the Modernization Project may be included in the broader public interest considerations, but should not be the central focus (BC Hydro Argument, para. 100; T9:1533).

Alcan submits that the Modernization Project is only relevant to the 2007 EPA to the extent it determines the amount of power that is available for purchase by BC Hydro (Alcan Argument, para. 4.12; T9:1566). Alcan further submits that the Commission has no jurisdiction to review the Modernization Project and therefore should avoid being drawn into debates about the merits of the Modernization Project (Alcan Argument, para. 4.13).

The DoK submits that BC Hydro and Alcan seek to limit the scope of the Commission's inquiry under section 71. The DoK submits that the central focus should be the broader pubic interest considerations. Regarding impacts or the potential impacts of the 2007 EPA on the community of Kitimat and the surrounding area, the DoK submits the 2007 EPA is contrary to the public interest (DoK Argument, para. 19).

BC Hydro further submits that the Commission determined in its LTEPA+ Decision that incentives to undertake the Modernization Project could be relevant to the cost-effectiveness analysis (BC Hydro Argument, para. 33). However, BC Hydro submits that because the alternatives are not equally cost-effective, then issues regarding the Modernization Project should not be considered (T9:1539). BC Hydro then goes on to say that because it has not relied on the Modernization Project for its cost-effectiveness analysis that the Modernization Project is not relevant to the cost-effectiveness analysis.

The DoK submits that the original intended use of the power and the impact on the local community of a diversion from that use are all relevant considerations falling within section 71(2)(e). The DoK further submits that the *Nakina (Township) v. Canadian National Railway Co.* [1986] F.C.J. 426 (C.A.) case is "equally applicable to the within proceeding" (DoK Argument, para. 30). The DoK then submits that the "likely effect" of the 2007 EPA on the community of Kitimat is a public interest consideration. The DoK quotes from the LTEPA+ Decision as follows:

> "The Commission Panel is guided by the comments made in *Nakina*. The Commission Panel should not exclude from consideration in determining the public interest any class or category of interests which form part of the general public interest. In particular, the Commission Panel is of the view that evidence dealing with probable economic effects flowing from the approval of LTEPA+ on the surrounding community is a relevant consideration in determining the pubic interest" (DoK Argument, para. 32; LTEPA+ Decision, p. 29).

The DoK submits that the "probable economic impacts [effects] flowing from the approval" of a contract on the community carries within it the economic incentives and disincentives in the contract because they are what gives rise to the probable economic effects (T9:1598). The DoK further submits that the evidence of Dr. Shaffer demonstrates that there are economic incentives in the 2007 EPA for Alcan not to proceed with the Modernization Project (T9:1602). Moreover, it is that incentive that will create the economic change for Alcan whereby Alcan will not proceed with the Modernization Project (T9:1603).

The DoK submits that if the Commission does not reject the 2007 EPA on price, the District submits that the incentive issue must be addressed, and that the failure to address the incentive question would be an error of law within the meaning of *Nakina* (DoK Argument, para. 68).

The DoK also submits that the diversion of power from industrial purposes would be contrary to the public interest and should be rejected by the Commission (DoK Argument, para. 69). Alcan submits that it is the province's role to develop economic and industrial policy, not the Commission's role under a section 71 review of an energy supply contract (T9:1573). Alcan further submits that the Commission also addressed concerns about the diversion of power from an industrial use in the LTEPA+ Decision at page 30 (T9:1573). Moreover, Alcan submits that the 2007 EPA does not create incentives to divert power from aluminum production (T9:1575).

BC Hydro submits that, if the 2007 EPA is not accepted, the circumstances for the surrounding community do not change because Alcan may still sell the power (T9:1535). Therefore, the decision should not turn on the impacts for Kitimat and the surrounding communities. Moreover, BC Hydro submits that the uncertainty associated with incentives or disincentives in the 2007 EPA distinguishes the instant case from *Nakina* (T9:1537). BC Hydro further submits that in the *Nakina* case the regulatory tribunal had jurisdiction over what was the direct link into *Nakina*, and the equivalent of the rail line in *Nakina* is the smelter in Kitimat, which is not within the jurisdiction of the Commission (T9:1538).

Alcan submits that the *Nakina* case does not apply to these circumstances (T9:1567). Alcan submits that the proposed action by the railway company, which was the regulated entity, in the *Nakina* case, and the impacts on the community, were direct and clear, that is, it was the discontinuation of the regulated service that would no doubt affect the community (T9:1567). Alcan further submits that its decision related to the Kemano system and its Kitimat smelter are not regulated by the Commission (T9:1568), and comparable circumstances to *Nakina* would be if BC Hydro was seeking to discontinue service to Kitimat (T9:1567).

Alcan submits that in the VITR case, the connection between the proposed action, the building of a new transmission line project, and the environmental impact concerns and the social concerns, were direct and clear. In a CPCN application that involves a project with physical impacts the connection to the Commission's mandate is clear, and has parallels to *Nakina* (T9:1570).

Commission Determination

In this Decision, the Commission Panel accepts the cost-effectiveness analysis, and concludes that the price of the 2007 EPA is below BC Hydro's avoided cost. Moreover, the cost-effectiveness analysis results show a significant net benefit to ratepayers. Given these results, the Commission Panel concludes that significant weight should be attributed to ratepayer interests.

On the issue that the DoK submits is the central issue: whether it is in the public interest for BC Hydro to sign a long-term contract with Alcan which has the effect of diverting power from Kemano to the provincial grid at the almost certain expense of the Kitimat smelter – the Commission Panel agrees with the submissions of BC Hydro that the 2007 EPA is not almost certainly at the expense of the Kitimat smelter. As stated in Section 7 of the Decision, the Commission Panel cannot conclude that the 2007 EPA is either at the expense of, or to the benefit of, the Kitimat smelter. Therefore, the Commission Panel does not need to consider the issue identified by the DoK as the central issue. For the same reason, the Commission Panel cannot conclude that the 2007 EPA has probable economic effects on the DoK and the surrounding communities as were considered in the *Nakina* case.

In the context of *Nakina*, the reasons why the Commission Panel cannot conclude that there are no probable economic effects are not as important as the conclusion. In other words, the distinctions drawn by BC Hydro and Alcan between the *Nakina* case and the instant case may not have been material if the Commission had concluded that there were probable economic effects. Although the distinctions may have been the reason why there is no finding of probable economic effects, the absence of probable economic effects is what distinguishes the *Nakina* case from the instant case.

3.0 LOAD RESOURCE BALANCE

Introduction

In its Report (Exhibit B1-2-1, Chapter 5) BC Hydro describes its load resource balance for two distinct periods – F2007 through F2010, and F2011 and beyond - and identifies a need for additional capacity and energy resources by F2011 or F2012. This Section of the Decision reviews BC Hydro's projected load resource balance and then assesses the contribution of the 2007 EPA to the balance in the two periods.

3.1 Demand

In assessing demand, BC Hydro relies on its December 2006 Load Forecast net of demand-side management ("DSM") programs Energy Efficiency ("EE") 2 and Load Displacement ("LD") 2. BC Hydro submits that it does not expect that the load forecast methodology adjustments that it is presently making to reflect the 2006 IEP/LTAP Decision will have a material impact on its analysis (Exhibit B1-2-1, p. 5-1).

3.2 Near Term Balance

For the period through F2010 (the operating time horizon), BC Hydro is forecasting a reliance on the external market and operational contingency plans to supplement its existing and committed supply resources in order to reliably meet its energy and capacity requirements. BC Hydro expects to rely on up to 1,000 MW of market or off-system capacity, and approximately 4,000 GW.h/year of energy from external markets and Burrard Thermal Generating Station ("Burrard"), under the mid-range load forecast during this period (Exhibit B1-2-1, pp. 5-3 to 5-4).

3.3 Planning Horizon Balance

For the period after F2010, BC Hydro identifies a gap in F2011 (the first year of the planning horizon) for both capacity and energy, with or without any contribution from Burrard after F2014, and without any contributions from the 2007 Call or EE 3, 4 and 5. In its analysis, BC Hydro relies on the following assumptions:

- All energy-based load/resource balances presented include the full 2,500 GW.h of non-firm/market allowance.
- All capacity-based load/resource balances presented include the 400 MW of reliance on external markets, which is assumed to be fully backstopped by the Canadian Entitlement to Downstream Benefits ("CE"). The CE is considered a contingency resource in the planning horizon, and not considered as a long-term capacity resource option when other long-term capacity resource options are available.
- The load/resource balances are presented both with and without the full capability of Burrard in the years after F2014 to reflect the uncertainty of its status after F2014.
- The load/resource balances are based on the capacity planning reserve requirements of 14 percent of dependable capacity.

(Exhibit B1-2-1, pp. 5-4 to 5-5).

In the LTEPA+ Decision, the Commission found that electricity purchased under LTEPA+ would not contribute to self-sufficiency because there would be no net increase in generation from a provincial perspective (p. 35, LTEPA+ Decision). However, since that decision, the Province introduced a requirement for BC Hydro to achieve energy and capacity self-sufficiency by 2016, and to do so using the restrictive criteria set out in Special Direction No. 10 to the BCUC ("SD10"), (Exhibit B1-2-1, Appendix C). BC Hydro states that it did not make any explicit modifications as a result of either the 2007 Energy Plan or SD10 notes that some of its assumptions are therefore conservative (Exhibit B1-2-1, p. 5-5).

In determining the expected load resource balance, BC Hydro included existing and committed resources, including contributions from Resource Smart upgrades (at G.M. Shrum and Aberfeldie); existing and committed Independent Power Projects ("IPPs"), including the EPAs awarded in the

F2006 Call adjusted for attrition and outages; Greater Vancouver Regional District Micro Hydro; and Revelstoke Unit 5. BC Hydro did not include the remaining potential supply from 2006 Long Term Acquisition Plan ("LTAP") action items, i.e., the 2007 Call and EE 3, 4 and 5, nor any additional Columbia capacity projects beyond Revelstoke Unit 5 (e.g., Mica Unit 5 and Revelstoke Unit 6). BC Hydro also excluded Site C from its analysis, referring to it (like the repowering of Burrard) as a speculative project with an earliest in-service date well into the future (BC Hydro Argument, para. 26).

Based on the foregoing assumptions and exclusions, BC Hydro's analysis shows gaps of 1,400 GW.h/year in the energy balance and 100 MW in the capacity balance beginning in F2011 and increasing in subsequent years (Exhibit B1-2-1, Tables 5-1 and 5-2).

BC Hydro provided further analysis that continued to exclude the 2007 Call and any additional Columbia capacity projects, but recognized the DSM programs EE 3, 4 and 5 which are in the Definition phase, and concluded that, without the 2007 EPA, there would still be a need for an additional 600 GW.h of energy in 2011 and an additional 100 MW of capacity in 2012. The load/resource balances are shown in Tables 5-5 and 5-7 of the Report, which are reproduced below.

Gap in Firm Energy Load Carrying Capacity ("FELCC") to the Mid Load Forecast based on Existing, Committed Resources, EE3, 4 and 5 and excluding the 2007 EPA

FELCC (GW.h/year)	F2011	F2012	F2013	F2014	F2015
With Burrard	-600	-900	-1,500	-1,700	-1,100
Without Burrard	-600	-900	-1,500	-1,700	-7,200

(Source: Exhibit B1-2-1, p. 5-17)

Gap in Effective Load Carrying Capacity ("ELCC") to the Mid Load Forecast based on Existing, Committed Resources, EE3, 4 and 5 and excluding the 2007 EPA					
ELCC (MW)	**F2011**	**F2012**	**F2013**	**F2014**	**F2015**
With Burrard	0	-100	-200	-200	-100
Without Burrard	0	-100	-200	-200	-900

(Source: Exhibit B1-2-1, p. 5-20)

3.4 Near Term Value of the 2007 EPA

BC Hydro submits that the 2007 EPA will reduce its reliance on the CE or other market sources of capacity and displace the highest cost alternative supply sources from either Burrard or market. BC Hydro states that an important consideration in the negotiation of the 2007 EPA was to ensure the capacity, energy and associated products contained in the 2007 EPA would be contractually secured before the 2007/08 winter peak. These products will be available to BC Hydro for the 2007/08 winter peak even if the regulatory condition is not fulfilled (Exhibit B1-2-1, p. 5-20).

3.5 Planning Horizon Value of the 2007 EPA

BC Hydro states that, even if EE 3, 4 and 5 are recognized, the 2007 EPA is needed to fill a currently forecast gap in the energy balance beginning in F2011, and a gap in the capacity balance beginning in F2012. The 2007 EPA postpones the forecast energy gap until F2013, and the capacity gap until F2015 without Burrard and until F2018 with Burrard.

BC Hydro identifies other resources that could help to fill the energy and capacity gaps, but excludes these options from its analysis, noting that "…capacity and energy available from future calls or other development or acquisition processes are not yet through the Definition phase or received approval to be implemented" (Exhibit B1-2-1, p. 5-14).

BC Hydro stated that "Site C is not a realistic alternative to the 2007 EPA" (Exhibit B1-9, BCOAPO 1.1.1), that no decision has been made to develop Site C, and that the earliest date that it could conceivably be available is 2019, after almost half of the life of the 2007 EPA will have passed (Exhibit B1-9, DoK 1.5.2).

BC Hydro stated that the capacity and energy from the 2007 EPA are required whether or not Burrard is available after 2014 (Exhibit B1-9, BCOAPO 1.2.2) and that the earliest in-service date for a re-powered Burrard is expected to be at or beyond 2020 (Exhibit B1-9, DoK 1.5.3).

BC Hydro developed Contingency Resource Plans ("CRPs") in case additional needs materialize during the planning period. The CRPs, which were approved by the Commission in the 2006 IEP/LTAP Decision, show that additional capacity and energy will be more urgently required if needs are greater than anticipated.

BC Hydro submits that "…[i]ts need to acquire new resources to meet its forecast load/resource gap was not questioned and no evidence to the contrary was provided" (BC Hydro Argument, para. 10). The DoK submits that potential power sources such as re-powering Burrard and Site C are clearly relevant in assessing cost-effectiveness (DoK Argument, para. 50), but does not directly counter BC Hydro's position that the 2007 EPA is needed. BCOAPO states that it "…accepts BC Hydro's evidence that the energy and capacity provided by the EPA are useful to BC Hydro and its ratepayers" (BCOAPO Argument, p. 14), and BCSEA states that it is "…satisfied that the need for the energy, capacity and other products under the 2007 EPA has been established" (BCSEA Argument, para. 20).

Commission Determination

In the LTEPA+ Decision, the Commission determined that, from the perspective of need, LTEPA+ was not required for strict conformance to BC Hydro's planning criteria given other existing, committed and planned resources and therefore must be justified on other bases (LTEPA+ Decision, p. 34).

The Commission Panel concludes that, for the near term, BC Hydro has alternative sources of supply and that the incremental capacity and energy from the 2007 EPA are not needed, especially as winter 2007/08 benefits continue even without the 2007 EPA. The near-term value of the 2007 EPA is uncertain, as it will largely depend on the market prices for the alternatives upon which BC Hydro would rely in the absence of the 2007 EPA.

The Commission Panel concludes that there is a projected energy gap in F2011 and a capacity gap in F2012. The Commission Panel agrees with BC Hydro that development of Site C and repowering of Burrard should not be included as planned resources for the purpose of determining the load resource balance in this proceeding, and that the CE is not a suitable source of dependable capacity in the long-term. However, BC Hydro is likely to have alternative sources of supply from the 2007 and later Calls, and further Columbia capacity projects. Therefore, the Commission Panel finds that the energy and capacity available under the 2007 EPA are useful contributions to BC Hydro's planning horizon load resource balance but that the issue remains one of cost-effectiveness.

4.0 HYDROLOGY, PHYSICAL CHARACTERISTICS AND AVAILABLE POWER

Introduction

BC Hydro states that the 2007 EPA provides it with access to all the electricity generated by the Kemano System that is excess to Alcan's Smelter needs and that is capable of being delivered to the BC Hydro system over the existing interconnecting transmission facilities, subject to certain exceptions (Exhibit B1-2-1, p. 3-3). A significant amount of analysis of both the hydrological system and physical plant underpinned the definition of the fundamental characteristics and capabilities of the Kemano System. The difference between these characteristics and capabilities and Alcan's power needs for aluminum production defines the products available to BC Hydro in the 2007 EPA.

This Section of the Decision describes the Kemano System, its characteristics from an electricity production perspective, the Kitimat Smelter load and finally, how the products defined in the 2007 EPA arise from the electricity production capability not used for Smelter load purposes.

4.1 Kemano System Capability

The power from the Kemano System is generated by the Kemano Powerhouse, which receives water from the Nechako Reservoir. The Nechako Reservoir was created from a chain of lakes and rivers in the Eutsuk/Tahtsa drainage basin whose natural flow was impounded by Kenney Dam, which was constructed in the 1950s. Electricity from the Kemano Powerhouse is transported via two parallel 82 km 300 kV transmission lines to Alcan's Smelter in Kitimat (Exhibit B2-1, pp. 9-18).

4.1.1 The Nechako Reservoir and its Hydrology

The catchment area of the Nechako Reservoir is 13,955 square km. When full, the surface area of the reservoir is 910 square km, stretching over a distance of 233 km. The reservoir has two water outlets, the Skins Lake Spillway and the Tahtsa Intake.

Water releases from the Nechako Reservoir, and hence the reservoir level, are regulated by two radial gates at the Skins Lake Spillway. The water is released into Skins Lake, which in turn is drained by the Cheslatta River system that joins the Nechako River at Cheslatta Falls. As explained in Section 1 of this Decision, Alcan must release water to the Nechako River for protection of fish and fish habitat. Alcan committed to maintain water releases from the reservoir for fisheries purposes equivalent to a mean annual flow of 36.8 cms as measured at Skins Lake Spillway, plus additional releases in July and August for cooling purposes. These releases, which range between 31 cms in the winter and 49 cms in the summer, not including additional cooling releases to assist migrating salmon, are made under the direction of the NFCP Technical Committee. The cooling releases in July and August result in total flows as measured at Cheslatta Falls of between 170 cms and 283 cms. The actual flow objective is based on meteorological conditions and in all cases is limited to a maximum of 283 cms to minimize flooding downstream on the Nechako River. Excess inflows to the reservoir may be further released in consultation with the Water Comptroller and the NFCP Technical Committee (Exhibit B2-1, pp. 27-28).

Only about 48 percent of the Nechako Reservoir's licensed 7,100 cubic hectometres of live storage is accessible for power generation because of a hydraulic restriction created by Tahtsa Narrows. Tahtsa Narrows restricts the water that can pass from the eastern portion of the reservoir to Tahtsa Lake to the west and then to the Tahtsa Intake. The Tahtsa Narrows restriction limits the usable drawdown in the reservoir to the top 3.96 m and Alcan normally operates the reservoir within a range of 3.04 m.

Alcan's water license allows for the diversion and use of up to 170 cms of water for power generation. The Kemano Powerhouse utilizes water at rates of 136 cms or 112.4 cms to generate 860 MW or 730 MW, respectively. Under normal conditions, the starting assumption for the water utilization rate through the Kemano Powerhouse is to achieve a generation level of approximately 790 MW. The actual water utilization rate from day-to-day will be adjusted as the operating model results are updated for reservoir conditions and inflows, increasing if the risk of spill becomes significant, and decreasing if the reservoir elevation drops and inflows are low (Exhibit B2-1, p. 25). The water utilization at the Kemano Powerhouse is also regulated to control the discharges into the Kemano River during the spring to provide a stable water flow for eulachon spawning and to protect against dewatering of incubating eulachon eggs (Exhibit B2-1, p. 28).

BC Hydro states that, for the purposes of the 2007 EPA, it used an average annual generation of the Kemano Powerhouse of 793.4 aMW, based on simulations performed on the data provided by Alcan for the stream flow data period between 1940 and 2000, which is the period that BC Hydro uses for assessment of the energy capabilities of its own system (Exhibit B1-2-1, p. 4-15).

BC Hydro stated that it performed simulations of the quantity of energy the Kemano Powerhouse could have generated using two sets of stream flow data for the 1931 to 2006 period of record (Exhibit B1-8, BCUC 1.34.1). One set of stream flow data was provided by Alcan and resulted in a simulated generation of 795.2 average megawatts ("aMW") annually, while a second set of stream flow data based on B.C. Government data resulted in a simulated generation of 798.4 aMW annually. BC Hydro stated that the physical firmness attributable to a new resource being added to its portfolio is not determined on a stand-alone basis, but rather is measured by the relative contribution the new resource provides to the FELCC of BC Hydro's overall portfolio and that this takes into account resource and fuel diversity benefits of the overall portfolio that are not available to the new resource on a stand-alone basis (Exhibit B1-9, DoK 1.2.2). FELCC is defined as the amount of energy that the system can provide 100 percent of the time (Exhibit B1-2-1, Appendix A, p. 4). For the determination of the contribution of new hydro resources to FELCC, BC Hydro also uses the stream flows for the period of record between 1940 and 2000.

Based on the portfolio approach, BC Hydro calculates the energy production that could have been generated by the Kemano Powerhouse over BC Hydro's system critical flow period of October 1940 to April 1946. The simulated energy production of the Kemano Powerhouse over this period was 757 aMW for the stream flows derived from data provided by Alcan, and 779 aMW for the stream flows derived from B.C. Government data (Exhibit B1-2-1, p. 4-11). By comparison, when considered on a stand-alone basis, BC Hydro expects the Kemano Powerhouse to produce more than 730 aMW 95 percent of the time, and taken in isolation, the FELCC rating would be 700 aMW (Exhibit B1-2-1, p. 4-14; T4:673-74). Alcan estimates the Kemano Powerhouse will produce more than 730 aMW 92 percent of the time (Exhibit B2-1, p. 22). For the purposes of the 2007 EPA, the firm capability underpinning Tier 1 Electricity was determined to be 730 aMW, which was established through negotiation (Exhibit B1-8, BCUC 1.20.6).

The maximum annual amount of energy simulated over the period of record is approximately 842 aMW for stream flows based on both Alcan's data and the B.C. Government data (Exhibit B1-8, BCUC 1.34.1).

4.1.2 The Kemano Powerhouse

Alcan states that water for the Kemano Powerhouse enters the 16 km power tunnel at the Tahtsa Intake, located at the western end of the Nechako Reservoir. The 7.6 m wide arched tunnel drops 40.8 m along its 16 km length, where it connects to two steel-lined penstocks directly above the Kemano Powerhouse. Each penstock branches into four sections. Each section is equipped with a spherical valve to control the water supply to each of the eight generators. Although the water can be shut off to the power tunnel at the Tahtsa Intake, the water utilization is controlled by the valves and generator nozzle needles at the Kemano Powerhouse. The elevation difference between the surface of the Nechako Reservoir when full and the Kemano Powerhouse is approximately 792 m (Exhibit B2-1, pp. 12-14).

The first three generating units in the Kemano Powerhouse were brought into service in 1954, each rated at 112 MW. By 1957, seven generating units were in operation. The eighth and last unit was brought into service in 1967, for a "nameplate" powerhouse rating of 896 MW. During the 1980's and 1990's the eight generating units were modified and upgraded to yield a nameplate powerhouse rating of 1,000 MW (Exhibit B2-1, p. 15), and Alcan has since invested approximately $45 million to further enhance efficiency and reliability (Exhibit B2-4, BCUC 1.6.1).

Alcan states that the maximum water flow through the power tunnel is 142 cms, which creates a peak generation capacity of the Kemano Powerhouse of approximately 880 MW to 900 MW. This maximum water flow can only be sustained for short periods because of hydraulic characteristics of the power tunnel. Therefore, the dependable capacity is considered to be 860 MW, which is the capacity associated with the water flow that the power tunnel can supply for unlimited periods so long as water remains available in the reservoir and all eight generating units are running (Exhibit B2-1, p. 21). Alcan testified that the power tunnel hydraulic characteristics also limit the Kemano Powerhouse capacity to 830 MW when one generating unit is out of service, even though the remaining seven units represent an installed capacity of 875 MW (T7:1357).

The 2007 EPA contains provisions that discourage or limit planned outages of the generating units in November, December, January, February and March. Alcan has provided outage statistics for planned, maintenance and forced outages that demonstrate to BC Hydro that Alcan can perform the required maintenance on the units during the balance of the year (Exhibit B1-2-1, pp. 4-7 to 4-8).

The forced outage statistics show high unavailability in 1996 and 1997, attributable to a generator failure; however, over the seven-year period between 1998 and 2004, the average forced outage rate per generating unit has remained under 0.5 percent. In BC Hydro's analysis, the dependable capacity of 860 MW should be available 96.1 percent of the time with an average forced outage rate of 0.5 percent, and drops to 92.3 percent of the time if a higher average forced outage rate of one percent is assumed (Exhibit B1-2-1, pp. 4-9 to 4-10). The Kemano generating units' average forced outage rate in recent years compares favourably to the three percent forced outage rate associated with BC Hydro's own large generating units.

4.1.3 Kemano-Kitimat Transmission

Alcan states that there are two parallel 300 kV, 82 km long transmission circuits connecting the Kemano Powerhouse to the Kitimat Switchyard. For the first 16 km out of Kemano, both circuits are at low elevation and are carried on the same double-circuit structures. The circuits then switch to single-circuit structures for a 16 km high elevation section, before returning to common double-circuit structures for the remainder of the route to Kitimat. Through the high elevation section, the circuits have a rating of 1,600 MW (Exhibit B2-1, pp. 17-18).

The losses on the transmission lines between Kemano and Kitimat are roughly 20 MW at higher generation levels, and can be as low as 15 MW at Kemano Powerhouse generation levels of 730 MW (Exhibit B2-1, pp. 20-23).

A 287 kV transmission line provides the interconnection between the Alcan's Kitimat Switchyard and BC Hydro's Minette Bay Substation. According to BCTC System Operating Order 7T-30, Alcan's transmission delivery capability to BC Hydro ranges from 295 MW to 380 MW (depending on Smelter load). The transmission delivery capability to Alcan is up to 150 MW (Exhibit B2-1, p. 44; Exhibit B1-8, BCUC 1.21.1).

4.2 Smelter Requirements

With the final construction and operation of the last potline in 1967, Alcan's Kitimat Smelter maximum annual rated production capacity has been 275,000 tonnes of aluminum per year. The power requirements for this production rate are approximately 610 aMW plus 20 MW for transmission line losses, for a total 630 aMW. In recent years, the production rate has been limited to 90 percent of full production capacity, or 240,000 tonnes per year. At this production rate, the Kitimat Smelter requires approximately 568 aMW, including transmission line losses. (Exhibit B2-1, p. 38)

The Kitimat Smelter currently uses Vertical Stud Söderberg ("Söderberg") technology, which is less efficient and more labour-intensive than the modern generation of technology that is typically used in new or updated smelters. In order to increase smelting and operating efficiency and improve environmental performance, Alcan is proposing to modernize the Kitimat Smelter by replacing the existing Söderberg technology with Alcan's AP 3X "pre-bake" anode technology (Exhibit B2-1, p. 31).

Alcan estimates that the Kemano System can reliably produce 700 aMW on a long-term basis 100 percent of the time, and states that the ultimate size of the proposed Modernization Project is based on this amount (Exhibit B2-1, p. 22). Alcan's current plan for the Modernization Project is to build, by the end of 2012, an AP 37 smelter with 360 pots and a corresponding production rate of 370,000 tonnes of aluminum per year. This configuration would require 662 aMW, inclusive of Kemano to Kitimat transmission losses. There is a smaller AP 37 configuration with 342 pots and a corresponding minimum production rate of 350,000 tonnes per year which would require as little as 635 aMW. Although this smaller configuration is not the current plan, it has been acknowledged as a

possible ultimate configuration for the Modernization Project (T3:355). After 2012, the current plan is to then continue to ramp up to an AP 39 smelter with a rated production rate of 400,000 tonnes per year by 2017, which will require an additional 35 aMW for a total of 697 aMW (Exhibit B2-16, BCUC 1.1.1).

4.3 2007 EPA Products

BC Hydro states that the products that are addressed by the 2007 EPA arise from the difference between the generation capabilities of the Kemano System and the requirements of the Kitimat Smelter. The 2007 EPA establishes priorities for the various uses of the generation capability of the Kemano System, and places limits on their quantities. Broadly speaking, the generation capabilities of the Kemano System fall into four categories: firm energy, dependable capacity, non-firm energy, and reservoir storage capability.

The firm annual energy capability of the Kemano System of 730 aMW was arrived at through negotiation as described above. Also through the course of negotiations, Alcan defined certain maximum limits for its Kitimat Smelter Load, as shown in the table below.

Year	Maximum Average Annual Smelter Load (MW)
2007-2009	568
2010	619
2011	656
2012	651
2013-2016	635 to 662
2017 *et seq.*	635 to 697

(Exhibit B1-1, section 6.1; T3:355)

The difference between the maximum average annual Smelter load, expressed as aMW, and the firm annual energy capability of the Kemano System determines the amount of firm energy being sold to BC Hydro, defined as Tier 1 Electricity in the 2007 EPA (Exhibit B1-2-1, p. 3-11).

The maximum capacity available to BC Hydro for scheduling the delivery of Tier 1 Electricity is defined as the Scheduling Capacity, and can be as much as the difference between the maximum average annual Smelter Load, expressed in MW, and the dependable capacity rating of the Kemano Powerhouse of 860 MW as described earlier. BC Hydro states that Alcan must make available to BC Hydro additional capacity, subject to certain outage allowances, to schedule the delivery of the Tier 1 Electricity (an energy amount) into periods that are preferential to BC Hydro. The amount of additional capacity that is in excess of the capacity associated with Tier 1 Electricity as described above is defined as the Incremental Actual Scheduling Capacity ("IASC"). However, the total actual capacity made available by Alcan for scheduling the delivery of Tier 1 Electricity is subject to certain operating and outage provisions that can reduce the maximum amount of overall Scheduling Capacity and hence also the IASC. Alcan is paid a separate amount for any IASC that it makes available to BC Hydro to schedule Tier 1 Electricity deliveries (Exhibit B1-2-1, pp. 3-11 to 3-12).

All energy generated by the Kemano System in excess of that required to supply the smelter load and the Tier 1 Electricity deliveries is available for Alcan to sell and schedule to BC Hydro on a "must-take" basis. This energy is defined as Tier 2 Electricity. Tier 2 Electricity must be scheduled around the higher-priority Tier 1 Electricity (Exhibit B1-2-1, pp. 3-12 to 3-14). The 2007 EPA contains provisions that allow energy generated by the Kemano System to be sold to parties other than BC Hydro, but that energy has lowest scheduling priority (Exhibit B1-2-1, p. 3-5).

Alcan and BC Hydro provided tables setting out the actual annual Kemano System generation (Exhibit B2-4, BCUC 1.10.1) and the simulated capability (Exhibit B1-8, BCUC 1.34.1). Alcan claims that the operating data since 1994 provides the best representation of the future performance of the Kemano System (Exhibit B2-4, BCUC 1.6.1). The simulated and actual Kemano System energy generation data for the period from 1994 to 2006 and again for the period from 2001 to 2006 is shown in the table below:

Year	Column 1 Kemano System Annual Average Generation (B.C. Government data) (simulated aMW)		Column 2 Kemano System Actual Annual Average Generation (actual aMW)	
1994	790.4		793	
1995	770.3		793	
1996	798.7		739	
1997	842.4		771	
1998	807.2		783	
1999	787.0		760	
2000	760.8		711	
2001	725.0	725.0	617	617
2002	782.0	782.0	717	717
2003	820.6	820.6	796	796
2004	756.2	756.2	727	727
2005	842.4	842.4	848	848
2006	814.0	814.0	801	801
Average	792.1	790.0	758.2	751.0

(Sources: Column 1 from Exhibit B1-8, BCUC 1.34.1, Column 2 from Exhibit B2-4, BCUC 1.10.1)

Effects attributable to force majeure, sub-optimal dispatch, aversion to spill and other situations were cited as the cause of the difference between the actual generation and the simulated generation (T4:676-77; T7:1338-41; Exhibit B2-1, pp. 30-31).

