



**British Columbia Transmission
CORPORATION™**

**System Impact Study for
One-Year Transfer Applications on the
EAL × BPAT Path
Between 1 November 2006
and 1 May 2010**

**Report No: SPA2006-6
April 2006**

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Executive Summary

The following applications for Long Term Firm Point-to-Point (LTFPtP) transmission service on the EAL x BPAT Path were submitted to British Columbia Transmission Corporation (BCTC):

OASIS #	Time Stamp	Customer	Amount	Term
70609893	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2006 – 1 Nov. 2007)
70609900	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2006 – 1 Nov. 2007)
70609902	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2007 – 1 May 2008)
70609904	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2007 – 1 May 2008)
70609906	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2007 – 1 Nov. 2008)
70609907	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2007 – 1 Nov. 2008)
70609910	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2008 – 1 May 2009)
70609914	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2008 – 1 May 2009)
70609916	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2008 – 1 Nov. 2009)
70609918	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2008 – 1 Nov. 2009)
70609921	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2009 – 1 May 2010)
70609922	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2009 – 1 May 2010)

In response to the above applications and in accordance with the Open Access Transmission Tariff (OATT), BCTC prepared this System Impact Study (SIS). The SIS only addresses the capability of the BCTC's transmission grid and does not consider capabilities of adjacent systems.

The study is consisted of following two parts:

- A) Review of the impact of wheeling 25 MW of power through BCTC transmission grid from BC-Alberta border to BC-US border between 01 November 2006 and 01 May 2010.
- B) Review of the impact of wheeling 50 MW of power through BCTC transmission grid from BC-Alberta border to BC-US border between 01 November 2006 and 01 May 2010.

The starting conditions for this SIS are: BCTC's studies of the 2004 Network Integrated Transmission Services request (NITS2004), BC Hydro's native load requirements, existing "General Wheeling Agreement" (GWA) transfer rights, and prior LTFPtP commitments on the EAL x BCTC and BCTC x BPAT Paths.

In this SIS, it is concluded that the existing transmission system does not have the capability to accommodate any of the requested Long-Term Transmission Services. The only way that the requested Long-Term Firm Point-to-Point Transmission Services can be accommodated is through the re-dispatch of generation resources, where:

For wheeling 25 MW on EAL x BPAT path:

- a) South Interior East (SIE) generation is restricted to limit the flow on the 5L91-5L96-5L98 cut-plane to 1825 MW between 1 November 2006 and 1 May 2010.
- b) The Lower Mainland (LM) and Vancouver Island (VI) generation is dispatched to relieve approximately 27 MW on the Interior to Lower Mainland (ILM) transmission grid between 1 November 2006 and 1 May 2010.

For wheeling 50 MW on EAL x BPAT path:

- a) SIE generation is restricted to limit the flow on the 5L91-5L96-5L98 cut-plane to 1800 MW between 1 November 2006 and 1 May 2010.
- b) The LM and VI generation is dispatched to relieve approximately 54 MW on the ILM transmission grid between 1 November 2006 and 1 May 2010.

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1. Introduction

The following twelve Wholesale Transmission Service (WTS) Applications for wheeling LTFFtP power through BCTC's transmission grid on the EAL x BPAT path are processed in accordance with BCTC's OATT:

OASIS #	Time Stamp	Customer	Amount	Term
70609893	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2006 – 1 Nov. 2007)
70609900	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2006 – 1 Nov. 2007)
70609902	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2007 – 1 May 2008)
70609904	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2007 – 1 May 2008)
70609906	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2007 – 1 Nov. 2008)
70609907	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2007 – 1 Nov. 2008)
70609910	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2008 – 1 May 2009)
70609914	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2008 – 1 May 2009)
70609916	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2008 – 1 Nov. 2009)
70609918	20 Dec. 2005	NRPT	25 MW	1 year (1 Nov. 2008 – 1 Nov. 2009)
70609921	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2009 – 1 May 2010)
70609922	20 Dec. 2005	NRPT	25 MW	1 year (1 May 2009 – 1 May 2010)

This SIS reviews the system conditions that are required for wheeling either 25 MW or 50 MW on the EAL x BPAT path between 01 November 2006 and 01 May 2010.

2. Terms of Reference

The review of the submitted OASIS requests is conducted with reference to the following two BCTC documents:

1- "Facilities Study For BC Hydro Distribution NITS 2004, Report # SP2005-26, September 2005" (NITS2004-FS).

