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**VIA E-MAIL**

July 10, 2009

**SECTION 5**

**TRANSMISSION INQUIRY**

**EXHIBIT A-18**

To: Long-Term Transmission Inquiry Participants

Re: British Columbia Utilities Commission  
Project No. 3698545/Order G-30-09  
Inquiry into British Columbia's Long-Term Transmission Infrastructure

Reasons for Decision on Scope

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Further to the Procedural Conference on June 24, 2009, enclosed is Commission Order G-86-09 and Reasons for Decision on Scope.

Yours truly,

*Original signed by:*

Erica M. Hamilton

/yl  
Enclosures



**BRITISH COLUMBIA  
UTILITIES COMMISSION**

**ORDER  
NUMBER G-86-09**

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

and

An Inquiry into British Columbia's Electricity Transmission Infrastructure  
and Capacity Needs for the Next 30 Years

**BEFORE:** L.A. O' Hara, Commissioner  
and Panel Chair  
A.W.K. Anderson, Commissioner July 9, 2009  
D.A. Cote, Commissioner  
M.R. Harle, Commissioner  
R.K. Ravelli, Commissioner

## **O R D E R**

### **WHEREAS:**

- A. Section 5(4) of the *Utilities Commission Act* ("UCA" or "Act") provides that the British Columbia Utilities Commission ("Commission") must conduct an inquiry ("Inquiry") to make determinations with respect to British Columbia's infrastructure and capacity needs for electricity transmission for the period ending 20 years after the day the inquiry begins, or a different period if so specified by terms of reference issued by the Minister responsible for administration of the Hydro and Power Authority Act ("Minister"); and
- B. On December 11, 2008, the Minister issued Terms of Reference for the Inquiry which identify that the general purpose of the Inquiry is for the Commission to make determinations with respect to British Columbia's electricity transmission infrastructure and capacity needs for a 30-year period commencing from the date the Inquiry begins; and
- C. By Order G-30-09, the Commission established a Preliminary Workshop on April 17, 2009 for Participants to discuss issues related to the Terms of Reference and the process to be used for the Inquiry, and a Procedural Conference on April 27, 2009 to discuss and hear submissions on Inquiry procedures and timing; and
- D. After the April 27, 2009 Procedural Conference, the Commission issued Order G-47-09 and a Preliminary Inquiry Schedule. The Preliminary Inquiry Schedule directed Commission staff to draft a discussion draft paper on scoping of the issues ("Staff Paper") and circulate it by May 21, 2009. Other Inquiry Participants

**BRITISH COLUMBIA  
UTILITIES COMMISSION**

**ORDER  
NUMBER** G-86-09

2

were to provide written comments by June 11, 2009. A Workshop for discussion of the issues was established for June 18, 2009 and a second Procedural Conference, on Inquiry issues and scoping, was established for June 24, 2009; and

- E. The Commission, after reviewing the written comments and the oral comments at the June 24, 2009 Procedural Conference, concluded that another Procedural Conference should be held on August 18 and 19, 2009 to discuss issues related to the type of engagement with First Nations. That Procedural Conference and the specific questions to be addressed are the subject of a letter from the Commission dated June 30, 2009 (Exhibit A-16); and
- F. The Commission has also concluded that the Staff Paper should be revised to incorporate some of the views that Participants expressed in their written comments or made orally at the June 24, 2009 Procedural Conference in order to create a Scoping Document which reflects the determinations of the Commission on scoping; and
- G. The reasons for the revisions are described in the Reasons for Decision on Scope issued concurrently with this Order.

**NOW THEREFORE** the Commission orders as follows:

1. Subject to paragraph 2, and with the exception of the First Nations issues which are the subject of the August 18 and 19, 2009 Procedural Conference, the issues within scope for the Inquiry are the issues described in the Scoping Document which is Attachment A to the Reasons for Decision.
2. After September 18, 2009, a Participant may seek leave to expand the list of issues described in the Scoping Document, if in the view of the Participant an issue has arisen that the Commission should consider in the preparation of its report.

**DATED** at the City of Vancouver, in the Province of British Columbia, this 10th day of July 2009.

BY ORDER

*Original signed by:*

L.A. O' Hara  
Commissioner

Attachments

## LONG TERM ELECTRICITY TRANSMISSION REQUIREMENTS INQUIRY

### Reasons for Decision on Scope

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#### Introduction

This document represents the Reasons for Decision on the Inquiry Panel's Determinations on Scope. Paragraph 1 of the Terms of Reference for the Long-Term Electricity Transmission Inquiry, issued by the Minister of Energy Mines and Petroleum Resources on December 11, 2008 ("Terms of Reference"), establishes that the general purpose of the Inquiry is for the Commission to make determinations with respect to BC's electrical transmission infrastructure and capacity needs for a 30-year period, commencing from the date the Inquiry begins. The Terms of Reference provide directions on the scope of the Inquiry by identifying the matters that the Commission must assess, consider, have regard to and make determinations upon. In this document, the Inquiry Panel ("Panel") provides preliminary determinations on the scope and the scale for the next steps in the long-term analysis of the transmission system. The determinations are incorporated in the Scoping Document which forms Attachment A to these Reasons and also includes scoping items upon which the Participants appear to be in general agreement. The Panel accepts the scoping items upon which the Participants appear to be in general agreement as being within scope.

For the reasons explained in the 'Background' section, below, the determinations focus on aspects of the following issues where the Participants were either not in agreement or, in one instance, the issue was not previously identified by Commission staff: provincial generation potential, domestic electricity demand, interjurisdictional trade, analysis of the transmission system, areas inappropriate for development, and integration of generation, demand and transmission requirements. Participants raised many issues in their written comments and at the Procedural Conference which took place on June 24, 2009, and the Inquiry Panel has focussed its determinations on those comments that were, in its view, important for the Inquiry to progress.

In addition, at the June 24, 2009 Procedural Conference, some Participants suggested that the Commission should allow some flexibility on scoping so that the Panel does not define now for all time, what the scope of the Inquiry will be (BCTC at T2: 128; IPPBC at T2: 285). On the other hand, BC Hydro stated that it needed some certainty on some issues (T2: 343). The Panel finds merit in both positions. It therefore views its determinations in these Reasons for Decision as preliminary, but suitable for the analysis going forward, and notes that it may revisit certain scoping issues, if necessary, following the September 18, 2009 filing by British Columbia Transmission Corporation ("BCTC"), BC Hydro and FortisBC Inc. ("FortisBC") of the information ("Initial Evidence") that is required pursuant to the terms of Preliminary Inquiry Schedule attached as Appendix A to Commission Order G-47-09.

#### Background

At the Inquiry's first Procedural Conference on April 27<sup>th</sup> 2009, BCTC stated that "...care has to be taken to ensure that the scope is neither so broad that it makes your task unachievable nor so narrow that we limit people from making submissions or filing evidence that they need to make..." (T1: 20). BC Hydro strongly supported the comments by BCTC on scope.

