Attachment C – Public Hearing Registration Form

This attachment outlines the process for registering to participate in the public hearing. When registering, please include the following information:

Full name	Sara Van Mulligen
Organization	Sea Breeze Victoria Converter Corporation
Email address	<contact information removed>
Mailing address	<contact information removed>
Telephone	<contact information removed>
I intend to participate	☑ In a general session – Location: Prince George -- or via teleconference ☐ In a community session – Location: ☐ In a topic-specific session – Location and Topic: _____ ☑ In writing ☑ Orally (I request 20 minutes to present)
If you require translation, specify language	N/A
Please submit a synopsis of the information to be presented *(attach a separate sheet if necessary)*	The Juan de Fuca Cable Project ('JdF') is a risk reduction tool for Site C. Its additional intertie export capacity could help reduce the cost of any unexpected system surplus after Site C comes on line. Similarly its additional intertie import capacity could assist BC Hydro meet any deficit if Site C were delayed. The export and import capacity offered through the Juan de Fuca Cable requires neither government nor BC Hydro direct or indirect funding.

Sea Breeze Victoria Converter Corporation

<contact information removed>

November 25, 2013

VIA E-MAIL to: SiteCReview@ceaa-acee.gc.ca

Site C Review Panel Secretariat
160 Elgin Street, 22nd Floor
Ottawa ON K1A 0H3

Attention: Courtney Trevis, Panel Co-Manager

Dear Ms. Trevis:

Re: Site C EIS Review: Juan de Fuca Cable Project could help if a large unexpected surplus exceeds current intertie capacity

We provide the attached document as a written submission to the Joint Review Panel.

The attached document addresses part of a question raised by the JRP in IR #25.

The document explains how the proposed Juan de Fuca Cable Project could help BC Hydro export any unexpected surplus if it exceeded the capacity of the current interties. This could be very helpful if actual domestic demand is exceptionally low and/or during extremely wet water years.

We look forward to the opportunity to make a presentation to the Joint Review Panel.

Should you have any questions, please do not hesitate to contact me.

Respectfully submitted,
Sea Breeze Victoria Converter Corporation

<signature removed>

Per: Paul B. Manson
President

Juan de Fuca Cable Project

The Project will supply additional intertie transfer capacity that could help export energy if BC Hydro faced surpluses after Site C comes on line

The Juan de Fuca Cable Project:

The Juan de Fuca Cable ('JdF'), is a proposed new 550MW bi-directional electricity transmission cable crossing beneath the Strait of Juan de Fuca. It will expand transmission capacity between British Columbia and the US Pacific Northwest by adding a new interconnection between these two regions.

Joint Review Panel Question:

In the first part of Information Request 25 (IR 25) the Panel asks whether there is sufficient intertie capacity to enable potential system surpluses to be exported after Site C is built.

The Panel requested BC Hydro to *"Provide an assessment as to whether export capacity, prices, and regulatory issues will allow full cost recovery of excess generation in cases where the load forecast exceeds actual demand."*

BC Hydro Response to IR 25

BC Hydro's response regarding Intertie Capacity concluded with the following statement; *"Based on the portfolio PV modelling results, BC Hydro expects that there will be adequate export capacity with the current intertie limits to the U.S. to manage the surplus associated with the portfolios considered in the evaluation of alternatives."*

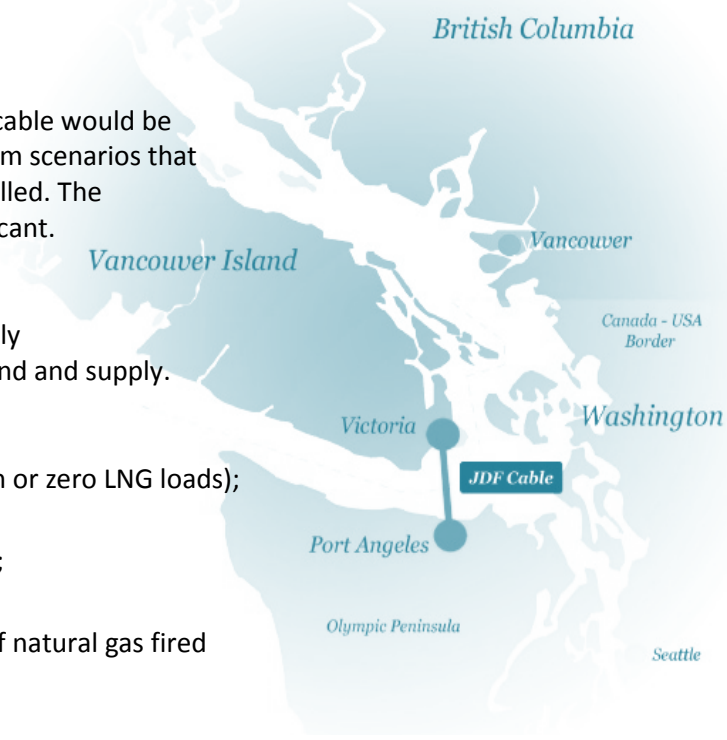
We do not disagree with that statement. We have not seen BC Hydro's complete analysis but from the data provided that conclusion seems reasonable.