The above results are similar to the analysis that appears on page 38 of the LTEPA+ Decision. In that Decision, the analysis suggested that the average annual amount Tier 2 energy that was available was approximately 40 aMW, based on a Kemano System annual average generation level of 770 aMW, as compared to BC Hydro's estimate of Tier 2 energy of 55 aMW to 60 aMW.

The storage capability of the Nechako Reservoir can also be accessed via the Equichange Services and Coordination Services products in the 2007 EPA, described more fully later in this Decision. Equichange return energy balances are expressed as water volumes (subject to the availability of Nechako Reservoir storage) and are subject to a maximum balance of 6,000 cms-hours, either

positive or negative, in the Equichange Account (Exhibit B1-2-1, p. 3-16). The equivalent energy amount associated with a storage volume of 6,000 cms-hours is between 33 GW.h and 37 GW.h, depending on the applicable conversion factor (Exhibit B1-8, BCUC 1.32.1). This storage volume accounts for less than 0.1 feet of reservoir elevation in the Nechako Reservoir (Exhibit B1-8, BCUC 1.32.2). The Coordination Services product allows BC Hydro to request Alcan to permit BC Hydro to serve a portion of Alcan's Kitimat load, and "store" some or all of the delivered energy as water in the Nechako Reservoir.

Commission Determination

The Commission Panel considers the simulated average annual energy production can only be attained if the system is run optimally, which has not been demonstrated to be achievable by the Kemano System. Modeled or simulated averages will tend to overshoot actual results. Neither BC Hydro nor Alcan provided any new evidence to suggest the Commission's determination in the LTEPA+ proceeding should be altered. Therefore, the Commission Panel determines that the actual average annual generation of the Kemano System will be lower than the 793 aMW assumed by BC Hydro, and reaffirms the results of the previous analysis in the LTEPA+ Decision of an expected average annual energy amount of 770 aMW.

The Commission Panel agrees that the contribution of an individual resource to BC Hydro's FELCC may be higher when evaluated on a portfolio basis rather than a stand-alone basis. The Commission Panel notes that the simulated energy production from Kemano over BC Hydro's system critical flow period of October 1940 to April 1946 is 779 aMW based on the stream flows derived from B.C. Government data, but only 757 aMW based on Alcan stream flow data. In its base case cost-effectiveness evaluation, BC Hydro used 757 aMW to estimate the total contribution of the 2007 EPA to BC Hydro's FELCC. In general, although it prefers the B.C. Government stream flow data, the Commission Panel accepts the lower FELCC value as a conservative assumption. In this regard, the Commission Panel also notes that the FELCC based on the B.C. Government Data exceeds the average total energy production for Kemano derived from more recent actual historical operating data.

In summary, the Commission Panel accepts a FELCC of 757 aMW for the purposes of BC Hydro's economic evaluation, which is still greater than the Tier 1 Electricity quantity of 730 aMW established in the 2007 EPA, but determines that a lower average energy production of 770 aMW should be assumed instead of the 793 aMW used by BC Hydro. This finding would lower the total volume of Tier 2 Electricity in BC Hydro's cost-effectiveness evaluation but would not alter the total amount of firm energy assumed in that evaluation. This is discussed further in Section 6 of the Decision.

5.0 2007 EPA TERMS AND CONDITIONS

Introduction

This Section of the Decision sets out the key terms and conditions of the 2007 EPA, focuses on the products and the prices thereof and reviews the ability of the parties to amend the 2007 EPA.

5.1 Background to the Negotiations

BC Hydro states that its objectives in negotiating the 2007 EPA were to:

- obtain the best deal possible for BC Hydro and its ratepayers;
- obtain access to capacity, energy and other products and services available from Kemano;
- structure the 2007 EPA in a way that optimizes the unique value of a hydro generating facility with storage to the BC Hydro system;
- address the concerns raised in the LTEPA+ proceeding; and
- ensure that the 2007 EPA taken as a whole constitutes a cost-effective addition to BC Hydro's supply portfolio.

(Exhibit B1-11, p. 2).

In its opening statement BC Hydro stated that it and Alcan approached the technical issues cooperatively by sharing information and working together to analyze the maximum potential of the system, and that, once the work involved in that assessment was complete, its objectives were to obtain the best possible deal for BC Hydro and its ratepayers and to ensure that the concerns raised by the Commission in its LTEPA+ Decision were comprehensively dealt with (Exhibit B1-12, p. 3).

BC Hydro addressed the provincial government's role in negotiations and stated that very early in the negotiating history of this transaction, it was determined that BC Hydro's commercial needs would be the sole criteria by which BC Hydro would judge the outcome, and contrasted the 2007 EPA negotiations with those for the LTEPA+ contract, which had been a tripartite agreement that

involved compromising some of the claims which arose from the Replacement Electricity Supply Agreement ("RESA") between the Province and Alcan. Alcan's rights under that agreement had expired at the end of 2006 and thus there was no need for provincial involvement in connection with the 2007 EPA (Exhibit B1-12, p. 3).

BC Hydro explained the rationale for a long-term agreement as the result of a negotiation where Alcan was looking for secure a long-term stable market for the electricity that it could not use for aluminum production and BC Hydro was looking to acquire a new attractively priced source of electricity supply. BC Hydro stated that a longer contract term provides greater certainty for both BC Hydro and Alcan in terms of pricing and assured access to the Kemano excess energy and capacity. The combination of fixed prices and prices that partially or fully inflate at CPI over a longer term will provide greater price certainty and less price volatility compared to shorter term agreements (Exhibit B1-8, BCUC 1.53.1).

BC Hydro testified that there was a government employee with the Crown agency secretariat who was very conversant with Alcan's arrangements and hydrology, who served as an observer on the team. BC Hydro stated: "His role was to observe and to the extent he could offer any perspectives on issues from his past experience he did so, but it was purely in an observer capacity. He was a member of the negotiating team in the role of an observer" (T4:606).

The 2007 EPA was executed by BC Hydro and Alcan on August 13, 2007.

Some of the Intervenors commented on the negotiation process. The DoK submits that it would have been far more prudent for BC Hydro to negotiate a short term contract with Alcan to enable it "…to better define its plans with respect to Burrard and Site C, as well as to gain certainty about Alcan's development plans….preserving the potentially very considerable option value that will be lost with the 2007 EPA" (DoK Argument, para. 52).

The CAW expresses concern that a government employee took part in the negotiations, and submits that it was a "luxury that was afforded to none of the other stakeholders" (CAW Argument, pp. 12-13).

In Reply BC Hydro submits that "there's no support for the notion that if [BC] Hydro refused to enter into a long-term deal, Alcan would have been content with a short-term transaction while B.C. Hydro decided what it wanted to do with Site C or Burrard. Moreover, the acquisition under the 2007 EPA doesn't preclude proceeding with either of those projects in the future" (T9:1545).

5.2 Term and Condition Subsequent

The 2007 EPA commences on October 1, 2007 and terminates on December 31, 2034. It contains a regulatory condition subsequent clause, whereby it will terminate pursuant to section 2.3 unless, on or before January 31, 2008:

> (a) the Commission has accepted the 2007 EPA for filing under sections 61 and 71 of the UCA, without a hearing; or
>
> (b) the Commission, after a hearing, has issued an order accepting the 2007 EPA for filing under sections 61 and 71 of the UCA subject to no conditions; or
>
> (c) the Commission, after a hearing, has issued an order indicating that the 2007 EPA is not accepted for filing under section 71 of the UCA unless, or is accepted for filing only if, the Parties comply with conditions specified by the Commission, and those conditions are acceptable to each Party, acting reasonably, as confirmed, or deemed to have been confirmed, by each Party under section 2.2; or
>
> (d) both parties have waived termination of the EPA under this section.
>
> (Exhibit B1-1, Section 2)

5.3 Modernization Project

The 2007 EPA contemplates Alcan commencing the Modernization Project. the anticipated timing of which is referred to in section 5.13 of the 2007 EPA as "…the expected commercial operation of the Modernization Project commencing in 2012 at AP 37, and ramping up to AP 39 in 2017" (Exhibit B1-1, section 5.13).

The 2007 EPA also contains provisions, which address both parties' rights if the Modernization Project schedule changes (section 5.13) or if the Modernization Project does not proceed (section 5.14). These provisions are discussed later.

5.4 Exclusivity

Under the 2007 EPA, Alcan may not sell any electricity to any person, other than BC Hydro except:

- to serve the Smelter Load;
- during any period in which BC Hydro is in breach of its obligations to accept power;
- during any period of BC Hydro invoked force majeure;
- in excess of the Delivery Limit (approximately 380 MW);
- for the provision of backup, standby and emergency services to the Transmission Authority;
- as permitted under section 5.14; and
- as BC Hydro may otherwise consent.

(Exhibit B1-1, section 5.8)

5.5 Volumes

BC Hydro states that the 2007 EPA recognizes that electricity supplied from Kemano will have multiple uses and establishes delivery priorities as follows:

- to serve the applicable Kitimat Smelter Load up to the maximum Smelter Load;
- to provide Tier 1 Electricity to, and as scheduled by, BC Hydro;
- to provide Tier 2 Electricity to BC Hydro as scheduled by Alcan or rescheduled by BC Hydro;
- to exchange energy between Alcan and BC Hydro pursuant to Equichange Services;

- to exchange energy between Alcan and BC Hydro pursuant to Coordination Services; and
- to deliver energy pursuant to third party sales, if any

(Exhibit B1-2-1, p. 3-5).

5.5.1 Kitimat Smelter Load

BC Hydro states that because the Kitimat Smelter Load is subject to a maximum amount the 2007 EPA provides it with relative certainty as to the electricity that will be made available to it. The maximum Smelter Load is calculated on the assumption that the Modernization Project proceeds so that its use in deriving electricity quantities made available to BC Hydro reflects minimum volumes that BC Hydro will receive (Exhibit B1-2-1, p. 3-6).

BC Hydro states that capacity and energy from Kemano that is not required to serve the Kitimat Smelter Load and can be transmitted within the transmission capability limits is being made available by Alcan on an exclusive basis (both as a right and obligation) to BC Hydro. The products to be provided include Tier 1 Electricity, Tier 2 Electricity and capacity; while the services provided include scheduling, operating reserves, Equichange Services and Coordination Services (Exhibit B1-2-1, p. 3-8).

5.5.2 Scheduling Capacity

BC Hydro states that the amount of Scheduling Capacity being made available is set out in the following table. The amount of Scheduling Capacity is 860 MW minus the maximum Smelter Load (Exhibit B1-2-1, p. 3-10). The Expected Scheduling Capacity as defined in the 2007 EPA is summarized below.

Year	Kemano Dependable Capacity (MW)	Maximum Average Annual Smelter Load (MW)	Expected Scheduling Capacity (MW)
2007 - 2009	860	568	292
2010	860	619	241
2011	860	656	214
2012	860	651	209
2013 - 2016	860	662	198
2017 - 2034	860	697	163

(Source: Exhibit B1-1, section 6.1)

BC Hydro states that the 2007 EPA provides it with the right to schedule its Tier 1 Electricity volumes in any one calendar year as it sees fit within this Scheduling Capacity (Exhibit B1-2-1, p. 3-12), and that the Scheduling Capacity made available to it as a result of the 2007 EPA, along with the Tier 1 Electricity volumes and scheduling rights, provide it with a product with significant option value by allowing it to schedule (or provide incentives for Alcan to schedule) the energy at times when it is most valuable (Exhibit B1-2-1, pp. 3-14 to 3-15).

The average capacity factor of the 2007 EPA for Tier 1 Electricity, expressing Tier 1 Electricity quantity (aMW) as a percentage of Expected Scheduling Capacity (MW) falls within a range of 55 percent in the early years to 20 percent in the later years (Exhibit B1-2-1, Figure 3-6).

BC Hydro states that there is an average of approximately 127 MW of Incremental Scheduling Capacity being made available to BC Hydro (Exhibit B1-2-1, p. 3-12).

5.5.3 Tier 1 Electricity

BC Hydro states that Tier 1 Electricity is the difference between the 730 aMW and the maximum Smelter Load (Exhibit B1-2-1, p. 3-9). The Tier 1 volumes are summarized below.

Year	"LTEPA" Quantity (aMW)	"Incremental" Quantity (aMW)	Tier 1 Electricity Quantity (aMW)
2007	140	22	162
2008	140	22	162
2009	140	22	162
2010	111	0	111
2011	74	0	74
2012	79	0	79
2013	68	0	68
2014	68	0	68
2015	0	68	68
2016	0	68	68
2017 - 2034	0	33	33

(Source: Exhibit B1-1, Appendix 1, para. 101)

Pursuant to section 5.13, the quantities set out above may be varied to accommodate revisions to Alcan's construction schedule or final design of the Modernization Project with the consent of BC Hydro (Exhibit B1-1, section 5.13).

5.5.4 Tier 2 Electricity

BC Hydro states that the amount of Tier 2 Electricity that is being made available to BC Hydro in the 2007 EPA varies depending on the annual water conditions at Kemano and that it expects the amount to average 63 aMW and to vary from a low of zero aMW to a high of 120 aMW based on the maximum Smelter Load. The Tier 2 Electricity in any one year may be higher than 120 aMW if the Kitimat Smelter Load is below the maximum Smelter Load.

Pursuant to section 6.2, Alcan retains the responsibility and scheduling right to the Tier 2 Electricity. BC Hydro states that Alcan is in the best position to evaluate the forecast inflows and manage the energy supply obligations and risks it has in meeting the Kitimat Smelter Load and the Tier 1 Electricity obligation.

Pursuant to section 6.2, BC Hydro may request that Alcan modify its delivery schedule of Tier 2 Electricity. BC Hydro states that such a request would normally be under conditions where it would see added value through a modified delivery schedule, and that, if Alcan agrees to such a request, it would pay Alcan as if the original unmodified delivery schedule occurred and would assume responsibility for any incremental spill or outage risk related delivery loss that may occur because of the modified schedule (Exhibit B1-2-1, pp. 3-12 to 3-14).

BC Hydro states that the Tier 2 Electricity in any one year may also be higher if Alcan elects to not exercise its limited direct sales option in the event that the Modernization Project does not proceed. Pursuant to section 5.14 if Alcan does not proceed with the Modernization Project before December 31, 2013 Alcan may give notice to BC Hydro to modify the 2007 EPA effective from and after January 1, 2015, to decrease the maximum Smelter Load by an amount not exceeding the lesser of (A) 129 MW, and (B) the reduction in the maximum Smelter Load, and Alcan may then sell electricity to a third party (Exhibit B1-1, section 5.14).

5.5.5 Equichange Services and Coordination Services

BC Hydro states that, while the full value of the energy content of the annual stream flows into the Kemano system will typically have been utilized once the Kitimat Smelter Load, the Tier 1 Electricity and the Tier 2 Electricity have been scheduled, there remains capability in the generating and storage capacity at Kemano that can be utilized when coordinated with the BC Hydro system in a way that does not consume additional annual water volumes. This capability would be implemented by means of energy delivery and returns to/from the BC Hydro system. The 2007 EPA includes two mechanisms, Equichange Services and Coordination Services to utilize the remaining capability (Exhibit B1-2-1, p. 3-16).

5.5.5.1 Equichange Services

BC Hydro states that whenever Tier 1 Electricity and Tier 2 Electricity deliveries do not fully utilize the Scheduling Capacity, it may call for Equichange return energy to be delivered to its system at rates up to the Scheduling Capacity less the Tier 1 Electricity and Tier 2 Electricity scheduled deliveries and that it

will return the Equichange return energy to Alcan at a later date, or deliver it in advance, subject to the availability of Nechako Reservoir storage and subject to a maximum balance, either positive or negative, in the Equichange account. BC Hydro will call on its right to Equichange return energy when it wishes to reduce generation from its own system for refilling purposes or to reduce downstream releases at certain facilities to accommodate non-power constraints (Exhibit B1-2-1, p. 3-16).

BC Hydro states that the Equichange Services provided by Alcan under the 2007 EPA, will allow it to make more effective use of the available Scheduling Capacity and expects that in the later years of the 2007 EPA when Tier 1 Electricity deliveries are low relative to the Scheduling Capacity, it will shape most of the energy deliveries into the winter heavy load hours ("HLH"), which will mean that during the balance of the year there will be little or no Tier 1 Electricity volumes remaining available for delivery. It is during these periods that BC Hydro expects to use the Equichange Services provisions of the 2007 EPA to take advantage of the difference between HLH and light load hours ("LLH") prices (less the payment to Alcan for the service) on a short-term basis. BC Hydro expects that it will have greater value as the annual capacity factor of the 2007 EPA declines, since there will be more hours of the year where there will be no Tier 1 Electricity or Tier 2 Electricity deliveries already making use of the available capacity from Kemano, which should free up capacity for Equichange return energy during higher value periods (Exhibit B1-2-1, p. 7-13).

5.5.5.2 Coordination Services

BC Hydro states that during periods when it is not taking Tier 1 Electricity but is import constrained due to minimum generation constraints on its own system, it may request Alcan to permit it to serve a portion of Alcan's Kitimat load, and that, once delivery schedules are agreed to, BC Hydro will supply the Kitimat load until an agreed future time when Alcan will return the energy by increasing its deliveries to the BC Hydro system. In this mechanism, Alcan has the right to purchase up to half of the energy delivered to it under Coordination Services at the then prevailing market prices (Exhibit B1-2-1, pp. 3-16 to 3-17).

BC Hydro expects that Coordination Services will provide benefits whenever it is constrained by minimum generation requirements on its own system and the modified operation is acceptable to Alcan, and that, under these conditions, it could deliver energy to Alcan and return it to its system at a later time when minimum generation conditions do not constrain it. BC Hydro expects that, unlike Equichange Services where the energy would be a daily or weekly return from the Equichange account, the energy would be retained in the Coordination account for as long as several months.

BC Hydro anticipates that the usefulness of the Coordination Services will be dependent on the amount of Tier 2 Electricity that is available in a given year, and that in years where there are high levels of Tier 2 Electricity, the service will have minimal value and in years with low Tier 2 Electricity, its value will be greater. BC Hydro estimates the Coordination Services could generally be used in the LLH from mid-April through mid-July (Exhibit B1-2-1, p. 7-15).

BC Hydro confirmed that "the most likely scenario" is that Alcan would resell any purchased Coordination storage energy back to BC Hydro at the Tier 2 Electricity price and that in rare circumstances when Alcan had shortfalls, and only in the event that BC Hydro triggered the storage of Coordination Services energy, could Alcan resell the purchased energy at the Tier 1 Electricity price or use it to serve smelter load. In addition BC Hydro stated that there was also the possibility that the purchased energy may be spilled (Exhibit B1-8, BCUC 1.44.2).

5.5.6 LTEPA Volumes

BC Hydro states that the 2007 EPA re-establishes the sale to BC Hydro of all of the original LTEPA volumes that Alcan does not require for the Kitimat Smelter Load, and that, in the period 2010 through 2014, some of that volume will be replaced by Tier 1 Electricity and some by Tier 2 Electricity, so that BC Hydro will receive up to 140 aMW at the LTEPA price. There remains some uncertainty as to the amount of energy BC Hydro will receive at the LTEPA price because this depends on the quantity of Tier 2 Electricity delivered in any one year which will vary with future reservoir inflow conditions (Exhibit B1-2-1, pp. 3-17 to 3-18).

BC Hydro states that between 2010 and 2014, a substantial portion of the available Tier 2 Electricity will be used to make up the original LTEPA volumes, but that in the years 2011, 2013 and 2014, it does not expect that there will be sufficient Tier 2 Electricity under average (63 aMW) water conditions to make up the LTEPA volumes completely, resulting in no new volumes being identified under average conditions for those years (Exhibit B1-2-1, p. 3-19).

The following Table shows the amount of Tier 2 energy required to make up the LTEPA volumes.

Year	LTEPA Tier 1 (aMW)	Shortfall (aMW)
2010	111	29
2011	74	66
2012	79	61
2013	68	72
2014	68	72

(Source: Exhibit B1-8, BCUC 1.1.1, p. 2)

5.6 Operating Reserves

BC Hydro states that Alcan operates as if it is a separate control area and manages its own reserve obligations with BCTC (Exhibit B1-2-1, p. 3-8), and that, pursuant to section 4.12 Alcan is required to maintain all operating reserves at Kemano during each hour at a reserve delivery rate equal to the lesser of: (i) 5 percent of the Tier 1 Electricity quantity for the applicable year divided by 0.85; and (ii) the Actual Scheduling Capacity in excess of scheduled deliveries of electricity under the EPA for each hour. Alcan is required to provide to the Transmission Authority all data (including real-time data) required to verify compliance by Alcan with this section (Exhibit B1-1, section 4.12).

BC Hydro states that as a result of providing BC Hydro access to the full Scheduling Capacity for energy deliveries, the requirement for Alcan to maintain operating reserves in the 2007 EPA is reduced when the actual Scheduling Capacity is being fully utilized for scheduled Electricity deliveries (Exhibit B1-2-1, p. 3-9), and that Alcan is relieved from the obligation to provide operating reserves whenever the full amount of Actual Scheduling Capacity is being used to schedule either Tier 1 Electricity or Tier 2 Electricity, or a combination of both (Exhibit B1-9, IPPBC 1.4.1).

BC Hydro testified that if it nominated lower volumes and Alcan elected not to use that available scheduling capacity to schedule Tier 2 Electricity, then Alcan would have the obligation to provide operating reserves, but that if Alcan used the available scheduling capacity that B.C. Hydro is not using to deliver Tier 2 Electricity, then it would be relieved of the obligation to provide operating reserves (T5:774). BC Hydro also testified that it may be beneficial for it to provide operating reserves elsewhere on its system, so that by requesting Alcan to commit the full amount of its surplus capacity to BC Hydro, it could back off an equivalent amount of its own generation and provide that operating reserve elsewhere on its system. BC Hydro also testified: "The obligation for carrying the operating reserve for the smelter load is Alcan's. And that actually arises out of the 1978 interconnection and exchange agreement" (T5:832).

5.7 Pricing

BC Hydro states that pricing under the 2007 EPA has a number of components intended to reflect the variety of products and services being offered and existing pricing arrangements with respect to products that are already being provided under the existing LTEPA. The negotiated price components are:

- electricity associated with the original LTEPA volumes, priced at the original LTEPA price;
- incremental Tier 1 Electricity in the period 2007 through 2009;
- new Tier 1 Electricity in the period 2015 through 2034;
- Tier 2 Electricity in the period 2007 through 2009;
- Tier 2 Electricity in the period 2010 through 2034;
- delivery time adjustment for Tier 2 deliveries;
- payment for Incremental Scheduling Capacity and new Tier 1 scheduling rights; and
- payment for Equichange Services and Coordination Services.

There are also an option fee and an exercise fee to carve out additional electricity for sale to third parties in the event that the Modernization Project does not proceed, both of which are payable by Alcan (Exhibit B1-2-1, pp.3-20 to 3-21).

5.7.1 Original LTEPA Volumes

BC Hydro states that all energy delivered prior to 2015, whether as Tier 1 Electricity or Tier 2 Electricity, up to the original LTEPA energy volume of 140 aMW will be priced at the original LTEPA price, namely the sum of (i) the price, inclusive of escalation at 3 percent, that would otherwise apply under LTEPA in the absence of the 2007 EPA during that period, plus (ii) a surcharge in lieu of water rentals at $5.25 per MW.h, escalated at 2 percent per year. The sum of (i) and (ii) for 2007 is $46.44/MW.h at the Point of Interconnection ("POI"). This LTEPA-based price will be trued-up on an annual basis to reflect actual water fee costs incurred by Alcan for the supply of such electricity to BC Hydro (Exhibit B1-2-1, p. 3-22).

5.7.2 Incremental Tier 1 Electricity in the period 2007 through 2009

BC Hydro states that for the 22 aMW of new, incremental Tier 1 Electricity to be delivered from October 2007 through 2009 the electricity price at the POI is a fixed, non-escalating $54/MW.h (Exhibit B1-2-1, p. 3-23).

5.7.3 New Tier 1 Electricity in the period 2015 through 2034

BC Hydro states that the price at the POI for the new Tier 1 Electricity being delivered in the period 2015 through 2034 is set at $80.39/MW.h (in January 2006 dollars) with 50 percent thereof escalated annually at CPI (Exhibit B1-2-1, p. 3-24).

5.7.4 Tier 2 Electricity in the period 2007 through 2009

BC Hydro states that all Tier 2 Electricity deliveries from October 2007 through 2009 will be incremental to the original LTEPA. The base price for Tier 2 Electricity at the POI is a fixed price of $52.0/MW.h (2006 dollars) and will escalate annually at CPI (Exhibit B1-2-1, p. 3-25).

5.7.5 Tier 2 Electricity in the period 2010 through 2034

From 2010 to the end of the EPA, the base price for Tier 2 Electricity is set at a fixed price of $54.0/MW.h (2006 dollars) that escalates annually at CPI, applied to quantities which in the 2010 through 2014 period are subject to a true up adjustment mechanism at year end to reflect the LTEPA energy price for the Tier 2 Electricity volumes required to make up the full 140 aMW (Exhibit B1-2-1, p. 3-26).

BC Hydro states that the value of electricity delivered to it varies depending on when in the year such electricity is delivered, and since Alcan is responsible for scheduling all Tier 2 Electricity, (subject to BC Hydro's prior scheduling of Tier 1 Electricity and to certain Tier 2 Electricity rescheduling rights provided to BC Hydro) the 2007 EPA provides a price signal to incent Alcan to deliver the electricity during time periods that have higher value to BC Hydro. The 2007 EPA includes an energy weighting factor table which reflects the relative value of the electricity depending on the month of delivery and whether the electricity is delivered in HLH or LLH and establishes the price paid by BC Hydro upon delivery. For all Tier 2 Electricity deliveries an adjustment is made to the price per MW.h by multiplying the base price by the relevant multiplier in the energy weighting factor table. The energy weighting factor table is designed such that a continuous, flat block of electricity delivered throughout the year would have an average price equal to the base price (Exhibit B1-2-1, pp. 3-26 to 3-27).

BC Hydro states that the weighting factors are based on the price table of the March 2006 electricity price forecast EIA scenario measured at the B.C. border and that the use of this electricity price scenario is consistent with the Revelstoke Unit 5 CPCN Application price assumption for the calculation of system benefits (Exhibit B1-2-1, p. 3-28).

Pursuant to section 2.5, BC Hydro has certain rights to modify the energy weighting factor table to accommodate changes in market prices and/or system conditions through time. Such rights are conditioned to ensure that the revisions could not reasonably be expected to have a material adverse financial impact on Alcan under the 2007 EPA (Exhibit B1-1, section 2.5).

5.7.6 Payment for Capacity

BC Hydro states that the 2007 EPA provides it access to the scheduling rights with respect to approximately 127 MW of Incremental Scheduling Capacity for the scheduling of Tier 1 Electricity and that the only explicit payment for capacity relates to the Incremental Scheduling Capacity, as the Base Capacity is part of the Tier 1 Electricity product and price.

In consideration of the additional capacity and scheduling rights, a monthly capacity payment to Alcan has been included in the 2007 EPA, calculated as follows:

> The monthly capacity payment = IASC * ACF * WF; where
>
> - IASC is expressed in MW;
> - ACF is expressed in $/kW-year; and
> - WF is the monthly capacity weighting factor.
>
> (Exhibit B1-2-1, p. 3-29)

5.7.7 Incremental Actual Scheduling Capacity

BC Hydro states that in each month, the IASC is the average amount of the Incremental Scheduling Capacity that is made available to it in each of the HLH of such month, whether or not it used the capacity. At any moment in time, the IASC may be lower than the Incremental Scheduling Capacity reflecting adjustments for actual interconnection constraints attributable to Alcan and actual unit outages and other generating constraints. If the IASC is higher at any moment than the applicable Incremental Scheduling Capacity quantity, Alcan will receive no payment for the excess (Exhibit B1-2-1, p. 3-29).

5.7.8 Annual Capacity Fee

For IASC made available to BC Hydro for each HLH in a year, a capacity charge is accumulated in the Monthly Capacity Payment. The ACF is the price in $/kW-year that establishes the value of the IASC that is made available. It is an annual per-unit capacity price that is set out in the 2007 EPA as two ACF formulae, one for the period 2007 to December 31, 2014 and the other for the period from January 1, 2015 to December 31, 2034:

- for the period from the Commencement Date through 2014: ACF = Inflation Adjustment * (27.99 + 0.2435 * annual Tier 1 quantity in aMW); and
- for the period from the period 2015 through 2034: ACF = Inflation Adjustment * (30.827 + 0.393 * annual Tier 1 quantity in aMW).

(Exhibit B1-2-1, p. 3-30)

5.7.9 Monthly Capacity Weighting Factor

BC Hydro states that capacity has more value to it in certain times of the year as compared to other times of the year and that a monthly capacity weighting factor has been determined for the 2007 EPA, which provides the incentive to Alcan to make Kemano capacity available for scheduling Tier 1 Electricity in the periods when BC Hydro values the capacity most, namely the months of December, January and February (Exhibit B1-2-1, p. 3-32).

The monthly capacity weighting factor table is set out in Appendix 2 of the 2007 EPA.

5.7.10 Derivation of the ACF

BC Hydro states that the ACF was developed in the negotiation as a means of setting the combined value of incremental capacity and Tier 1 Electricity scheduling value in the 2007 EPA. The ACF was established to allocate the value of the ability to schedule between Alcan and BC Hydro. It is

based on the bi-monthly energy weighting factors, allocating this base scheduling value to Alcan and allocating to BC Hydro the additional value that can be derived in ongoing operation. This section describes the derivation of the ACF, the underpinning of which was based on the following two concepts:

- a pure capacity fee in $/kW-year set at $10/kW-year (2006$) for the period through 2014 and $20/kW-year (2006$) for the period 2015 through 2034; and
- an incremental scheduling value based on a portion of the value BC Hydro expects to obtain by scheduling the Tier 1 Electricity into the higher value time periods of the year as would be determined by and priced using the energy weighting factor table.

(Exhibit B1-2-1, p. 3-32)

BC Hydro testified that the $10 and $20/kW-year were taken as roughly representative of the value of acquiring capacity from the Canadian Entitlement for the $10/kW-year, and from Mica 5 for the $20/kW-year (T4:664), and that the reason it structured the pricing in that fashion was because it expected to experience a step function increase in the cost of capacity in 2014 because "…that's the earliest time that we could bring Mica 5 online" (T5:840-41).

BC Hydro calculates the value of expected scheduling of Tier 1 Electricity for the full term of the 2007 EPA, by taking the 24 monthly HLH and LLH price periods in a year and assuming that the Scheduling Capacity is made available and the Tier 1 Electricity is concentrated in the highest value periods of each year. This provides the basis for the calculation of the value established for scheduling rights in the 2007 EPA, which was determined to be $77.3 million. The calculated values of the capacity fee and the incremental scheduling value were used to arrive at a negotiated basis for valuing the capacity and scheduling rights that underpin the 2007 EPA (Exhibit B1-2-1, pp. 3-33 to 3-34). BC Hydro testified that the combined net present value ("NPV") of the capacity fee and the incremental scheduling was approximately $110 million (T5:705).