Following the April 27<sup>th</sup> Procedural Conference, the Commission Panel issued Order G-47-09, which provided, in part, for Commission staff to distribute a discussion paper on Issues and Scoping by May 21, 2009 (“ Staff Paper”). Order G-47-09 also provided for written comments by Participants on the Staff Paper, a workshop on Inquiry Issues and Scoping (“ Workshop”), and a Procedural Conference on the same topics. The Staff Paper entitled “ Commission Staff Discussion Draft on Scope” was issued on May 21, 2009 (Ex. A-12). The Workshop to discuss the Staff Paper was held on June 18, 2009 and the Procedural Conference (the second for this Inquiry) took place on June 24, 2009. The Staff Paper, the written comments of the Participants and the second Procedural Conference were all aimed at providing additional definition to the issues and the scope of the Inquiry.

The Staff Paper provided a starting point for discussion relating to the scope of the issues and the level of analysis required to assess these issues. It focused on five specific areas: generation, electricity demand, transmission requirements, areas inappropriate for the development of generation, and a discussion around the form of inclusion of First Nations’ issues in the Inquiry. These Reasons focus mainly on suggested amendments to the Staff Paper. Attachment A to these Reasons incorporates both the Panel’ s preliminary determinations on matters of scope that were either in dispute or not covered by the Staff Paper and those matters upon which there was general agreement.

Following the second Procedural Conference the Inquiry Panel issued a letter dated June 30, 2009 (Ex. A-16) inviting written submissions and establishing a further Procedural Conference for August 18 and 19, 2009 to address First Nations’ interests and specifically the following questions and any subcategories of the questions that Participants might identify:

- What, if any, is the duty to consult with First Nations and accommodate with respect to the Long-Term Electricity Transmission Inquiry?
- If there is a duty to consult, how would that duty best be fulfilled such that the Inquiry Panel can also fulfill its legal requirements to hold an Inquiry and complete its draft report by June 30, 2010?

Recognizing that the issue of First Nations interests is the subject of another round of written submissions and a further Procedural Conference, the Panel will not address that issue further in these Reasons.

Potential export demand was discussed in the Staff Paper under ‘ Assessment of Demand’ , but had also been the subject of a separate letter from the Commission on May 5, 2009 (Ex. A-10) and a response from BCTC and BC Hydro dated June 11, 2009 (Ex. B1-4). Consequently, the Panel will deal with export demand as a separate component of electricity demand.

Finally, the subject of ‘ an integrated approach to the analysis’ was raised at the Workshop and in the written submissions, and was specifically identified for discussion by the Panel Chair at the second Procedural Conference. Therefore, these Reasons will focus mainly on the following issues: provincial generation potential, domestic electricity demand, interjurisdictional trade, analysis of the transmission system, areas inappropriate for development, and integration of generation, demand and transmission requirements.

## Provincial Generation Potential

In its written submissions (Ex. B1-3), BCTC suggested that the term “provincial generation potential” was a clearer reflection of the Terms of Reference than simply “generation”. No party disagreed with that statement and the Inquiry Panel adopts that term.

BC Hydro generally agreed (Ex. B2-3) with the scope of the ‘Assessment of Generation’ section in the Staff Paper and provided additional information about how it proposed to supplement the information in its 2008 Long Term Acquisition Plan (“LTAP”), and engage other stakeholders to reconcile its own data with that of the other stakeholders. **The Inquiry Panel appreciates BC Hydro’s proposal to provide the supplemental information and considers that the work BC Hydro proposes to undertake on provincial generation potential is within the scope of the Inquiry.**

FortisBC submitted (Ex. B3-3) that, in addition to the unit energy cost, the information on generation should also include, where applicable, the unit capacity cost. FortisBC also submitted that in the assessment of the generation zones it would be helpful to consider the geographic distance between generation and load. **There was no opposition to the inclusion of unit capacity cost. The Panel considers unit capacity cost to also be in scope.**

Regarding FortisBC’s submission concerning the geographic distance between generation and load, the Inquiry Panel is concerned that generation can serve more than one load and load can be served by more than one generation source or cluster or zone. **The Panel considers this to be an issue that should be deferred until after the filing of the Initial Evidence to see if there is or is not an issue about geographical distance between generation and load.**

The BC First Nations Energy and Mining Council (“First Nations EMC”) raised the issue of how best to define resource option groupings relevant to the Inquiry, as well as related geographic areas and potential development timing considerations. It also submitted that when assessing possible resource option groupings there should be consideration of First Nations perspectives and information requirements as to need and sustainability impacts of different generation scenarios, of the relative priority of new generation resources, and of the integration of generation and transmission planning considerations. **The Panel considers First Nations’ views on the regional demand scenarios and on the relative priority of new generation sources to be in scope provided the views are consistent with the regional approach to demand and generation. Comments, for example, on individual generation resources, are not in scope. The extent to which consideration of infringements related to transmission or generation development are in or out of scope will be considered at the Procedural Conference scheduled for August 18 and 19.**

The Ocean Renewable Energy Group suggested broadening the term ‘Ocean (wave and/or tidal current)’ as used in the Staff Paper to ‘Ocean (wave, tidal and in-stream current)’, and notes that climate change impact mitigation was not addressed in the Staff Paper. The BC Sustainable Energy Association et al (“BCSEA”) and Energy Solutions for Vancouver Island et al. (“ESVI”) made similar requests. **The Panel agrees to the use of the broadened description as suggested, and accepts that climate change impacts may be considered as alternative scenarios or sensitivity tests around future forecasts of hydro generation associated with both reduced inflows and higher demand for low-carbon electricity.**

Cloudworks Energy Inc. submitted that the transmission benefits of having a large pumped storage facility or other large energy storage alternative in the Lower Mainland should be in scope. Columbia Power Corporation (“CPC”) also submitted that implementation of pumped storage should be investigated as a way to meet capacity requirements. **The Panel accepts that it is in scope to explore whether or not an alternative such as a large energy storage facility exists, and whether it is in the range of cost-competitiveness with other alternatives. If the evidence indicates that it is, and on a scale sufficient to make an impact on the transmission system, then it will be in scope to consider such an alternative in the analysis of the transmission system.**

The BCSEA submitted several comments on the issue of provincial generation potential identified in the Staff Paper. Some of the comments dealt with generation in support of exports and how exports should be considered, and those comments will be dealt with in the Interjurisdictional Trade section of these Reasons. Some comments took issue with the paraphrasing of the Terms of Reference. **The Panel notes that where the Terms of Reference have been paraphrased in the Staff Paper or in the Scoping Document and Participants wish to make further submissions on what the Terms of Reference mean, the Panel will consider those submissions in the context of how the actual words are used in the Terms of Reference and the wording of the Terms of Reference as a whole.**

The BCSEA also suggested that the renewable generation technologies listed at one point in the Staff Paper should be expanded to include geothermal, wave and kinetic hydro technologies. **The Panel accepts the suggestion and notes that it considers any renewable generation technology that is anticipated to be commercially viable in the study horizon to be in scope.** The BCSEA also noted that if “carbon sequestration from coal becomes cost-competitive” then this might not only impact generation in BC, but could also increase generation outside BC and have an impact on the export forecasts. **The Panel agrees that such an outcome could be a viable scenario, and if so would be in scope. However, the Panel also considers that a determination now as to whether such an outcome will be a viable scenario is premature because the technological and economic viability of carbon sequestration within the study period has not yet been demonstrated.**

CPC submitted that distributed generation will play an important role in BC’s electricity system, and encouraged the Panel to consider the impact of distributed generation over the 30-year study period and to make recommendations for appropriate development and implementation. ESVI also suggested that ‘Feed-in Tariffs’ and distributed generation should be within scope for the Inquiry.