Unexpected surpluses

Our comment on BC Hydro's conclusion is that the JdF cable would be helpful if there are unexpected surpluses that result from scenarios that occur that are outside of the portfolios that were modelled. The likelihood of those unexpected scenarios is not insignificant.

BC Hydro's draft 2013 Integrated Resource Plan (IRP) emphasized that their forecasting outlook faced uniquely high degrees of uncertainty on several aspects of demand and supply. These included:

- rate of load growth (including especially high or zero LNG loads);
- success of aggressive DSM initiatives;
- substantial reservoir inflow water variability;
- scope and timing of new transmission lines;
- construction and the scale of acceptability of natural gas fired generation resources.



Each of these could swing the demand or supply about 5,000 GWh up or down. In aggregate they could swing the demand/supply gap over 20,000 GWh up or down. That is almost 40% of the current 55,000 GWh system.

BC Hydro's Assessment of Current Intertie Capacity - vs - Modelled Surpluses

BC Hydro's response about the Intertie Capacity included the following statement; "*In the portfolio PV modelling, BC Hydro used transfer capabilities ranging between 1,550 MW to 2,350 MW to model the typical congestion on the transmission system south of the B.C./U.S. border and the seasonal variability of the transfer capability."*

BC Hydro's IR 25 response included Table 6 that forecast system capacity deficits/surpluses to 2033 for the scenario of BC Hydro's "Base Case with No LNG".

The largest surplus capacity amount appears in 2033 at 1,750 MW. That 1,750 MW is over the 1,550 MW (the bottom range of the intertie capacity) but it was under the 2,350 MW (the top of the range of the intertie capacity). For the 1,750 MW surplus the IR did not state whether the bottom or top of the range was applicable. However, it is clear that the 1,750 MW is very close to the intertie capacity. If the surplus is much larger than anticipated, then additional cross-border transmission capacity will be required.

Intertie Capacity - Current and Future

Currently, BC – Washington transmission has a north to south rating of 3,150MW. However, operating constraints in the Puget Sound Area reduce capacity on the line from north to south so that it is often limited to 2,400 MW or less.

The Western Electricity Coordinating Council (WECC)states, that the BC-Washington interties (referred to as Path 3) is historically congested in their 10-year regional transmission planning report for Path 3.

Looking to the future, the WECC Path 3 report states that while there may be upgrades planned for the Puget Sound Area Northern Intertie ('PSANI') region and the I-5 corridor, there are certain future scenarios that when modelled, show increased congestion along Path 3.[1] Those high levels of congestion along Path 3 appeared to be most contingent on futures featuring high DSM and high Carbon Reduction policy[2]. The BC Clean Energy Act legislates high DSM and Carbon Reduction policies and targets. These have been incorporated and are planned to be implemented through BC Hydro's IRP.

Future Unexpected Surplus - vs - Future Intertie Capacity

We do not disagree with BC Hydro's IR 25 conclusion; "*BC Hydro expects that there will be adequate export capacity with the current intertie limits to the U.S. to manage the surplus associated with the portfolios considered …"*

However, the combination of the high degree of uncertainty of future demand/supply scenarios and the potential for increased congestion limiting the available transmission capacity makes it possible that an unexpected large surplus could exceed the current intertie capacity.