BC Hydro stated that the ACF was derived by linear regression analysis of each year's capacity and scheduling values versus the applicable Tier 1 Electricity quantities for the two time periods, and that the terms in the ACF formula for each period reflect the regression coefficients from the respective

analyses. It adopted the Tier 1 Electricity quantity as the independent variable for the regression analysis because under section 5.13, it may vary during the term (Exhibit B1-9, BCUC 2.129.1).

5.7.11 Pricing for Equichange Services and Coordination Services

BC Hydro states that Equichange Services and Coordination Services will be used at the discretion of the parties and that the transactions take place at the POI. The price negotiated for these services will enable the parties to undertake transactions in specific circumstances whenever sufficient value exists.

Pursuant to the 2007 EPA BC Hydro will pay Alcan $4/MW.h, expressed in 2006 dollars, to be escalated annually at CPI multiplied by the amount of:

- Equichange return energy delivered to the BC Hydro system; and
- Coordination return energy delivered to the BC Hydro system (i.e. net of any electricity that Alcan may have purchased pursuant to its associated purchase option).

In both cases, BC Hydro will be responsible for any incremental energy losses that are incurred by Alcan in the execution of the transaction. These include:

- hydraulic losses that result from changes in operating efficiency between the time of delivery and the time of return; and
- any spill that may result at Kemano.

In the case of Coordination Services, if Alcan exercises its purchase option, the electricity purchased by Alcan will be priced at the applicable Mid-C index adjusted for Bonneville Power Authority (“BPA”) wheeling (Exhibit B1-2-1, p. 3-38).

5.8 Option

BC Hydro states that the 2007 EPA recognizes the possibility that the Modernization Project may not proceed. Should that occur, Alcan is obliged to supply and BC Hydro is obliged to purchase the same volume of products and services that would have been sold and bought if the Modernization Project had proceeded. However, the additional capacity and energy that would have been used by Alcan at its Kitimat smelter had the Modernization Project proceeded would remain with Alcan, to dispose of as it wishes, either as Tier 2 Electricity under the 2007 EPA or by sales to third parties (which third parties may include BC Hydro) outside the 2007 EPA. To obtain this option, Alcan agreed to pay an upfront option fee of $3.25 million in consideration of which it may:

- make a one time election, prior to December 31, 2013, to sell some or all of the additional capacity and energy outside the 2007 EPA to any purchaser (including BC Hydro) and pay an exercise fee of $150,000/aMW sold outside the 2007 EPA (in 2006$). On exercising the option, the 2007 EPA would be deemed to have been modified as of January 1, 2015; or
- sell any remaining surplus energy to BC Hydro under the 2007 EPA as Tier 2 Electricity.

The option is limited to a maximum volume of 129 aMW being the difference between the current smelter load of 568 aMW and the planned ultimate Modernization Project load of 697 aMW (Exhibit B1-2-1, p. 3-40).

5.9 Liquidated Damages, Penalties and Risk

Pursuant to section 11, Alcan is subject to payment of liquidated damages for failure to deliver in any hour 90 percent of the scheduled Tier 1 volume for that hour. The liquidated damages are based on Mid-C prices and are capped at $100/MW.h (indexed) (Exhibit B1-1, section 11), subject to the following exceptions:

- in the event of low water conditions that would impact Alcan's ability to deliver Tier 1 Electricity quantities, BC Hydro will adjust its energy schedules to eliminate Alcan's exposure to liquidated damages on potential future non-delivery shortfalls that would otherwise occur, and

- in the event that BC Hydro is scheduling on any hour at a rate that exceeds the Tier 1 Electricity quantity divided by 0.85, then, in a delivery shortfall situation, Alcan may elect not to pay liquidated damages on any energy non-delivery above this level. If Alcan elects not to pay liquidated damages, then BC Hydro will have a rescheduling right for the applicable energy shortfall.

(Exhibit B1-2-1, pp. 3-39 to 3-40).

BC Hydro stated that if Alcan is unable to make the incremental capacity available to BC Hydro for reasons solely of low reservoir conditions, then it will not be paid in accordance with the capacity pricing formula to the extent of the unavailability (Exhibit B1-8, BCUC 1.97.2).

BC Hydro addresses risk in its Argument and submits that the 2007 EPA has no take or pay provisions and BC Hydro only pays Alcan for what Alcan is able to supply or make available to BC Hydro. With respect to the products and services being supplied, it submits that Alcan is paid for IASC that it actually makes available to BC Hydro and that the monthly value of the IASC is the average of the Actual Scheduling Capacity available to BC Hydro for scheduling Tier 1 Electricity Quantities on each HLH during the month less the base capacity. The IASC is generally the generating capacity available from Kemano less the smelter load less the base capacity. The maximum amount of IASC that Alcan is obligated to provide in each year of the agreement is approximately 127 MW. BC Hydro submits that the IASC in any hour will be a function of Kemano generation and smelter load. The Kemano generating capacity is limited by the lesser of: (i) the combined available unit generating capacity (maximum of 8x125 MW = 1,000 MW); and (ii) the penstock hydraulic restrictions. Kemano is capable of delivering 860 MW with all units in service, 830 MW with one unit off line and 720 MW with two units off line. In the event that Kemano generation falls below 860 MW, the IASC will be similarly reduced unless there is a concurrent reduction in smelter load to offset the Kemano generation reduction. To the extent that Alcan does not make capacity available, it will not get paid for the shortfall. The availability risk lies with Alcan.

BC Hydro addresses Tier 1 Electricity and submits that where a capacity shortfall causes a Tier 1 schedule to be cut, Alcan will also be subject to liquidated damages for the Tier 1 energy shortfall. BC Hydro notes that Tier 2 Electricity is not guaranteed to be supplied so while BC Hydro is at risk that it will not receive it, it is under no obligation to pay for that which it does not receive.

BC Hydro addresses the Equichange Services and Coordination Services transactions and submits that they occur at the election of the parties and that there are no material risks to either party beyond the possible risk to BC Hydro that some of the energy may be spilled in the remote situation that spill occurs at Kemano while there is Equichange Services or Coordination Services energy in storage.

BC Hydro addresses force majeure and notes that it may provide relief to Alcan from paying liquidated damages with respect to non-delivery of Tier 1 Electricity during any period, but it does not cause BC Hydro to pay for IASC or Tier 1 Electricity that is not made available. Any claim by Alcan of force majeure does not alter the basic principle that BC Hydro will not be required by pay for services not delivered by Alcan (BC Hydro Argument, para. 34).

The HHC address risk and submit that risk passes to BC Hydro at the POI, including risk with respect to contingent liabilities and that there is no indemnity by Alcan with respect to such contingent liabilities, and suggest that section 18 be amended to add language "…to deal with torts etc. any litigation etc. brought regarding impacts to and/or ownership of water pertaining to Kemano" (HHC Argument, p. 15).

BCOAPO raises the issue of risk and submits that although the 2007 EPA contains provisions which address options available if the parties Modernization Project does not proceed, such an outcome would leave BC Hydro with a "…fundamentally different scale and type of supply resource and would significantly magnify the longer-term risk to ratepayers saddled with costs that are greater than could have been negotiated had BC Hydro sought a price for energy which is closer to Alcan's opportunity cost" (BCOAPO Argument, p. 7).

In Reply BC Hydro submits that BCOAPO's argument displays a "fundamental misunderstanding" and points out that if the Modernization Project does not proceed, BC Hydro gets the same power as it would have got had the Modernization Project proceeded and, in return for a payment from Alcan of $3.25 million, made at closing of the transaction, Alcan will have then the choice between providing additional power to BC Hydro on a firm basis at the Tier 2 price, or Alcan would have to pay in excess of $20 million for the privilege of selling that incremental power to a third party. BC Hydro stated: "So in either case, if the modernization project does not proceed, ratepayers will be better off than they would have been if Alcan sales had been limited to the volumes that will be available if it does proceed" (T9:1490 to 1491).

5.10 Amendments to the 2007 EPA

The 2007 EPA contains a number of sections which contemplate amendments to it. BC Hydro testified that amendments to the 2007 EPA that flow from mechanisms included in the 2007 EPA to change the terms do not need to be resubmitted to the Commission, but that amendments that were "…negotiated outside of the agreement, depending on the circumstances, may have to be submitted for review or acceptance" (T3:457).

The sections dealing with potentially significant amendments to the 2007 EPA are sections 5.13 and 5.14.

5.10.1 Section 5.13 Amendments

BC Hydro observes that the 2007 EPA contains no unilateral mechanisms for Alcan to recall volumes of Tier 1 Electricity or to put new volumes of Tier 1 Electricity to BC Hydro, but that Alcan can (i) make improvements at the Kemano System, which would allow increases in the maximum Smelter Load so long as any increase in maximum Smelter Load does not negatively impact BC Hydro's rights, and ii) make scheduling adjustments to the Modernization Project which may change the Tier 1 Electricity and scheduling capacity quantities, the latter being timing related. BC Hydro states that it must be given prior notice of these changes and may withhold its consent if, acting reasonably, it believes the changes

may materially impair the value of the 2007 EPA to it and its ratepayers. Pursuant to section 5.13, if the Modernization Project proceeds, volumes can be varied by Alcan, with BC Hydro's consent, during the ramp up period. An agreement to deliver different volumes under any other circumstances would be an amendment to the 2007 EPA. BC Hydro states that it would file such amendment with the BCUC under section 71 of the UCA in accordance with its normal practices (Exhibit B1-2-1, p. 3-39).

BC Hydro stated that a change to Tier 1 Electricity quantities under section 5.13 is not a change to the 2007 EPA and will not be filed as such. It is common for agreements such as the 2007 EPA to allow for adjustments to prices, quantities and other obligations based on evolving circumstances and, so long as the manner in which those adjustments are to be determined is set out in the 2007 EPA, such adjustments do not represent amendments to the 2007 EPA and are not required to be filed under section 71 of the UCA (Exhibit B1-8, BCUC 1.7.5).

BC Hydro stated that it will file timely notice of any changes to Tier 1 Electricity quantities requested by Alcan and accepted by BC Hydro pursuant to section 5.13, but BC Hydro does not propose to file an explanation in connection with every change because it anticipates that there could be numerous changes to schedules and precise amounts which are not significant in nature. In any event those which are significant can be fully explored through subsequent revenue requirement proceedings to the extent they are determined to be material (Exhibit B1-8, BCUC 1.7.6).

BC Hydro stated that it believes that steps taken by either party pursuant to provisions in the 2007 EPA as filed are not changes that would require a refiling with the Commission, but that if the terms of the contract themselves are changed by agreement between the parties outside of the current terms of the 2007 EPA, filing with the Commission would be required. In the interests of transparency, BC Hydro would provide notice of changes made pursuant to the terms of the 2007 EPA but would not expect that any review of those changes would be undertaken by the Commission (Exhibit B1-8, BCUC 1.77.1).

Commission counsel asked: "What would B.C. Hydro's response be to a direction that, in the event the quantities - Tier 1 quantities, were changed under section 5.13, B.C. Hydro would be required to file the change seeking Commission approval?" BC Hydro's counsel responded: "Mr. Chairman, B.C. Hydro's

response would be to seek legal advice if that happened. And … that's a question I'm quite happy to deal with in argument…. it seems to me it's not fair to ask the witness to assume an obligation beyond that which the Section [71 of the UCA] imposes on B.C. Hydro, or beyond the jurisdiction which it gives to the Commission. The question is jurisdictional in its nature. I'm happy to address that as part of argument" (T5:811-12). BC Hydro's Argument proved silent on the matter. No Intervenor raised the issue of the Commission's jurisdiction over amendments to the 2007 EPA, once approved by the Commission, except Mr. McLaren who submitted that an increase that would be large and permanent would be troublesome to him as that would indicate that the modernized smelter is not going to run at the AP 39 level as planned, but that if Alcan proceeds with the modernization and ramps it up to the planned AP 39 using close to 697 MW in 2017 then his concern about large permanent increases in the Tier 1 amounts becomes moot.

Mr. McLaren submits that Alcan and BC Hydro have been very good this time in the approval process, with being open, transparent and willing to answer questions of concern. He concludes: "I am glad that, in the interest of transparency, BC Hydro will provide notice to the BCUC of any changes to the Tier 1 Electricity quantities which are accepted by them. As far as I am concerned this issue is resolved" (McLaren Argument, pp. 10-11).

5.10.2 Section 5.14 Amendment

BC Hydro states that the 2007 EPA recognizes the possibility that the Modernization Project may not proceed, but that in that instance: (i) Alcan remains obliged to supply and BC Hydro remains obliged to purchase the same volume of products and services that would have been sold and bought if the Modernization Project had proceeded; and (ii) the additional capacity and energy that would have been used by Alcan at its Kitimat smelter had the Modernization Project proceeded remains with Alcan, to dispose of as it wishes, either as Tier 2 Electricity under the 2007 EPA or by sales to third parties (including BC Hydro) outside the 2007 EPA. BC Hydro states that Alcan agreed to pay an upfront option fee of $3.25 million in consideration of which it may:

- make a one time election, prior to December 31, 2013, to sell some or all of the additional capacity and energy outside the 2007 EPA to any purchaser (including BC Hydro) and pay an exercise fee of $150,000/aMW sold outside the 2007 EPA (in 2006$). On exercising the option, the 2007 EPA would be deemed to have been modified as of January 1, 2015; and

- sell any remaining surplus energy to BC Hydro under the 2007 EPA as Tier 2 Electricity.

The option is limited to a maximum volume of 129 aMW equal to the difference between the current smelter load of 568 aMW and the planned ultimate Modernization Project load of 697 aMW (Exhibit B1-2-1, p. 3-40).

Pursuant to Alcan's invocation of its rights under section 5.14 the parties are obliged to settle, execute and deliver an amendment to this EPA confirming its terms, and "BC Hydro shall provide the BCUC with notice of the amendment referenced in subparagraph (c) if required by the UCA or any rule of the BCUC made pursuant to it" (Exhibit B1-1, section 5.14 (d)).

BC Hydro stated: "If the 2007 EPA is accepted for filing but subsequently modified pursuant to section 5.14, BC Hydro will file a revised agreement with the BCUC. BC Hydro does not believe such a filing is required by section 71 of the *Act*, because the revisions will be in accordance with the provisions of section 5.14 which in turn will have been accepted for filing by the BCUC. However, to ensure that the terms of the 2007 EPA remain transparent, BC Hydro will file the revised agreement with the BCUC for information purposes" (Exhibit B1-8, BCUC 1.7.7).

Commission Determination

The Commission Panel accepts BC Hydro's objectives in negotiating the 2007 EPA, and finds that it was able to focus on its commercial needs alone and that the resultant 2007 EPA represents a truly bilateral, arms-length agreement. The Commission Panel notes that the 2007 Energy Plan was issued during the negotiations and that the 2007 EPA complies with many of its policy objectives.

The Commission Panel rejects the DoK's argument that BC Hydro acted imprudently in negotiating a long-term rather than a short-term agreement.

The Commission Panel has considered BC Hydro's rationale for seeking prices which are tied to inflation rather than other indices and is concerned by BC Hydro's evidence that it did not consider any indexed form of pricing within the 2007 EPA. The Commission Panel considers that basing the pricing of long-term supply arrangement on market indexes does not necessarily contradict government policy and that a portfolio of 100 percent fixed-price supply arrangements is not necessarily always in ratepayer interests. The Commission Panel accepts the fixed price arrangements acceptable in these particular circumstances, but expects BC Hydro to provide a better analysis and rationale for pursuing solely fixed price arrangements for all of its future acquisitions of power.

So far as filing amendments to the 2007 EPA with the Commission, the Commission Panel expects that BC Hydro will comply with section 71 of the UCA and with the Commission's published "Energy Supply Contracts – Rules".

6.0 COST-EFFECTIVENESS ANALYSIS

Introduction

This Section of the Decision will summarize the original benchmarks and cost-effectiveness analysis filed by BC Hydro, additional analyses conducted by BC Hydro in response to information requests, and key issues raised during the proceeding concerning BC Hydro's benchmarks and cost-effectiveness analysis. This Section of the Decision will also review other considerations relevant to an overall determination of cost-effectiveness, including financial risks and other qualitative factors. Finally, this Section of the Decision reviews the evidence and argument concerning Alcan's opportunity costs and the conclusions of the Commission Panel with respect to that evidence and argument regarding its overall determination with respect to cost-effectiveness.

6.1 Overview

In the Report, BC Hydro states:

> "Taken as a whole, BC Hydro has determined the 2007 EPA is a cost-effective addition to BC Hydro's supply portfolio. Such cost-effectiveness holds across all reasonably plausible future scenarios currently being considered by BC Hydro for planning purposes. The 2007 EPA protects, at no additional cost, all original value that may have been available through existing arrangements with Alcan under LTEPA and also removes any basis for dispute relating to the LTEPA Recall Notice so long as the 2007 EPA is in force" (Exhibit B1-2-1, p. 1-1).

BC Hydro also states "… the 2007 EPA is cost-effective when compared with other alternatives having regard to cost-effectiveness benchmarks established by the BCUC in recent decisions, including: cost; reliability; safety; schedule; financing arrangements; dispatchability; timing; location; and environmental impacts" (Exhibit B1-2-1, p. 1-3). BC Hydro sets out the following characteristics of the 2007 EPA to demonstrate its cost-effectiveness of the 2007 EPA are as follows:

- it secures for BC Hydro and its ratepayers defined volumes of electricity regardless of whether the Modernization Project proceeds;

- it commits Alcan to provide power from an existing B.C. based renewable resource with no development or timing risk;
- Alcan is with a counterparty from whom BC Hydro has acquired power for more than 40 years;
- the interconnection between Alcan and BC Hydro already exists and the existing interconnection capacity can accommodate the transactions without system upgrades;
- Alcan has all the permits it requires to sell the power committed under the 2007 EPA;
- it provides BC Hydro with access to substantial additional capacity from Kemano;
- it provides BC Hydro with scheduling rights (Tier 1 Electricity) or provides incentives to Alcan (Tier 2 Electricity) that will cause energy to be supplied under the 2007 EPA when it has most value to BC Hydro;
- its scheduling, Equichange and Coordination provisions provide additional flexibility for meeting load including enhancing BC Hydro's ability to acquire non-firm or intermittent resources from other sources;
- it provides power at fixed prices, thus reducing BC Hydro's exposure to market price volatility;
- the overall use of capacity and energy from Kemano for aluminum production and electricity sales will become more efficient and effective, allowing for an energy efficient use of a large but limited renewable resource; and
- in aggregate, the bundle of products and services is significantly lower in cost than any comparable bundle of products and services available from alternative sources (Exhibit B1-2-1, pp. 1-3 to 1-4).

BC Hydro suggests the 2007 EPA is also consistent with the 2007 Energy Plan and the requirements of SD10 to the BCUC.

BC Hydro presents a summary comparison of the 2007 EPA and a number of alternative sources according to some 16 different characteristics. For each characteristic, BC Hydro concludes the 2007 EPA compares equally or favourably with each of the alternatives and none of the alternative sources compares favourably with the 2007 EPA on all 16 characteristics as a whole (Exhibit B1-2-1, Table 7-15).

BC Hydro submits the analysis in its Report speaks for itself and the conclusions in Chapter 7 with respect to cost-effectiveness stands unchallenged on the record of this proceeding, pointing out that even the analytical approach taken in developing the cost- effectiveness analysis contained in Chapter 7 was largely unchallenged (BC Hydro Argument, para. 8-9).

Alcan concurs with the analysis in Chapter 7 of the Report and in particular the summary in Table 7-15 of the Report, which it submits "…demonstrates in compelling terms the unique and high value of the 2007 EPA and the Kemano System to BC Hydro" (Alcan Argument, para. 5.7). Alcan further notes this evidence was virtually unchallenged in this review. Alcan notes in particular the energy and capacity benefits of the Kemano System; the fact the energy is existing and clean; the value of additional storage to the BC Hydro system, particularly in conjunction with the addition of wind and run of river small-hydro generators; the fact it is the only significant local generation available to BC Hydro in the Northwest; and a strong record of reliability.

BCOAPO submits that from BC Hydro's avoided cost perspective the 2007 EPA is "far better" than LTEPA+ and generally accepts the analysis presented in Chapter 7 of the Report. BCOAPO argues the Report follows the methodology presented and tested in previous proceedings such as the 2006 IEP/LTAP (BCOAPO Argument, p. 7).

The DoK argues "… the price comparators that BC Hydro uses to justify the price and other terms of the 2007 EPA are incomplete, misleading and fail to recognize the nature of the electricity being supplied by Alcan" (DoK Argument, para. 3). The DoK argues that BC Hydro's analysis of its avoided costs is flawed and that BC Hydro was too quick to dismiss consideration of alternative future power sources such as re-powering Burrard and Site C (DoK Argument, para. 50). The DoK also raises concerns about BC Hydro's treatment of Tier 1 Electricity and a portion of Tier 2 Electricity as firm, the requirement of BC Hydro to take all Tier 2 Electricity volumes, and the timing of Tier 2 Electricity deliveries (DoK Argument, para. 55). Finally, the DoK notes that there are many scenarios where the net benefit of the 2007 EPA is marginal (DoK Argument, para. 57). The DoK concludes BC Hydro has failed to demonstrate that the 2007 EPA is cost-effective in terms of price and relative to alternative sources of supply (DoK Argument, para. 58).

BCOAPO, BCSEA, McLaren, TEDA, KTIDS, and the JIESC all concur the analysis demonstrates the contract is cost-effective and provides long-term value to ratepayers. IPPBC takes no position with respect to the cost-effectiveness analysis.

6.2 Avoided Cost Benchmarks

BC Hydro's comparators are summarized in Chapter 6 of its Report (Exhibit B1-2-1). BC Hydro states that it "… used various market and internally developed cost and price signals in evaluating the cost-effectiveness of the 2007 EPA and informing its negotiating team. The comparators generally fell along the lines of (1) current market forecasts; (2) costs of known options available to BC Hydro; (3) comparative costs for standard products; and (4) comparative price signals for products to be obtained through acquisition processes" (Exhibit B1-2-1, p. 6-1). All comparisons are based on electricity delivered to the Lower Mainland. Delivery costs are based on expected incremental losses plus any long-term incremental transmission costs or wheeling costs as appropriate.

Many price forecasts are prepared in U.S. dollars and then converted to Canadian dollars using an exchange rate of 0.885, which BC Hydro states is based on the exchange rate forecast provided by the B.C. Treasury Board in the 2007/2008 – 2009/2010 Budget and Fiscal Plan (Exhibit B1-2-1, p. 6-5). BC Hydro provided an updated forecast by the Treasury Board of exchange rates dated October 2007 (Exhibit B1-8, BCUC 1.68.6). The updated exchange rates decline from 0.9654 in F2008 to 0.91 in F2012. BC Hydro indicated it used a long-run exchange rate of 0.91 U.S. dollars to the Canadian dollar in the calculations for BCUC 1.68.6 and that under an exchange rate of parity the prices in Canadian dollars would equal the prices in U.S. dollars provided in its Report and in response to BCUC 1.68.6 (Exhibit B1-8, BCUC 2.124.5).

The specific comparators presented by BC Hydro in Chapter 6 of the Report include the following.

- Spot Market Purchases;
- Market Forwards;
- Canadian Entitlement to the Downstream Benefits ;

- Columbia Basin Capacity;
- Simple Cycle Gas Turbines ("SCGTs");
- Combined Cycle Gas Turbines ("CCGTs"); and
- 2007 Call or Similar Future Acquisition Processes.

The prices of spot market purchases, SCGTs and CCGTs are based on BC Hydro's most recent Gas and Electricity Price Forecast dated April 2007, which is a more recent forecast than the one used in the 2006 IEP/LTAP, the F2006 Call Report, and the Revelstoke Unit 5 CPCN. BC Hydro uses three forecasts: 1) the High forecast, which is based on an internal high gas price forecast that assumes the historically highest gas prices will persist into the future; 2) the EIA forecast, which is based on the 2007 natural gas price forecast prepared by the U.S. Energy Information Administration ("EIA"); and 3) the Confer forecast, which is based on a Long Run Marginal Cost ("LRMC") analysis of natural gas prices, including recovery of capital costs (Exhibit B1-2-1, p. 6-2). Referring to evidence filed in the 2006 IEP/LTAP proceeding, BC Hydro states "… the LRMC of gas production [Confer forecast] is considered to be a reasonable floor for natural gas prices" (Exhibit B1-2-1, p. 6-2).

BC Hydro also develops a Scenario Average forecast, which is a simple average of the three forecasts. BC Hydro also provided an independent electricity price forecast prepared by Global Energy, which is within the range of the various BC Hydro forecasts and is higher than the EIA scenario in almost all years (Exhibit B1-8, BCUC 1.39.1). BC Hydro notes this forecast gives consideration to the likely effect of a Greenhouse Gas ("GHG") adder in the region (Exhibit B1-2-1, p. 6-3). Although the Report was not explicit, BC Hydro testified that all market electricity price forecasts assume 100 percent recovery of capital costs in market prices (T5:704).

The price of near-term (2008 through 2011) Market Forwards and the CE are based on actual trading activity in the Pacific Northwest ("PNW") (Exhibit B1-2-1, pp. 6-4 to 6-6). BC Hydro considers the cost of capacity additions in the Columbia Basin, delivered to the Lower Mainland as a reasonable proxy for the value of long-term capacity additions. These include Mica Unit 5 and Unit 6, Revelstoke Unit 6 and the Waneta Expansion Project ("Columbia Capacity Projects"). The cost of capacity in each

case is estimated net of system benefits (value of energy) from the projects. The value of system benefits varies across price forecast scenarios, resulting in a range of capacity costs. The Cost of Incremental Firm Transmission ("CIFT") is added to the net cost of the Columbia Capacity Projects to indicate the value of capacity to the Lower Mainland. The costs of the Columbia Capacity Projects are planning-level estimates and subject to confirmation in detailed design and construction phases.

BC Hydro assumes Mica Unit 5 is constructed first with an in-service date of October 2013, followed by Revelstoke Unit 6, with an in-service date of October 2017 (Exhibit B1-2-1, pp. 6-6 to 6-9).

BC Hydro uses the cost of an SCGT as alternative proxy for the cost of capacity. As with the Columbia Capacity Projects, the unit cost of capacity for an SCGT reflects the expected value of system benefits from this resource under different market price scenarios (Exhibit B1-2-1, pp. 6-9 to 6-10).

The cost of a CCGT is used as an additional proxy for firm energy within B.C. The cost of a CCGT is based on a generic greenfield 250 MW CCGT located in the Kelly Lake/ Nicola region, adjusted for location and GHG offsets, derived from the Resource Options Report prepared for the 2006 IEP/LTAP. The real levelized cost of a CCGT varies across the three gas price forecasts (Exhibit B1-2-1, pp. 6-11 to 6-12).

BC Hydro states that it is in the process of preparing its next Call for new resources and suggests the most relevant experience it has with respect to prices for electricity from call processes is the large project stream from the F2006 Call. BC Hydro uses the prices from this call as one possible comparator. Specifically, BC Hydro prepared indicative average and volume-weighted quartile prices from the 16 EPAs awarded in the F2006 Call. These prices are based on a unit of monthly firm energy delivered to the Lower Mainland on a relatively consistent basis (no shaping) and excluding any green attributes (Exhibit B1-2-1, pp. 6-12 to 6-15).

The table below compares the near-term and long-term costs of capacity ($/kW-yr) in the 2007 EPA with the alternatives identified by BC Hydro. The cost, system benefits and net cost are all based on the Scenario Average gas price forecast, while the ranges reflect the other gas price scenarios. All prices are based on a 5.25 percent discount rate and a 0.885 exchange rate.

Sources and Costs	Cost	System Benefits	Net Cost	Range
Near-Term Alternatives				
2007 EPA	$65.6	($64.9)	$0.8	($16.3) to $13.9
Canadian Entitlement	$10.0		$10.0	
Long Term Alternatives				
2007 EPA	$70.7	($35.8)	$34.9	$23.2 to $41.7
Mica Unit 5	$57.4	($31.5)	$25.9	$19.7 to $31.0
Revelstoke Unit 6	$62.2	($7.3)	$54.8	$53.9 to $55.8
SCGTs	$142.0	($35.4)	$106.5	$104.7 to $109.8

Note: Near-term refers to period between 2007 and 2012. Long-term refers to period between 2013 and 2034.
(Source: Exhibit B1-2-1, Table 7-1, p. 7-4)

The table below compares near-term and long-term costs of firm energy ($/MW.h) in the 2007 EPA with the alternatives identified by BC Hydro. The cost is based on the Scenario Average gas price forecast, while the ranges reflect the other gas price scenarios (and the different price quartiles in the case of the 2007 Call). All prices are based on a 5.25 percent discount rate and a 0.885 exchange rate.

Sources and Costs ($2006)	Cost	Range
Near Term		
2007 EPA Tier 1 Electricity	56.3	Fixed
2007 EPA Tier 2 Electricity	55.4	Fixed
Spot Markets (3 years)	70.7	69.1 to 77.3
Long Term		
2007 EPA Tier 1 Electricity	76.9	Fixed
2007 EPA Tier 2 Electricity	57.6	Fixed
2007 Call	85.7	71.1 to 93.9
CCGT	95.4	78.5 to 123.8

Note: Near-term refers to period between 2007 and 2010. Long-term refers to period between 2011 and 2034.
(Source: Exhibit B1-2-1, Table 7-2, p. 7-8)

The table below compares near-term and long-term costs of non-firm energy ($/MW.h) in the 2007 EPA with the alternatives identified by BC Hydro. The cost is based on the Scenario Average gas price forecast, while the ranges reflect the other gas price scenarios. All prices are based on a 5.25 percent discount rate and a 0.885 exchange rate.

Sources and Costs ($2006)	**Cost**	**Range**
Near Term		
2007 EPA Tier 2 Electricity	55.4	Fixed
Spot Market (3 years)	56.6	42.9 to 72.7
Long- Term		
2007 EPA Tier 2 Electricity	57.6	Fixed
Spot Market (2015-2034)	69.0	51.7 to 97.8

Note: Near-term refers to period between 2007 and 2010. Long-term refers to period between 2011 and 2034.
(Source: Exhibit B1-2-1, Table 7-3, p. 7-9)

BC Hydro compares the levelized plant gate price of power obtained under the LTEPA+, the F2006 Call and the 2007 EPA in 2006$ per MW.h, as the following table shows:

	LTEPA+	F2006 Call	2007 EPA
Tier 1 price Near Term	-	-	$51.90
Tier 1 price Long Term	$71.30	$59.70-$95.10 (average - $74.00)	$68.80
Tier 2 price Near Term	-	-	$52.00
Tier 2 price Long Term	$63.30	$66.00	$54.00

(Source: Exhibit B1-2-1, p. 3-43)

BC Hydro filed Exhibits B-15 and B-15B in response to Commissioner Pullman's request for a "headline price" which compared the UEC of all volumes covered by LTEPA+ with the UEC of all volumes and services covered by the 2007 EPA. By weighting the volumes and calculating the value of a one-year deferral of Revelstoke Unit 6, BC Hydro calculated the UEC of the 2007 EPA to be $62.50/MW.h and of the LTEPA+ to have been $71.30/MW.h.