**The Panel considers the potential impact of distributed generation on the transmission system to be within scope, but recommendations for development and implementation of specific distributed generation to be out of scope. Moreover, the Panel accepts that the potential impact of Feed-in Tariffs is within scope, but if and how the impact of Feed-in Tariffs are incorporated into the analysis depends on the availability of evidence on the issue. The acceptance of the potential impact of Feed-in Tariffs as an in scope issue for the Inquiry should not be taken as a signal that the Panel will ask BC Hydro or FortisBC to undertake a price elasticity or other new study to provide a detailed estimate of the distributed generation that might be provided at various price levels.**

CPC also suggested that the Inquiry should determine the resource capability for the deployment of carbon capture and storage in BC. **The Panel is of the view that it is within the scope of the Inquiry to evaluate the evidence on carbon capture and sequestration. BC Hydro in its submission (Ex. B2-3, p. 2) stated that it would provide information on the matter. CPC and other Participants are invited to provide evidence that will assist the Panel in assessing the potential for carbon capture and storage in BC.**

The Association for Mineral Exploration British Columbia (“AME”) encouraged the Panel to interpret Section [Paragraph] 10 of the Terms of Reference to include potential generators and consumers from the State of Alaska (Paragraph 10 relates to the parties to be invited to participate and the processes that may be used). **While the Panel does not accept that Paragraph 10 of the Terms of Reference requires it to invite “potential generators and consumers” from outside of British Columbia, it is prepared to consider submissions, evidence and presentations from interested persons from the State of Alaska provided they are made at the Panel’s sittings in British Columbia and are relevant to the Terms of Reference.**

The Commercial Energy Consumers of British Columbia (“CEC”) provided several suggestions about potential sources of information on generation resources and about scenario development. The CEC also submitted that the Commission decision with respect to BC Hydro’s 2008 Long Term Acquisition Plan (“LTAP”) will preclude revisiting anything to do with any aspect of the decision which may set a quantity of energy to be acquired and/or specify an attrition rate for the quantity to be acquired, and that any Energy Purchase Agreements issued by BC Hydro and any Section 71 [of the *Utilities Commission Act*] review (by the Commission) will be out of scope.

**The Inquiry Panel acknowledges the suggestions about resource options information and scenario development but considers those to be items to be discussed following the filing of the Initial Evidence in mid-September. The Panel agrees with the CEC that the Inquiry is not a forum for re-visiting recent past decisions of the Commission.**

ESVI also suggested that “the regional aspect for wind be expanded to include the regional considerations for solar”. The Panel understands the examples in the Staff Paper to be illustrative and that the cost estimates for various generation resources (especially developing technologies, including both wind and solar) will have regional considerations. **Thus the Panel agrees with ESVI that regional considerations for solar are within scope.** ESVI’s comments on regional generation will be included under the section “Integration of Generation, Demand and Transmission Requirements”.

The Independent Power Producers Association of British Columbia (“IPPBC”) submitted that the following matters should be within scope: the methodology used to produce the “Approximate cost”; the “Capacity rating type”; technologies that can be used to store electricity such as batteries in hybrid electric vehicles; the methodology used to determine regions; the benefits of a diverse portfolio of renewable technologies; and the impact of climate change, if any, on existing generation. The Burke Mountain Naturalists submitted that the ability of a generator to provide base load and or meet peak demand periods should be in scope. **The Panel agrees that all of these issues are in scope.**

Both Western GeoPower Corp. and the Canadian Geothermal Association noted the potential in BC for geothermal generation and the availability of information on the resource from both BC Hydro and the Ministry of Energy, Mines and Petroleum Resources (“MEMPR”). **The Panel agrees that the potential for cost effective geothermal generation is within scope, and encourages BC Hydro and MEMPR to provide any relevant information they can to the Inquiry.**

### **Assessment of Domestic Demand**

BCTC submitted that paragraph 6(b)(1) of the Terms of Reference should be reproduced in full in the finalized Scoping Paper, and that it would be helpful to clarify the distinction between forecasts and scenarios. BC Hydro and the BCSEA also suggested further clarification regarding the use of the terms scenarios and forecasts. **The Inquiry Panel clarifies the distinction between forecasts and scenarios in the Scoping Document.** BCTC also offered some other suggestions and observations clarifying the Staff Paper. **The Panel has taken the other observations and suggestions into account in finalizing the Scoping Document.**

As with the ‘Assessment of Generation’, BC Hydro generally agreed with the scope of the ‘Assessment of Demand’ section in the Staff Paper and provided additional information on its planned submissions on domestic demand and how it plans to engage other stakeholders to reconcile its own data with that of the other stakeholders. **The Panel appreciates the notice of BC Hydro’s approach to these issues and considers that the work BC Hydro proposes to undertake is within the scope of the Inquiry.**

**The Panel accepts the request for consistency in the wording about renewable and low-carbon resources.**

FortisBC noted the importance of considering its recently filed 2009 Resource Plan and the **Panel concurs that FortisBC’s 2009 Resource Plan will provide valuable information to the Inquiry.**

The First Nations EMC provided several comments on issues for further discussion including: differences between demand scenarios, assessment and priority of demand drivers, integration of demand and generation scenarios, and First Nation Perspectives on Lack of Grid-Access and Infringements Related to Development. **The Inquiry Panel considers that the issues raised by the First Nations EMC are in scope with one possible exception. That exception involves the issue of infringements related to transmission or generation developments. The Panel’s determinations on that issue will follow the Procedural Conference set for August 18 and 19, 2009.**

The BCSEA filed several comments regarding the Staff Paper which generally focused on clarifying the wording of the Staff Paper, but did not appear to materially disagree with the scope set out in the Staff Paper.

