



FOR GENERATIONS

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June 11, 2009

Ms. Erica M. Hamilton  
Commission Secretary  
British Columbia Utilities Commission  
Sixth Floor – 900 Howe Street  
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

**RE: Project No. 3698545  
British Columbia Utilities Commission (BCUC)  
British Columbia Hydro and Power Authority (BC Hydro)  
Section 5 Transmission Inquiry**

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Pursuant to BCUC Order No. G-47-09 (Exhibit A-7), BC Hydro provides as Exhibit B-2-3 its written comments regarding the BCUC Staff Discussion Draft Paper on Scope of the Inquiry. The written comments also address certain issues raised in section 2 of Exhibit A-6 which sets out a series of questions to be discussed at the June 24, 2009 Procedural Conference. Finally, as requested in the BCUC letter of May 4, 2009 (Exhibit A-10), Appendix 1 of these written comments is British Columbia Transmission Corporation's and BC Hydro's joint submission with respect to the recommended candidate they would retain to prepare an export study and an outline of the potential scope of work to be undertaken.

For further information, please contact Sandra Jones at 604-623-4315.

Yours sincerely,

A handwritten signature in black ink, appearing to read "J. Sofield".

Joanna Sofield  
Chief Regulatory Officer

Enclosure

c. BCUC Project No. 3698545 Registered Participant Distribution List.

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**Section 5 Transmission Inquiry**

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**BC Hydro Written Comments on  
Commission Staff Discussion Paper on Scope**

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## **Appendices**

Appendix 1	British Columbia Transmission Corporation's and BC Hydro's joint submission on scope of work and recommended candidate for export study.
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1 British Columbia Hydro and Power Authority (**BC Hydro**) files its written comments  
2 concerning the Commission Staff Discussion Paper on Scope (**Scope Discussion Paper**)  
3 pursuant to British Columbia Utilities Commission (**Commission**) Order No. G-47-09  
4 (Exhibit A-7). BC Hydro is in general agreement with most aspects of the Scope Discussion  
5 Paper. BC Hydro also addresses certain issues raised in section 2 of Exhibit A-6, which sets  
6 out a series of questions to be discussed at the Second Procedural Conference slated for 24  
7 June 2009. Finally, as required by Exhibit A-10, attached as Appendix 1 to these written  
8 comments is British Columbia Transmission Corporation's (**BCTC**) and BC Hydro's joint  
9 submission with respect to the recommended candidate they would retain to prepare an  
10 export study and an outline of the potential scope of work to be done.

## 11 **1 Assessment of Generation**

12 BC Hydro generally agrees with the scope of the "Assessment of Generation" set out at  
13 pages 1-3 in the Scope Discussion Paper. As BC Hydro was one of the parties identified by  
14 Commission staff as providers of information on generation resource options in Exhibit A-4,  
15 BC Hydro thought it would be helpful to the Inquiry process to provide the following overview  
16 of its anticipated 18 September 2009 filing on generation resource options and solicit  
17 comments from the Commission and participants in this scoping process.

18 For its 18 September 2009 filing on generation resource options, BC Hydro views the  
19 objective as providing the Commission with sufficient information to allow the Commission  
20 Panel to assess: (1) the generation resource potential, grouped by geographic region; and  
21 (2) the cost-effectiveness and probable sequence of development. To that end, BC Hydro  
22 anticipates its submission on generation resource options to include the following:

- 23 • Generation resource option potential within British Columbia (**B.C.**), presented by  
24 region in terms of bundles.<sup>1</sup> This information on generation resource options will  
25 largely be based on BC Hydro's 2008 Long-Term Acquisition Plan (**LTAP**) resource

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<sup>1</sup> Bundles are a block (tranche) of one resource type by cost and region. Clusters are a grouping of resource options by geographic area.