BC Hydro pointed out that the levelized UEC for the 2007 EPA would be as low as $59.20/MW.h if the Modernization Project does not proceed, and if Alcan does not elect the "carve-out" option and the incremental electricity flowed to BC Hydro as Tier 2 Electricity. However, BC Hydro believes that the net UEC of $62.50/MW.h understates the value of incremental capacity to be provided under the 2007 EPA. Specifically, BC Hydro notes the only capacity value assumed was a one-year deferral of Revelstoke Unit 6, which BC Hydro believes undervalues the incremental capacity provided by the 2007 EPA since no value for avoided costs in the near term is considered. BC Hydro stated:

> "…[w]hen the incremental capacity provided by the 2007 EPA is fully valued while maintaining all other assumptions equal to those requested in this undertaking, the levelized UEC for the 2007 EPA becomes $59/MW.h" (Exhibit B1-15B, p. 3).

In response to an information request to provide an estimate of the value of capacity during the 2006/2007 winter period in the PNW, BC Hydro noted that there are many different products that would include capacity-related attributes, such as operating reserves, regulating reserves and other dynamic products, or combined with energy to provide resource adequacy service. BC Hydro suggested some of these products are becoming increasingly valuable, particularly with the addition of more intermittent energy resources such as wind generation. BC Hydro noted that capacity, as it is used in its Report, is the right to call on generation provided the purchaser (holder of such right) pays for all energy called upon at the appropriate prevailing energy price at the time any call was made, and the price for such a product would depend on conditions such as how much energy would be delivered with the capacity, once called, and would also vary depending on the flexibility of the dispatch rights and / or the services that may be attached (such as dynamic scheduling). BC Hydro noted that the premium for such a product is generally something that is included in a package of products or services and not easily observable on its own. BC Hydro estimated implicit premiums for capacity reflected in products being traded are in the range of $2/kW-month to $6/kW-month, and potentially higher for some of the premium products such as dynamic scheduling. Based on selling the capacity-related products in the four peak load months per year, BC Hydro then estimated the annual capacity value would range from $8/kW-year to $24/kW-year (Exhibit B1-9, BCOAPO 1.8.1).

In his evidence for the DoK, Dr. Shaffer suggests that the price comparisons BC Hydro has presented "… fail to recognize the value of the back-up it is providing to firm up Alcan's supply; they do not reflect risks associated with its commitment to buy whatever surplus Alcan provides regardless of its own needs and opportunities at the time of delivery; and they do not recognize the long-term benefits that its own capacity provides as compared to the benefits of the Alcan capacity, which terminate at the end of the contract term" (Exhibit C10-7, p. 6). He also suggests the price comparisons are incomplete because they fail to consider the price that BC Hydro would have to pay for other existing sources of supply in the province, such as Teck Cominco in Trail, or Powell River Energy (Brookfield Power) that currently supplies hydroelectric energy and capacity to the Catalyst Paper mill in Powell River; the costs of other alternatives that could be developed by BC Hydro such as Burrard repowering or Site C; or the cost of non-BC Hydro sources of capacity which it has not canvassed in previous Calls or clearly determined in other ways (Exhibit C10-7, p. 5).

BC Hydro submits that the sole criticism of BC Hydro's evidence on the cost-effectiveness analysis came from Dr. Shaffer. BC Hydro submits that its comparators were based on a rigorous assessment of the cost of replacing each of the elements of the products and services supplied under the 2007 EPA and that nobody produced any evidence suggesting contrary evaluations of these alternatives (BC Hydro Argument, para. 12).

In response to Dr. Shaffer's evidence, BC Hydro argues that, to date, Teck Cominco has declined to sell to BC Hydro in favour of the export market. BC Hydro also argues that Brookfield's Powell River facility currently sells its product to Catalyst's pulp mill in Powell River and the prospect of its selling to BC Hydro after its contract in 2011 expires is entirely speculative. Both Brookfield and Teck Cominco were eligible to bid surplus power into the F2006 Call but declined to do so. BC Hydro submits that neither Teck Cominco nor Brookfield's power are substitutes or alternatives to acquisitions of power under the 2007 EPA (BC Hydro Argument, para. 15-17).

With respect to valuing the back-up it is providing to firm Alcan's supply, BC Hydro argues its approach to valuing the firmness of Alcan's supply to BC Hydro is not only reasonable but is consistent with its normal practices (BC Hydro Argument, para. 21).

With respect to the risks associated with deliveries of Tier 2 Electricity, BC Hydro notes that it must accept energy from other IPPs most of which do not have storage and have no control over when they produce energy. However, in Alcan's case, BC Hydro notes the weighting factor built into the 2007 EPA provides Alcan with every reason to use its storage to provide Tier 2 Electricity when it is anticipated to have greatest value to BC Hydro. Moreover, BC Hydro notes that Alcan is able to predict the amount of Tier 2 Electricity that will be available several months into the future and BC Hydro will be able to obtain significant insight into how the Kemano system will be operated through the joint operating committee, allowing it to make best use of the Tier 2 Electricity volumes in its operational planning (BC Hydro Argument, para. 23-24).

BC Hydro argues that Burrard repowering and Site C are speculative projects with earliest in service dates well into the future which it would have been wholly inappropriate to include as comparators for the purposes of the avoided cost analysis (BC Hydro Argument, para. 26).

BC Hydro concludes there is "… simply no evidence that contradicts the in depth analysis undertaken by BC Hydro in Chapter 7 of Exhibit B1-2-1 insofar as it relates to avoided cost. BC Hydro respectfully submits that its evidence in that regard should be accepted in its entirety" (BC Hydro Argument, para. 27).

The DoK reiterates many of Dr. Shaffer's points and concludes that "…the price comparators that BC Hydro uses to justify the price and other terms of the 2007 EPA are incomplete, misleading and fail to recognize the nature of the electricity being supplied by Alcan" (DoK Argument, para. 3). With respect to BC Hydro's argument that projects such as Burrard repowering and Site C are speculative, the DoK argues the 2007 EPA is a long-term commitment and as a result the Commission is entitled and obligated to consider whether alternative major financial commitments such as Site C or Burrard may be preferable and/or more cost-effective (DoK Argument, para. 51).

BCOAPO agrees with BC Hydro that its avoided cost analysis received little substantive challenge in the hearing. However, BCOAPO expresses concern that BC Hydro has included a High Gas scenario in its analysis without a corresponding "Low Gas" scenario. BCOAPO argues that if natural gas prices remain low, there is a risk that this EPA will not prove cost-effective, and the inclusion of the High Gas

scenario in BC Hydro's analysis tends to bias the forecast upward and ignores an area of genuine ratepayer risk (BCOAPO Argument, p. 7).

BC Hydro replies there was no cross-examination on the price forecasts and there was no real evidence on the record about what might be strong or weak about those forecasts. BC Hydro notes that although the Report used the Scenario Average for all of the examples, in Argument it referenced only the EIA forecast, and so is totally uninfluenced by the High Gas scenario. BC Hydro also notes that in the cost-effectiveness analysis it uses the lower of the call price or CCGT cost to value long-term firm power after 2011 and as a result the High Gas scenario does not end up influencing the result because the model selects the call price instead (T9:1540-42). In conclusion, BC Hydro argues "… far from distorting the impression of cost-effectiveness … the approach really is a conservative one because it's saying that consistently [BC] Hydro in its cost-effective analysis used the most conservative … that is the least value assumption with respect to valuing that Tier 1 power" (T9:1542-43).

With respect to whether existing generators should have been used as a comparator, BC Hydro replies the "… market price is what it is, and the market doesn't care whether you're supplying it with energy for an old generator or a new one" (T9:1544). BC Hydro suggests Dr. Shaffer and the DoK conceded that point in its responses to BCSEA IRs 1.38 through 1.3.13 in Exhibit C10-15 and in response to BCUC IR 1.8.1 in Exhibit C10-12. BC Hydro argues that in those responses, the DoK concedes that in fact the competitive benchmark faced by Hydro and Alcan exists irrespective of whether it's created by existing or potential future generators.

With respect to the valuation of Tier 2 Electricity, BC Hydro continues to rely on paragraphs 23 and 24 of its Argument (summarized above), and suggests that the DoK has not really dealt with them in its argument (T9:1546).

Commission Determination

The Commission Panel notes that BC Hydro and Intervenors sometimes request that the Commission make inferences from a lack of cross-examination on a particular issue. The Commission Panel acknowledges that such inferences may be appropriate in some circumstances, but also notes that a

lack of cross-examination does not necessarily infer acceptance for at least two reasons. First, in some cases issues may have been explored through information requests rather than cross-examination. Second, it would impose a heavy burden on the process if inferences were frequently drawn from a lack of information requests or cross-examination. The Commission Panel also notes there is a distinction between evidence and argument, and a lack of information requests or cross-examination on evidence should not be construed as supporting the Applicant's argument with respect to that evidence. Therefore, the Commission Panel has not made any conclusions, as BC Hydro and Alcan submit, based on the lack of cross-examination and limited information requests regarding Table 7-15.

The Commission Panel accepts the general range of avoided cost benchmarks developed by BC Hydro for the purposes of the cost-effectiveness analysis. However, the Commission Panel does not agree with the manner in which these benchmarks were incorporated in the cost-effectiveness analysis in all cases. This is discussed further in the next Section of the Decision. In addition, the Commission Panel has some concerns with certain approaches to establishing certain benchmarks. These were not determinative in this case, but are worth noting for the benefit of future filings.

The Commission Panel notes there is uncertainty involved in the estimation of long-term benchmarks. One major source of uncertainty, which was raised in information requests and during cross-examination, is the long-term exchange rate. BC Hydro relies on the Treasury Board forecast to support its exchange rate assumptions. BC Hydro suggests this is the only evidence on the record and "…[a]nybody who wanted to predict or suggest plausibility for parity over the next 30 years is very brave indeed" (T9:1542). The Commission Panel is not satisfied with BC Hydro's evidence or argument with respect to long-term exchange rates. First, the Commission Panel notes that the Treasury Board forecast is a near-term forecast to F2011. BC Hydro provides no evidence to support extrapolating the long-term exchange rate (for a 30-year planning period) based on the last year of that forecast and the Commission Panel suggests BC Hydro is equally brave to make such a simple extrapolation from a near-term forecast. Second, the Commission Panel notes there was no evidence to explain methodology behind the Treasury Board forecast. In addition, the Commission Panel notes that the intended use of a forecast can influence the methodology, for example a bias towards more conservative assumptions.

The Commission Panel notes that there is no evidence that a short-term forecast intended to assist the government in forecasting provincial revenues is a reasonable basis for long-term planning decisions by BC Hydro. Given the apparent importance of exchange rates in its price forecasts, the Commission Panel expects BC Hydro to provide greater justification for its long-term exchange forecasts in future proceedings including possible market references for long-term exchange rates. At a minimum, the Commission Panel would expect BC Hydro to include exchange rate sensitivities in its applications to acknowledge the substantial uncertainty over this variable. For the purposes of this Decision, the Commission Panel has relied on the sensitivity analyses conducted by BC Hydro in its Report and in response to various information requests and undertakings to test the significance of exchange rates and other uncertainties. The Commission Panel's specific determinations with respect to these sensitivity analyses are discussed further in the following Section of the Decision.

The Commission Panel believes the High Gas scenario is a possible (but unlikely) scenario, and is concerned about BC Hydro's practice of producing an equally weighted average of all the forecasts in its analyses. The Commission Panel does not consider all potential outcomes should always receive equal weight in calculating an expected outcome. That said, the Commission Panel notes BC Hydro relied on the EIA forecast in its final Argument and also agrees with BC Hydro that the effect of its cost-effectiveness evaluation methodology was to disregard the High Gas scenario in favour of the F2006 Call prices for valuing long-term firm energy purchases. However, the Commission Panel notes that market prices are still used in the valuation of non-firm energy under the High Gas scenario.

The Commission Panel accepts BC Hydro's argument that Confer can be considered a reasonable floor on long-term natural gas prices. The Commission Panel does note that the market price forecasts used by BC Hydro include 100 percent capital cost recovery, although BC Hydro was not explicit in its filing about this. The Commission Panel believes BC Hydro should have been more explicit about this and should have included a sensitivity analysis of 25 percent capital cost recovery, which is more likely to reflect a situation where existing generators determine market prices (i.e., a surplus market).

As noted in the in the Commission Determination in Section 3.5 of this Decision, the Commission Panel agrees with BC Hydro that Burrard repowering and Site C are not relevant benchmarks since these projects are still highly speculative, these projects would not be available in the near-term, and the 2007 EPA does not preclude their future development given BC Hydro's currently projected load/resource balance. In addition, the Commission Panel agrees with BC Hydro that the willingness of Alcan to enter into a short-term contract is speculative.

The Commission Panel accepts BC Hydro's estimated headline price for the 2007 EPA of approximately $62.50/MW.h (2006$), compared with a comparable headline price for LTEPA+ of approximately $71.30/MW.h.

6.3 Cost-Effectiveness Results

Having established its avoided cost benchmarks, Chapter 7 of the Report then compares the costs of the various products and services in the 2007 EPA with the cost of its alternatives. These products and services include Tier 1 Electricity, Tier 2 Electricity, capacity, scheduling services, operating reserves, Equichange Services and Coordination Services.

BC Hydro filed its economic evaluation model (Exhibit B1-2-2). BC Hydro also provided an updated version of this model incorporating additional sensitivity analyses and calculations (Exhibit B1-10, BCUC 3.1.6).

The analysis in section 7.2 of the Report compares the value of each of the primary capacity, firm energy and non-firm energy products received under the 2007 EPA with the projected market prices and other indicators of value for each of those products. These comparisons were reviewed above. However, BC Hydro states "…the ultimate issue is the overall cost-effectiveness of the contract as a whole, not simply the cost comparison of the individual components. Thus, the assessment of the cost-effectiveness of the 2007 EPA should ultimately turn on the basket of value offered under the agreement relative to what is available from other sources having regard to all characteristics of each" (Exhibit B1-2-1, p. 7-1).

The comparative analysis of the 2007 EPA is summarized in section 7.3 of the Report. In its analysis, BC Hydro evaluates the capacity, firm energy and non-firm energy provided by the 2007 EPA against portfolios of alternative resources that provide the same volumes of these products and services. In addition, the 2007 EPA contains some non-standard provisions such as LTEPA volumes, options and exercise fees and Coordination and Equichange Services.

The energy associated with the original LTEPA volumes is all priced at the original LTEPA price in the 2007 EPA. Given LTEPA would continue to be in effect in the absence of the 2007 EPA, BC Hydro values the LTEPA volumes at the original LTEPA price, although BC Hydro notes the LTEPA volumes are still lower cost than current alternative sources of supply (Exhibit B1-2-1, p. 7-13). As a result, no net benefit is attributed to LTEPA volumes in the cost-effectiveness analysis, except the additional value provided by the additional ability to schedule LTEPA volumes into higher value hours under the 2007 EPA.

As described in Section 5 of this Decision, the Equichange Services allow BC Hydro to make more effective use of the available Scheduling Capacity under the 2007 EPA. BC Hydro states that the value of Equichange Services varies with the annual capacity factor of the 2007 EPA. For the purposes of the cost-effectiveness evaluation, BC Hydro first determines the months when Tier 1 Electricity would be expected to be delivered based on price expectations and optimal dispatch, as outlined in Table 3-8 of Exhibit B1-2-1. For this calculation, BC Hydro considers three different periods of the contract, reflecting different Tier 1 Electricity quantities. For months with no expected Tier 1 Electricity deliveries, BC Hydro estimates the net value (in weighted MW.h) associated with delivery of 100 MW to Alcan during LLH, and associated return of this energy in HLH, net of losses and reflecting the energy weighting factors applicable for each month and time period in the 2007 EPA. BC Hydro then calculates a net value based on the weighted MW.h times the spot market price forecast, less the fee payable to Alcan. The net value is then adjusted by the probability that Equichange Services would be utilized, which BC Hydro assumes would be 25 percent of the time in those months where Tier 1 Electricity is not scheduled (Exhibit B1-2-1, pp. 7-14 to 7-15).

As described in Section 5 of this Decision, Coordination Services provide benefits to BC Hydro whenever BC Hydro is constrained to minimum generation requirements and the modified operation is acceptable to Alcan. Energy would typically be left in the Coordination Services account for a longer period of time than Equichange Energy. BC Hydro states that the value of Coordination Services will depend on the amount of Tier 2 Electricity available in a given year, and will have highest value in low water years.

BC Hydro estimates the value of Coordination Services by first determining the amount of energy that could be supplied to Alcan during the LLH periods from mid-April to mid-July (the most likely times Coordination Service could be exploited), using the assumption of 100 MW delivered to Alcan multiplied by the energy weighting factors applicable for these months and time periods. BC Hydro then determines the amount of energy returned to BC Hydro during the HLH periods in September through November, again using the applicable energy weighting factors for those months and time periods. The net value is then estimated based on the difference between the weighted energy delivered to Alcan and returned to BC Hydro, multiplied by the applicable spot market price and reduced by the fee payable to Alcan. BC Hydro then adjusts the net value to reflect the probability the Coordination Service would be used in any given year and to reflect the option that Alcan has to purchase 50 percent of the delivered electricity. On the basis of these assumptions, BC Hydro uses a probability of 10 percent to determine the net available value from Coordination Services (Exhibit B1-2-1, p. 7-16).

The NPV of the net benefit attributed to both the Equichange and Coordination Services by BC Hydro ranges from about $4 million to $15 depending upon the price scenario and discount rate (Exhibit B1-2-2).

For the remaining non-LTEPA products, BC Hydro used the following methodology to calculate net benefits:

- the incremental cost of products in the 2007 EPA are calculated for each year of the contract based on the prices and escalation factors specified in the contract, and reflecting expected volumes under average water conditions (and assuming the Modernization Project proceeds);

- the CIFT to the Lower Mainland is added to the cost of incremental capacity and Tier 1 Electricity deliveries in the 2007 EPA;

- the value of incremental capacity acquired in the 2007 EPA is calculated as the annualized cost of capacity for the CE until 2013, Mica Unit 5 from 2013 through 2016, and Revelstoke Unit 6 from 2017 and beyond. In the case of the Columbia Capacity Projects, the value of capacity varies across market price forecasts, since these affect the value of system benefits used to estimate the net (pure) cost of capacity for each alternative;

- the value of incremental firm energy is based on market forwards until 2010 and the lesser of future calls (which is forecast based on the average price of the F2006 Call) or the cost of a CCGT each market price scenario beyond 2010. BC Hydro assumes 65 aMW of Tier 2 Electricity on average, and considers a portion of the Tier 2 Electricity (27 aMW) as firm for the purposes of its valuation;

- BC Hydro also estimates the additional system benefits arising from the ability to schedule Tier 1 Electricity deliveries into high-value periods as a result of the incremental scheduling capacity provided by the 2007 EPA; and

- the value of non-firm energy is based on the market price for electricity under each forecast.

(Exhibit B1-2-1, pp.7-17 to 7-18)

As noted above, no net benefit is attributed to the original LTEPA volumes. BC Hydro does not include the value of the option fee in its cost-effectiveness analysis ($3.25 million), which BC Hydro will receive regardless of whether Alcan exercises this option. BC Hydro also does not attribute any value to the exercise fee as it considers the Modernization Project is likely to proceed (Exhibit B1-2-1, p. 7-18).

BC Hydro calculates an overall net benefit for the 2007 EPA as the difference between the NPV of the contract cost and the cost of the alternatives, plus the NPV of the expected net value of Equichange and Coordination Services as outlined above. The analysis is done on a calendar year basis and incorporates BC Hydro's current average incremental cost of debt of 5.25 percent as the discount rate in its base case for levelized costs and cost-effectiveness comparisons, while providing additional sensitivity studies that utilize an 8.0 percent discount rate. The prices for all products and services associated with the 2007 EPA and the alternatives are reported as delivered to the Lower Mainland in Canadian 2006 dollars. An exchange rate of 0.885 to the U.S. Dollar is used throughout (Exhibit B1-2-1, p. 7-2).

BC Hydro's estimates of the NPV of the 2007 EPA in its Report are positive across a range of assumptions for forward electricity and gas prices and discount rates. The table below shows net benefits ranging from a low of $39.1 million to a high of $335.7 million ($2006).

BC Hydro provided an expanded version of the base case and sensitivity analyses in Chapter 7 that separated the overall net benefit calculation into the following components: Capacity, Tier 1 Electricity, Tier 2 Electricity and Equichange and Coordination Services. In its filing BC Hydro corrected some small errors in the original analysis, which it had noted in the responses to Exhibit B1-8, BCUC 1.2.1, 1.13.1 and 1.75.2. These adjustments included: (1) a small change to the price for LTEPA energy, (2) a small change to the Coordination return energy that impacts the cost of Coordination Services transactions, and (3) adjustments to the prices for new sources of firm energy at the eight percent discount rate. In all cases, BC Hydro suggested the differences were minor and in most cases insignificant (Exhibit B1-9, BCUC 1.109.1).

The table below summarizes the updated analysis and compares it with the original analysis included in BC Hydro's Report. System benefits (i.e., shaping value) are included in the estimated net benefits of capacity in the table below.

Electricity & Gas Price Scenario	Net Benefit (NPV 2006$ millions)						
	Capacity	Tier 1	Tier 2	Coord. & Equichange	Total	2007 EPA Report	Difference
	5.25% Discount						
Scenario Average	$19.0	$31.8	$121.6	$9.8	$182.2	$182.1	0.1
High Gas	$45.5	$31.8	$243.2	$15.2	$335.7	$335.6	0.1
EIA	$10.2	$25.8	$71.4	$7.7	$115.2	$115.1	0.1
Confer	$2.5	$8.2	$25.4	$6.6	$42.7	$42.7	0.1
	8.00% Discount						
Scenario Average	$32.2	$23.5	$80.7	$6.6	$143.0	$136.2	6.7
High Gas	$52.3	$23.5	$163.8	$10.2	$249.7	$243.0	6.7
EIA	$26.0	$14.0	$42.9	$5.2	$88.1	$91.1	-3.0
Confer	$19.6	$3.4	$11.6	$4.5	$39.1	$40.2	-1.1

(Source: Exhibit B1-9-1, BCUC 2.109.1)

Employing the discount rate favoured in previous decisions of the Commission and using the EIA forecast, which is below the Scenario Average, BC Hydro estimates a net benefit from the 2007 EPA of $115 million in NPV terms. BC Hydro also conducted a rate impact analysis and, as expected based on the results of the NPV analysis, BC Hydro estimates a rate impact of 1.6 percent under the 2007 EPA compared with a rate impact of 1.9 percent under the alternative portfolio of sources (Exhibit B1-2-1, Table 7-10, p. 7-19).

BC Hydro states that it also performed the following additional sensitivity analyses in section 7.4 of the Report: (1) sensitivity to the need for new capacity; (2) sensitivity to the evaluation of the firm energy capability of Kemano; and (3) sensitivity to the assumption of the future price of firm energy. The scenario of a delayed need for capacity assumed that the Burrard plant's full capacity is retained for capacity reliability purposes. The base case analysis assumes a firm energy contribution from Kemano of 27 aMW, based on the correlation between low water flows at Kemano and low water flows on the rest of the BC Hydro system. BC Hydro also performed sensitivity analyses assuming 49 aMW of firm energy and assuming that none of the Tier 2 Electricity deliveries can be considered firm. Finally, BC Hydro conducted a sensitivity analysis using a lower alternative firm energy price (based on the first quartile of prices in the F2006 Call) and a higher firm energy price (based on the fourth quartile of prices in the F2006 Call). Some of these sensitivities resulted in higher net benefits calculations while others resulted in lower net benefits calculations. In only one case did the net benefit become negative and that was the scenario assuming no Tier 2 Electricity is firm and using the Confer price forecast (Exhibit B1-2-1, pp. 7-25 to 7-29).

BC Hydro also provided summaries of various sensitivity analyses, including a delayed need for capacity, assumptions about firm energy provided by Kemano and the cost of new supply. For the most part, all of the sensitivity analyses showed positive net benefits under all discount rates and price forecasts, with the only notable exception being the scenario with Kemano firm energy of only 730 aMW and the Confer price scenario (Exhibit B1-9, BCUC 2.109.1).

BC Hydro also provided sensitivity analyses under alternative inflation assumptions. Again, net benefits remained positive under all scenarios of prices and discount rates, with the only notable exceptions being a scenario with low Kemano firm energy, Confer prices and low discount rate, and a scenario with the lowest quartile of F2006 Call prices and lower discount rate (Exhibit B1-9, BCUC 2.109.2 and 2.109.3).

BC Hydro also provided a sensitivity analysis assuming an exchange rate of parity and no other change in base case assumptions. The table below summarizes the results of this analysis:

Electricity & Gas Price Scenario	Net Benefit (NPV 2006$ millions)				
	Capacity	Tier 1	Tier 2	Coord. & Equichange	Total
	5.25% Discount				
Scenario Average	$15.7	$29.9	$108.1	$9.4	163.2
High Gas	$41.3	$29.9	$225.9	$14.6	311.7
EIA	$7.4	$19.7	$55.8	$7.4	90.2
Confer	$0.1	$2.4	$11.4	$6.3	20.2
	8.00% Discount				
Scenario Average	$29.4	$21.7	$70.1	$6.3	127.6
High Gas	$48.7	$21.7	$150.4	$9.8	230.6
EIA	$23.6	$9.4	$30.9	$5.0	68.8
Confer	$17.5	-$1.0	$0.9	$4.3	21.7

(Source: Exhibit B1-9, BCOAPO 1.5.1)

BC Hydro's economic evaluation model values capacity using unit cost of capacity for: 1) the CE between 2007 and 2012; 2) Mica Unit 5 for the period from 2013 to 2016 or 2021, depending upon the scenario; 3) and Revelstoke Unit 6 from the period 2017 or 2022, depending upon the scenario. The unit cost of capacity for Revelstoke Unit 6 is more than twice the unit cost of Mica Unit 5. In response to an information request for a further sensitivity analysis using Mica Unit 5 to value capacity for the entire term of the contract BC Hydro provided the following table:

Electricity & Gas Price Scenario	Net Benefit (NPV 2006$ millions)				
	Capacity	Tier 1	Tier 2	Coord. & Equichange	Total
	5.25% Discount				
Scenario Average	-$15.2	$31.8	$121.6	$9.8	148.0
High Gas	$4.9	$31.8	$243.2	$15.2	295.1
EIA	-$21.2	$25.8	$71.4	$7.7	83.8
Confer	-$26.7	$8.2	$25.4	$6.6	13.5
	8.00% Discount				
Scenario Average	$10.4	$23.5	$80.7	$6.6	121.1
High Gas	$26.5	$23.5	$163.8	$10.2	223.9
EIA	$6.2	$14.2	$43.0	$5.2	68.6
Confer	$1.0	$3.4	$11.6	$4.5	20.5

(Source: Exhibit B1-10, BCUC 3.1.4)

In its response BC Hydro noted:

> "The capacity associated with the Columbia Basin Capacity additions is a very economic but limited resource. Because it is a limited resource, it is not realistic to assume that the value of capacity will remain equal to the lowest cost of these resources throughout the term of the contract. A detailed capacity value forecast for B.C. would increase in stages as the capacity associated with Mica Unit 5 and Mica Unit 6, Revelstoke Unit 6 and the Waneta Expansion was acquired on a least cost basis. In the longer term, the value of capacity would be expected to rise to the cost of a new SCGT…. For BC Hydro's analysis, the value forecast included only the first two of these step increases corresponding to the in-service dates of Mica Unit 5 and Revelstoke Unit 6 and the cost of those projects. BC Hydro considers this to be a conservative estimate of the value of the capacity acquired by the 2007 EPA."
>
> (Exhibit B1-10, BCUC 3.1.4)

In response to an information request asking if the Mica Unit 5 or Revelstoke Unit 6 capacity projects would be deferred as a result of the 2007 EPA, and if so by how long and for an estimate of the NPV of any deferral benefit and a further sensitivity analysis on BC Hydro's net benefits calculation including

only the deferral benefit in the value of capacity calculation, BC Hydro indicated it does not anticipate a deferral of Mica Unit 5 and stated that it "…does not believe it can realistically estimate the net present value of capacity deferrals without undertaking a portfolio analysis exercise similar to the analysis for the IEP as the amount of deferral will depend on the success of future DSM programs and the outcome of future calls for power in the various scenarios. Such an undertaking cannot realistically be completed by the deadline for this response" (Exhibit B1-10, BCUC 3.1.5). BC Hydro testified that the 2007 EPA would not alter the timing of the Mica Unit 5 addition, which is required by its earlier possible in-service date, but could defer Revelstoke Unit 6, the next major anticipated capacity addition after Mica Unit 5, by about one year and that the addition of capacity from the 2007 Call or future calls could further defer the timing of Revelstoke Unit 6 (T5:847, 848).

In Exhibit B1-15B, the value of a one-year deferral of Revelstoke Unit 6 was estimated by assuming an avoided cost equal to the unit capacity cost shown in Table 6-7 of Exhibit B1-2 of approximately $55/kW-yr at 5.25 percent discount rate, multiplied by the dependable capacity of 470 MW and adjusted for inflation. This approximates the net annual cost for Revelstoke Unit 6 that would be avoided if in-service could be delayed by one year from 2017 to 2018.

BC Hydro submits its estimates of net benefits "… were based on a rigorous assessment of the cost of replacing each of the elements of the products and services supplied under the 2007 EPA" (BC Hydro Argument, para. 12). BC Hydro argues that Dr. Shaffer appeared to accept BC Hydro's evaluation methodology and in response to a question by the Chair, BC Hydro notes that Dr. Shaffer stated: "So I think in terms of what they've done, that makes sense" (BC Hydro Argument, para. 12; T6:1129). BC Hydro further suggests that nobody produced any evidence suggesting contrary evaluations of these alternatives, nor did anyone even criticize the analytical approach employed to calculate the present values. BC Hydro argues the sole criticism of its evidence on the cost-effectiveness analysis came from Dr. Shaffer for the District of Kitimat, who suggested that BC Hydro's estimate failed to consider some potential alternatives that he thought it might have (BC Hydro Argument, para. 12).

The DoK's main criticisms revolved around the avoided cost benchmarks in the cost-effectiveness analysis. These are reviewed in the previous Section of the Decision. With respect to the overall conclusions from the cost-effectiveness analysis, the DoK submits:

> "As one final note on price and cost-effectiveness, at paragraph 86 of its argument, BC Hydro asserts that it paid "at least $115 million below its avoided cost". With respect, this is not what BC Hydro has saved. It is simply an estimate of the value of the *2007* EPA based on a series of assumptions. BC Hydro itself has provided very plausible alternative scenarios (exchange rate parity; EIA gas price forecast) in which its potential savings are drastically reduced to the point where they are marginal when measured against the relative largesse of the 2007 EPA: see, for example, BC Hydro Response to BCOAPO IR 1.5.1: Ex. B1-9" (DoK Argument, para. 57).

BCOAPO generally accepts the analysis presented in Chapter 7 of the Report, which it suggests follows the methodology presented and tested in previous proceedings such the 2006 IEP/LTAP (BCOAPO Argument, p. 7).

Although IPPBC took no position with respect to the desirability of the 2007 EPA or the outcomes of the cost-effectiveness analysis, it did suggest that "… there were significant differences between the transmission losses, CIFT, and Network Upgrade charges shown by BC Hydro in its comparative analysis of the 2007 EPA and those being proposed by BC Hydro in its Standing Offer Program for small independent power projects" (IPPBC Argument, p. 11). IPPBC suggests the rationale for these differences is far from clear and the methodology for calculating these charges should be made clear and transparent, and should be consistent between bilateral agreements such as the 2007 EPA, and any future competitive calls, such as the Clean Power Call or the Standing Offer Program.

As noted in the introduction, no other Intervenors had substantive criticisms of the cost-effectiveness methodology or results.