The Joint Industry Electricity Steering Committee (“JIESC”) submitted that the transmission load forecast must consider the ability of major customers to manage and reduce peak load. In the JIESC’s submission, providing incentives to customers and reduce load during peak hours should be considered an option when designing the transmission system. (T2:182-183) **The Inquiry Panel agrees that this is an issue that is in scope and encourages the assistance of the JIESC in assessing this option.**

CPC submitted that the Inquiry should discuss and adopt a set of “high-level principles”. The Panel views the high-level principles as a set of very high-level assumptions that could underlie many if not all demand forecasts. **The Panel is of the view that such high-level assumptions should, and will be, discussed as the scenarios and forecasts are developed later this year. The Panel does not believe that it is appropriate to embed them in the Scoping Document at this time.**

CPC further submitted that the Inquiry should consider the impact of possible changes in British Columbia’s export policy over the study period. The Panel notes that the BCTC and BC Hydro joint submission (Ex. B1-4) on the potential scope of work for an export study includes advising on the impacts that emerging public policy initiatives might have on B.C.’s export potential. **Thus, the Panel considers that the impact identified by CPC may be included in the work to be undertaken in the BCTC/BC Hydro-sponsored export study. The Panel is not prepared to direct that a specific possible policy change be included in that study at this time.** CPC also encouraged the Panel to look at how broad deployment of electric plug-in vehicles within the study period would affect transmission requirements and operations. **This is a scenario that has been suggested by several participants and the Panel considers such a scenario to be within the scope of the Inquiry.**

Enmax proposed an alternative methodology to simplify evaluating the impact of demand – that is, to look at ‘tranches’ of demand growth. **While the Enmax proposal may not be the only solution to the construction of demand forecasts, the Panel considers it may be a useful way to resolve unnecessary complexity at some points in the process.**

AME submitted that considerations should be given to the potential for new or improved transmission capacity to drive new generation or demand. **The Panel considers that there must be some evidence in the demand scenarios that demand will exist for a proposed transmission line before modeling and analyzing it.**

CEC made several comments that either agreed with the Staff Paper or looked forward to the development of scenarios. None of these require further comment by the Panel at this time. CEC suggested that the demand forecasts should be disaggregated into customer class categories and, further, that the industrial and commercial classes should be disaggregated into industry-specific or business classifications. The rationale for such disaggregation was that the business and industrial classifications will be useful for relating them to economic development scenarios. **The Panel is not convinced, at this stage, that the effort required to disaggregate to that level is necessary for developing the high level scenarios and demand forecasts that will be required for a 30-year study.**

CEC also submitted that the first requirement for considering development for export will be to identify the potential legal, regulatory and administrative context within which the exports will be developed and why that context is different from the current context. **The Panel is not convinced that a detailed review of what future legal, regulatory and administrative rules will be in place is required in order to develop reasonable scenarios of export development.**

ESVI provided several comments on specific scenarios that it wished to see developed. The Panel notes the comments of ESVI, but considers it premature to endorse any specific scenarios. ESVI also suggests that "...it be clearly stated that the demand-side measure forecasts themselves be considered in scope." **The Panel anticipates that energy and capacity forecasts will be presented on both a gross and a net basis so that in each forecast the amount of energy saved as a result of Demand Side Management ("DSM") is transparent. Evidence on whether the amount forecast for DSM in the various scenarios falls within a reasonable range is, in the view of the Panel, in scope. The revisiting of any DSM forecast methodology that has been considered by the Commission in its forthcoming decision on BC Hydro's 2008 LTAP is not in scope.**

IPPBC submitted that impacts of greenhouse gas initiatives on demand for electricity in potential exports should be in scope, as should interpretation of the relationship between the 3,000 GWh of surplus and exports. **The Panel considers that both issues are in scope. In the Panel's view, the latter issue could be dealt with as alternative scenarios, if consensus on interpretation cannot be reached.** The IPPBC further submitted that the statement in the Staff Paper, which suggests that revisiting BC Hydro's 2008 LTAP after the Commission has issued its decision is not in scope, contradicts section 7(c) of the Terms of Reference. Section 7(c) suggests that scenarios, that are in the Commission's opinion reasonable and not adequately addressed within the load-serving utilities most recent long-term resource plans, are in scope. **Thus, the Panel sees the potential for additional scenarios that are not adequately covered in the 2008 LTAP to be in scope, without revisiting the analysis that is contained in the 2008 LTAP, and the Commission LTAP decision.**

### **Interjurisdictional Trade**

In a letter dated June 11, 2009 (Ex. B1-4), BCTC and BC Hydro jointly proposed engaging the consulting firm Energy and Environmental Economics Inc. ("E3") to assist in assessing the export potential for B.C.'s electricity, and in doing so, to consider the entire Western Interconnection. E3 would identify and assess the impact of factors expected to have significant influence on the supply of, and demand for, clean or renewable or low-carbon electricity across the region.

At the June 24 Procedural Conference BCTC proposed to engage E3 to commence the work set out in Ex. B1-4 immediately following the Procedural Conference, subject to any concerns raised by Participants at the Procedural Conference.

The engagement of an independent expert to provide evidence on exports should assist in distinguishing between evidence provided by BC Hydro and others on domestic demand and the evidence on exports. FortisBC requested clarification on whether the consideration of generation developed for export means that such exports would first have to be offered in B.C. at a cost beneficial to B.C. ratepayers (Exhibit B3-3, pp.2-3). **The Panel is not prepared to make a determination on this question prior to the filing of any evidence or submissions on exports. It will address the issue after evidence on interjurisdictional trade has been filed, if it is still a pertinent issue.**

Enmax suggested that BC Hydro and BCTC share prior studies on export opportunities and transactions studies with Alberta and the United States. **While the Inquiry Panel is not adverse to BC Hydro and BCTC filing such studies, the Panel notes the comments by BC Hydro on the issue of exports at the second Procedural Conference (T2: 346-347 and 354-355) and is aware of the potential that such studies could contain commercially sensitive information. Therefore, the Panel is not prepared to direct them to file such studies at this time.**

**TransCanada Energy submits that both exports and imports should be considered as in scope. The Panel agrees.**

### **Assessment of Transmission**

The Staff Paper states that:

“Staff consider the above references to long-term regional development of generation and long-term transmission needs to imply a review of the province’s bulk transmission system at a high-level, and that the analysis should be regional or zonal, not route specific. Therefore staff believe that the existing bulk transmission system (230 kV or greater) would be an appropriate starting point for analysis of the transmission system.” (Ex. A-12, p. 6)

The Staff Paper further states:

“Initial focus on the bulk transmission system should not prevent consideration of regionally significant transmission, irrespective of the voltage that such transmission might be operated at initially.” (Ex. A-12, p.6)

IPPBC, BCOAPO and Enmax submitted that the 230 kV threshold was too high. IPPBC submitted that the distinction between distribution and transmission is 60 kV not 230 kV, and that it could not recall an instance where multiple transmission lines of 230 kV has ever been a problem. BCTC (Ex. B1-3, p. 1), BCSEA (Ex. C10-3, p.8) and CEC (Ex. C44-2, pp. 11-12) supported the approach set out in the Staff Paper. **The Panel is of the view that the Terms of Reference support a high-level, long-term view of the transmission system and this is consistent with a focus on the bulk transmission system. The Panel also notes that the Staff Paper proposed consideration of lines below 230 kV if they are regionally significant. This in the Panel’s view allows for the inclusion of such lines that the system analysis may show to be necessary, but where a 230 kV threshold is not met.**