1 option information. However, to allow for the 30-year timeframe of the Inquiry  
2 **(Determination Period)** and to incorporate new information, BC Hydro plans to add  
3 the following to its 2008 LTAP data set:

- 4 ○ Updated information on wind energy; and
- 5 ○ Information on the potential for near commercial technologies, such as ocean  
6 energy and coal-fired generation with carbon capture and sequestration  
7 **(CCS)**. With respect to the latter, BC Hydro will solicit participant comments  
8 concerning the Powertech Labs Inc. “Coal-Fired Generation CCS Report”  
9 filed as part of the 2008 LTAP;

- 10 • Attributes of the generation resource option potential that would assist the  
11 Commission in determining the cost-effectiveness and probable development,  
12 including:

- 13 ○ Energy and capacity;
- 14 ○ Cost (\$/MWh);
- 15 ○ Location;
- 16 ○ Whether the generation meets the B.C. Government’s *Clean and Renewable*  
17 *Guidelines*;
- 18 ○ Whether the generation is commercial or near-commercial; and
- 19 ○ BC Hydro’s confidence in the level of technical review of the generation  
20 resource potential; and

- 21 • “Filters” that can be overlaid on top of the generation resource option potential,  
22 including:
  - 23 ○ Legally Protected Areas (please refer to the section below entitled “Areas  
24 Inappropriate for Generation Development”).

25 BC Hydro and BCTC have jointly engaged Kerr Wood Leidal Associates Ltd. to overlay  
26 generation resource option potential and Legally Protected Areas in Geographical  
27 Information System format.

1 BC Hydro notes that Commission staff identified independent power producers (**IPPs**) as  
2 another provider of information of generation resource option potential in Exhibit A-4.  
3 BC Hydro also notes that a number of industry associations have registered as participants  
4 in the Inquiry and that they may have views on the generation resource potential in B.C.  
5 While BC Hydro believes that it is consistent with the spirit of the Inquiry to invite multiple  
6 parties to make submissions on resource option potential, BC Hydro notes that multiple data  
7 sets may be problematic due to the possibility of resource option potential double-counting.

8 To that end, BC Hydro offers to initiate an engagement process on generation resource  
9 option potential with the objectives of obtaining feedback on its generation resource option  
10 information and reconciling other participants' resource option potential information with its  
11 own. This engagement process would consist of a session where BC Hydro presents its  
12 information on generation resource option potential and invites written submissions from  
13 other parties if they felt the potential in a given area was significantly different than that  
14 represented by BC Hydro's information. With these submissions, BC Hydro would:

- 15 • Review the information;
- 16 • Determine whether it is (a) either commercial or near-commercial and (b) BC Hydro's  
17 level of confidence in the technical review of the data;
- 18 • Provide an estimate of the overlap between the data sets; and
- 19 • Include all information with its 18 September 2009 submission on generation  
20 resource options categorized according to the preceding bullet.

21 BC Hydro believes that it would be appropriate to hold this engagement session in July to  
22 allow other participants sufficient time to provide information to BC Hydro and to allow  
23 BC Hydro to incorporate this information before 18 September 2009. BC Hydro notes that  
24 this engagement process on generation resource option information is not intended to  
25 preclude IPPs, industry associations or other participants from making their own  
26 submissions.

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1    **2                    Assessment of Demand**

2    BC Hydro also generally agrees with the scope of the “Assessment of Demand” set out at  
3    pages 3-6 of the Scope Discussion Paper. In this section of comments, BC Hydro provides:

- 4            • Information on BC Hydro’s planned 18 September 2009 submissions on domestic  
5            demand;
- 6            • Information on BC Hydro’s planned engagement process on domestic load  
7            scenarios; and
- 8            • Suggested wording changes to the Scope Discussion Paper.

9    **2.1                    Information on BC Hydro’s Planned 18 September 2009 Submissions on**  
10   **Domestic Demand**

11   Similar to the comments on the “Assessment of Generation,” BC Hydro believes it would be  
12   helpful to the Inquiry process to provide preliminary information on BC Hydro’s planned  
13   submissions on domestic demand. BC Hydro welcomes comments from the Commission  
14   and participants on its planned submissions and will consider them for its 18 September  
15   2009 filing.