Commission Determination

The Commission Panel agrees with BC Hydro that a determination with respect to the cost-effectiveness of the 2007 EPA depends upon the overall net benefits of the contract as a whole and not upon the net benefits associated with individual products and services, although these are obviously an input to the estimate of overall net benefits.

The Commission Panel agrees in principle with the use of a simplified cost-effectiveness evaluation methodology for an individual supply contract. The Commission Panel generally accepts BC Hydro's simplified methodology for the cost-effectiveness evaluation, but has concerns with the manner in which the value of capacity was evaluated.

The Commission Panel notes that BC Hydro's forecast Columbia Capacity Projects are lumpy (i.e., increments of approximately 480 MW) and some consideration of this fact is likely required, even in a simplified analysis. An avoided cost analysis implies that some cost must actually be avoided in the future. The Commission Panel notes that BC Hydro's load resource balance analysis suggests a need for capacity by F2012 based on the mid-load forecast and existing and committed resources, including EE3, 4 and 5 (as shown in Table 5-7 of Exhibit B1-2-1). The 2007 EPA could meet part of this need, but if it does not actually avoid or defer other capacity projects, it does not necessarily provide a true benefit for ratepayers. The Commission Panel also notes BC Hydro's testimony that it is planning Mica Unit 5 and Revelstoke Unit 6 at their earliest in-service dates, and that the 2007 EPA will not defer the expected timing of Mica Unit 5 and will only defer the timing of Revelstoke Unit 6 by one year. However, the Commission Panel notes that BC Hydro was not asked about and did not provide any evidence on possible capacity deferrals beyond 2017. In addition, the Commission Panel notes both Mica Unit 5 and Revelstoke Unit 6 are in the definition phases and neither has yet been approved.

BC Hydro's testimony with respect to Mica Unit 5 and Revelstoke Unit 6 would suggest that the only truly avoided costs with respect to capacity are the cost of relying on the CE until Mica Unit 5 is in-service and the one-year deferral of Revelstoke Unit 6 (which is expected to provide dependable capacity of 470 MW). If BC Hydro's economic evaluation model only included these avoided costs, the

Commission Panel estimates that the net benefit of the capacity provided by the 2007 EPA would be reduced from $10.2 million to a negative value of $46 million, under the EIA price scenario and 5.25 percent discount rate. The overall net benefit would be approximately $58 million, still a positive net benefit, but roughly half of BC Hydro's original net benefit estimate for this price scenario.

The Commission Panel acknowledges the evidence is ambiguous and incomplete with respect to the value of capacity from the contract. The Commission Panel therefore notes that the net benefit of the 2007 EPA is somewhere between the $58 million estimated above and the $115 million calculated by BC Hydro, under the EIA price scenario, 5.25 percent discount rate, a 0.885 exchange rate, and assumptions about Tier 2 volumes.

As noted in Section 4 of this Decision, BC Hydro assumes average total generation of 793 aMW at Kemano, and not the 770 aMW the Commission determined was available on average in its LTEPA+ Decision. Based on total average generation and smelter load, BC Hydro assumes approximately 63 aMW of Tier 2 Electricity volumes. (The Commission Panel notes that BC Hydro's economic evaluation model actually assumes an average Tier 2 Electricity volume of 65 aMW and not the 63 aMW referred to in its Report). In Section 4.3 of this Decision, the Commission Panel found no new evidence to suggest the Commission's determination in LTEPA+ is no longer valid. As a result, the likely Tier 2 Electricity production is only approximately 40 aMW based on historical operations. This is still higher than the amount of Tier 2 Electricity that BC Hydro considers firm in the base case analysis and the Commission Panel finds no evidence to suggest it should alter the absolute quantity of Tier 2 Electricity that may be considered firm in BC Hydro's economic evaluation model (757 aMW). However, the Commission Panel notes that BC Hydro's sensitivity analysis assuming 779 aMW of firm energy at Kemano (summarized in Table 7-13 of Exhibit B1-2-1) is no longer relevant.

The Commission Panel has recalculated the net benefits using BC Hydro's economic evaluation model assuming the lower total Tier 2 Electricity but leaving the total amount of firm Tier 2 Electricity the same. Holding all other assumptions constant, this results in a net benefit of $121 million compared to BC Hydro's base case estimate of $115 million under the EIA gas price scenario. The net benefits are

higher because the market prices in this scenario are lower than the cost of Tier 2 Electricity in the contract in some years. As shown in the summary further below, the lower Tier 2 Electricity volumes increase the net benefits associated with the 2007 EPA under the lower EIA and Confer price forecasts and decrease the net benefits under the High Gas price forecast. Valuing capacity based on the CE and deferral benefit of Revelstoke Unit 6, the net benefit assuming lower Tier 2 Electricity volumes would be $65 million compared to the $58 million above. The Commission Panel notes that between F2011 and F2014, the lower Tier 2 Electricity volumes would result in under-delivery of the LTEPA Tier 2 Electricity volumes and no incremental Tier 2 Electricity volumes. The under-deliveries vary and are generally less than 9 aMW. For simplicity, the Commission Panel has not adjusted the LTEPA volumes (which are not included in BC Hydro's net benefits calculation) and has simply assumed zero incremental Tier 2 Electricity volumes for those years.

Given uncertainty over future exchange rates and their importance in the analysis, the Commission Panel considers BC Hydro should have provided sensitivity analyses for alternative exchange rate assumptions, in addition to more evidence concerning the reasonableness of the Treasury Board forecast for a very long-term investment analysis.

The Commission Panel notes that under higher long-run exchange rate assumptions, the net benefits of the 2007 EPA decline. However, they remain positive under all scenarios except the Confer price scenario. The Commission Panel also notes the net benefits also become negative under the EIA price scenario when only the avoided costs of CE capacity and the deferral benefit of Revelstoke Unit 6 are included in the value of capacity calculation. That said, the Commission Panel places less weight on the Confer price forecast, which it considers represents a reasonable floor on long-term natural gas prices, than on the EIA forecast. In addition, while the Commission Panel considers exchange rates could persist at parity for some time, it places less weight on this scenario. Finally, the Commission Panel also considers it relevant that while there are some scenarios in which the net benefits of the contract become negative based on BC Hydro's avoided costs, these are more than outweighed by the many possible and probable scenarios with positive net benefits.

In summary, the Commission Panel considers the expected net benefits of the 2007 EPA will be lower than suggested by BC Hydro based on the lower Tier 2 Electricity volumes and also based on a more realistic assessment of capacity benefits. The actual value of capacity is uncertain based on the evidence. However, under most reasonable scenarios, net benefits are still positive. This assessment is based solely on BC Hydro's avoided cost benchmarks. The Commission Panel will consider non-financial factors and Alcan's opportunity costs below before making an overall determination with respect to the cost-effectiveness of the 2007 EPA.

The table below summarizes the range of net benefits under various assumptions and scenarios, including the assumptions and scenarios used by BC Hydro and further calculations made by the Commission Panel.

	Net Benefit ($2006 millions) @ 5.25% Discount Rate		
	Price Scenario		
	Confer	**EIA**	**High Gas**
Original BC Hydro Assumptions	43	115	336
Capacity Value Based Only on Rev 6 Deferral (Note 1)	-15	58	279
Revised Average Tier 2 Electricity (40 aMW) (Note 2)	69	121	226
Revised Capacity Value and Tier 2 Quantities (Note 3)	12	65	173
Exchange Rate Parity (Note 4)	20	90	312
BC Hydro Need for Capacity Sensitivity (Note 5)	33	105	323
Low Firm Capability of Kemano (730 aMW) (Note 5)	-44	36	369
Low Cost of New Supply (Note 5)	0	41	250
High Cost of New Supply (Note 5)	43	115	384

Notes:

1) Uses BC Hydro's original assumptions except the capacity benefit is based on cost of relying on the CE until 2013 and a one-year deferral of Revelstoke Unit 6 in 2017.
2) Uses BC Hydro's original assumptions except average Tier 2 Electricity is set at 40 aMW. No change in firm energy contribution from Tier 2 Electricity (approximately 29 aMW).
3) Combines Scenarios 1 and 2 above.
4) Sensitivities from Exhibit B1-9, BCOAPO 1.5.1.
5) Sensitivities from Exhibit B1-2-1, section 7.4. These sensitivities use BC Hydro's methodology for valuing capacity and assume total Tier 2 quantities of 65 aMW.

The Commission Panel agrees with IPPBC that BC Hydro must ensure consistency in its assumptions about transmission losses, CIFT, and Network Upgrade charges and should provide clear rationale for any differences across processes. However, the Commission Panel does not find this issue affects its determination of cost-effectiveness in this particular case.

6.4 Other Cost-effectiveness Considerations

Section 7.3.6 of the Report discusses the non-price factors that BC Hydro considers are relevant to the determination of cost-effectiveness. First BC Hydro suggests that several of the Policy Actions in the Province's 2007 Energy Plan "…reinforce the need for the additional dependable and schedulable capacity and energy to be provided by the 2007 EPA" (Exhibit B1-2-1, p. 7-20). Table 7-11 notes those Policy Actions that BC Hydro considers to make the 2007 EPA more attractive relative to the situation prior to the release of the 2007 Energy Plan. BC Hydro notes that the Modernization Project, which the 2007 EPA supports, is consistent with Policy Action 8 to develop an industrial energy efficiency program for B.C. that addresses the specific challenges faced by industries in B.C. BC Hydro also suggests the 2007 EPA will help it meet Policy Action 10 (as reflected in Special Direction 10) to ensure electricity self-sufficiency, including "insurance." BC Hydro suggests the 2007 EPA supports Policy Actions 19 through 21 that specify targets for GHG emissions and renewable energy production. Finally, BC Hydro notes that the 2007 EPA also supports Policy Action 22 by adding to BC Hydro's options to displace Burrard (Exhibit B1-2-1, p. 7-21).

When asked in BCUC 1.11.1 whether BC Hydro can assert that the power is from a green source, or that it complies with the clean/renewable requirements of Policy Action No. 21 of the 2007 Energy Plan, BC Hydro replied:

> "Policy Action No. 21 refers to the source of the electricity, and sets the requirement based on the energy source being "clean or renewable". BC Hydro understands that electricity produced at Kemano meets this criterion.
>
> Section 5.12 of the 2007 EPA does not restrict BC Hydro's ability to assert the electricity is generated from a clean or renewable resource.

> There are no conditions within the 2007 EPA under which BC Hydro would be required to make an additional payment"
>
> (Exhibit B1-8, BCUC 1.11.1).

Table 7-15 of Exhibit B1-2-1 (p. 7-31) provides a comparison of the 2007 EPA and a number of alternative resources according to some 16 different characteristics, including: Schedule and Timing Availability, Term, Capacity Reliability, Energy Reliability, Shaping/Scheduling/Coordination, Dispatchability, Safety, Financing Arrangements, Location, and Environmental Impacts. For each characteristic, BC Hydro concludes the 2007 EPA compares equally or favourably with each of the alternatives and none of the alternative sources compares favourably with the 2007 EPA on all 16 characteristics as a whole. Based on its analysis of these characteristics, BC Hydro concludes that the 2007 EPA: "(1) provides a package of products that has an aggregate value that cannot be obtained from any combination of alternative resources at lower cost; (2) compares well to all alternatives on characteristics relating to schedule and timing availability, term, capacity and energy reliability, scheduling and dispatchability, safety, financing arrangements, location and environmental impacts; and (3) serves the objective of the 2007 Energy Plan better than many other alternative resources" (Exhibit B1-2-1, p. 7-24).

BC Hydro submits it "… expected that this table [Table 7-15] might form the centrepiece of both the cross examination and analysis with respect to the 2007 EPA during the hearing….Contrary to BC Hydro's expectations, there were only two information requests that referred to Table 7-15 and it was not referenced in cross examination. No one attempted to compare the attributes of the alternative resources available to BC Hydro to the attributes of the 2007 EPA. A credible alternative to the 2007 EPA would need to be more cost-effective based on the analysis summarized in Table 7-15. … On the record of this proceeding, there is no conclusion available to the Commission other than that this agreement is cost-effective in the full extent of the meaning of that word" (BC Hydro Argument, para. 29-32).

BCSEA notes there was no cross-examination of BC Hydro's witnesses regarding Table 7-15 (BCSEA Argument, para. 28).

Commission Determination

As with other Commission decisions, the Commission Panel agrees with BC Hydro that non-price considerations are relevant to an overall determination of cost-effectiveness. The Commission Panel generally agrees with the range of characteristics selected by BC Hydro but notes some unnecessary redundancy in some characteristics. For example, the location and environmental impact characteristics are redundant with the "Alignment with the Energy Plan 2007" characteristic.

The Commission Panel also suggests the comparison could have been simplified by comparing the 2007 EPA to one or two equivalent portfolios, rather than individual resource options. The individual resource options are incomplete substitutes for the 2007 EPA and Table 7-15 does not really facilitate a conclusion with respect to the overall merits of the 2007 EPA.

The Commission Panel notes that the evaluation of the 2007 EPA in column 2 of Table 7-15 does not use the firm or non-firm descriptors it used for other resources, and finds this somewhat confusing.

Finally, the Commission Panel is concerned about some of the conclusions arrived at by BC Hydro in its analysis of non-price characteristics. Under section 5.12 Alcan retains title to all benefits arising from so-called Green Attributes. The Commission Panel does not understand how Alcan can retain the rights to green attributes while BC Hydro also claims some or all of those attributes to fulfill its own obligations. Even if such a case could be made with respect to Policy Action No. 21 (depending in part how the Province chooses to define that obligation), this is certainly less clear with respect to other environmental attributes such as GHG reduction obligations.

The Commission Panel notes these issues to provide assistance to BC Hydro in preparing future applications and filings. These criticisms notwithstanding, the Commission Panel finds Table 7-15 to be a useful summary of price and non-price characteristics of the 2007 EPA and finds the analysis further supports a determination that the 2007 EPA is cost-effective. The Commission Panel finds that the 2007 EPA provides a number of qualitative benefits. In particular BC Hydro acquires power from a fully developed, permitted and interconnected source, and avoids the risk of attrition that it faces with

greenfield IPPs. The Commission Panel notes Alcan's credit worthiness which reduces BC Hydro's counterparty risk. Finally, the Commission Panel agrees that the 2007 EPA reduces BC Hydro's exposure to market price and foreign currency volatility.

In summary, the Commission Panel concludes the 2007 EPA is cost-effective. The Commission Panel will now turn to the issue of Alcan's opportunity costs, which is relevant to its determination of whether the 2007 EPA is in the overall public interest.

6.5 Alcan's Opportunity Costs

Chapter 8 of the Report considers other elements of the public interest discussed in the Reasons for Decision to Order No. G-176-06 dated February 2, 2007 regarding LTEPA+. Section 8.1 of the Report includes a discussion of the effects of the Modernization Project on the evaluation of the 2007 EPA. This is dealt with in the following Section of this Decision. Section 8.2 of the Report deals with the concerns about RESA raised in the LTEPA+ proceeding, which BC Hydro notes is no longer relevant. Section 8.4 of the Report deals with the LTEPA Recall Notice. BC Hydro notes this is not an issue because the 2007 EPA reinstates all of the LTEPA volumes and renders the issue essentially moot.

Section 8.3 of the Report contains BC Hydro's assessment of Alcan's opportunity costs. Section 2 of this Decision discusses jurisdictional issues and the general relevance of Alcan's opportunity costs. This Section of the Decision reviews BC Hydro's actual assessment of Alcan's opportunity costs and the Commission Panel's determination with respect to the effect of opportunity costs on whether the 2007 EPA is in the overall public interest.

In its assessment, BC Hydro refers to the recent Supreme Court of B.C. Decision confirming Alcan's right to choose to whom it sells electricity from Kemano (Exhibit B1-2-1, p. 8-5). BC Hydro then refers to BCTC's recent "System Impact Study for Increasing Firm ATC from B.C. to Alberta and from B.C. Interior to the U.S." which is also provided as Appendix E of Exhibit B1-2-1. BC Hydro states:

> "While actual transmission capacity that may be available to Alcan cannot be known with certainty, the BCTC study indicates that Alcan does have options, including:
>
> - the opportunity now and in the future to access the Alberta market; and/or
> - obtaining Short-Term Firm Point to Point (STF PTP) transmission access for all months except December and January immediately (and all year if BC Hydro provided additional reliability must run capability), and Long-Term Firm Point to Point (LTF PTP) transmission access to the US beginning 2012.

In addition based on past practice, Alcan could continue current arrangements with Powerex until, in Alcan's assessment, conditions were appropriate to execute something different. Other opportunities within the Province include potential sales to FortisBC, which currently has a capacity deficit, and/or sales to industrial customers to displace consumption on the trailing step of Rate Schedule 1823" (Exhibit B1-2-1, pp. 8-5 to 8-6).

BC Hydro concludes that Alcan's right to sell to other parties is substantially firmer now compared to the uncertainties that existed during the LTEPA+ proceeding, and there is now additional evidence of Alcan's opportunities.

With respect to the specific market opportunities, BC Hydro suggests it "… cannot know or assess all market opportunities Alcan may have" (Exhibit B1-2-1, p. 8-6). BC Hydro cites the recent withdrawal of Tolko's offer to sell incremental electricity to BC Hydro from its Armstrong wood-waste cogeneration facility as "…a clear indicator that a seller's assessment of its opportunities may be broader or at least different from what BC Hydro may expect" (Exhibit B1-2-1, p. 8-6).

BC Hydro offers two indicators of Alcan's opportunity costs, namely the Mid-C Forward Market and prices in other utility acquisition processes in California and the Pacific Northwest. Table 8-1 (Exhibit B1-2-1, p. 8-7) summarizes BC Hydro's analysis of Alcan's net back price (i.e., net price from selling at Mid-C after all applicable charges for wheeling and losses are deducted) based on market forward prices of US$60 and US$65 per MW.h and using BC Hydro's assumed exchange rate of 0.885. BC Hydro calculates net back prices using both long-term firm and short-term firm point-to-point

wheeling charges. Table 8-1 suggests net back prices to Alcan of approximately $54 to $60 per MW.h, which BC Hydro suggests are not out of line with Tier 1 Electricity prices for the period through 2009 and Tier 2 Electricity prices through the entire term of the contract.

The net back price in Table 8-1 assumes a high capacity factor utilization of firm transmission capacity. The DoK asked BC Hydro to estimate the wheeling costs and losses for delivery of the actual specific quantity of Tier 1 Electricity and incremental scheduling capacity to the U.S. border and from the U.S border to U.S. load, including upgrade costs. In its response, BC Hydro stated "… it is too speculative to determine what Alcan's strategy to market its electricity would be were the 2007 EPA not accepted by the BCUC" (Exhibit B1-9, DoK 1.6.4). For example, if Alcan chose to sell Scheduling Capacity and Tier 1 Electricity at Mid-C, BC Hydro suggested it would likely look for a way to combine that power with other resources to make as efficient use of transmission as possible. However, BC Hydro estimated that if Alcan were to market its Incremental Scheduling Capacity and Tier 1 Electricity in the manner described in this information request, the requested values, based on the long-term electricity available from Alcan post-2017 and using LTFPTP transmission services, would be $33/MW.h to the U.S. Border and $13 within the U.S. These costs are calculated based on the assumption that Alcan would reserve the full 163 MW of transmission capacity on the BCTC and BPA systems, but only utilize the capacity to optimally schedule 33 aMW of Tier 1 Electricity (i.e. approximately 80 percent of the time the capacity would be unutilized). Given the costs, BC Hydro concluded that Alcan would be unlikely to market its incremental capacity to a U.S. load on this basis, unless it was marketing a premium capacity product such as dynamic scheduling. BC Hydro stated that it considered that FortisBC, markets within Alberta, and short-term firm sales were likely better opportunities for sales of capacity.

In response to the DoK, BC Hydro indicated it had "… not identified any specific buyers for the Coordination Services and Exchange Services provided by the 2007 EPA. However, the shaping capability of the Kemano reservoir is expected to become more valuable in the future as more renewable energy sources are developed" (Exhibit B1-9, DoK 1.6.2).

The BCUC requested that BC Hydro conduct a NPV analysis of Alcan's opportunity cost in comparison to the contract cost. BC Hydro stated it has not performed the analysis (Exhibit B1-9, BCUC 2.127.1) and referred to another information request in which it stated that "… the expense and effort associated with sophisticated modeling [of Alcan's opportunity cost] by BC Hydro was not considered warranted" (Exhibit B1-9, BCUC 2.124.3).

BC Hydro submits that "… while the opportunity cost issue ought not to be considered in the context of the 2007 EPA, in any event, the uncontradicted evidence is that BC Hydro is paying Alcan something which is considerably under BC Hydro's avoided cost (as discussed further in the avoided costs section of BC Hydro's argument). Thus, if Alcan's opportunity cost is indeed below BC Hydro's avoided cost, the price in the EPA is somewhere in between avoided cost and opportunity cost" (BC Hydro Argument, para. 37). BC Hydro goes on to argue:

> "… it is by no means obvious on the record that in fact Alcan's opportunity cost is below BC Hydro's avoided cost. Indeed, as the hearing wore on, the testimony that BC Hydro was required to give during cross-examination relating to Alcan's opportunity cost became increasingly worrisome. In a bi-lateral negotiation, a buyer would rarely wish to vocalize all of the lucrative alternatives it thought might be available to the seller. Normally each party to a commercial negotiation would minimize the significance of the alternatives available to the other party. Under oath, BC Hydro was required to take precisely the opposite tack during the course of this proceeding and advised the Commission and at the same time Alcan of all of the lucrative alternatives for Alcan that BC Hydro has been able to identify. These unfortunate disclosures make it even more important than it might otherwise be that the regulatory condition, which is the only obstacle to this transaction binding Alcan until 2034, be removed by January 31, 2008 because if it is not, the record of this proceeding gives Alcan many reasons to rethink whether in fact it obtained a good deal in the 2007 EPA. It would be most unfortunate if Alcan walked away from the 2007 EPA for that reason because the opportunity to purchase this power represents a significant saving for BC Hydro's ratepayers" (BC Hydro Argument, para. 38).

BC Hydro concludes:

> "If the Commission does conclude that it is appropriate to consider opportunity cost in this case, notwithstanding the many questions originally posed in this regard, the evidence is clear that:

- BC Hydro paid at least $115 million below its avoided cost;
- Therefore, if Alcan's opportunity cost is less than BC Hydro's avoided cost by more than $115 Million then the EPA is priced between the two; and
- If Alcan's opportunity cost has truly almost converged with BC Hydro's avoided cost, then the EPA may be priced below Alcan's opportunity cost.

In this event, Alcan would benefit if it could escape from its obligations under it" (BC Hydro Argument, para. 86).

BCOAPO and the DoK submitted argument specifically addressing BC Hydro's analysis of Alcan's opportunity costs. Despite BC Hydro's arguments that opportunity costs are unduly difficult and expensive to assess, BCOAPO argues that "… BC Hydro has, in fact, presented substantive evidence of Alcan's opportunity cost in this proceeding" (BCOAPO Argument, p. 11). Further, BCOAPO argues that BC Hydro "left some money on the table" when viewed from Alcan's opportunity cost perspective. BCOAPO agrees that Table 8-1 provides a reasonable estimate of Alcan's opportunity cost in the short term. However, BCOAPO argue that Table 8-2 somewhat overstates the value of Tier 1 Electricity. In particular, BCOAPO notes:

> "The lead up to this Table on page 8-8 of Exhibit B1-2-1 implies that Alcan's Tier 1 energy is comparable to asset-backed contracts based on coal and natural gas. As shown during BC Hydro's cross-examination of Dr. Shaffer, Alcan would have to buy energy from time to time in order to firm up its Tier 1 deliveries so as to be comparable to an asset-backed coal or natural gas contract (Transcript Volume 6, page 1110 line 17 through page 1113 line 11). The cost of that energy required to firm up Tier 1 deliveries would reduce Alcan's opportunity value and this reduction in value is not reflected in Table 8-2" (BCOAPO Argument, p. 13).

BCOAPO also notes that "… the EPA includes the full potential value of the scheduling capacity made available by Alcan in the capacity payments …, in spite of the fact…[BC Hydro] conceded that Alcan could not capture all of the value in the short term due to transmission constraints" (BCOAPO Argument, pp. 13-14).

Despite its concerns about BC Hydro's valuation of certain aspects of this EPA, BCOAPO submits that "… the amount of money BC Hydro left on the table is not reason enough to reject it provided concerns about regional socioeconomic impacts are adequately addressed in the end result" (BCOAPO Argument, p. 14).

The DoK argues BC Hydro again failed to consider Alcan's opportunity costs in any meaningful way (DoK Argument, para. 41). The DoK argues there is no competitive benchmark against which to measure the price to be paid under the 2007 EPA because there was no call targeted at existing industrial producers. The DoK submits that even if industrial producers could have bid into the F2006 Call, the F2006 Call was not directed at such producers and no such producers bid into the Call (DoK Argument, para. 47). In the absence of a competitive benchmark, the DoK asserts that "… Alcan's opportunity cost is the best and most accurate way to assess the cost-effectiveness of the contract" (DoK Argument, para. 48). Finally, the DoK argues BC Hydro's evidence on opportunity costs "… contained highly favourable transmission assumptions and used U.S. dollar conversion figures based on an 0.88 dollar. It also ignored the firming costs that Alcan would have to incur in order to offer the full compliment of Tier 1 Electricity to another party, the permitting requirements that would be necessary if Alcan sought to realize markets outside Canada (e.g. in the Pacific Northwest or California) and the potential risk of increases to its water rental rates if it embarked on such sales. Viewed as a whole, B.C. Hydro's evidence of Alcan's opportunity costs is speculative at best and in all likelihood exaggerates Alcan's ability to realize comparable returns from other sales" (DoK Argument, para. 49).

The DoK submits that BC Hydro's assertion that it paid "at least $115 million below its avoided cost" is simply an estimate of the value of the 2007 EPA based on a series of assumptions and that "…BC Hydro itself has provided very plausible alternative scenarios (exchange rate parity; EIA gas price forecast) in which its potential savings are drastically reduced to the point where they are marginal when measured against the relative largesse of the 2007 EPA" (DoK Argument, para. 57).

BC Hydro argues the response to BCUC 2.124.3 (Exhibit B1-9) "… makes clear that Hydro in fact did not do the modeling exercise with respect to opportunity costs that would be necessary to be done if opportunity cost was being treated in the same way that avoided cost is, for the purpose of assessing

the EPA (T9:1496). BC Hydro also argues that the lead-up to Table 8-2 "… does not suggest that Alcan's Tier 1 energy is, as BCOAPO would have it, comparable to an asset backed coal or natural gas contract. Rather, it simply says that Alcan's Tier 1 energy could compete successfully with bid prices relating to proposals from wind, natural gas, coal and hydro that range from the U.S. $66 to U.S. $112. Table 8-2 places the Tier 1 price being paid to Alcan at the bottom end of that range. There's nothing in Dr. Shaffer's testimony which would suggest that the Tier 1 price is outside the range" (T9:1510).

BC Hydro also argues that its evidence (T3:383-385) was clear that notwithstanding short-term transmission constraints, Alcan would be able to market its energy into Mid-C by using non-firm transmission and thereby achieve the benefit of seasonal shaping and it is therefore not surprising that BC Hydro considers Alcan could capture most of the shaping value (T9:1511-12).

BC Hydro notes that Alcan could buy energy low in low load hours and in low load months at a significantly lower price, and then sell that additional energy at a higher price in other hours. As a result, Alcan could sell more energy firm than Kemano in fact produces on an assured basis, and earn additional profits thereby on both its own energy and the energy bought in low load hours (T9:1514).

Commission Determination

The Commission Panel acknowledges uncertainty with respect to Alcan's opportunity cost. However, the Commission Panel notes that both assessments rely considerably on the same external market benchmarks. As discussed in Section 2 of this Decision, the most significant difference between the two, at least with respect to market-based sales, is the different impact and treatment of transmission constraints and costs on the seller and BC Hydro. The Commission Panel also acknowledges somewhat more uncertainty with respect to the opportunity costs of the vendor with respect to non-traded, illiquid and/or long-term products and services (e.g., Capacity, Equichange and Coordination Services), but notes these make up a relative smaller amount of the value of the contract than the energy products.

Alcan could also incur certain upgrade costs but the Commission Panel agrees these are speculative at this point.

The Commission Panel notes there is some uncertainty over the transmission charges associated with a low capacity factor product such as provided by Alcan. The Commission Panel notes that Table 8-2 represents a fairly optimistic view (i.e., low estimate) of transmission charges associated with marketing this product. However, the Commission Panel also agrees with BC Hydro that the charges estimated in DoK 1.6.1 represent an unrealistically high estimate of how the product might be marketed.
The Commission Panel agrees that it is important that the counterparty concur with the analysis of its opportunity cost, but the very fact of a negotiated contract suggests the contract already equals or exceeds the parties perceived opportunity costs. There is no evidence that Alcan's opportunity cost is greater than BC Hydro's avoided costs and the Commission Panel disagrees with BC Hydro that the evidence led in this proceeding suggests Alcan could benefit from being released from its obligation under the 2007 EPA.

These concerns and criticisms notwithstanding, the Commission Panel agrees the value of the 2007 EPA lies somewhere between BC Hydro's avoided costs and Alcan's opportunity cost, and given the finding of cost-effectiveness in Section 6.4 of this Decision, concludes that the 2007 EPA is in the public interest.

7.0 CONDITIONAL ACCEPTANCE

Introduction

As noted in Section 5 of this Decision, the 2007 EPA contemplates the possibility of the Commission accepting the 2007 EPA for filing with conditions. During both the oral phase of the hearing and in argument the issue of conditional acceptance was canvassed on a number of occasions.

7.1 Conditions Not Related to the Modernization Project

The CAW urges the Commission to "take a look at Section 15.1 –Assignment" to prevent the water resource being made available to the "highest bidder globally" (CAW Argument, p. 16).

IPPBC submits that "…[i]f the BCUC approves the 2007 EPA the IPPBC requests that it direct BC Hydro to fully explore the costs and benefits of an upgrade" (IPPBC Argument, p. 10). IPPBC clarified its submission to state that BC Hydro be directed by the Commission under section 23 of the UCA and not section 71.

The HHC make several suggestions in their Argument as to how the 2007 EPA can be improved, but do not go as far as submitting that the amendments be made as a condition of acceptance by the Commission. In Reply, Alcan observes that it is unclear from the argument presented by the HHC whether they support or oppose the 2007 EPA, since it consists of suggestions for improvements to the contract terms, whose basic thrust can be summed up as "…[m]aking sure that the EPA is as tight as possible and does not allow for a back door or for easy exit creates the most certainty for the public." Alcan submits that it does not believe the changes suggested by the HHC are appropriate or necessary and that the Commission's role in the section 71 filing review is to determine whether the 2007 EPA is in the public interest, and not making sure the 2007 EPA is as tight as possible (T9:1583-84).

In Reply BC Hydro addresses the HHC's comments on the conditions which would require approval of the contract and submits "…when you come to consider whether or not conditions are appropriate, it's absolutely necessary to consider Sections 2(1) through 2(3) of the EPA itself…", and points out that if either party concludes that a condition could have any degree of adverse effect on it – "…and that's really, with great respect, not a specially high threshold…" - it can simply decline to accept it, which means that the risk exists that "…Alcan, with the benefit of what it's heard in this proceeding or with the benefit of changing economic circumstances or its change of mind, can walk away from a commitment it's made, with no recourse available to anybody" (T9:1613).