BCTC suggested that “estimated cost” should be added to the list of items to be included under analysis of the bulk transmission system. BCSEA also asked that it be confirmed that the list is not intended to be exclusive. **The Inquiry Panel agrees with both comments. “Estimated cost” is to be added to the list of items. The Panel does not consider the list to be exclusive.**

BC Hydro submitted (Ex. B2-3, p. 8) that the Inquiry is not, and cannot be, a determination on cost-allocation. BCTC (T2: 133-135) takes a similar position to that of BC Hydro. The JIESC (Ex. C6-2) also submitted that domestic transmission cost allocation is out of scope for this proceeding, arguing that there are other processes for such allocations. The JIESC believes that the Inquiry must define the approximate cost of recommended transmission facilities and the nature of key drivers behind the need for those facilities (e.g. domestic load, sale of domestic surplus, opportunity trades and export). BCTC stated that the level of segregation of costs requested by the JIESC should be achievable in its transmission system modeling and that it is “probably fair game” (T2: 358).

The Burke Mountain Naturalists (Ex. C86-2) and the Wilderness Committee (Ex. C92-2) submitted that the cost-allocation of new transmission should be in scope. The Panel notes that the Terms of Reference are silent on the issue of cost allocation with the exception of a specific committed project identified in the Terms of Reference. **The Panel is of the view that there are other processes for determining cost allocations. However, the Panel is also of the view that defining the approximate cost of recommended transmission and the nature of the key drivers behind the need for those facilities are in scope.**

The First Nations EMC submitted that it will be relevant to define other regionally significant long-term lower voltage transmission infrastructure proposals, including First Nations concerns regarding lack of grid access and continued reliance on diesel generation. **The Panel, at this time, considers that it is in scope to hear First Nations concerns on these issues, but the Panel recognizes that a resolution in any specific instance may be beyond the scope of the Inquiry. For example the appropriate resolution could be an alternative (non-diesel) generation resource rather than new transmission.**

The Line Contractors Association of BC submitted that several issues related to cost-estimates for forecasts, contracting and labor practices, and employment skills development should be considered as issues in the Inquiry. **The Inquiry Panel finds that these issues, with the exception of information required to support high-level, long range cost estimates of transmission, are out of scope.**

BCSEA provided several clarifying comments or questions. Many of these, in the Panel's view are of a detailed nature, and not inconsistent with the general direction of the scope as set out in the Staff Paper. Thus they do not require a response on each point. **The Panel will address the question of whether 'areas inappropriate for development' are applied to both generation and transmission in the next section of these Reasons.** BCSEA correctly noted that the Terms of Reference make reference to cost-allocation with reference to specific planned transmission capacity north of Skeena substation. Finally, BCSEA submitted that the scoping decision should address the topic of transmission infrastructure built by entities other than BCTC or FortisBC. The Panel is not persuaded that there is any purpose to be served in addressing the topic at the present time and so declines to do so.

CPC and the BC HVDC Initiative encouraged the Panel to consider transmission line technology as a part of its deliberations. The submission of the BC HVDC Initiative describes what it sees as the advantages of an HVDC (High Voltage Direct Current) bulk power link between the North and South regions of BC, and describes a preferred corridor location. Some Participants, including BCTC, noted that while determinations on specific technologies are out of scope, the cost associated with different technologies would be taken into account in the modeling of the transmission system. **The proposal by the BC HVDC Initiative is premature in the Panel's view. It is, however, in scope for the Inquiry to look at the need for a bulk power link between the North and South regions of BC. The Panel finds that, assuming that the need and capacity of such a link has been determined, it is an appropriate matter for the Inquiry to account for significant cost differences between alternatives to be entered into the BCTC transmission model (including technology alternatives), but that it is not an appropriate matter to engage in detailed review of the different technologies.**

CPC urged evaluation of the impact of smart grid technology on generation, transmission and distribution and appropriate recommendations in that regard. ESVI also suggested that the discussion of the transmission interties with Alberta and the U.S. should include a discussion of the Smart Grid. **The Panel notes that, under the Terms of Reference, it is not to make determinations with respect to specific technologies and considers the evaluation of smart grid technology, beyond what is required to assess the impact on long-term transmission needs, to be outside the scope of the Inquiry.**

BCOAPO, in addition to its comments on the 230 kV threshold for the analysis, submitted that discussion of reliability standards to define the amount of redundancy that will be needed in the system to meet future requirements, should be in scope. **The Panel agrees that discussion of reliability standards for that limited purpose only is in scope.**

The Coast Forest Products Association submitted that the Inquiry needs to consider how best to capture increased power generation within limited corridors, and that the routing of transmission and the impact of routing on the forest sector and other resource industries should be in scope. If this is not practical, it asks the Inquiry to establish clear and consultative parameters that can be applied to routing determinations. Under the Terms of Reference, **determinations about specific routes of transmission projects are out of scope. However the Coast Forest Products Association may provide general information on the impact of transmission routing on the industry.**

The Burke Mountain Naturalists commented that it is important to distinguish between facilities that can provide base load power and those that provide intermittent power. **The Inquiry Panel agrees and considers that this distinction will be necessary for the analysis of the transmission system.**

### **Areas Inappropriate for Development**

The Staff Paper observes that in staff' s view, the assessment of areas inappropriate for development is limited to **generation** resources, not transmission. The Staff Paper proposed that areas inappropriate for the development of generation resources could fall into two general categories: the first being "Exclusion Areas", which are those where new generation is already precluded or severely constrained by statute, regulation, or official plans; the second being areas where new generation should be deferred or avoided based on imminent government decisions, or where prolonged review by permitting agencies can be anticipated, due to significant ecological, traditional use, or cultural values. The Staff Paper also suggested that, in the view of staff, the Inquiry will rely on current policies and land use designations contained, for example, in land and resource management plans, strategic land use resource plans and official community plans.

It was staff' s view that consideration of areas inappropriate for the development of new generation must be based on *readily available and foreseeable* information. The Inquiry is not meant to substitute for or prejudice environmental assessment, land use, or permitting processes. Evidence should not include any individual project or permitting issues.

BCTC argued against inclusion of the second category of inappropriate areas on the basis that debate on these areas would necessarily be subjective, and that, even though some areas might be subject to prolonged review, the area could ultimately be developed within the time frame of the Inquiry (Ex. B1-3, p. 3). For similar reasons, BC Hydro argued against inclusion of the second category. FortisBC submitted that “..greater certainty and scope should be given to the factors involved in the identification of areas inappropriate for generation development than as presently stated in the Staff Discussion Draft.”