[1] WECC 10 Year Regional Transmission Plan, 2011 - Path Reports – Path 3, p.1 https://www.wecc.biz/library/StudyReport/Documents/Path_WriteUps.pdf

[2] *Id* at p.5

In that circumstance the additional intertie export capacity of JdF could help that unexpected surplus get to the US market to enable BC Hydro to attain "*full cost recovery of excess generation".*

The JdF Cable would likewise be helpful if actual domestic demand is exceptionally low and/or during extremely wet water years.

The JdF Cable can also help if Site C is delayed or the BC Hydro system is in deficit

The flip side of JdF providing additional export intertie capacity in the case of excess generation, is the ability for JdF to provide additional import intertie capacity, either if Site C is delayed, or in the case of insufficient domestic generation.
The aforementioned high uncertainty of future demand/supply scenarios can fall either way – to a surplus or a deficit. The JdF Cable can act as a risk reduction tool for Site C under either scenario.

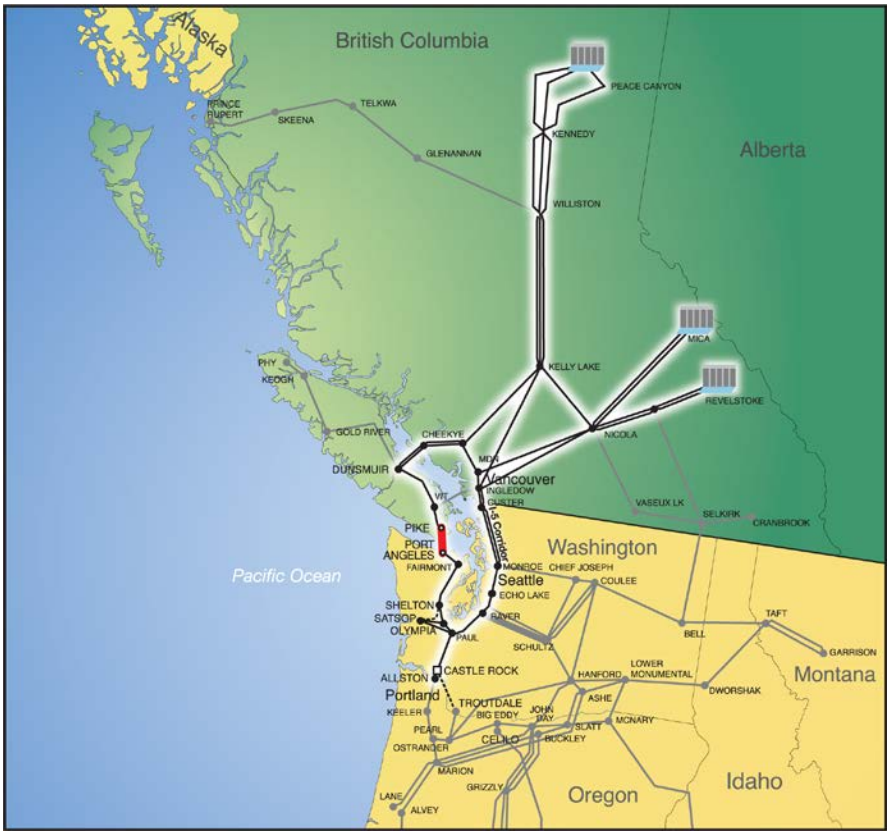
In the latter case, if Site C is delayed, or if load growth exceeds expectations before Site C is operational, the JdF Cable can act as a bridge, effectively serving as a virtual generator for additional power until Site C has been completed and put into service.

Juan de Fuca Cable Project: Fast In-Service Date

If BC Hydro suddenly foresees either an unexpected surplus or an unexpected deficit the Juan de Fuca Cable can be constructed and operational within three years.

Market based Financing for Juan de Fuca Cable - No Government or BC Hydro funding required

JdF requires no government or BC Hydro funding to be built. Transmission revenues from power buyers and sellers are sufficient to support private financing.



Summary

The JdF Cable can serve as a practical and economic risk reduction tool for Site C. Its additional intertie export capacity can help to reduce the cost of any unexpected system surplus after Site C comes on line. Similarly its additional intertie import capacity can assist BC Hydro meet any possible deficit if Site C were delayed. The export and import capacity offered through the Juan de Fuca Cable requires neither government nor BC Hydro direct or indirect funding.