7.2 Conditions Related to the Modernization Project

When asked why there is nothing in the 2007 EPA that either requires the Modernization Project to be built, or terminates the 2007 EPA if it's not built, BC Hydro testified: "Because as I said, that's not B.C. Hydro's role to incent modernization. Our role is to be there if there's an economic opportunity to secure the surplus" (T4:606).

Alcan testified as follows:

> MR. HUNTER: Q: Since acceptance of the EPA is a pre-condition to the modernization project, does Alcan have any objection to a term in the EPA that would terminate the EPA if the modernization project is not built? … What would be wrong with including a term as a condition of acceptance for filing, for example, that if the project isn't built, the EPA will terminate?
>
> MR. ARSENEAULT: A: Well, if the EPA is not accepted the way it is presented today … we will certainly have to regroup and see what we would do. To your specific question, if there is any management rights included in the EPA, I don't think we would agree with that.
>
> MR. HUNTER: Q: If there is any which? I'm sorry?
>
> MR. ARSENEAULT: A: Management rights, meaning in the contract we include whether or not we should or should not build a plant.
>
> MR. HUNTER: Q: I see. You want to keep that open, that option open, of not building.

MR. ARSENEAULT: A: No, we just don't want it in the contract.

(T6:1189-90)

BC Hydro submits that, unlike the LTEPA+ contract, the 2007 EPA is not linked in any way to Alcan's plans to undertake its Modernization Project. The Commission determined in its LTEPA+ Decision that such incentives could be relevant to the public interest evaluation, but here BC Hydro acquires the power with or without the Modernization Project. While Alcan has said that the 2007 EPA is an essential prerequisite to construction of the Modernization Project, BC Hydro has not relied on that fact to demonstrate cost-effectiveness. Accordingly, BC Hydro does not believe that the Modernization Project is relevant in the context of assessing the 2007 EPA in this regard (BC Hydro Argument, para. 33). BC Hydro goes on to observe:

> "It is quite possible that the misconceived approach adopted by the District of Kitimat results from the deep animus that appears to have developed between its council and staff on the one hand and Alcan on the other. This historical lack of trust was also evident during the cross-examination conducted by Mr. Belmont on behalf of the union. While BC Hydro accepts that lack of trust may reflect the genuine beliefs of both the union and the municipality and is regrettable, it should not colour an assessment of whether the 2007 EPA is in the public interest" (BC Hydro Argument, para. 33).

BCOAPO quotes BC Hydro's Argument that it is "…anxious to discourage the Commission from accepting the temptation to reject the 2007 EPA but indicate that it would become acceptable to the Commission if it contained a condition that BC Hydro's obligation to buy would cease if Alcan does not proceed with the modernization project." BCOAPO submits that "…[t]o cut to the proverbial chase, that is precisely what our clients are urging the Commission to Order" (BCOAPO Argument, p. 1).

BCOAPO submits that its clients are community-based organizations with "…voices for the betterment of the lives of the people they represent, in terms of social and economic well being…", who consider it an important matter of principle to stand behind the region most affected by the proposed EPA – the District of Kitimat and the workforce employed in the Alcan smelter and consider that a proper

weighing of the general interests of ratepayers and the specific local interests of the community "…tips the balance in favour of doing what they can to assure the continued economic viability of Kitimat, while seeking to retain the benefits of this EPA, to the extent that these two objectives may be reconcilable" (BCOAPO Argument, p. 15). Accordingly, BCOAPO submits that the improvements [of the 2007 EPA over LTEPA+] are potentially overshadowed by the possibility that the 2007 EPA could produce a "catastrophic impact" on the local economy if it incents Alcan to use the output of the Kemano facility entirely for electricity sales. BCOAPO submits that Alcan's lack of clear commitment to follow through with its proclaimed intention to modernize the smelter creates risk, and uncertainties which could be significantly mitigated if the Commission were to "…fashion a decision which opens the door to approval of the Agreement [2007 EPA] if it is accompanied by that obligation" (BCOAPO Argument, pp. 15-17).

BCOAPO addresses the economic impact on BC Hydro's ratepayers if Alcan rejects a smelter modernization condition attaching to the 2007 EPA, and submits that "…if the modernization does not proceed, then the Tier 2 floor price is removed for all Alcan's energy sales in addition to the 140 MW.h of LTEPA energy. Based on the opportunity cost evidence provided in this proceeding, this would not appear to be a significant risk." Based on BC Hydro's estimate of the benefit of the 2007 EPA of approximately $150 million, "…LTEPA comes back into effect and BC Hydro's ratepayers would still receive the majority of that $150 million dollar benefit attributed to the EPA" (BCOAPO Argument, pp. 16-17).

Mr. McLaren, himself a pensioner from Kitimat, had a different view of the 2007 EPA and Alcan's Modernization Project and submits:

> "I feel that asking you to reject this application outright would not solve any of those concerns either, and would actually jeopardize the only hope for the future that Kitimat has left, namely Alcan's Modernization Project ... "I realize that there is nothing within the Panel's jurisdiction that they can do to add 100% certainty to this project. All I feel they can do in a positive fashion is help the project on its way by approving this 2007 EPA. A rejection of this 2007 EPA by this Panel would, I feel, cause a severe re-evaluation of the modernization project by Alcan and also cast a serious uncertainty over Alcan's long-term future in the aluminum smelting industry in British Columbia, and as such would not be in the public interest" (McLaren Argument, pp. 12, 14).

The CAW urges the Commission to attach a number of conditions to its approval, and submits that for the 2007 EPA to be acceptable it must contain a project agreement which obliges Alcan to guarantee Modernization Project completion by 2012, ensures the new pre-bake pots are started up and ramped up to full production, and establishes operational benchmarks for the life of the new smelter. The CAW submits that sections 5.14 and 5.15 of the 2007 EPA be "removed, for obvious reasons". Alternatively it suggests that should Alcan not proceed with the Modernization Project "…they would only get the industrial rate of $37 / megawatt hour" (CAW Argument, pp. 14, 16).

The DoK advocates that the Commission reject the 2007 EPA but observes that:

> "If Alcan were prepared to make the 2007 EPA conditional upon the construction of the modernized plant so that if the decision was made not to modernize the 2007 EPA would come to an end, the District and the community could have some comfort that the power sales would in fact as well as rhetoric be surplus to the needs of a modernized smelter" (DoK Argument, para. 60).

All Intervenors had an opportunity to comment on the Arguments of other Intervenors. The BCSEA submits that BCOAPO's assertion that the 2007 EPA "…could produce a catastrophic impact on the Kitimat region's economy if it incents Alcan to use the output of the Kemano facility entirely for electricity sales…" is made without reference to any evidence, and that BCOAPO makes no attempt to show how approval of the 2007 EPA would lead to these catastrophic outcomes. The BCSEA continues that BCOAPO's call for the Commission to cancel the 2007 EPA unless Alcan legally commits itself to complete the Modernization Project, fails to consider the consequences for the Modernization Project and the economy of the Kitimat region in the event Alcan were to decline to make such a legal commitment, noting that Alcan has said that the filing of the 2007 EPA is a prerequisite for moving forward with the Modernization Project. BCSEA states: "Ironically, nothing is more likely to "incent" Alcan to abandon the Modernization Project and to "use the output of the Kemano facility entirely for electricity sales" than cancellation of the 2007 EPA" (BCSEA Response Argument, para. 21-23).

BCSEA addresses the CAW's submission that the Commission should make a "project agreement" a condition to be part of the 2007 EPA and makes the legal point that the Commission cannot impose on Alcan and BC Hydro a project agreement or even a specific condition such as completion of the Modernization Project that is not agreed to by both Alcan and BC Hydro. If the Commission did determine that the 2007 EPA would be approved but only if conditions regarding the smelter were added, then it would be Alcan's legal right to refuse to accept the conditions, causing the 2007 EPA to be cancelled. The BCSEA submits that "…[b]y saying that the 2007 EPA is not acceptable without terms and conditions regarding the Modernization Project, etc., the CAW is effectively giving Alcan the opportunity to back out of the 2007 EPA if Alcan so chooses" (BCSEA Response Argument, para. 35-36).

In Reply BC Hydro addresses BCOAPO's economic analysis of Alcan's rejection of a conditioned approval of the 2007 EPA and points out that all the benefits that are associated with the 2007 EPA are "…incremental to what would obtain in its absence, i.e. with the continuation of the LTEPA and then expiry of the arrangement with Alcan at the end of the LTEPA term…" and submits that BCOAPO's analysis "…completely misconstrues the nature of the net present value calculation. The net present value calculation is identifying benefits over and above the benefits received under LTEPA" (T9:1554).

In Reply BC Hydro submits that the DoK's argument reiterates its opening position and demonstrates "…very little regard to the evidence that was actually adduced during the course of the oral hearing…" and cites as an example paragraph 19 of DoK's argument "…whether it is in the public interest for BC Hydro to sign a long-term contract with Alcan, which has the effect of diverting power from Kemano to the provincial grid at the almost certain expense of the Kitimat smelter…" and concludes the DoK continues to assert that the evidence demonstrates it will almost certainly be at the expense of the Kitimat smelter if B.C. Hydro is permitted to acquire this power. BC Hydro submits that "…[w]ith the exception of the DOK panel, every bit of evidence in this proceeding is completely to the contrary of that assertion…" and notes that the Alcan executives and managers charged with the responsibility for the Modernization Project were pellucidly clear that the 2007 EPA is a precondition to the project, and that its rejection by the Commission would be "…so challenging as to render uncertain as to whether the project could proceed in its absence" (T9:1520-21).

In Reply Alcan addresses the DoK's submission that, in the absence of a commitment to build the modernization plant if the 2007 EPA is accepted, it is reasonable to conclude that the Modernization Project is a "mirage" Alcan is using to support the 2007 EPA that would actually make the modernization less likely, and submits that the "DoK's assertion is absurd", contending that the evidence does not support this conclusion and that Alcan has "…every intention to proceed with the modernization project. A publicly-traded company like Alcan does not announce a $2 billion project lightly, certainly not as a mirage to disguise another intent." Alcan submits that the approval of the 2007 EPA will assist it in fulfilling the intention to proceed with the Modernization Project, by satisfying a necessary condition to proceed. Alcan submits that it has conditional Board approval and has no reason to expect that final Board approval would not be given (T9:1574).

In Reply Alcan submits: "The DOK has, in fact, done everything it can to frustrate the realization of the modernization project. If they want the modernization project to proceed, then they need only work with Alcan to let it happen. Whether the concern is jobs or the fate of the modernization projects (sic), those issues are beyond the Commission's jurisdiction because there is no regulated service or public utility involved in Alcan's decisions in those areas" (T9:1565).

In Reply Alcan submits: "[The CAW's concerns] have nothing to do with the Commission's mandate under its review of the 2007 EPA. The modernization project has nothing to do with the value of the 2007 EPA to its ratepayers or to its cost-effectiveness, nor does the ownership of Alcan" (T9:1582-83).

In Reply BC Hydro states that the difficulty with the CAW's position is that Alcan has indicated that it will not enter into a project agreement, nor is it obliged to accept the conditions to the 2007 EPA which the union proposes, and submits that the concerns of the union for its membership and its palpable desire to attain certainty with respect to the future prospects for the aluminum industry in the Kitimat region "…can't justify taking the kind of risks with ratepayer interests that are being advocated in the union submission" (T9:1559).

Commission Determination

The Commission Panel rejects the CAW's submission that it "take a look" at the assignment provision of the 2007 EPA, and finds that the provision is a standard one designed to protect BC Hydro and its ratepayers and requires no amendment.

The Commission Panel finds that the CAW's submission that the Commission should impose a condition that the price Alcan receive for its power be reduced to $37/MW.h if the Modernization Project does not proceed by a certain date, is not supported by any evidence and would almost certainly cause Alcan to terminate the 2007 EPA which would not be in the interests of BC Hydro's ratepayers.

So far as concerns the CAW's submission that advocated a project agreement between Alcan and BC Hydro which would impose guarantees and obligations on Alcan, the Commission Panel is not persuaded that it possesses such authority under the UCA or, if it did, that the exercise of such authority would be in the public interest. The Commission Panel finds the testimony of Alcan's witnesses quoted above regarding Alcan's aversion to its "management rights" being prescribed in the 2007 EPA to have been forthright and to have considerable merit.

The Commission Panel agrees with BC Hydro's submission that the DoK has ignored the evidence of both BC Hydro and Alcan in this proceeding and concludes that the DoK's fundamental tenet that a long-term contract between B.C. Hydro and Alcan will have the effect of diverting power from Kemano to the provincial grid at the almost certain expense of the Kitimat smelter is not justified by the evidence.

The Commission Panel has considered BCOAPO's submission that it should impose a condition that the 2007 EPA terminate if the Modernization Project does not proceed by a certain date. The Commission Panel notes that BCOAPO's submission that BC Hydro's ratepayers should be indifferent to Alcan's rejecting the 2007 EPA was based on an incorrect economic evaluation. It is clear to the Commission Panel that the decision to proceed with the Modernization Project will ultimately, and can only, be made by the Board of Directors of Rio Tinto. It is also clear that no party is opposed to the Modernization Project, that the 2007 EPA has been drafted on the basis that the Modernization Project will proceed,

and that its execution and regulatory acceptance is an internal condition precedent to Alcan seeking final Board approval of the Modernization Project.

The Commission Panel concludes that the decision as to whether or not to proceed with the Modernization Project rests with the Board of Directors of Rio Tinto. The evidence of Alcan suggests the Modernization Project is more likely to be completed with acceptance of the 2007 EPA than any of the alternatives proposed by Intervenors. In these circumstances, the Commission cannot conclude that the 2007 EPA is either at the expense of, or to the benefit of, the Kitimat smelter. For the same reason, the Commission Panel cannot conclude that acceptance of the 2007 EPA has probable economic effects on Kitimat or the surrounding communities.

Accordingly, the Commission Panel finds that BCOAPO's submission that it should impose a condition that the 2007 EPA terminate if the Modernization Project does not proceed is not in the public interest and rejects it.

8.0 RELATED ISSUES – PHASE II REASONS

This Section of the Decision provides the reasons for dismissal of the CSTC Phase II reconsideration motion of the Scoping Order (Appendix C). The references to submissions in this Section are references to the submissions filed in the Phase II process.

The CSTC's asserts that its members hold aboriginal title and rights over an area affected by the reservoir operations of Alcan, including the Nechako River downstream of the Kinney Dam and the northern portion of the Nechako reservoir (CSTC Submission, para. 9(a)). The CSTC further asserts that operations of the Nechako reservoir and the use and diversion of Nechako waters for power production at the Kemano Project have significant adverse effects on the aboriginal rights and title of the CSTC (CSTC Submission, para. 9(b)). Moreover, the CSTC asserts that the CSTC Bands have never been consulted or accommodated for this infringement (CSTC Submission, para. 9(f)). For the purpose of the principal question in these Phase II Reasons, the Commission Panel assumes the assertions noted in this paragraph are correct.

In the CSTC's view, acceptance of the 2007 EPA will result in a change to the purpose of the Kemano Powerhouse, that is, the use of the generation will change. Further, the Kemano Powerhouse is the cause of the diversion, which is in turn the cause of the infringement (CSTC Submission, para. A3).

In Alcan and BC Hydro's view, there are no new impacts arising from the 2007 EPA, so nothing changes as a result of acceptance of the 2007 EPA. In this regard, Alcan and BC Hydro rely on the decision of the Commission Panel issued by Letter No. L-95-07 dated November 29, 2007.

The Commission Panel accepted a single ground for Phase II of the CSTC reconsideration motion, which was correctly identified by both BCH and Alcan (T5:695). The single ground was stated by the CSTC in the Phase I motion as follows:

> "The determination of the Commission is an error of law going to jurisdiction (absent consent from all other affected First Nations)" (Exhibit C21-2).

The question for determination in this Phase II of the reconsideration motion of the CSTC can be restated, as follows:

> Assuming there has been a historical, continuing infringement of aboriginal title and rights and assuming there has been no consultation or accommodation with CSTC on either the historical, continuing infringement or the 2007 EPA, would it be a jurisdictional error for the Commission to accept the 2007 EPA?

The effect of framing the question for determination this way is to give little or no weight to the submissions of BC Hydro in section F of its submission, that is, the Commission did not have before it the facts that would trigger an obligation to consider the adequacy of consultation and does not have them before it now. The important facts that give rise to the jurisdictional ground for this Phase II reconsideration are assumed in the question. Although important to the disposition of this Phase II reconsideration motion, the procedural considerations, including the BC Hydro submissions in section F, are addressed as a separate issue.

Framing the question for determination in this manner also brings into focus the Commission Panel findings in Letter No. L-95-07 (Appendix D) and the duty to consult on the 2007 EPA. In Letter No. L-95-07, the Commission concluded, inter alia, as a matter of fact that:

(a) the 2007 EPA will have no impact on the volume, timing or source of water flows into the Nechako River;

(b) the 2007 EPA will not change the volume of water to be released into the Kemano River; and

(c) the 2007 EPA may cause reservoir elevations to vary approximately one or two inches which will be an imperceptible change in the water levels of the Nechako Reservoir. This change to the reservoir levels will not affect water flows other than the timing of releases to the Kemano River.

In the CSTC's view the infringement to downstream First Nations rights and title occurs directly from the sale of power which is at the "heart of this agreement" and no impacts need to arise from the 2007 EPA because the infringement is the existing facility. The CSTC further submits that it does not matter that the infringement has been previously approved under other permits or agreements (CSTC Submission, para. A3).

The CSTC submits that "approval" would constitute an important decision on the part of the Crown in respect of the use of resources (CSTC Submission, para. A5). The CSTC further submits that the 2007 EPA will also constitute a significant change in use of the resource. At that point, BC Hydro and Alcan disagree. BC Hydro says that this fundamental premise of the CSTC application is incorrect – a section 71 filing does not involve a Crown decision or approval (BC Hydro Submission, section E). Moreover, they say the Commission can accept the 2007 EPA even though the alleged infringement is the existing facility, because the 2007 EPA does not change the use of the existing facility – optimization of power generation (BC Hydro Submission, section G).

BC Hydro submits:

> "…there is no nexus between (i) Alcan's existing licenses, permits and authorizations and (ii) BC Hydro's requirement to file the 2007 EPA with the Commission that would enable (much less require) the Commission to attempt to look at the "broader impacts" of the existing Nechako River and the Kenney Dam (facilities which have been in place since the 1950's) in the context of the current proceeding" (BC Hydro Submission, section G).

The CSTC quotes the Supreme Court of Canada in *Haida Nation v. British Columbia (Minister of Forests),* [2004] 3 S.C.R. for the proposition that the Crown has a duty to consult with aboriginal people when it makes decisions, sets policy or contemplates conduct that might adversely affect asserted aboriginal interests:

> "But when precisely does a duty to consult arise? The foundation of the duty in the Crown's honour and the goal of reconciliation suggest that the duty arises when the Crown has knowledge, real or constructive, of the potential existence of the Aboriginal right or title and contemplates conduct that might adversely affect it…" (CSTC Submission, para. A15; *Haida*, para. 35)

BC Hydro submits:

> "No "conduct" by the BCUC is required to render the 2007 EPA enforceable --- it is enforceable, as a commercial contract, on its own terms. In the absence of any requisite Crown conduct from the BCUC, the CSTC's submissions must fail" (BC Hydro Submission, section E).

The Commission Panel disagrees with BC Hydro and agrees with the CSTC that acceptance of an energy supply contract pursuant to section 71 could be within the purview of the broad language of "contemplates conduct" used in the *Haida* decision. However, *Haida* goes further to state: "contemplates conduct that might adversely affect it…" In the instant case, if new physical impacts resulted from the 2007 EPA, acceptance of the 2007 EPA might be a jurisdictional error. But, as Alcan submits, there must be an action contemplated by the Crown that might adversely affect an aboriginal right and title (Alcan Submission, para. 5.6). The existing infringement with adverse effects is not enough, further conduct with adverse effects is required to trigger a duty to consult on the 2007 EPA.

The CSTC submits that the definition of impacts in the Scoping Order, and in the Commission's decision making in the proceeding must be broadened. The CSTC further submits that "…it is not the decision that infringes, but rather *the activity to which the decision relates* which infringes and thus must be subject to justification by the Crown…" (CSTC Submission, para. B1, emphasis in original). The CSTC submits that "…the focus should not be on the impacts of the EPA itself, but rather on the infringements resulting from the water diversion which is the subject of the EPA" (CSTC Submission, para. B2). In this regard, the CSTC refers to four cases, including *Gitxsan Houses v. British Columbia (Minister of Forests),* (2002), 10 B.C.L.R. (4th) 126 (S.C.) *and Haida* (CSTC Submission, para. B4).

BC Hydro submits: "[The *Gitxsan* case] cannot be read to suggest that the Commission should or could look at the historical impacts which are (now) the focus of the CSTC's concerns. The *Gitxsan Houses* case dealt with a change in control of the very same licenses that were the source of the alleged infringement" (BC Hydro Submission, section H, emphasis in original). BC Hydro further submits that the Court in *Gitxsan* found, as a fact, that the transfer of the forest licenses at issue in the proceeding

would not be neutral in the sense of having no impact on the Aboriginal groups (BC Hydro Submission, section H).

The Commission Panel agrees with the CSTC that the definition of impacts used in Letter No. L-95-07 is narrow, and is narrower than has been used in the recent case law referred to by the CSTC. The CSTC submits the proper meaning of impacts should not be limited to new, physical impacts arising from the decision itself (CSTC Reply, para. B9). The CSTC submits that the case law is referred to for the proposition that "impacts" arises not in the decision itself, but rather from the view of the underlying infringement (CSTC Reply, para. B10). However, the Courts in both *Haida* and *Gitxsan* required more than just an underlying infringement. In *Haida*, "adverse affects" were required and in *Gitxsan* "…the change in control was not neutral from a practical point of view." The Commission Panel does not accept the proposition that an underlying infringement is in and of itself a sufficient basis to accept the CSTC ground of a jurisdictional error. However, just as the underlying infringement is not determinative of the principal question; the absence of new, physical impacts is also not determinative of the principal question. Both propositions would be too simplistic.

Acceptance of the 2007 EPA must have no "adverse effects" and must be "neutral from a practical point of view." In this regard, the Commission Panel agrees with the following BC Hydro submissions:

> "There is no request before the Commission (nor could there be) for approval or consent to transferring or changing control regarding the Alcan licenses, permits and authorizations which enabled it to construct and operate the Nechako Reservoir in the Kenney Dam" (BC Hydro Submission, section H).
>
> "There is no evidence (or even suggestion) that, in the absence of the 2007 EPA, Alcan would stop diverting water and/or the Nechako reservoir (the source of the alleged infringement) would go away. In fact, the uncontradicted evidence before the Commission is to exactly the opposite effect. Alcan has sold surplus power to BC Hydro for its predecessor since 1961. Alcan's evidence was clear that with or without the 2007 EPA it will continue to sell surplus within the confines of its release commitments on the Nechako River. There is no "change of objective" (BC Hydro Submission, section H).

There may be steps contemplated by the Crown that have no new impacts that would nevertheless trigger the duty to consult because of a historical, continuing infringement. However, a section 71 review does not approve, transfer or change control of licenses or authorization and therefore where there are no new physical impacts acceptance of a section 71 filing would not be a jurisdictional error. That is, it is the combination of no new physical impacts together with the limited scope of a section 71 review that answers the principal question - there is no jurisdictional error in this Decision. Alcan states: "The Crown's fiduciary duty arises in specific situations, in particular, when the Crown assumes discretionary control over specific Aboriginal interests" (Alcan Submission, para. 5.3). The decision to accept or declare unenforceable the 2007 EPA under section 71 of the Act does not affect underlying water resources or any CSTC aboriginal interests there may be in that resource (Alcan Submission, para. 5.5).

The CSTC submits:

> "The 2007 EPA will also constitute a significant change in use (from power produced for aluminum smelting purposes to power for general provincial consumption) which, if approved by the BCUC, will amount to approval by the Crown of that change in use – without consultation" (CSTC Submission, para. A6).

The 2007 EPA may change the use of power in the sense suggested by the CSTC. However, such change in the use of the power could be effected by Alcan without the 2007 EPA and by means that are beyond the authority of the Commission. Nevertheless, the important question is whether or not there is a change in water flows, not whether or not there is a change in use of power. And, as found by the Commission in Letter No. L-95-07, water flows will not change.

Then in Reply, the CSTC states: "The question is not whether the 'decision' raises a duty of consultation, but whether the failure of the duty of consultation to have been met is *relevant* to the decision" (CSTC Reply, para. B6, emphasis in original). Again, assuming a failure of the duty of consultation for the historical, continuing infringement and no consultation on the 2007 EPA, the Commission Panel concludes that acceptance of the 2007 EPA is not a jurisdictional error because a duty to consult does not arise by acceptance of the 2007 EPA and because a failure of the duty of

consultation on the historical, continuing infringement cannot be relevant to acceptance of the 2007 EPA where there are no new physical impacts.

First Nations were entitled to be active participants in this proceeding. In the Revelstoke Unit 5 Decision, the Commission, at page 40, said:

> "First Nations may be active participants in Commission processes; however, it is not necessary for the Commission to consider whether or not the duly of the Crown to consult, and if necessary, accommodate has been met."

First Nations issues are also relevant to this proceeding, and for that reason the evidence of the HHC has been admitted. The CSTC submits:

> "In Order to uphold the breadth of the Scoping Order under s. 71, it would be necessary to find that these impacts on aboriginal rights and title, and the constitutional legal duty to respect them, are not 'relevant to the public interest'. This would, in our respectful submission, be jurisdictional error" (CSTC Submission, para. A10).

The CSTC was given an opportunity in accordance with Order No. G-120-07 establishing the Regulatory Timetable to submit evidence within the scope of the Scoping Order on First Nations issues that may have been within the Commission's jurisdiction to consider as "any other factor that the commission considers relevant to the public interest" under section 71(2)(e), and did not do so. In the absence of such evidence, it cannot be a jurisdictional error for the Commission not to have considered the concerns of the CSTC that are suggested by this submission of the CSTC (also, CSTC Reply, para. A3).

Evidence regarding the duty to consult for the historical, continuing infringement is not relevant because there is no obligation on the Commission to consider the adequacy of consultation regarding the historical, continuing infringement. Moreover, the 2007 EPA does not give rise to a duty to consult because of the factual determinations set forth in Letter No. L-95-07. The Commission Panel does not find the jurisdictional question as framed by the CSTC of assistance to the determination necessary for

disposition of the Phase II reconsideration motion (CSTC Reply, para. A3). In the circumstances of this review, evidence regarding consultation with respect to the historical, continuing infringement can reasonably be expected to be of no assistance for the same reasons there is no jurisdictional error, that is, the limited scope of the section 71 review, and there are no new physical impacts.

Now turning to the procedural submissions. The Commission Panel accepts the submissions of BC Hydro that there has been adequate notice of this proceeding (BC Hydro Submission, section F). The Commission Panel also accepts the submissions of BC Hydro that the CSTC failed to raise in a timely way the issue of the jurisdictional error in the Scoping Order. As noted above, the CSTC also failed to file in a timely way any evidence within the scope of the Scoping Order. The Commission Panel did have an obligation to proceed expeditiously not just so as to render a timely decision, but also in fairness to the participants in the proceeding (T3:270). As BC Hydro states: "That was too late then and it is too late now" (BC Hydro Submission, section F). And as Alcan states: "The CSTC could have reasonably raised its objection at an earlier time but failed to do so" (Alcan Submission, para. 6.21).

By letter dated October 29, 2007 (Exhibit C21-1), the CSTC requested Intervenor status and indicated conditional support for the coldwater release proposal, which seemed to be the interest of the CSTC in the proceeding. The coldwater release proposal and the conditions for support are beyond the scope of this Decision. By letter dated October 30, 2007 (Exhibit A-22), the Commission granted Intervenor status to the CSTC.

The Commission's customary practice is to accept late interventions, and usually does so without providing an opportunity for participants to comment. Given the number of participants in a Commission proceeding, an orderly proceeding requires all Intervenors, including late Intervenors, to be respectful of, and comply with, the established Regulatory Timetable. Despite the comments provided to the CSTC in the letter accepting their intervention of October 30, 2007 (Exhibit A-22), the CSTC complains that the Commission did not provide a two week adjournment, and that First Nations have been given no meaningful opportunity to assess the impacts (CSTC Submission, para. B24). As BC Hydro submits, the Commission's obligations of fairness to all parties, not just the CSTC, dictated

denial of the request for the adjournment. The Commission Panel does find the following NEB comments *In the Matter of Terasen Pipelines (Trans Mountain) Inc.* to be instructive:

> "The Board is of the view that parties to a regulatory proceeding, including First Nations, are under an obligation to raise issues in a timely way in order to allow the applicant to respond. Furthermore, although the SFN [sc Simpcw First Nation] has a right to expect procedural fairness, so do other parties. As such, the Board has to weigh the lateness of the submission against the rights of other parties and, in particular, the right of the applicant to have its application heard in a timely manner.
>
> When these two considerations are compounded by the fact that argument by counsel for the SFN in both the Motion and on the application contain allegations which are unsupported by evidence and thus do not discharge the burden of proof, it is clear to the Board that the Motion must be dismissed" (*In the Matter of Terasen Pipelines (Trans Mountain) Inc*., Appendix II, Hearing Order OH-1-2006, p. 17).

Alcan submits that the CSTC argument is that the Commission had an independent duty to consult or an independent supervisory duty to assess the adequacy of Crown consultation, regardless of the submissions that were made at the time the Scoping Order was made (Alcan Submission, para. 2.8). Both Alcan and BC Hydro submit that the Commission does not have an independent duty. The Commission Panel agrees with Alcan and BC Hydro that the Commission as a quasi-judicial body does not have an independent duty to consult. Therefore, the Commission Panel did not err in law when it made determinations in the Scoping Order based on the circumstances that existed at the time.

For the reasons related to the principal question and the procedural issues, the CSTC reconsideration motion is dismissed.

9.0 CONCLUSION

The Commission accepts the approach and objectives of BC Hydro to the bilateral negotiations with Alcan. The objectives were to obtain the best possible deal for BC Hydro and its ratepayers and to ensure the concerns raised by the Commission in the LTEPA+ Decision were dealt with.

The Commission accepts the general conclusion, if not the specific results, of the cost-effectiveness analysis of BC Hydro; that is, the 2007 EPA is cost-effective, and is in the public interest. The Commission has concerns regarding BC Hydro's treatment of transmission costs in estimating its avoided costs, its approach to estimating capacity benefits arising from the 2007 EPA, its estimate of average energy production at Kemano, its weighting of different price scenarios, and its justification and analysis of exchange rates. Alternative assumptions have the potential to reduce the net benefits of the 2007 EPA. However, the Commission concludes the net benefits to ratepayers, calculated by comparing the cost of the 2007 EPA to other resource alternatives, are still positive under most reasonable scenarios, and likely range from approximately $65 million to $120 million under the EIA gas price forecast.

The Commission concludes that the opportunity costs of the seller are both within its jurisdiction to consider and are particularly relevant to the determination of the public interest where a contract is reached through bilateral negotiations rather than competitive processes, such as the 2007 EPA. The Commission finds the value of the 2007 EPA lies between BC Hydro's expected avoided costs and Alcan's opportunity costs.