The First Nations EMC stated that it is not clear on what basis the Inquiry’ s scope does not also require areas inappropriate for transmission development. It also stated that in looking at areas where development should be deferred or avoided based on imminent government decisions, consideration must be given to ongoing Treaty studies and negotiations, and ongoing requirements to collaborate with First Nations on land use planning processes.

BCSEA accepted the two general categories identified in the Staff Paper, but submitted that they should be described in broader terms than staff used. BCSEA would include, in the examples of exclusion areas in the Staff Paper, areas identified in completed Land and Resource Management Plans and other landscape level plans. BCSEA also supported expanding the definition of avoidance areas. BCSEA submitted that “ Even where some generation may be acceptable in an area, the analysis should recognize that the full technical potential in any particular region is unlikely to be developed due to localized environmental constraints.”

CPC submitted that a distinction between generation resources and transmission for purposes of assessing which areas are inappropriate for development, while consistent with the letter of the Terms of Reference may be inconsistent with the spirit. CPC noted that recent experience demonstrated that transmission development may be vigorously opposed in some areas, and that some areas (e.g. National Parks) are unavailable for transmission irrespective of the Terms of Reference.

CEC generally agreed with the Staff Paper on this issue, but added that the Panel should not be constrained from hearing concerns about what is in or not in existing policies, land use designations or plans.

The Coast Forest Products Association submitted that the routing of electricity transmission projects and the impact of such routing on the forest sector and the other natural resource industries should be included in the scope of the Inquiry.

The Sto:lo Tribal Council (“ Sto:lo” ) submitted that “ ..if First Nations are willing to engage in a planning process for traditional territories, this should be encompassed within the Sec. 5 Inquiry in order to allow First Nations the chance to meaningfully participate in strategic planning level of decision making.” The Sto:lo argued that, in the format put forward by the BCUC staff, provincial, regional and municipal zoning and plans will take precedence over Sto:lo land designations based on disparity in opportunity to prepare these documents. (Ex. C72-2, p. 2)

The Haisla Nation submitted that the scope of areas inappropriate for development should be broadened to include an assessment of: areas that are appropriate or inappropriate for development of generation and/or transmission regardless of current regulatory, statutory or planning-based constraints and status; circumstances

in which areas that are otherwise unavailable for development as a result of legislation or pending decisions may become available and how their suitability may be assessed; consideration of First Nations land use planning and aboriginal interest and use studies, and how First Nations voices will be heard in the absence of such information (Ex. C83-2). The submissions of the We Wai Kai Nation (Cape Mudge Indian Band) (Ex. C84-2) were similar to those of the Haisla.

The Burke Mountain Naturalists also argued that areas inappropriate for development for both generation and transmission should be in scope. The Wilderness Committee (Ex. C92-2) argued that restricting the review of areas inappropriate for development would result in an inadequate analysis and that transmission should be included in scope. The Wilderness Committee also submitted that the consideration of areas inappropriate for development should include analysis of ecological values and traditional use values, and impacts on endangered species.

The Nlaka'pamux Nation Tribal Council, the Okanagan Nation Alliance, the Shishalh Nation, and the Tahltan Central Council jointly submitted that the Inquiry must consider and make recommendations regarding particular areas of their territories which for cultural spiritual, environmental or other Aboriginal title and rights reasons are inappropriate for energy development.

**The Panel accepts that consideration of areas inappropriate for development is specifically limited in the Terms of Reference to generation resources. However, when the scale of a legally defined protected area is sufficiently large that it could have an impact on the cost or viability of a transmission line, or the ability to connect a generation cluster to the existing transmission system, the Panel would be unwise not to at least comment on those facts. Therefore, the Panel will consider presentations, evidence and submissions on the ability to connect regional new generation to the existing transmission grid.**

**The Panel also concludes that, in considering areas inappropriate for development of generation, it will rely primarily on Exclusion areas as set out in the Staff Paper. The Panel will also consider presentations, evidence and submissions from First Nations with respect to broad-based concerns or issues with respect to generation in their territories. The Panel will not be reviewing individual generation sites, and is not persuaded that review of detailed land-use plans is necessary. Integration of Generation, Demand and Transmission Requirements**

Some Participants submitted that the Inquiry should adopt a more integrated approach that combines the interrelated impacts of generation, demand and transmission requirements (ESVI: Ex. C58-2, pp. 4, 9; Columbia Power: T2: 199).

BCTC described its view of an integrated approach at the June 24 Procedural Conference. BCTC explained that initially it would work with BC Hydro and FortisBC to prepare a set of initial scenarios that represent a range of possible outcomes. Following a workshop to engage with Inquiry Participants, the expected loads and potential generation resources associated with each of those initial scenarios would be estimated and the corresponding transmission plans developed. As a result, in BCTC's view, a scenario is a total package that combines the various components in an integrated way. (T2: 131)

**The Inquiry Panel notes the comments of BCTC and others on an integrated approach, but concludes that the issue does not require a determination on scope.**

## LONG TERM ELECTRICITY TRANSMISSION REQUIREMENTS INQUIRY

Scoping Document - July 10, 2009

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### Introduction

This Scoping Document provides Participants with the Inquiry Panel's ("Panel") determinations with respect to the issues and level of detail that it considers appropriate and consistent with the Terms of Reference for the Inquiry. This Scoping Document supplements the Panel's Reasons for Decision on Scope and incorporates those scoping issues upon which Participants appear to be in general agreement. This Scoping Document focuses on the following issues:

- provincial generation potential
- assessment of domestic electricity demand
- assessment of interjurisdictional trade
- analysis of the transmission system
- areas inappropriate for development
- integration of generation, demand and transmission requirements.

As noted in the Reasons for Decision, while First Nations' issues were included in the Staff Paper, issues relating to First Nations' interests are the subject of another round of written submissions and another Procedural Conference. Consequently, the Panel will not address those issues now.

Further, while the Panel views this Scoping Document as establishing a suitable scope for the Inquiry, it reserves the right to revisit certain scoping issues, if necessary, following the filing of the Initial Evidence on September 18, 2009.

### Provincial Generation Potential

Several paragraphs in the Terms of Reference outline the issues relating to the assessment of provincial generation resources that are in scope and that are out of scope. Paragraph 3 of the Terms of Reference outlines generally what must be addressed. The Panel considers the following issues to be in scope and consistent with the Terms of Reference.