16   To assist the Commission Panel in its determinations, BC Hydro anticipates filing the  
17   following information on domestic demand:

- 18            • 2008 Load Forecast, extended out to 30 years (as part of its 18 September  
19            information filing);
- 20            • 2009 Load Forecast, extended out to 30 years (as part of its late November  
21            submissions filing); and
- 22            • High and Low Domestic Load Scenarios, which will be outside the bounds of the  
23            Load Forecast and consider factors such as high/low economic growth, plug-in  
24            electric vehicles, electrification and alternative levels of Demand Side Measures.

1 BC Hydro will provide this information to BCTC for input into BCTC's broader domestic  
2 scenarios, which will include other assumptions on generation resource options and the  
3 transmission system.

4 In determining what is out of scope, BC Hydro strongly agrees with the statement at page 6:  
5 "Staff interpret the direction provided in the Terms of Reference with regard to the utilities'  
6 most recently approved long-term resource plans to mean that the Inquiry is not intended to  
7 be a forum for revisiting BC Hydro's June 2008 LTAP after the Commission LTAP Panel has  
8 issued its Decision on it".

9 While examination of domestic load scenarios is clearly within scope as set out above,  
10 BC Hydro interprets this statement to mean that BC Hydro's Load Forecast methodology is  
11 out of scope for this proceeding. First, BC Hydro's Load Forecast has already been  
12 reviewed and tested extensively in the 2008 LTAP proceeding. Second, BC Hydro submits  
13 that the Inquiry is not the appropriate forum for a detailed review of the Load Forecast  
14 methodology. As it is clearly out of the Inquiry's scope for the Commission to make  
15 determinations on specific generation projects and specific transmission routes or  
16 technological specifications pursuant to paragraphs 5(a) and 5(b) of the Terms of Reference  
17 (ToR), BC Hydro believes that a detailed review of the Load Forecast is not required. Third,  
18 BC Hydro submits that the introduction of scenarios into the Inquiry process suggests that  
19 the level of precision and exactness around BC Hydro's usual defence of its Load Forecast  
20 is not required.

21 **2.2 Information on BC Hydro's Planned Engagement Process on Domestic**  
22 **Load Scenarios**  
23

24 As with its other submissions, BC Hydro intends to engage participants on its submissions  
25 on domestic demand. If scrutiny of the Load Forecast methodology is out of scope,  
26 BC Hydro submits the most meaningful place for participants to provide input is with respect  
27 to the development of the future circumstances that could describe domestic load scenarios.  
28 An example of where BC Hydro might seek input is on the question of what factors should  
29 go into the domestic load scenarios.

1 BC Hydro anticipates this planned engagement process might address the question in  
2 Section 2(c) of Exhibit A-6 that asks: “who will provide information on the long-term future of  
3 the pulp and paper industries? Will the Joint Industry Electricity Steering Committee (**JIESC**)  
4 be prepared to provide this information?”. After discussion with JIESC, BC Hydro advises  
5 that it will work closely with JIESC as BC Hydro develops information concerning pulp and  
6 paper industry demand-related information for the scenarios BC Hydro will develop as part  
7 of the assessment of demand within its service area.

8 **2.3 Suggested Wording Changes to the Scope Discussion Paper**

9 Given BC Hydro’s comments above, BC Hydro offers as a high-level comment that clarity  
10 with language on scope of assessment of demand is important in two areas: (1) to  
11 distinguish between load scenarios as opposed to Load Forecasts; and (2) in references to  
12 “demand” it is important to be clear whether it is export demand or domestic demand.  
13 BC Hydro respectfully submits these distinctions are important because: (1) they help clarify  
14 what is in scope (e.g., domestic load scenarios) and out of scope (e.g., Load Forecast  
15 methodology) in the Inquiry, and subsequently where participants can and cannot provide  
16 input; and (2) different parties will be making submissions on both domestic demand and  
17 export demand.