Some Intervenors, including the CAW, BCOAPO and the DoK, are of the view that the 2007 EPA should not be accepted without further assurance, if not a commitment, that Alcan will proceed with the Modernization Project. The Commission concludes that the decision as to whether or not to proceed with the Modernization Project rests with the Board of Directors of Rio Tinto. The evidence of Alcan suggests the Modernization Project is more likely to be completed with acceptance of the 2007 EPA than any of the alternatives proposed by Intervenors. In these circumstances, the Commission cannot

conclude that the 2007 EPA is either at the expense of, or to the benefit of, the Modernization Project. For the same reason, the Commission Panel cannot conclude that acceptance of the 2007 EPA has probable economic effects on Kitimat or the surrounding communities. The Commission concludes that it should accept the 2007 EPA because it is cost-effective and, while the Modernization Project is in the public interest, the Commission finds no reasonable alternative to acceptance of the 2007 EPA that would increase the probability that Alcan will proceed with the Modernization Project.

DATED at the City of Vancouver, in the Province of British Columbia, this 29th day of January 2008.

Original signed by:

ROBERT H. HOBBS
CHAIR

Original signed by:

NADINE F. NICHOLLS
COMMISSIONER

Original signed by:

A.J. PULLMAN
COMMISSIONER

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BRITISH COLUMBIA UTILITIES COMMISSION

ORDER NUMBER E-3-08

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IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

A Filing by British Columbia Hydro and Power Authority
of the 2007 Electricity Purchase Agreement with Alcan Inc.
as an Energy Supply Contract Pursuant to Section 71

BEFORE: R.H. Hobbs, Chair
A.J. Pullman, Commissioner
N.F. Nicholls, Commissioner

January 29, 2008

O R D E R

WHEREAS:

A. On September 5, 2007, British Columbia Hydro and Power Authority ("BC Hydro") filed with the British Columbia Utilities Commission (the "Commission") pursuant to section 71 of the Utilities Commission Act (the "Act") the 2007 Electricity Purchase Agreement between Alcan Inc. ("Alcan") and BC Hydro dated August 13, 2007, and by a letter dated October 24, 2007, Alcan and BC Hydro amended the agreement (as amended, the "2007 EPA"); and

B. Under the 2007 EPA, Alcan will provide energy, capacity, shaping, scheduling and coordination services to BC Hydro; and

C. The term of the 2007 EPA is from October 1, 2007 to December 31, 2034. If the Commission does not accept the contract for filing by January 31, 2008, the parties' obligations to each other under the 2007 EPA will cease as of March 31, 2008; and

D. BC Hydro also filed the 2007 EPA pursuant to section 61(1) of the Act insofar as it provides for BC Hydro to deliver energy to Alcan as part of coordination services arrangements; and

E. BC Hydro held a public workshop on September 12, 2007 and, on September 21, 2007, submitted a Report (the "Report") that describes the 2007 EPA; and

F. On September 21, 2007, Alcan submitted the Alcan Report in support of the 2007 EPA and the Report; and

G. Pursuant to Order No. G-100-07, the Commission held a Procedural Conference on September 26, 2007 to hear submissions on the regulatory process for review of the filing; and

. . ./2

H. By Order No. G-120-07, the Commission established a second Procedural Conference on October 5, 2007 regarding the scope of the proceeding, an Oral Hearing into the 2007 EPA commencing November 19, 2007 and the Regulatory Timetable for the proceeding; and

I. By Letter No. L-83-07 dated October 10, 2007, the Commission Panel defined the scope of the Oral Hearing and made certain other determinations regarding the record and scope of the proceeding; and

J. The Oral Hearing continued for five days from November 19 through November 23, 2007; and

K. On November 27, 2007, the Commission Panel heard Argument on whether or not the 2007 EPA impacts water flows on the Nechako River, and by Letter No. L-95-07 dated November 29, 2007, issued its determination on the matter; and

L. Final Argument concluded with BC Hydro and Alcan making oral Reply Argument on December 18, 2007; and

M. The Commission Panel has considered the submissions it has received and has concluded that the 2007 EPA should be accepted as filed by BC Hydro, pursuant to sections 61(1) and 71 of the Act.

NOW THEREFORE the Commission orders as follows:

1. The 2007 EPA is accepted as filed by BC Hydro, as an energy supply contract pursuant to section 71 of the Act and as a rate pursuant to section 61(1) of the Act with respect to the delivery of energy to Alcan as part of coordination services arrangements.

2. BC Hydro is directed to comply with the directions of the Commission in the Decision that is issued concurrently with this Order.

DATED at the City of Vancouver, in the Province of British Columbia, this 29th day of January 2008.

BY ORDER

Original signed by:

Robert H. Hobbs
Chair

LIST OF APPEARANCES

P. MILLER	Commission Counsel
C. W. SANDERSON, Q.C. C. WILSON	B.C. Hydro and Power Authority
D. BURSEY S. SAHOTA	Alcan Inc.
L. WORTH J. QUAIL	The BC Old Age Pensioners Organization Active Support Against Poverty B.C. Coalition of People with Disabilities Counsel Of Senior Citizens' Organizations of B.C. End Legislated Poverty Federated Anti-Poverty Groups of B.C. Tenants Rights Action Coalition (TRAC)
R B. WALLACE	Joint Industry Electricity Steering Committee
J. HUNTER, Q.C. M. OULTON	District of Kitimat
W. ANDREWS	British Columbia Sustainable Energy Association Sierra Club of Canada (B.C. Chapter) Peace Valley Environmental Association
D. AUSTIN	Independent Power Producers of B.C.
A. DONOVAN J. GRIFFITH K. NICE	Haisla Nation
J.G.A.E. SWITLO	Haisla Hereditary Chiefs
G. McDADE, Q.C. L. LANDRY	Carrier Sekani Tribal Council
R. AUSTIN	MLA for Skeena
B. EYNON	K.T. Industrial Development Society

R. BELMONT	CAW, Local 2301
R. McLAREN	Self

J.B. Williston	Commission Staff
T. Berry E. Switlishoff	Commission Consultants
Allwest Reporting Ltd.	Court Reporters

LIST OF PANELS

MARY HEMMINGSEN GRAEME SIMPSON KEN SPAFFORD	British Columbia Hydro and Power Authority
JAMES BRANDER MARY HEMMINGSEN	British Columbia Hydro and Power Authority
PIERRE ARSENEAULT PAUL HENNING LOUISE REMILLARD PIERRE COSSETTE	Alcan Inc.
MARVIN SHAFFER TRAFFORD HALL	District of Kitimat

IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

British Columbia Hydro and Power Authority
2007 Electricity Purchase Agreement with Alcan Inc.
Section 71 Energy Supply Contract

EXHIBIT LIST

Exhibit No.	Description
COMMISSION DOCUMENTS	
A-1	Letter dated September 7, 2007 issuing Order No. G-100-07 establishing a Procedural Conference
A-2	Letter dated September 18, 2007 advising that written submissions on the procedural matters to be discussed at the Procedural Conference may be filed by Individuals unable to attend
A-3	Letter dated September 26, 2007 issuing request to the Haisla Hereditary Chiefs to provide clarification of the role, authority and constituency in relation to the Haisla First Nation and comments on the Procedural Conference Transcript (T1: 123-124) (Exhibit C12-1)
A-4	Letter dated September 27, 2007 issuing Order No. G-120-07 establishing an Oral Public Hearing, Procedural Conference No. 2 and the Regulatory Timetable
A-5	Letter dated October 3, 2007 issuing Commission Information Request No. 1 to BC Hydro and Power Authority
A-6	Letter dated October 3, 2007 issuing Commission Information Request No. 1 to Alcan Inc.
A-7	Letter dated October 10, 2007 issuing Commission Information Request No. 2 to BC Hydro and Power Authority
A-8	Letter dated October 10, 2007 issuing Commission Information Request No. 2 to Alcan Inc.
A-9	Letter No. L-83-07 dated October 10, 2007 establishing the scope for the proceeding and oral hearing

Exhibit No.	Description
A-10	Letter dated October 17, 2007 issuing Information Request No. 1 on Intervenor Evidence from District of Kitimat
A-11	Letter dated October 17, 2007 issuing Information Request No. 1 on Intervenor Evidence from K.T. Industrial Development Society
A-12	Letter dated October 17, 2007 issuing Information Request No. 1 on Intervenor Evidence from the City of Terrace
A-13	Letter dated October 19, 2007 issuing Information Request No. 3 to BC Hydro
A-14	Letter dated October 23, 2007 regarding the review of the evidentiary record and the removal of correspondence filed by Donovan & Company, Ms. Switlo, McConchie Law Corporation and the Hereditary Chiefs of the Haisla First Nation
A-15	Letter dated October 30, 2007 regarding the removal of the following exhibits from the evidentiary record: C3-5, C3-6, C3-7, C3-8, C3-9 and C12-5, C12-7, C12-8, C12-9, C12-10, C12-11, C12-12
A-16	Letter dated October 31, 2007 confirming the procedure for the removal of exhibits form the evidentiary record; that no participant has objected to the procedure outlined in Exhibit A-15; and amending Commission Information Request Question 9.1 to BC Hydro regarding Dr. Shaffer's Evidence
A-17	Letter No. L-90-07 dated November 5, 2007 responding to Mr. McLaren and the Haisla Hereditary Chiefs
A-18	Letter dated November 7, 2007 responding to Mr. McLaren's request for reconsideration of Exhibit A-17
A-19	Letter dated November 7, 2007 to Participants providing procedural information for the public hearing
A-20	Letter dated November 8, 2007 regarding the removal of the following exhibits from the evidentiary record: C12-3 and C3-4
A-21	Letter dated November 15, 2007 responding to BCSEA *et al* regarding request for adjournment and PACA funding
A-22	**SUBMITTED AT HEARING** - Letter dated October 30, 2007 from the Commission to Carrier

Exhibit No.	Description
COMMISSION COUNSEL DOCUMENTS	
A2-1	**SUBMITTED AT HEARING** – Copy of the BC Hydro F2006 Open Call for Power – Call for Tenders, issued December 8, 2005
A2-2	**SUBMITTED AT HEARING –** Copy of "Analysis of Purcurement processes for generation capacity, renewables, demand response and energy efficiency" Report prepared for the Ontario power Authority by London Economics
A2-3	**SUBMITTED AT HEARING** – Copy of the CRS Report – 98-419 – "Electric Restructuring Background: The Public Utilitiy Regulatory Policies Act of 1978 and the Energy Policy Act of 1992", by Amy Abel, dated May 4, 1998
A2-4	**SUBMITTED AT HEARING** – Copy of the Ontario Power Authoirty – "Report of Large dollar Procurement Approaches", dated September 6, 2005
BC HYDRO DOCUMENTS	
B1-1	Letter dated September 5, 2007 filing the 2007 Electricity Purchase Agreement with Alcan Inc. dated August 13, 2007 pursuant to Section 71 of the UCA
B1-2-1	Letter dated September 21, 2007 filing the BC Hydro/Alcan 2007 Electricity Purchase Agreement Report
B1-2-2	Working version of the 2007 Electricity Purchase Agreement Economic Evaluation Model which BC Hydro committed to providing at the September 12, 2007 Workshop
B1-3	Letter dated September 24, 2007 providing overview to draft 2007 EPA Report
B1-4	Letter dated October 10, 2007 no further submission required
B1-5	Letter dated October 17, 2007 filing Information Request No. 1 on Intervenor Evidence from the District of Kitimat
B1-6	Letter dated October 22, 2007 from Chris Sanderson, Lawson Lundell, filing comments on procedural matters and request to withdraw correspondence from the record between Donovan & Company and Ms. Switlo
B1-7	Letter dated October 31, 2007 from Chris Sanderson, Lawson Lundell, filing objection to certain questions contained in the Commission's Information Request No.1 on Intervenor Evidence of the District of Kitimat, Direct Evidence of Marvin Shaffer (Exhibit A-10)

Exhibit No.	Description
B1-8	Letter dated November 1, 2007, filing response to Commission's Information Request No. 1
B1-9	Letter dated November 5, 2007 filing responses to the Commission's Information Request No. 2 and Intervenors' Information Request No. 1
B1-10	Letter dated November 9, 2007, filing responses to the Commission's Information Request No. 3 and R. McLaren's Information Request No. 2 and Information Request No. 3
B1-11	Letter dated November 9, 2007, filing Witness Panels and Direct Testimonies of Mary Hemmingsen, Ken Spafford, Graeme Simpson and Dr. James Brander
B1-12	Letter dated November 16, 2007 filing the Opening Statement of Mary Hemmingsen
B1-13	**SUBMITTED AT HEARING** – Revised response issued November 19, 2007 to the Commission's Information Request No. 1.76.1
B1-14	**SUBMITTED AT HEARING** – Undertaking from Volume 5, Page 785, Lines 19-60 to Page 786, Lines 1-9 – ACF Formula
B1-15	**SUBMITTED AT HEARING** – Undertaking from Volume 5, Page 834, Lines 11-12, Page 838, Lines 23-26, Page 839, Lines 1-6 – Headline Price
B1-15B	Undertaking from Volume 8, Page 1484 to 1486, filing a reconfigured response for Exhibit B1-15 as requested by Commissioner Pullman
B1-16	**SUBMITTED AT HEARING** – Undertaking from Volume 6, Page 983, Line 21 to Page 984, Line 15 – California Public Utilities Commission Decision re: Pacific Gas and Electric Company
B1-17	**SUBMITTED AT HEARING** – Undertaking from Volume 6, Page 1032, Line 23 to Page 1033, Line 1 – Revised Response to BCUC IR 2.127.1
B1-18	**SUBMITTED AT HEARING** – Affidavit No. 1 of Joanna Sofield, Chief Regulatory Officer, British Columbia Hydro and Power Authority

Exhibit No.	Description
ALCAN DOCUMENTS	
B2-1	Letter dated September 21, 2007 filing Alcan's Report on the 2007 Electricity Purchase Agreement with BC Hydro
B2-2	Letter dated October 17, 2007 from David Bursey, Bull, Housser & Tupper, legal counsel, filing Information Request No. 1 on Intervenor Evidence to the District of Kitimat
B2-3	Letter dated October 22, 2007 from David Bursey, Bull, Housser & Tupper, legal counsel, filing response to Information Requests and correspondence relating to the duty of consultation from Ms. Switlo
B2-4	Letter dated November 1, 2007, filing response to Commission's Information Request No. 1
B2-5	Letter dated November 5, 2007 filing response to the Commission's Information Request No. 2
B2-6	Letter dated November 5, 2007 filing response to BCOAPO's Information Request No. 1
B2-7	Letter dated November 5, 2007 filing response to the District of Kitimat's Information Request No. 1
B2-8	Letter dated November 5, 2007 filing response to the District of Kitimat's Information Request No. 2
B2-9	Letter dated November 5, 2007 filing response to the District of Kitimat's Information Request No. 3
B2-10	Letter dated November 5, 2007 filing response to IPPBC's Information Request No. 1
B2-11	Letter dated November 5, 2007 filing response to Richard McLaren's Information Request No. 1
B2-12	Letter dated November 5, 2007 filing response to Richard McLaren's Information Request No. 2
B2-13	Letter dated November 6, 2007 filing response to Ms. Switlo's comments dated November 2, 2007
B2-14	Letter dated November 13, 2007 advising of Alcan's Witness Panel comprised of Pierre Arseneault, Paul Henning, Louise Remillard and Pierre Cossette

Exhibit No.	Description
B2-15	Letter dated November 15, 2007 filing Statements of Alcan's Witness Qualifications comprised of Pierre Arseneault, Paul Henning, Louise Remillard and Pierre Cossette
B2-16	**SUBMITTED AT HEARING** – Letter dated November 19, 2007, filing a correct version of the response to the Commission's Information Request No. 1, Question 1.1
B2-17	**SUBMITTED AT HEARING** - Letter dated November 19, 2007 to the Commission from the Cheslatta Carrier Nation
B2-18	**SUBMITTED AT HEARING** – Document dated September 24, 2007 entitled "Alcan Primary Metal BC Kitimat Modernization Project – Provision of DFO Requested Information to Support a Letter of Advice"
B2-19	**SUBMITTED AT HEARING** – Alcan responses to the Commission Counsel's Undertakings at Volume 7, page 1346, lines 12 to 24 and page 1347, lines 12 to 20

INTERVENOR DOCUMENTS

C1-1	**BRITISH COLUMBIA OLD AGE PENSIONERS' ORGANIZATION (BCOAPO)** – Letter dated September 13, 2007 from Jim Quail and on behalf of Leigha Worth and Colin Fussell requesting Intervenor Status
C1-2	Letter dated September 14, 2007 filing comments on position of the procedural issues in response to letter from the Commission (Exhibit A-1)
C1-3	Letter dated October 4, 2007 regarding scope of proceeding
C1-4	Letter dated October 10, 2007 filing Information Request No. 1 to Alcan
C1-5	Letter dated October 10, 2007 filing Information Request No. 1 to BC Hydro
C1-6	**SUBMITTED AT HEARING** – BCOAPO's cross-examination reference documents - excerpt from the Puget Sound Energy, Draft copy of the 2008 All Source RFP

Exhibit No.	Description
C2-1	**TERRACE ECONOMIC DEVELOPMENT AUTHORITY (TEDA) –** Online web registration received September 13, 2007 from Lael McKeown requesting Intervenor Status
C2-2	Letter dated September 21, 2007from Sam Harling, Terrace Economic Development Authority, filing comments in support for the 2007 EPA
C2-3	Letter dated September 21 from Lael McKeown, Progressive Ventures, filing comments in support for the 2007 EPA
C2-4	Letter dated October 4, 2007 regarding scope of proceeding
C2-5	Letter dated October 12, 2007 filing comments on the proceeding and contract
C3-1	**HAISLA NATION –** Online web registration received September 13, 2007 from Laurie Bonacci of Donovan & Company requesting Intervenor Status
C3-2	Letter dated September 14, 2007 from Laurie Bonacci of Donovan & Company requesting Intervenor Status and for Jennifer Griffith
C3-3	Letter dated September 24, 2007 from Laurie Bonacci of Donovan & Company, filing comments in support of the 2007 EPA proposed modernization of the Alcan facilities
C3-4	**Removed from Evidentiary Record (Exhibit A-20) -** Letter dated October 3, 2007 from Laurie Bonacci of Donovan & Company, regarding Duty to Consult
C3-5	**Removed from Evidentiary Record (Exhibit A-15)** - Letter dated October 9, 2007 regarding Exhibit C12-5
C3-6	**Removed from Evidentiary Record (Exhibit A-15)** - Letter dated October 18, 2007 from Alan Donovan of Donovan & Company, filing comments concerning the authority and responsibilities of the elected government of the Haisla Nation/Kitimat Indian Band
C3-7	**Removed from Evidentiary Record (Exhibit A-15)** - Letter dated October 18, 2007 from Alan Donovan of Donovan & Company, filing background and comments regarding their representation of the elected Chief and Council of the Haisla Nation in the proceedings
C3-8	**Removed from Evidentiary Record (Exhibit A-15)** - Letter dated October 12, 2007 from Alan Donovan of Donovan & Company, filing notice of legal representation and request for the Commission not to post Ms. Switlo's series of letters

Exhibit No.	Description
C3-9	**Removed from Evidentiary Record (Exhibit A-15)** - Letter dated October 19, 2007 from Roger D. McConchie, of McConchie Law Corporation filing notice of legal representation for the Kitamaat Village Counsel
C3-10	**SUBMITTED AT HEARING** – Letter dated November 22, 2007 from Donovan & Company Re. BCUC Inquiry into the Alcan/BC Hydro 2007 EPA
C4-1	**K.T. INDUSTRIAL DEVELOPMENT SOCIETY (KTIDS)** – Email dated September 17, 2007 filing request for Intervenorship for Austin Byrne, Robin Lapointe, and Bill Eynon
C4-2	E-mail dated September 18, 2007 stating support for Application
C4-3	Letter dated September 23, 2007 from Gerry Martin, Board Member, filing Notice and written submission in support of a written hearing process
C4-4	Letter dated October 3, 2007 regarding scope of Oral Hearing
C4-5	E-mail dated October 4, 2007 providing clarification of Exhibit C4-4 and the review of the 2007 EPA, and not the Alcan Modernization
C4-6	Letter dated October 12, 2007 filing comments and submission on the impact and importance of the EPA modernization project
C4-7	Letter dated October 31, 2007 filing Information Request No. 1 to the District of Kitimat
C4-8	Letter dated October 31, 2007 filing response to Commission's Information Request No. 1
C4-9	Letter dated November 2, 2007 filing response to the District of Kitimat's Information Request No. 1
C4-10	Letter dated November 16, 2007 filing Notice of Panel comprised of Bill Eynon, President and Austin Byrne, Executive Director
C5-1	**MCLAREN, RICHARD –** E-mail dated September 20, 2007 requesting Intervenor Status
C5-2	Letter dated September 21, 2007 filing written submission in support of a written hearing process
C5-3	Email dated October 2, 2007 filing written submission to Second Procedural Conference

Exhibit No.	Description
C5-4	Email dated October 10, 2007 filing Information Request No. 1 to Alcan Inc.
C5-5	Email dated October 10, 2007 filing Information Request No. 1 to BC Hydro
C5-6	Email dated October 18, 2007 filing Information Request No. 2 to BC Hydro
C5-7	Email dated October 21, 2007 filing Information Request No. 3 to BC Hydro
C5-8	Email dated October 28, 2007 filing Information Request No. 2 to Alcan Inc.
C5-9	Email dated October 29, 2007 regarding Hearing presentation
C5-10	Email dated November 1, 2007 filing response and clarification regarding Hearing presentation (Exhibit C5-9)
C5-11	Email dated November 5, filing Information Request No. 1 to the District of Kitimat
C5-12	Email dated November 6, 2007, filing reply and request for reconsideration on denial of presentation (Exhibit A-17 / Exhibit 5-9)
C5-13	**SUBMITTED AT HEARING** - Opening Statement of Mr. McLaren, dated November 19, 2007
C6-1	**AUSTIN, ROBIN, MLA SKEENA –** E-MAIL dated September 21, 2007 requesting Intervenor Status
C7-1	**JOINT INDUSTRY ELECTRICITY STEERING COMMITTEE (JIESC) –** Letter dated September 24, 2007 from Brian Wallace of Bull Housser Tupper, legal counsel, requesting Intervenor Status and filing Notice to Attend the Procedural Conference
C8-1	**CITY OF TERRACE –** Letter received September 24, 2007 requesting Intervenor Status and filing comments
C8-2	Letter dated September 20, 2007 confirming Notice of Intervention
C8-3	Letter dated October 12, 2007 filing comments in support of the modernization project
C8-4	Letter dated November 1, 2007 filing response and comments to the Commission's Information Request No. **7** on Intervenor Evidence(Exhibit A-12, Exhibit C8-3)

Exhibit No.	Description
C9-1	**MILLS, DR. & MRS. HJP –** Letter received September 25, 2007 requesting Intervenor Status and filing comments
C10-1	**DISTRICT OF KITIMAT –** Letter received September 25, 2007 requesting Intervenor Status
C10-2	Letter dated September 26, 2007 from Mark S. Oulton of Hunter Litigation Chambers, legal counsel filing response to Chair regarding date of written submissions
C10-3	Letter dated October 4, 2007 regarding scope of proceeding
C10-4	E-mail dated October 4, 2007 filing the Book of Authorities for Exhibit C10-3
C10-5	E-mail dated October 10, 2007 filing Information Request No. 1 to BC Hydro
C10-6	E-mail dated October 10, 2007 filing Information Request No. 1 to Alcan
C10-7	Letter dated October 12, 2007 from Mark S. Oulton of Hunter Litigation Chambers, legal counsel, filing Statement of Evidence of Dr. Marvin Shaffer with his resume
C10-8	Letter dated October 17, 2007 from Mark S. Oulton of Hunter Litigation Chambers, legal counsel, filing Information Request No. 1 on Intervenor Evidence of K.T. Industrial Development Society
C10-9	Letter dated October 23, 2007 filing Information Request No. 2 to Alcan
C10-10	Letter dated October 26, 2007 filing Information Request No. 3 to Alcan
C10-11	Letter dated October 31, 2007 filing no objection in principle and comments on procedural process regarding Mr. McLaren's request (Exhibit C5-9)
C10-12	Letter dated November 5, 2007 filing response to the Commission's Information Request No. 1
C10-13	Letter dated November 5, 2007 filing response to Alcan's Information Request No. 1
C10-14	Letter dated November 5, 2007 filing response to BC Hydro's Information Request No. 1
C10-15	Letter dated November 5, 2007 filing response to BCSEA's Information Request No. 1

Exhibit No.	Description
C10-16	Letter dated November 6, 2007 filing an Errata and clarification to Information Request response to the BCSEA (Exhibit C10-15)
C10-17	Letter dated November 7, 2007 filing an additional Errata to Information Request response to the BCSEA (Exhibit C10-15)
C10-18	Letter dated November 9, 2007, filing Witness Panels comprised of Dr. Marvin Shaffer and Trafford Halls and Direct Testimonies
C10-19	Letter dated November 13, 2007 filing response to Information Request No. 1 from the K.T. Industrial Development Society
C10-20	**SUBMITTED AT HEARING** – Copies of slide presentation from BC Hydro & Alcan 2007 EPA Workshop, dated September 12, 2007
C10-21	**SUBMITTED AT HEARING** - Letter dated February 28, 2001 from BC Hydro to the Commission
C11-1	**INDEPENDENT POWER PRODUCERS OF BRITISH COLUMBIA (IPPBC) –** Letter dated September 25, 2007 from David Austin, Tupper Jonsson & Yeadon, legal counsel, requesting Intervenor Status on behalf of Steve Davis, President
C11-2	Letter dated October 4, 2007 regarding scope of proceeding
C11-3	E-mail dated October 10, 2007 filing Information Request No. 1 to BC Hydro
C11-4	E-mail dated October 10, 2007 filing Information Request No. 1 to Alcan Inc.
C11-5	**SUBMITTED AT HEARING** – Excerpt from the "Kemano Completion Project Review – Report & Recommendations to the Lieutenant Governor in Council" – December 1994
C11-6	**SUBMITTED AT HEARING** – Excerpt from the "Standing Offer Program Rules", Revised July 5, 2007, Page 11 and Page 8, Revised November 14, 2007
C12-1	**HEREDITARY CHIEFS OF THE HAISLA FIRST NATION –** Letter dated September 26, 2007 from Chief Sunahead John Wilson Sr, and Antagamnolth Harvey Grand Sr, requesting Intervenor Status and filing comments This is different from the Haisla Nation registration above
C12-2	Letter received October 3, 2007 filing submission regarding Duty to Consult

Exhibit No.	Description
C12-3	**Removed from Evidentiary Record (Exhibit A-20)** - Letter dated October 2, 2007 requesting withdrawal of September 26, 2007 letter requesting Intervenor Status
C12-4	Email dated October 4, 2007 filing submission
C12-5	**Removed from Evidentiary Record (Exhibit A-15)** - Letter dated October 9, 2007 from Janice Switlo, advisor, filing comments in response to the transcript of the Procedural Conference of October 5, 2007
C12-6	Letter dated October 10, 2007 from Janice Switlo, advisor, filing Information Request No. 1 to BC Hydro and Alcan
C12-7	**Removed from Evidentiary Record (Exhibit A-15) -** Unposted Letter of October 11, 2007 to BCUC from the Haisla Hereditary Chiefs confirming request for intervenor status; the letter also challenges representation by Mr. Wilson (letter cc. to Switlo, Applicants and Participants)
C12-8	**Removed from Evidentiary Record (Exhibit A-15)** - Letter dated October 12, 2007 filing Evidence
C12-9	**Removed from Evidentiary Record (Exhibit A-15)** - Letter dated October 20, 2007, filing comments regarding procedural matters and overview on the Indian Act and band council
C12-10	**Removed from Evidentiary Record (Exhibit A-15)** - Letter dated October 20, 2007 filing response to comments from Roger D. McConchie, of McConchie Law Corporation (Exhibit 3-9)
C12-11	**Removed from Evidentiary Record (Exhibit A)** - Received October 20, 2007 filing copy of the December 2006 corporate search for water licences
C12-12	**Removed from Evidentiary Record (Exhibit A)** - Letter dated October 22, 2007 filing response to letter and email from Roger D. McConchie, of McConchie Law Corporation to Allan Donovan of Donovan & Company seeking clarification and confirmation to Mr. McConchie's clients (Exhibit C3-8)
C12-13	Email dated October 30, 2007 from Janice Switlo, advisor, filing comments on removal of exhibits procedure (Exhibit A-15)

Exhibit No.	Description
C12-14	Letter dated November 2, 2007 from Janice Switlo, advisor, filing comments on the removal of certain exhibits and request for removal of Exhibit 12-3 (Exhibit A-15)
C12-15	Letter dated November 2, 2007 from Janice Switlo, advisor, filing response from to Intervenor response regarding Exhibit C12-6 (Exhibit B2-3)
C12-16	Letter dated November 2, 2007 from Janice Switlo, advisor, filing Information Request No. 2
C12-17	Letter dated November 6, 2007 from Janice Switlo, advisor, filing comments on the response to Alcan's response to Information Request No. 1 and No. 2 (Exhibit B2-13)
C12-18	Email dated November 10, 2007, filing notice to attend as Witness and comments regarding Exhibit C12-2
C12-19	Letter dated November 13, 2007, filing notice of Witness Panel of Chief Wakas (Allan Williams Sr.), Chief Jassee (Tom Robinson) and Mike Robinson, translator and Janice Switlo, advisor
C12-20	Email dated November 13, 2007, filing comments on BCSEA's request for adjournment of Oral Public Hearing (Exhibit C13-4)
C12-21	**SUBMITTED AT HEARING** - Opening Statement dated November 19, 2007 from Janice Switlo
C12-22	**SUBMITTED AT HEARING** – Reference materials prepared by Matthew T. Ghikas, issued October 2006 for the Continuing Legal Education Society of BC, called "First Nations Consultation in Proceedings before the British Columbia Utilities Commission"
C12-23	**SUBMITTED AT HEARING** – Revisions and clarifications to earlier submission ensure no potential of misunderstanding (Exhibit C12-2)
C12-24	**SUBMITTED AT HEARING** – Copy of letter to the editor of the Cariboo Press - Terrace Standard, dated February 14, 2007, entitled "Haisla chief backs Alcan"
C13-1	**BC SUSTAINABLE ENERGY ASSOCIATION (BCSEA) –** Letter dated September 27, 2007 from William Andrews, legal counsel, requesting Intervenor Status on behalf of BC Sustainable Energy Association, Sierra Club of Canada (SCCBC) and Peace Valley Environment Association (PVEA)
C13-2	Letter dated October 10, 2007 – will not be filing Information Requests to BC Hydro or Alcan Inc.