- Information on sources of electricity supply from the BC Hydro Long Term Acquisition Plan ("LTAP") and recent calls for power, FortisBC, and any other reliable sources of information, including the outline of work that BC Hydro proposes to undertake in Exhibit B2-3.
- Generating capability, type and geographic area. To effectively model the transmission system, the Panel believes that these estimates should include:
  - The regional location of the generation option, the first and last year the energy is available, the range of peak generation capacity (MW) and energy (GWh);
  - Approximate unit energy cost and unit capacity cost;

- Assessment of whether it meets the Provincial Government' s clean or renewable electricity guidelines;
- Information on capacity rating type (Dependable Generation Capacity, Effective Load Carrying Capacity, Maximum Continuous Rating) may be required.
- Information on all existing electricity resources, including any anticipated changes that may occur, such as Resource Smart projects and end-of life estimates with or without life extension projects.
- Developing technologies and their impacts on the economics of generation may be considered, especially as this may affect renewable generation such as wind, solar, wood waste, other bioenergy, geothermal, ocean (wave, tidal and in-stream current), or other such renewable generation resource that is anticipated to be commercial or near commercial; Distributed generation in or near load centres and the impact of Feed-in tariffs on the availability of distributed generation is in scope, subject to the conditions in the Panel' s determinations on scoping set out in the Reasons for Decision.
- Investigation of whether or not electricity storage options such as batteries in hybrid electric vehicles or pumped storage are available as a means of meeting capacity requirements and whether it is cost-competitive with other alternatives;
- The potential for clean coal generation in combination with carbon capture and storage;
- The methodologies to determine the approximate cost and the capacity rating type, the basis for determining the regions, the ability of generation to provide base load versus peak demand and the costs and benefits of resource diversity;
- The need for generation resources resulting from both domestic and export demand; and,
- Evidence on whether proposed generation or storage options are commercial or near commercial and on the level of technical review of the generation resource potential.

The Panel concurs with the view expressed in the Staff Paper (Ex. A-12, p.2) that it will be in scope, and necessary, to produce a viable number of resource options for each region. To be clear, the regional analysis of resource options can employ a combination of scenarios, assumptions and sensitivity analyses, but will need to result in a manageable number of regional resource option forecasts.

BCTC highlighted the difference between scenarios and forecasts, describing a scenario as a construct that will "...provide a broad view of the future that may be influenced by a variety of factors (both controllable and non-controllable) including the economy, technology, policy decisions and environmental developments. A particular scenario would not necessarily represent the most likely case, but rather a set of scenarios would represent a range of possible futures. In this context a forecast would describe the load or generation associated with a particular scenario." (Ex. B1-3, p. 2) BCTC expanded on this description at the Procedural Conference on June 24, stating that "...with a range of scenarios you should get a pretty good idea of what's needed." (T2: 129-13). BCTC suggested that five or six scenarios would be a reasonable number to work with (T2: 149).

For example, one scenario could be a wind emphasis scenario that, based on a set of assumptions relatively favourable to wind energy, would tend to increase the generation forecast in regions with more wind potential. Similarly, scenarios could be developed with assumptions favourable to run-of-river generation, to ocean (wave, tidal and in-stream current) generation, to solar generation, or to coal generation with carbon capture and storage, and such scenarios would tend to increase or decrease the generation forecasts in various regions depending on the supply resource options in each region. It might be possible to achieve a similar result using sensitivity analysis around one or more base case scenario(s).

The Panel notes that some Participants have suggested that, because of the magnitude of the resource, a discrete scenario should be developed based on the assumption that BC Hydro's Site C dam proceeds.

The Panel is not endorsing or precluding any particular assumptions or scenarios at this point, but notes that regional generation estimates and a range of cost forecasts for generation by region will be required to assist in determining the most cost-effective and probable sequence(s) of development, and therefore the need for transmission infrastructure.

#### Not in Scope

Paragraph 5 of the Terms of Reference prohibits the Commission from making determinations on the merits of specific generation projects. Thus the Inquiry will not consider the merits of specific generation projects. The Panel accepts that known projects based, for example, on determinations already made by the Commission Panel reviewing the BC Hydro LTAP application would be included in the base data. The revisiting of the 2008 LTAP and the Commission Decision is not in scope. Furthermore, revisiting Energy Purchase Agreements already issued by BC Hydro and approved by the Commission is also not in scope.

In the view of the Panel, the Terms of Reference do not contemplate that the Panel's Report should include the merits, for example, of one generation project versus another. They do, however, contemplate that in making its Report, the Panel will analyse what a reasonable range of generation potential is in the province, the geographic dispersion of that generation, and the characteristics of the generation in each region.

#### **Assessment of Domestic Electricity Demand**

In order to meet the general purpose of the Inquiry, forecasts of demand under varying conditions for the 30-year study period are necessary. Agreement or Panel direction on a manageable number of demand scenarios, which are meaningfully different from each other, is vital to the Panel delivering useful determinations. The Staff Paper set out specific sections of the Terms of Reference related to the staff's conclusions regarding forecast demand. While the Staff Paper was intended to explain the staff thinking and to provoke discussion about the scope of the Inquiry, the Panel considers it preferable if parties refer directly to the Terms of Reference in their entirety rather than to reproduce them here.

#### In Scope

- Both domestic and export demand are in scope.
- The Commission is to have regard for the utilities' "...most recently approved long-term resource plans." Therefore, BC Hydro's and FortisBC's long term resource plans, including their most recently filed and relevant contingency resource plans as accepted by the Commission are in scope.
- Because the Inquiry study period is longer than the LTAP period, the LTAP forecasts will need to be extended. In addition, scenarios may need to be developed to reflect future outcomes that were not adequately addressed in the LTAP. For example, the Terms of Reference consider heightened requirements arising from fuel switching to electricity as a greenhouse gas reduction strategy, and regional long-term economic expansion.
- BC Hydro provided additional information on its planned submissions on domestic demand and how it plans to engage other stakeholders to reconcile its own data with that of the other stakeholders. (Ex. B1-4) The work proposed to be undertaken by BC Hydro is all within the scope of the Inquiry.

- Reasonable scenarios leading to forecasts of the province’s net domestic long-term energy and capacity requirements, taking into account factors such as provincial self-sufficiency requirements and demand-side measures, are in scope; Evidence on whether the amount of DSM in the various scenarios falls within a reasonable range is in scope. Equally, peak demand reduction measures such as those proposed by JIESC are in scope.
- New technologies such as electric vehicles and home electronics may increase demand, while conservation technologies may reduce demand. Reasonable estimates of the impact of such new technologies on domestic and export demand are in scope.

The Panel expects that demand forecasts will be estimated for each year in the study period and disaggregated to show the demand at appropriate points in the study model for both capacity (MW) and energy (GWh) and that regional domestic demand forecasts will be created by disaggregating the province-wide 30-year forecasts.

BC Hydro, BCTC and the BCSEA suggested that further clarification regarding the use of the terms scenarios and forecasts would be helpful. BCTC provided a description of scenarios which has been quoted above in the context of the assessment of generation. The same description of a scenario could be applied to future demand. In that context, a scenario - the variety of factors (both controllable and uncontrollable) including the economy, technology, policy decisions and environmental developments - will produce a forecast of the energy and capacity required under that scenario. BCTC notes that some scenarios could impact both demand and generation, and that under certain scenarios, some types or locations of generation might need to be changed.