18 To that end, specific examples of references where BC Hydro would suggest wording  
19 changes are:

- 20 • Page 5: “Forecasts will consider and adopt appropriate input from participants,  
21 including the utilities, local and regional governments, and large volume consumer  
22 groups. Such input would include key regional forecast determinants, such as the  
23 long-term outlook for major industrial sectors such as forestry, mining, and oil and  
24 gas.” BC Hydro believes this section would be more consistent with its interpretation  
25 of the Scope Discussion Paper if the word “forecast(s)” was replaced with  
26 “scenario(s)”.

- 1       • Page 5: “Staff further anticipate that regional distribution of total demand will be  
2       created by adding the regional domestic demand forecasts to the export estimates at  
3       the interconnection points with Alberta and the U.S.” BC Hydro may not be the party  
4       leading evidence with respect to what is called the “total demand”; as set out above,  
5       BC Hydro is only directly responsible for domestic demand scenario development.
- 6       • Page 5: “The Terms of Reference recognize the need for scenarios and staff think it  
7       is important that a limited number of scenarios be used to group factors that may  
8       drive demand higher or lower in order to produce a viable number of options. e.g.,  
9       o High Demand – high exports, high economic growth, plug-in electric vehicles  
10       o Low Demand – low exports, low economic growth, high electricity prices causing  
11       fuel switching to carbon fuels, conservation and technological improvements.”

12       Again, to keep domestic and export demand distinct, BC Hydro suggests removing the  
13       references to “high exports” and “low exports” and re-naming the scenarios “High  
14       Domestic Demand Scenario” and “Low Domestic Demand Scenario”.

15

16       In addition to these comments, BC Hydro offers one additional comment on the outline of  
17       the export analysis on page 5. While BC Hydro generally supports the outline of the work, it  
18       finds the following wording troublesome: “The most comprehensive credible information  
19       concerning renewable and low-carbon resource potential in British Columbia.” The challenge  
20       with this wording is that “the most comprehensive credible information” is subjective and  
21       calls for a value judgement as opposed to an objective finding. To be consistent with the  
22       wording in the section on “Assessment of Generation,” BC Hydro suggests replacing “the  
23       most comprehensive credible information concerning” with the phrase “a reasonable range  
24       of information concerning”.

1     **3           Assessment of Transmission**

2     BC Hydro takes no position on the scope of the “Assessment of Transmission” set out at  
3     pages 6 and 7 of the Scope Discussion Paper. However, BC Hydro agrees with and indeed  
4     would go further than Commission staff in taking the position that any Commission  
5     determination on transmission need made as part of this Section 5 Transmission Inquiry is  
6     not, and cannot be, a determination on cost-allocation. Customer participants and other  
7     participants ought to be able to make submissions on cost-allocation in any future Certificate  
8     of Public Convenience and Necessity (**CPCN**), rate design or other regulatory proceedings,  
9     or other processes, relating to, among other things, the determination of transmission  
10    routing and technology.

11    **4           First Nations Issues**

12    Given the scope, both geographic and temporal, of the Section 5 Inquiry, BC Hydro accepts  
13    that the Inquiry offers a valuable opportunity to obtain information with respect to First  
14    Nation interests and concerns.

15    To maximize the opportunity the Inquiry offers to foster reconciliation, BC Hydro believes  
16    consultation should be seen as a multi-stage process. The first stage is the development of  
17    BC Hydro’s own position. In that regard, BC Hydro intends to share its thinking with First  
18    Nations, First Nation Tribal Councils, The First Nations Summit, the Union of BC Indian  
19    Chiefs, The BC Assembly of First Nations and the First Nations Energy and Mining Council  
20    prior to filing BC Hydro’s November 2009 submissions. In this way, BC Hydro’s plans and  
21    views filed with the Commission will be informed by input from First Nations at the first  
22    available opportunity.