<http://www.bctc.com/NR/rdonlyres/86705D4D-0560-4A56-AAB1-5F9FA32ADDF9/0/SP200526Final2.pdf>

2- "System Impact Study For BC Hydro Distribution NITS 2004 - Stage 3 (Final) Revision-1, Report # SP2005-06, May 2005" (NITS2004-SIS-Stage3).

http://www.bctc.com/NR/rdonlyres/7242916C-A344-434E-8C4E-5B27108ADB9B/0/SIS_Stage3Revision1.pdf

3. Resources for Transmission Request

The Point-of-Receipt (POR) will be BC - Alberta border on the EAL x BPAT Path. Since there is no ATC on the Eastern BC-US tie, power delivery will be through the

Westside BC – US 500 kV interconnections (5L51 and 5L52). Point-of-Delivery (POD) will be at the BC – US border. Alberta generators are the resources for this request.

4. System Study Conditions

A review of the OASIS requests # 70609893 to 70609922 is based on the following network conditions:

- BC Hydro's October 2004 normal load forecast with the probability of the actual load exceeding the forecast once every two years¹.
- BC Hydro's required peak hour Reliability Must Run (RMR) generation in the LM and VI for the normal load forecast²:

	2006/07	2007/08	2008/09	2009/10	2010/11
BC Hydro's Required RMR Gen. for Normal Load Forecast (MW)	1207.0	1285.0	1427.0	1530.0	1811.0

- BC Hydro's committed generation in the LM and VI:

	2006/07	2007/08	2008/09	2009/10	2010/11
BC Hydro's Committed Gen. in the LM and VI	1320.1	1320.6	1256.6	1281.9	1335.7

- Total Transfer Capability (TTC) of the 5L91-5L96-5L98 cut-plane: 1850 MW³.
- The existing General Wheeling Agreement (GWA) with Fortis BC on transfer rights.
- OASIS # 72623 for 230 MW LTFPtP commitment on the BCTC x BPAT Path
- Automatic rollover of OASIS # 311567 for 101 MW LTFPtP transfer on EAL x BCTC.
- Teck Cominco Scheduling rights.
- Transmission Reliability Margin (TRM) of 65 MW on the AEL x BCTC path.
- TRM of 50 MW on the BCTC x BPAT path.

5. Project and Transmission Service Risks

A) Content of this document contains some uncertainty in terms of the load forecast and committed generation in the LM, VI, and SI-E.

¹ BC Hydro's native load requirements are included in the Network Integration Transmission Service request OASIS No.'s 1349122, 1349123, 1349124, and 1349125 submitted on 15 September 2004.

² NITS2004-SIS-Stage3, Page 13, Table 4.1

³ NITS2004-FS, Page 28

B) Availability of the identified transmission service will be subjected to a separate agreement between the transmission customer and BC Hydro. This agreement should address BC Hydro's generation scheduling in the LM, VI, MCA, REV, and SI-E. There is a risk that BC Hydro and the transmission customer do not reach an agreement on the generation dispatch restrictions.

6. Conclusions

In this SIS it is concluded that the existing BCTC transmission system does not have the capability to accommodate any of the requested Long-Term Transmission Service. The only way that the requested Long-Term Firm Point-to-Point Transmission Service can be accommodated is through the re-dispatch of BC Hydro's generation resources, where:

For wheeling 25 MW on EAL x BPAT path:

- a) South Interior East (SIE) generation is restricted to limit the flow on the 5L91-5L96-5L98 cut-plane to 1825 MW between 1 November 2006 and 1 May 2010.
- b) The Lower Mainland (LM) and Vancouver Island (VI) generation is dispatched to relieve approximately 27 MW on the Interior to Lower Mainland (ILM) transmission grid between 1 November 2006 and 1 May 2010.

For wheeling 50 MW on EAL x BPAT path:

- a) SIE generation is restricted to limit the flow on the 5L91-5L96-5L98 cut-plane to 1800 MW between 1 November 2006 and 1 May 2010.
- b) The LM and VI generation is dispatched to relieve approximately 54 MW on the ILM transmission grid between 1 November 2006 and 1 May 2010.

Appendix 1 Transmission Cut Planes

Figure 1: The Interior to Lower Mainland Cut Plane

TTC: Approximately 6300 MW

Expected cut plane flow:

6230 MW (with 1320.1 MW generation in the LM & VI) in winter 2006,

6310 MW (with 1320.6 MW generation in the LM & VI) in winter 2007.