Exhibit No.	Description
C13-3	Letter dated October 17, 2007 filing Information Request No. 1 on Intervenor Evidence from the District of Kitimat
C13-4	Letter dated November 13, 2007, filing request for an adjournment of the Oral Public Hearing
C13-5	Letter dated November 14, 2007 filing further submission on PACA Guidelines eligibility
C14-1	**CAW 2301 –** Online web registration received September 27, 2007 from Gord Lechner & Rick Belmont, requesting Intervenor Status on behalf of the Workers at Alcan's Kitimat smelter and Kemano Power
C14-2	Facsimile received October 4, 2007 filing submission
C14-3	Letter received November 14, 2007 filing Information Request to the Commission
C14-4	Letter received November 14, 2007 filing Information Request to Alcan
C14-5	Letter received November 14, 2007 filing Information Request to BC Hydro
C14-6	Letter received filing Rio Tinto Press Release dated October 25, 2007 and supporting documentation from BHP Billiton Limited
C14-7	Letter received November 15, 2007 filing additional Information Request to Alcan
C14-8	Letter received November 15, 2007 filing additional Information Request to BC Hydro
C14-9	Letter dated November 15, 2007 filing Opening Statement of Rick Belmont, President of CAW Local 2301
C14-10	**SUBMITTED AT HEARING** – Copy of Historical Breakdown of Expenditures in Northwest B.C.VS. Rest of B.C.(1996-2005) - Direct Economic Contribution for Kitimat
C15-1	**COLUMBIA POWER CORPORATION (CPC)** – Email dated September 28, 2007 requesting Intervenor Status

Exhibit No.	Description
C16-1	**VANCOUVER BOARD OF TRADE (VBT)** – Email dated October 2, 2007 requesting Intervenor Status
C16-2	Letter dated October 3, 2007 submission supporting application
	**** INTERVENORSHIP WITHDRAWN **** **SHOULD BE POSTED AS INTERESTED PARY** **PLEASE REFER TO D-5**
C17-1	**GERMUTH, PHIL** – Email dated October 4, 2007 requesting Late Intervenor Status
C18-1	**RANKIN, THOMAS** – Request received October 10, 2007 for Late Intervenor Status
C19-1	**THE BROTHERHOOD OF HUMANITY** – Online web registration request received from John Venittelli, dated October 10, 2007 for Late Intervenor Status
C19-2	Email received October 16, 2007 filing Intervenor Statement for reasons for intervention
C20-1	**DR. HAMISH NICHOL** – Letter dated October 12, 2007, requesting late Intervenor Status
C20-2	Submitted at Hearing - Letter dated November 16, 2007 from Hamish Nicol
C21-1	**CARRIER SEKANI TRIBAL COUNCIL** – Letter dated October 29, 2007 requesting Late Intervenor status from Mr. David Luggi, Tribal Chief
C21-2	**SUBMITTED AT HEARING** – Motion for Reconsideration of Scoping Order dated October 10, 2007
C21-3	**SUBMITTED AT HEARING** – Document entitled “Recovery Plan for Nechako White Surgeon” dated March 2004
C21-4	**SUBMITTED AT HEARING** – Copy of “Kamano Completion Project Review – Summary Report”
C21-5	**SUBMITTED AT HEARING** – Copy of the 1987 Settlement Agreement between Alcan Aluminium Limited and the Minister of Fisheries and Oceans and Minister of Energy Mines and Petroleum Resources

Exhibit No.	Description
INTERESTED PARTY DOCUMENTS	
D-1	Online web registration received September 17, 2007 from John E. Elliott, of Elliott Energy Services Ltd., filing request for Interested Party
D-2	E-mail dated September 20, 2007 from Pauline Maitland of Kitimat Chamber of Commerce request for Interested Party Status
D-3	Email dated September 21, 2007 from Jerry L. Lampert, President, Business Council of British Columbia, filing request for Interested Party status
D-4	Fax dated September 24, 2007 from Mike Xu, filing request for Interested Party status and Notice of Attendance for the Procedural Conference
D-5	Online web registration received October 2, 2007 from Darcy Rezac, of the Vancouver Board of Trade, filing request for Interested Party FOR Bernard Magnan, Asst. Managing Director
D-5-1	Letter dated November 15, 2007 from Henry K.S. Lee, Chairman, of the Vancouver Board of Trade, filing letter of support
LETTERS OF COMMENT	
E-1	Letter of Comment from Brian & Sharon Murdoch, of Dochs Coffee Bar in Kitimat, BC
E-2	Letter of Comment email received September 17, 2007, from Gord Shaben, CEO, Silvertip Promotions & Signs Inc., of Terrace, BC
E-3	Web comment from James Richards
E-4	E-mail dated September 20, 2007 from Bill Watson, President, Twin River Power Ltd
E-5	E-mail dated September 20, 2007 from Steve Smyth, Branch Manager of Peterbilt Pacific Inc.
E-6	E-mail dated September 20, 2007 from Gerald Mitchell, Clearwest Ventures
E-7	Letter of Comment emailed dated September 22, 2007 from William D. Hickman, Kitimat, BC
E-8	Letter of Comment emailed dated September 23, 2007 from Clayton and Sandy Merritt

Exhibit No.	Description
E-9	Letter of Comment dated September 21, 2007 from the Nechako Northcoast Construction, Terrace, BC
E-10	Letter of Comment emailed dated September 23, 2007 from Adrian Tryssenaar, Kitimat, BC
E-11	E-mail dated September 24, 2007 from Phyllis & Metro Bereza, Kitimat, BC
E-12	E-mail dated September 24, 2007 from Eleanor Kendall, Kitimat, BC
E-13	Letter dated September 20, 2007 from George and Sylvia Mitchell, Kitimat, BC
E-14	Letter of Comment received September 26, 2007 from Austin and Pat Byrne, Kitimat, BC
E-15	Letter of Comment received September 26, 2007 from Dr. Tom Sager, Skeena Animal Hospital, Terrace, BC
E-16	Letter of Comment received September 26, 2007 from Myrtle & G. Prett, Kitimat, BC
E-17	Letter of Comment dated September 27, 2007 from Malcolm C. Bradbury, Western Equipment Ltd., Surrey, BC
E-18	Letter of Comment received September 27, 2007 from R.K. Haun, Kitimat, BC
E-19	Letter of Comment dated September 27, 2007 from Debbie Oviatt, Kitimat, BC
E-20	Letter of Comment dated October 1, 2007 from R. McWilliam, Kitimat, BC
E-21	Letter of Comment dated October 2, 2007 from B. Mailloux
E-22	Letter of Comment dated September 25, 2007 from J. Evans, Terrace, BC
E-23	Letter of Comment dated October 2, 2007 from P.H. Maitland, Kitimat, BC
E-24	Letter of Comment dated October 2, 2007 from seven residents of Kitimat, BC
E-25	Letter of Comment dated October 2, 2007 from A. Emmerson, Kitimat, BC
E-26	Letter of Comment dated October 9, 2007 from Bryan & Helen McInnes, Kitimat, BC

Exhibit No.	Description
E-27	Letter of Comment dated September 18, 2007, from Christine Olson, Terrace, BC
E-28	Letter of Comment emailed October 12, 2007 from Denise & Ken Welsh, Kitimat, BC
E-29	Letter of Comment dated November 15, 2007 from Michael McPhie, of the Mining Association of BC
E-30	Form Letters of Comment received November 20, 2007 from residents of Kitimat, BC
E-31	Letter of Comment dated November 22, 2007 from the Business Council of British Columbia
E-32	Form Letter of Comment received November 23, 2007 from Mary and John Kozak of Kitimat, BC
E-33	Letter of Comment received November 19, 2007, from the Haisla Business Development Corporations, (HBDC)

LETTER NO. L-83-07

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Log No. 21853

VIA E-MAIL

October 10, 2007

BCH 2007 EPA – ALCAN
S.71 ENERGY SUPPLY CONTRACT EXHIBIT A-9

TO: British Columbia Hydro and Power Authority
Registered Intervenors

Re: British Columbia Hydro and Power Authority
Filing of Electricity Purchase Agreement with Alcan Inc.
as an Energy Supply Contract Pursuant to Section 71

Scope of Proceeding and Oral Hearing

During the Procedural Conference on October 5, 2007, the Chair and Commissioner Nicholls heard submissions regarding the scope of both the proceeding and the oral hearing.

The Commission accepts that the scope of the oral hearing should include issues that can reasonably be expected to benefit from the oral hearing process. The written process may include all matters that concern interests to be considered within the public interest. As stated by the Commission in the LTEPA+ Decision:

> "The Commission Panel should not exclude from consideration in determining the public interest any class or category of interests which form part of the totality of the general public interest. In particular, the Commission Panel is of the view that evidence dealing with probably economic effects flowing from the approval of LTEPA+ on the surrounding community is a relevant consideration in determining the public interest" (p. 29).

However, the Commission concludes that the LTEPA+ record should not be duplicated in this proceeding, and that definition of the scope of the oral hearing is necessary to ensure an efficient process. The remainder of this letter defines the scope of only the oral hearing.

The Commission notes the concerns expressed by BCOAPO (T2:188) and other intervenors (T2:195-196; T2:216-217) regarding the fairness of establishing a process that includes an oral hearing, but one that is limited in scope. In this regard, the Commission accepts the submissions of counsel for BC Hydro that the Commission has the procedural flexibility to define the scope of the oral hearing. In part, the procedural flexibility arises from the mandate of the Commission regarding section 71 filings. The Commission has concluded that it should exercise this discretion early in this proceeding, both as a matter of fairness to participants and to ensure an efficient process (T2:257-258).

Counsel for BC Hydro submits that the process need not be designed for BC Hydro to meet some "burden or get over some hurdle or lead a body of evidence which meets some statutory standard or requirement" (T2:257). Although the Commission has decided to define the scope of the oral hearing in a manner that is similar to submissions of BC Hydro, the Commission has not accepted BC Hydro's submissions regarding the burden to be met. The Commission will make that determination at the end of the proceeding and then will consider whether or not the burden has been met based on all matters that are relevant to this proceeding, not just cost-effectiveness issues. The Commission has decided to define the scope of the oral hearing in a manner that is similar to submissions of BC Hydro, and the consequences of an insufficient record may be borne by BC Hydro.

In recent decisions, the Commission has established and defined a cost-effectiveness test as a means to consider public interests. The Commission concludes that issues within the scope of the oral hearing should be limited to factors that fall within the cost-effectiveness test, subject to one exception discussed below. The cost-effectiveness test was established in the Vancouver Island Generation Project decision (Order No. G-55-03, dated September 8, 2003, p. 77) and then refined in the VITR Decision (Order No. C-4-06, dated July 7, 2006, pp. 12-15). The cost-effectiveness test includes consideration of reliability, safety, schedule, financing arrangements and other factors itemized in those decisions. The factors to be considered have ratepayer impacts. For the purposes of defining the scope of the oral hearing, the cost-effectiveness test will include consideration of the opportunity costs of Alcan. A final determination of whether or not the opportunity costs of Alcan are an appropriate consideration in this section 71 review will be made at the conclusion of the proceeding.

Changes made by Alcan to the Kitimat Smelter can reasonably be expected to have consequences for the local communities. Those consequences were the subject of evidence of the LTEPA+ proceeding, and in most cases, were identified as consequences of changes that Alcan might make in response to incentives and disincentives in LTEPA+. However, the magnitude of the consequences that would accompany any particular change by Alcan is speculative at best. The contractual differences between LTEPA+ and the 2007 EPA may result in a different response by Alcan. However, just as the magnitude of the consequences was speculative during the LTEPA+ proceeding, the magnitude of the consequences arising from the 2007 EPA will be speculative.

The Commission concludes that further evidence regarding the economic consequences on the local communities of the 2007 EPA is not necessary. It follows that the Commission believes that the LTEPA+ record provides a sufficient record regarding the impacts on the local communities of the 2007 EPA, and the Commission finds that the economic consequences on the local communities of the 2007 EPA should not be within the scope of the oral hearing although they will be relevant for the proceeding.

Similarly, the Commission concludes that the LTEPA+ record provides a sufficient basis for concluding that there are linkages between the modernization project and the environmental impacts of the Kitimat Smelter. The Commission concludes that the magnitude of the incremental environmental impacts is, like the economic consequences of the 2007 EPA, of a speculative nature, and that the LTEPA+ record provides a sufficient record regarding environmental impacts.

The Commission also concludes that the contractual incentives and disincentives related to the Modernization Project can be expected to have changed from LTEPA+ to the 2007 EPA. As a result, the LTEPA+ record cannot be expected to provide sufficient evidence of the 2007 EPA contractual incentives and disincentives for Alcan regarding the Modernization Project. Therefore, the incentives

and disincentives in the 2007 EPA are within the scope of the oral hearing. The Commission anticipates that all consequences of the incentives and disincentives in the 2007 EPA will have consequences for ratepayers and therefore fall within the cost-effectiveness analysis. However, because some consequences of the incentives and disincentives in the 2007 EPA may not have consequences for ratepayers, the scope of the oral hearing is not limited to cost-effectiveness in this instance, and may include consideration of the consequences of the incentives and disincentives in the 2007 EPA on the Kitimat Smelter that do not have ratepayer impacts.

In an effort to assist the Commission in defining the scope of the oral hearing at an early stage, intervenors provided lists of issues. In an effort to provide clarity regarding the application of the cost-effectiveness test, the Commission will now comment on certain specific issues that have been selected for comment because it may not be clear whether or not the issues are within the scope of the oral hearing.

The issue described in paragraph 14(a) of the District of Kitimat ("DoK") submission regarding the Scope of the Proceeding (Exhibit C10-3) is:

> "The impact of the 2007 EPA on the District that may arise because of provisions and incentives or disincentives in the contract that could affect the investment and operating decisions of the owners and operators of the aluminium industry in the District; …"

The Commission notes the submissions of BC Hydro that this issue is outside of the scope of the cost-effectiveness test (T2:156). The Commission agrees. However, by deleting the words "on the District" the Commission believes that this issue may be within the scope of the oral hearing.

Issue 3.1 of the DoK list of issues (Exhibit C10-3) states:

> "3.1 What are the potential economic impacts of the 2007 EPA on the District and the surrounding area, including but not limited to the potential impacts of the 2007 EPA on Alcan's Modernization Project and its future operations?"

Again, the issue as generally stated by DoK is not within the scope of the oral hearing. However, the specific example that is provided is within the scope of the oral hearing so far as it relates to incentives and disincentives provided for in the 2007 EPA.

Issue 3.3(a)(i) of the DoK list of issues (Exhibit C10-3) states:

> "Does the 2007 EPA set precedents detrimental to the public interest to the extent that: it provides incentives for other industrial producers to redirect existing power generation from industrial uses to BC Hydro; …"

And issue 3.4 of the DoK list of issues (Exhibit C10-3) states:

> "Ought BC Hydro to be entering into arrangements such as the 2007 EPA without a formal policy regarding diversion of power from industrial to public uses?"

The Commission notes comments made in the LTEPA+ Decision:

> "The Commission Panel does not agree that as a matter of good public policy it should not approve long-term firm energy contracts from industrial producers who have built generation facilities to support their industrial operations" (LTEPA+ Decision, p. 30).

Counsel for the DoK accepts the above finding; however, he further submits that the policy considerations that underlie this issue ought to be considered by the Commission (T2:200). The Commission accepts that the DoK issues 3.3(a)(i) and 3.4 may be within scope of the oral hearing as defined by cost-effectiveness; however, the Commission during the oral hearing may conclude that these issues ought not to be included within the scope of the oral hearing. The Commission does note the submissions of DoK that the proper focus of this proceeding should not be whether or not Alcan has the right to sell power or reduce its production (T2:201). The connection to the cost-effectiveness test of issues 3.3(a)(i) and 3.4 has not yet been established and will need to be during the oral hearing if these two issues are pursued by DoK. In this regard, the DoK should consider the mandate of the Commission regarding consideration of government policy, and the formulation of broad policy.

Issue 1.5 of the BCOAPO list of issues (Exhibit C1-3) refers to the "Impact of Special Direction 10". As stated by counsel for BC Hydro(T2:160), the Commission agrees that issues arising from Special Direction 10 may be more appropriate for a proceeding regarding BC Hydro planning function than this proceeding. However, as stated by counsel for BCOAPO (T2:189-190), this issue was identified for the primary purpose of including it in "legal argument". This issue may very well be within the scope of argument, and the Chair will permit questions regarding Special Direction 10 that are necessary for the purposes of arguing questions of law.

Issue 5 of the BCOAPO list of issues (Exhibit C1-3) refers to the "Cumulative Rate Impact". Counsel for BC Hydro (T2:161) expressed concerns regarding the implications of the word "cumulative". It may be that cost-effectiveness limits this issue to a consideration of alternative sources of power, however, rate impacts are considered to be within cost-effectiveness considerations so further consideration of whether or not cross-examination on this issue is within scope will need to wait until the oral hearing.

The Commission notes the categorization of the IPPBC issues as provided by counsel for BC Hydro (T2:162-164). The Commission accepts the submissions of BC Hydro that the IPPBC issues that require a comparison of the terms and conditions of IPP contracts and the 2007 EPA are not within the scope of the oral hearing. The Commission has heard extensive cross-examination of the differences between the terms and conditions of LTEPA+ and the terms and conditions of the 2006 Call agreements and does not believe that further cross-examination on terms and conditions will benefit the decision. Further, BC Hydro's justification of the prices in the 2007 EPA does not rely on the 2006 Call in the same manner as did the LTEPA+ pricing.

By letter dated September 26, 2007 (Exhibit A-3), the Commission Panel established a process regarding whether or not the Commission needs to consider whether the duty to consult and, if necessary, accommodate First Nations has been discharged. By letter dated October 3, 2007 (Exhibit C3-4), the Haisla Nation advises that "it does not ask the Commission to assess the adequacy and accommodation afforded to the Haisla Nation by BC Hydro on the 2007 EPA in these proceedings."

By letter dated October 2, 2007 (Exhibit C12-3), the Hereditary Chiefs withdrew their request for intervernor status, and stated that the Haisla Nation elected government is the one voice that should speak for the Haisla Nation in this proceeding. By letter filed as Exhibit C12-2, further written submissions were made regarding the Haisla Nation. During the procedural conference, a member of the Beaver Clan of the Haisla Nation and the elected Indian Act chief made submissions (T2:222-237), and stated that the Haisla Nation will continue to be involved in the "rest of these hearings" (T2:226).

The representative of the Haisla Nation submits that "BC and BC Hydro have failed to act on their legal obligation to us." (T2:228) Given the oral submissions of the Haisla Nation and their stated intention to continue to participate in this proceeding, the Haisla Nation's requests of the Commission are not clear. However, in the circumstances, the Commission concludes that it may rely on the written submissions of the Haisla Nation quoted above regarding the duty of the Crown to consult and, if necessary, accommodate. Therefore, the duty of the Crown to consult and, if necessary, accommodate is not within the scope of this proceeding because it is not relevant to the proceeding.

As stated in the Reasons for Decision provided with Order No. C-8-07 dated July 12, 2007 ("Rev. 5 Decision"):

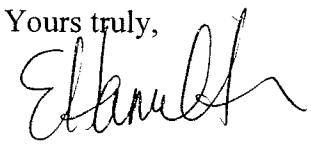
> "The Commission must ensure procedural fairness for participants, including First Nations, in Commission processes. First Nations may be active participants in Commission processes; however, it is not necessary for the Commission to consider whether or not the duty of the Crown to consult and, if necessary, accommodate has been met. Another certificate must be obtained before the project proceeds ..." (p. 40).

As further stated in the Rev. 5 Decision:

> "Evidence relevant to First Nations consultation may be relevant for the same purpose that the Commission often considers evidence of consultation with other stakeholders. Generally, insufficient evidence of consultation, including with First Nations is not determinative of matters before the Commission" (p. 41).

The Commission will continue to hear from the Haisla Nation during this proceeding, provided that such participation is subject to this decision to limit the scope of the oral hearing to cost-effectiveness.

Yours truly,



Erica M. Hamilton

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LETTER NO. L-95-07

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VIA E-MAIL

November 29, 2007

TO: British Columbia Hydro and Power Authority
Alcan Inc.
Registered Intervenors

Re: British Columbia Hydro and Power Authority ("BC Hydro")
Filing of Electricity Purchase Agreement with Alcan Inc.
as an Energy Supply Contract Pursuant to Section 71

The decision regarding impacts on water flows arising from the 2007 EPA, which were the subject of submissions during Oral Argument held on November 27, 2007, are attached. At T7:1239 and T7:1399, the Chair requested written comments by noon tomorrow regarding the process and schedule for Phase II of the CSTC reconsideration motion (Exhibit C21-2).

Yours truly,

Erica M. Hamilton

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Attachment

British Columbia Hydro and Power Authority
Filing of Electricity Purchase Agreement with Alcan Inc.
as an Energy Supply Contract pursuant to Section 71

Impacts on Water Flows

REASONS FOR DECISION

INTRODUCTION

In this decision the Commission Panel considers the question of whether or not the 2007 EPA impacts water flows on the Nechako River. In addressing that central question, the Commission Panel will also consider whether or not the 2007 EPA impacts water levels in the Nechako Reservoir and water flows on the Kemano River.

The question was first identified during the Phase I review of the motion of Carrier Sekani Tribal Council ("CSTC") filed as Exhibit C21-2. Following the Phase I review, the Commission Panel concluded that the CSTC established a prima facie case sufficient to warrant a reconsideration of the Scoping Order (Exhibit A-9) on the ground identified at item 5(d) of the motion (T5: 695). The Chair further identified the question during the cross-examination conducted by counsel for CSTC of the Alcan panel:

> "We're here to talk about the impacts on the water flows arising from the 2007 EPA, not the consequences of changes that may arise from the impact. The change in the impact on flows arising from the 2007 EPA is the issue" (T7:1284-1285).

Oral argument was heard on November 27, 2007 (T8). The submissions of counsel for both BC Hydro and Alcan were focused on the narrow issue as was identified and contemplated by the Commission Panel.

The significance of the finding in this decision is a matter for argument in Phase II of the reconsideration of the Scoping Order, and it may also be relevant to submissions to be made regarding the 2007 EPA.

BACKGROUND

As counsel for BC Hydro submits, the impacts on water flows arising from the 2007 EPA were not emphasized in the materials filed by BC Hydro. Alcan described the operation of the Nechako Reservoir in filed evidence (Exhibit B2-1, p. 24). A description of Alcan's existing infrastructure, including the Kemano system was filed by Alcan in an undertaking response to a question in cross-examination by counsel for IPPBC (T6:1145, 1146; Exhibit B2-18).

Water is released from the Nechako Reservoir through either the Skins Lake Spillway or the Tahtsa Intake. Downstream of the Skins Lake Spillway is the Cheslatta River system, which in turn flows into the Nechako River. Downstream of the Tahtsa Intake is the Kemano Powerhouse, which controls flows into the Kemano River.

The releases from the Skins Lake Spillway, inter alia, are the subject of the 1987 Settlement Agreement (Exhibit C21-5), which determines the minimum flow regime for fisheries purposes. The releases through the Kemano Powerhouse are the subject of Alcan's water license, which authorizes the use of water for power generation. The responsibility for operation of the Nechako Reservoir remains with Alcan under the 2007 EPA (T5:720), and Alcan normally operates the reservoir within a range of 10 feet around a mean value, with a historical range of 13 feet between extreme minimum and extreme maximum elevation (Exhibit B2-1, Appendix G, Slides 10, 11; Exhibit B2-18, p. 15; T7:1315). BC Hydro and Alcan testified that the 2007 EPA sets the priority of generation produced but does not set the priority for water (T5:740; T7: 1296).

RELEASES FROM THE NECHAKO RESERVOIR INTO THE NECHAKO RIVER

Generally, the evidence regarding releases from the Nechako Reservoir to meet regulatory requirements is that regulatory requirements are always met (T7:1263). This evidence is not contradicted. Further, the regulatory requirements do not change with the 2007 EPA.

The evidence regarding the priority of releases from the Nechako Reservoir is first to fish flows and second to power service (T7:1258). The Alcan panel testified that the 1987 Agreement is followed without exception, and Alcan has curtailed power production as necessary to meet the salmon spawning period (T7:1259).

Additional water may be released if necessary to reduce the risk of spilling due to high reservoir levels; that is, Alcan may release (pre-spill) more water through the Skins Lake Spillway than is necessary under the 1987 Agreement (T7: 1255, 1261).

In summary, the evidence and submissions from counsel for BC Hydro and Alcan is that the obligation to release flows into the Nechako River will be met in exactly the same way after the effective date of the 2007 EPA as before (T7:1319; T8:1421, 1429).

RELEASES FROM THE NECHAKO RESERVOIR INTO THE KEMANO POWERHOUSE

Once the regulatory requirements for flows into the Nechako River are met, Alcan operates the Nechako Reservoir to optimize power generation (T7: 1255).

The 2007 EPA provides BC Hydro with rights to schedule Tier 1 power, and to take coordination and equichange service. The exercise of these rights may change the timing of releases from the Nechako Reservoir for generation at the Kemano Powerhouse. As a result, the water levels in the Nechako Reservoir may change with the 2007 EPA. The evidence is that the expected change in water levels is from one to two inches (T7:1313, 1315).

CSTC submits that the evidence establishes that the reservoir will be operated differently, and the dispute is whether or not the two inch change to water levels in the Nechako Reservoir is substantive or not (T8:1450). Counsel for CSTC has provided a calculation of the volume of water in a two inch increase to the reservoir level (T8:1451).

Counsel for CSTC submits that the forecast generation under the 2007 EPA is greater than historic generation, and that with the increased generation the discretionary operation of the reservoir levels are "going to disappear in the exact ratio to the additional operational constraint that ensuring continuity of supply of the Tier 1 power is going to take place" (T8:1453). CSTC identified discretionary operation between the 1987 Agreement requirements at the low end and the spill maximum at the high end (T8:1452).

The Alcan panel testified that the EPA has no impact on the amount of power that can be generated (T7: 1296). The Alcan panel further testified that only the timing of power production will change with the 2007 EPA, not the total production (T7:1306). The BC Hydro panel testified that the change in timing of releases into the Kemano Powerhouse will have no impact on the releases into the Nechako river system (T5:729).

The evidence of BC Hydro and Alcan panels is that the one to two inch change in reservoir levels is insignificant (T7:1313; T5:769). Counsel for BC Hydro and Alcan submit that the one to two inch change in water levels in the Nechako Reservoir needs to be considered in the context of the normal operating range of 10 feet (T8:1424, 1432).

JOINT OPERATING COMMITTEE

Sections 4.13 and 4.14 of the 2007 EPA provides for a Joint Operating Committee. CSTC submits that the Joint Operating Committee will alter the management structure for the reservoir (T8:1449). CSTC submits that the 2007 EPA changes the reservoir from being exclusively operated by Alcan to a joint operation.

BC Hydro submits that the new management structure has nothing to do with dictating releases into the Nechako River (T8:1475), and the purpose of the Joint Operating Committee is administrative (T8: 1476). The evidence of BC Hydro and Alcan panels is that the role of the Joint Operating Committee is limited to information exchange and does not change the operating responsibility for the reservoir (T5:724; T7:1329).

COMMISSION DETERMINATION

The Commission Panel accepts the testimony of the Alcan and BC Hydro panels regarding the matters that are the subject of this decision. Their evidence is consistent and not contradicted. Specifically, the Commission Panel accepts the evidence and submissions of BC Hydro and Alcan regarding the insignificance of the one to two inch change in reservoir levels when compared to the normal and historical range.

The Commission Panel accepts the submissions of counsel for BC Hydro regarding the determinations that should be made at this time in the proceeding. The Commission Panel concludes as a matter of fact that:

a) the 2007 EPA will have no impact on the volume, timing or source of water flows into the Nechako River;

b) the 2007 EPA will not change the volume of water to be released into the Kemano River; and

c) the 2007 EPA may cause reservoir elevations to vary approximately one or two inches which will be an imperceptible change in the water levels of the Nechako Reservoir. This change to reservoir levels will not affect water flows other than the timing of releases to the Kemano River.

LIST OF ABBREVIATIONS/ACRONYMS

2006 IEP/LTAP Decision	Commission Order No. G-29-07 and Decision dated May 11, 2007
2007 EPA	2007 Electricity Purchase Agreement between Alcan and BC Hydro dated August 13, 2007, as amended by a letter dated October 24, 2007
ACF	annual capacity fee
Actual Scheduling Capacity	In respect of each hour, the actual capacity for scheduling Tier 1 Electricity quantities.
Alcan	Alcan Inc.
aMW	annual average megawatts
AP	Aluminium Pechiney
BC Hydro	British Columbia Hydro and Power Authority
BCOAPO	British Columbia Old Age Pensioners' Organization et al.
BCSEA	B.C. Sustainable Energy Association, Sierra Club of Canada (British Columbia Chapter), and the Peace Valley Environment Association
BCTC	British Columbia Transmission Corporation
BCUC, the Commission	British Columbia Utilities Commission
BPA	Bonneville Power Authority
Burrard	Burrard Thermal Generating Station
CAW	Canadian AutoWorkers, Local 2301
CCGT	combined cycle gas turbine
CE	Canadian Entitlement to Downstream Benefits
CIFT	Cost of Incremental Firm Transmission
cms	cubic metres per second
Columbia Capacity Projects	Mica Unit 5 and Unit 6, Revelstoke Unit 6 and the Waneta Expansion Project

CPCN	Certificate of Public Convenience and Necessity
CPI	Consumer Price Index for Canada, all items
CRPs	Contingency Resource Plans
CSTC	Carrier Sekani Tribal Council
Delivery Limit	The amount of electricity equal to the available take-away transmission capacity at the POI.
DoK	District of Kitimat
DSM	demand-side management
EE	Energy Efficiency
EIA	U.S. Energy Information Administration
ELCC	Effective Load Carrying Capacity
Equichange and Coordination Services	Services provided under the 2007 EPA and described in Appendices 3 and 4 thereto.
Expected Scheduling Capacity	In respect of each hour, the capacity shown in the table in Section 6.1 of the 2007 EPA.
FELCC	Firm Energy Load Carrying Capability
GHG	greenhouse gases
GW.h	gigawatt hours
HHC	Haisla Hereditary Chiefs
HLH	heavy load hours
IASC	Incremental Actual Scheduling Capacity
IPP	Independent Power Project
IPPBC	Independent Power Producers Association of British Columbia
IR	information request
JIESC	Joint Industry Electrical Steering Committee
Kemano Powerhouse	Kemano Hydroelectric Generating Station

Kemano System	Kemano Hydroelectric Generating Station and the Nechako Reservoir
km	kilometre
KTIDS	K.T. Industrial Development Society
kV	kilovolt
kW	kilowatt
LD	Load Displacement
LLH	light load hours
LRMC	long run marginal cost
LTAP	Long Term Acquisition Plan
LTEPA	Long Term Electricity Purchase Agreement between Alcan and BC Hydro dated February 27, 1990
LTEPA Recall Notice	Notice by Alcan in December 2004 to recall power committed to BC Hydro pursuant to the LTEPA
LTEPA+	Amended and Restated Long-Term Electricity Purchase Agreement between BC Hydro and Alcan dated October 27, 2006 which amended the LTEPA
LTEPA+ Decision	Commission Order No. G-176-06 and Reasons for Decision dated February 2, 2007
McLaren, Mr. McLaren	Richard McLaren, Intervenor
Modernization Project	Plans announced on 14 August 2006 by Alcan to modernize and expand the Kitimat Smelter
MW	megawatts
NFCP	Nechako Fisheries Conservation Program
NPV	net present value
PNW	Pacific Northwest
POI	Point of Interconnection
Report	BC Hydro 2007 Electricity Purchase Agreement Report

RESA	Replacement Electricity Supply Agreement
Revelstoke Unit 5 Decision	Commission Order No. C-8-07 and Reasons for Decision dated July 12, 2007
SCGT	simple cycle gas turbine
Scoping Order	Commission Letter No. L-83-07 dated October 10, 2007
SD10	Special Direction No. 10 to the British Columbia Utilities Commission
Smelter	Alcan's aluminum smelting facilities in Kitimat
Smelter Load	The electricity requirements of the Smelter, inclusive of transmission losses.
Söderberg	Vertical Stud Söderberg aluminum smelting technology
TEDA	Terrace Economic Development Authority
Tier 1 Electricity	The difference between the firm annual energy capability of the Kemano System and the maximum Smelter load.
Tier 2 Electricity	Energy in excess of that required to supply the Smelter load and the Tier 1 Electricity.
Transmission Authority	BCTC or any successor thereto
UCA	Utilities Commission Act
UEC	unit energy cost