Scenarios will consider and adopt appropriate input from Participants, including the utilities, local and regional governments, and large volume consumer groups. Such input would include key regional determinants of electricity demand, such as the long-term outlook for major industrial sectors such as forestry, mining, and oil and gas. BCSEA states that “...the important point is that the range of demand scenarios reflect a reasonable range of future demand by major industrial sectors as a whole, and the range of plausible geographical distribution of industrial load.” (Ex. C10-3, p. 7)

The Panel concurs with the comments in the Staff Paper that a limited number of scenarios be used to group factors that influence demand in order to produce a viable number of options. As noted in the previous section, BCTC suggested that a reasonable number of scenarios would be five or six (T2: 149), and the Panel agrees that this appears to be a reasonable number at this early stage in the Inquiry.

#### Not in Scope

The Panel interprets the direction provided in the Terms of Reference with regard to the utilities’ most recently approved long-term resource plans to mean that the Inquiry is not intended to be a forum for revisiting BC Hydro’ s June 2008 LTAP after the Commission LTAP Panel has issued its Decision on it. Thus the Panel does not consider that revisiting any load forecast or DSM forecast methodology that has been approved by the Commission in its forthcoming decision on BC Hydro’ s 2008 LTAP to be in scope.

### **Assessment of Interjurisdictional Trade**

With regard to potential electricity demand created by exports, paragraph 3(a)(v) of the Terms of Reference states that the Commission must assess the regional generation resources in British Columbia that will potentially be developed during the determination period, grouped by geographic location, considering “...potential future market opportunities to export clean or renewable or low-carbon electricity to other jurisdictions that is surplus to the requirements of load-serving utilities in British Columbia.”

In order to meet this requirement, the scope of evidence prepared to address exports may include:

- A reasonable range of information concerning renewable and low-carbon resource potential in British Columbia;
- The demand for that generation in British Columbia;
- The resultant surplus that is available for sale to other jurisdictions, including from potential generation (and related transmission) that may be specifically developed for that purpose;
- The potential demand for that generation, including energy, capacity, and clean attributes, in other jurisdictions over the next 30 years;
- The impact of greenhouse gas initiatives on potential export demand;
- Both exports and imports are in scope, as is the interpretation of the relationship between the 3,000 GWh surplus and exports.

At the June 24 Procedural Conference BCTC proposed to engage E3 immediately following the Procedural Conference to commence the work set out in Exhibit B1-4, subject to any concerns raised by participants at the procedural conference.

The Panel considers the engaging of E3, and the scope of the work it is to undertake for the Inquiry to be both helpful and within scope.

### **Analysis of the Transmission System**

Paragraph 5 of the Terms of Reference states that in making the determinations referred to in paragraph 4, the Commission may not make determinations with respect to the specific routing or technological specifications of electricity transmission projects. The sixth recital on page 2 of the Terms of Reference cites the need to “fully consider the potential long-term regional development of generation resources and the long-term transmission needs to access those resources.”

#### In Scope

The Panel is of the view that the Terms of Reference support a high-level, long-term view of the transmission system and this is consistent with a focus on the bulk transmission system. The Panel also notes that the Staff Paper proposed that the existing bulk transmission system (230 kV or greater) would be an appropriate starting point for analysis of the transmission system and should allow for consideration of lines below 230 kV if they are regionally significant. This in the Panel’s view allows for the inclusion of lines that the system analysis may show to be necessary, but where a 230 kV threshold is not met.

Initial focus on the bulk transmission system should, therefore, not prevent consideration of regionally significant transmission, irrespective of the voltage that such transmission might be operated at initially. For example, connecting the Fort Nelson area to the BC Hydro system north of Fort St. John by a 138 kV line could be one of several supply options to meet growing demand, and the proposed 287 kV line north of Terrace along Highway 37 may be initially operated at 138 kV.

However, as indicated above, the Terms of Reference prohibit the Commission from making determinations on the merits of specific generation projects or with respect to the specific routing or technological specifications of transmission projects. Therefore, the Panel considers that bulk transmission reinforcements developed in response to various scenarios need not be voltage specific, but should provide a general (not-specific) path and a transfer capacity for that path in MW.

Analysis of the bulk transmission system will include:

- the general (not specific) path location;
- the transfer capacity of the path in MW;
- estimated cost;
- component end-of-life date;
- line losses;
- timing of new additions.

The Panel agrees with the view that defining the approximate cost of recommended transmission and the nature of the key drivers behind the need for those facilities (e.g. domestic load, sale of domestic surplus, opportunity trades and export) is in scope.

Paragraph 4 of the Terms of Reference states that the Commission must make determinations respecting the need for, and timing of, additional transmission infrastructure and capacity that would allow for improved electricity transmission intertie capacity between British Columbia and the United States or Alberta that can be used effectively to permit continued optimization of the electricity system in British Columbia, and to support the export of surplus electricity. Thus, issues with respect to the capacity of the interties with Alberta and the U.S. are in scope.

#### Not in Scope

- Detailed analysis of the lower voltage transmission system except for proposals for transmission that are regionally significant.
- Specific routes or technological specifications of transmission projects; the Panel accepts that high-level corridor or technical information may be used to generate the cost estimates for the scenarios.
- For the reasons discussed in its Reasons for Decision, domestic transmission cost-allocation is out of scope for this proceeding, as there are other processes for such cost-allocation considerations.

### **Areas Inappropriate for Development**

Paragraph 3(a) (iii) of the Terms of Reference provides that in assessing generation resources in British Columbia that will potentially be developed during the determination period, grouped by geographic location, the Commission must consider:

*“that certain areas in British Columbia will be inappropriate for the development of generation resources, such as, but not limited to, parks and protected areas.”*

The reason for the consideration of this topic, in the view of the Panel, is to help with its estimate of potential generation resources grouped by geographic location, and their sequencing of development.

As explained in the Panel’s Reasons for Decision, it is persuaded that consideration of areas inappropriate for development is specifically limited in the Terms of Reference to generation resources. However, when the scale of a legally defined protected area is sufficiently large that it could have an impact on the cost or viability of a transmission line, or the ability to connect a generation cluster to the existing transmission system, the Panel would be unwise to ignore it.

The Panel also concludes that, in considering areas inappropriate for development of generation, it will rely primarily on exclusion areas as set out in the Staff Paper. The Panel will also consider submissions from First Nations with respect to broad-based concerns or issues with respect to generation in their territories. The Panel will not review individual generation sites, and is not persuaded that detailed review of land-use plans is necessary. The Panel, at this stage in the Inquiry, considers that concerns about the ability to develop generation in an area can be addressed by scenario development or sensitivity analysis. For example an area where generation is generally likely to be more difficult to build, because of the existence of exclusion areas or First Nations’ concerns, can be addressed in the analysis by varying the total amount of generation in the region or zone, or the timing of generation development.

### **Integration of Generation, Demand and Transmission Requirements**

This issue is addressed in the Reasons for Decision. The Panel finds BCTC’ s explanation to be responsive to the concerns and questions about an integrated approach.