23    Second, BC Hydro expects that the Section 5 Inquiry will consider evidence from First  
24    Nations about the unique impact of transmission lines on their interests. BC Hydro  
25    understands that evidence of this nature may draw on the experience of the past. However,

1 the purpose for which evidence of this experience can properly be considered by the  
2 Commission is limited to the extent to which the evidence informs and affects the planning  
3 of B.C.'s future transmission system. While B.C. Hydro appreciates that First Nations may  
4 consider that they have grievances arising out of past experience, the ToR of this Inquiry do  
5 not seek the Commission's view on the extent or specific characteristics of the impact of  
6 past transmission lines. It is particularly important that the Commission respect this  
7 distinction given that any finding of fact made by the Commission may be determinative of  
8 that fact in future regulatory or court proceedings (see section 79 of the *Utilities Commission*  
9 *Act*, referred to as the **UCA**).

10 It is clear from section 5 of the *UCA* and the ToR, and in particular paragraphs 4, 5, and 7,  
11 that the Section 5 Inquiry is a "strategic planning exercise". In particular, subsection 5(9) of  
12 the *UCA* makes it clear that determinations made as part of the Section 5 Inquiry will not be  
13 a substitute for a CPCN (or other relevant applications); subsection 5(9) provides that the  
14 Commission "may order a public utility to submit an application under section 46" for a  
15 CPCN. The preamble to the ToR confirms that

16 ... following the determinations made in the inquiry, applications for  
17 Certificates of Public Convenience and Necessity or other regulatory filings to  
18 be filed with the Commission under the *Act*, will be brought forward to pursue  
19 specific transmission projects ... .

20 The Commission's consideration of First Nation interests and concerns in the context of the  
21 Section 5 Inquiry will be far from a final opportunity to reconcile future development with First  
22 Nation interests. First Nations will have an opportunity to pursue their past grievances with  
23 the Crown in other forums. First Nations will also have the opportunity to address concerns  
24 with respect to specific projects in future Commission proceedings such as CPCN  
25 applications and other project-specific approval processes. BC Hydro submits that the  
26 Commission neither needs, nor should try, to be a forum to resolve all past concerns First  
27 Nations may have with respect to specific generation and transmission projects in B.C.

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1     **5           Areas Inappropriate for Generation Development**

2     BC Hydro agrees with the Commission staff observation at page 9 of the Scope Discussion  
3     Paper that the assessment of areas in B.C. “inappropriate for development” set out in  
4     paragraph 3(a)(iii) of the ToR is “limited to generation resources, not transmission”. For this  
5     reason, BC Hydro is prepared to be an evidence provider with respect to this topic, and  
6     would do so as part of its evidence relating to the “Assessment of Generation”. BC Hydro  
7     would work with the B.C. Ministry of Energy, Mines and Petroleum Resources, BCTC and  
8     other parties interested in providing input into the development of this evidence, including  
9     work done with respect to the Western Governors’ Association Western Renewable Energy  
10    Zone initiative.

11    **5.1           First Category – Legally Protected Areas**

12    BC Hydro agrees with Commission staff that the first category, which Commission staff  
13    labels “Exclusion Areas”, is within scope. This first category consists of areas with legally  
14    protected status under Federal, B.C., regional and municipal laws. Approximately 14.26 per  
15    cent of B.C. land and fresh water is under legally protected status. The Scope Discussion  
16    Paper gives 11 examples of legally protected status categories. BC Hydro prefers the term  
17    “Legally Protected Areas” because there are over 30 such protected area categories in B.C.,  
18    and while some designations preclude generation development, other designations do not  
19    absolutely prohibit development; rather, development is permitted under certain conditions.  
20    An example of the former is a Class A Provincial Park established under the B.C. *Park Act*;  
21    and an example of the latter is designation under the B.C. *Environment and Land Use Act*.  
22    In other words, not all areas with legally protected status are truly “Excluded Areas”.

23    BC Hydro also agrees with Commission staff that revisiting decisions made by governments  
24    at all levels concerning boundaries or permitted uses in the Legally Protected Areas is  
25    clearly out of scope.

1     **5.2           Potential Second Category**

2     BC Hydro has concerns with what is described in the Scope Discussion Paper as a potential  
3     “second category”. BC Hydro’s overriding concern with this second category is that it will  
4     lead to misstating the potential generation resources in B.C. that could be developed during  
5     the Determination Period.

6     Two potential subcategories are listed as proposals. The first subcategory encompasses  
7     “areas where new generation should be deferred or avoided based on imminent government  
8     decisions”. The Scope Discussion Paper goes on to give the following example: “a planning  
9     process may be recommending creation of a protected area but a regulation or bylaw  
10    creating the protected area is pending”. BC Hydro has concerns as to what evidence would  
11    be proffered to establish that a government decision to designate an area as legally  
12    protected is imminent. For example, Land and Resource Management Plans (**LRMPs**),  
13    referenced at the bottom of page 9 of the Scope Discussion paper, cannot be taken as  
14    evidence that there is an imminent B.C. Government decision to legally designate an area  
15    as protected. LRMPs set out the broad, strategic direction and priorities for a given area but  
16    rarely define specific methods for achieving the direction. Indeed, recommendations by B.C.  
17    Government staff may not be acted upon. If the Commission does accept that this  
18    subcategory is within scope, it is BC Hydro’s submission that it ought to be limited to  
19    issuance of Orders in Council, Ministerial orders or other legal instruments pursuant to  
20    relevant B.C. legislation including, but not limited to, the *Forest and Range Practices Act*,  
21    the *Land Act*, the *Protected Areas of British Columbia Act* and the *Park Act*.

22    The second subcategory could potentially consist of “areas where prolonged review by  
23    permitting agencies can be anticipated, due to significant ecological, traditional use or  
24    cultural values”. BC Hydro is of the view that such areas should not be included as part of  
25    the scope for the following reasons:

- 26           • First, inclusion of such areas could lead to what the Commission staff rightly state  
27           should be avoided, namely that the Section 5 Inquiry becomes a substitute for or  
28           prejudges environmental assessment, land use or permitting processes because the

1 Commission makes findings of fact that certain areas will be difficult for IPPs or other  
2 entities to develop generation projects. Such a finding conflicts with paragraph 5(a)  
3 of the ToR, pursuant to which the Commission cannot make determinations with  
4 respect to the merits of specific generation projects. BC Hydro submits that land use  
5 considerations, such as endangered species habitat and other environmental issues,  
6 are usually site-specific and impossible to capture in a meaningful way in the broad  
7 regional analysis required for the assessment of generation potential in B.C. that will  
8 potentially be developed during the Determination Period, as is required pursuant to  
9 paragraph 3(a) of the ToR. With respect, it is up to individual developers to assess,  
10 in the context of specific generation projects and in conjunction with government  
11 agencies, First Nations and stakeholders, whether a prolonged review by permitting  
12 agencies can be anticipated.

13 • Second, there is no objective test that can be applied to identify the areas in B.C.  
14 where prolonged review by permitting agencies can be anticipated, particularly if the  
15 filter is whether the area has “significant ecological values”. The content of such a  
16 value almost certainly differs by participant. In determining whether an area has  
17 significant ecological value, what criteria would be used? Would one look to  
18 representativeness (whether the area contains the best examples of a vegetation  
19 type, habitat or ecological process), rarity (whether the area supports or is important  
20 for the recovery of a species or groups of species which is listed under federal or  
21 B.C. legislation, or other process, which species number in the hundreds), diversity  
22 in vegetation, habitat types and/or species or some other criteria?

23 • Third, even if some objective test could be applied, BC Hydro submits that the  
24 significant amount of work required to craft a list of such areas in B.C. where  
25 prolonged review by permitting agencies can be anticipated is out of all proportion to  
26 the value of such information in terms of what the Commission is being asked to do  
27 under the ToR.

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**Section 5 Transmission Inquiry**

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**APPENDIX 1**

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Ms. Janet L. Fraser  
Director, Regulatory Affairs  
British Columbia Transmission Corporation  
Suite 1100, Four Bentall Centre  
1055 Dunsmuir Street PO Box 49260  
Vancouver, B.C. V7X 1V5

Ms. Joanna Sofield  
Chief Regulatory Officer  
British Columbia Hydro and Power Authority  
17th Floor □ 333 Dunsmuir Street  
Vancouver, B.C. V6B 5R3

June 11, 2009

Ms. Erica Hamilton  
Commission Secretary  
British Columbia Utilities Commission  
900 Howe Street, Sixth Floor  
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

**RE: Project No. 3698545**  
**Re: British Columbia Utilities Commission**  
**Inquiry into British Columbia's Long-Term Transmission Infrastructure**  
**Export Study**

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Pursuant to the Commission's letter of May 4, 2009 (Exhibit A-10), British Columbia Transmission Corporation (BCTC) and British Columbia Hydro and Power Authority (BC Hydro) provide the attached joint submission on an outline of the potential scope of the work to be done and the recommended candidate they would hire to prepare an export study.

Yours truly,

Original signed by:

  
For Janet L. Fraser  
Director, Regulatory Affairs  
BCTC

Original signed by:

  
For Joanna Sofield  
Chief Regulatory Officer  
BC Hydro

Attachment

c. BCUC Project No. 3698545 Registered Participant Distribution List

**Inquiry into British Columbia's Long-Term Transmission Infrastructure  
Submission on Scope of Work and  
Recommended Candidate for Export Study**

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1 This is the joint submission of British Columbia Transmission Corporation (BCTC) and  
2 British Columbia Hydro and Power Authority (BC Hydro) on an outline of the potential  
3 scope of the work to be done and the recommended candidate they would hire to  
4 prepare an export study.

5

6 **Background**

7 The British Columbia Utilities Commission (Commission) is undertaking an inquiry into  
8 British Columbia's (B.C.) long-term transmission infrastructure requirements. The Inquiry  
9 is to take a 30-year provincial perspective on the need for electricity transmission  
10 infrastructure. The Inquiry will consider future demand for electricity, expected resource  
11 opportunities; renewable electricity potential in British Columbia and opportunities to  
12 optimize the provincial benefit inherent in the province's potential to develop renewable,  
13 low carbon electricity. This will include an assessment of the external market for this  
14 electricity.

15 With the study period for the Inquiry being 30 years, and because the Commission is  
16 required to consider, in making its determinations, the potential opportunities to export  
17 B.C.'s clean or renewable or low-carbon electricity, the Inquiry will need to consider a set  
18 of possible future export scenarios that are not adequately addressed in any current  
19 long-term resource planning documents. BCTC and BC Hydro propose to retain an  
20 expert to assist in assessing the export potential for B.C.'s electricity, and in doing so, to  
21 consider the entire Western Interconnection, and to identify and assess the impact of  
22 factors expected to have significant influence on the supply of, and demand for, clean or  
23 renewable or low-carbon electricity across the region.

## Scope of Work

1 An outline of the potential scope of work the expert would undertake follows:

2 *Assessing B.C.'s Clean, Renewable, Low Carbon Electricity Export Potential*

- 3     ▪ Develop a view of the clean or renewable or low-carbon generation potential in
- 4     the Western Interconnection;
- 5     ▪ Within each export scenario, determine the demand for electricity in British
- 6     Columbia, and the resultant surplus available for export to other jurisdictions after
- 7     accounting for British Columbia's domestic demand, including information
- 8     provided by BC Hydro;
- 9     ▪ Identify any cross-jurisdictional issues that impact, positively or negatively, B.C.'s
- 10    ability to export renewable, low carbon electricity; and
- 11    ▪ Advise on the impacts that emerging public policy initiatives might have on B.C.'s
- 12    export potential.

13 *Cost Competitiveness of B. C. Renewables*

- 14    ▪ Determine cost competitiveness of British Columbia clean or renewable or low-
- 15    carbon electricity in the Western Interconnection and the likely market share for
- 16    B.C.'s electricity under different electricity marketing strategies; and
- 17    ▪ Provide a sensitivity analysis around the set of assumptions used in each of the
- 18    electricity supply and demand forecasts.

19 *Deliverables will include, but not be limited to:*

- 20    ▪ Participation in a series of First Nations and stakeholder workshops to present
- 21    and receive feedback on scenarios and assumptions;
- 22    ▪ A report describing the analytical approach used to develop the electricity supply
- 23    and demand forecasts;
- 24    ▪ A framework for assessing these scenarios;
- 25    ▪ An assessment of regional supply and demand factors;
- 26    ▪ An assessment of the relative competitiveness of B.C.'s clean or renewable or
- 27    low-carbon electricity in export markets; and
- 28    ▪ Presentation of the above-mentioned reports and advice during the evidentiary
- 29    and submission phases of the Inquiry.

## 1   **Selection of Expert**

2   Through work on a number of regional initiatives, BCTC and BC Hydro have had  
3   exposure to two consultancies with experience in cross-jurisdictional electricity export  
4   analysis: Black & Veatch Corporation (Black & Veatch) and Energy and Environmental  
5   Economics, Inc. (E3).

6   Black and Veatch performed resource and transmission modeling for the Western  
7   Renewable Energy Zone initiative for which the outputs were planning tools to assist  
8   resource and transmission planners in decision-making. Black and Veatch also provided  
9   its services in the California Renewable Energy Transmission Initiative designed to  
10   identify, characterize and assess the renewable resources and necessary transmission  
11   needed for California to meet its 33 percent renewable energy goal by 2020.

12   E3 has also done resource and transmission modeling, with a greater emphasis on the  
13   economic analysis of energy exchanges between regions across the Western  
14   Interconnection. As well, E3 has done modeling for the Western Electricity Industry  
15   Leaders Group that is consistent with the proposed scope for the Inquiry's export study.  
16   This work examined how regions across the Western Interconnection could most  
17   efficiently meet existing Renewable Portfolio Standards (RPS) and greenhouse gas  
18   (GHG) emission goals, and provided a high-level benefit-cost analysis of high-priority  
19   transmission lines for energy producing and energy consuming regions.

20   E3 has a comprehensive database of renewable generation potential for all states in the  
21   Western Interconnection, complete with local construction cost factors for each  
22   renewable generating technology. E3 has done considerable modeling for the Western  
23   Climate Initiative on the implementation of a regional GHG cap and trade program, and  
24   has performed much of the modeling for California on the implementation of its RPS,  
25   and implementation of Assembly Bill 32, the *California Global Warming Solutions Act*.

26   Finally, and perhaps most importantly, E3 has detailed knowledge of B.C.'s electricity  
27   system and B.C.'s legal and regulatory framework, their work is well known to the  
28   Commission, and they have considerable experience working with BCTC and BC Hydro.  
29   BCTC and BC Hydro will be providing data and support to the Inquiry throughout the

- 1 proceeding and BCTC has engaged E3 to perform scenario modeling for use in
- 2 developing its information for filing in September.
  
- 3 Considering the above, BCTC and BC Hydro propose to retain E3 as an expert to
- 4 undertake the export study for B.C.'s Long-Term Transmission Infrastructure Inquiry.