VIA E-MAIL

February 3, 2006

TO: British Columbia Transmission Corporation
   Sea Breeze Victoria Converter Corporation
   Registered Intervenors (BCTC-VITR-RI)

Re: British Columbia Transmission Corporation ("BCTC")
Certificate of Public Convenience and Necessity ("CPCN") Application
Vancouver Island Transmission Reinforcement Project ("VITR")
Sea Breeze Victoria Converter Corporation ("Sea Breeze")
CPCN Application for Vancouver Island Cable Project ("VIC")
Projects No. 3698395 and 3698405, Orders No. G-70-05 and G-97-05

Hearing Issues List

Please find attached the Hearing Issues List that will be followed at the Oral Public Hearing that commences at 9:00 a.m. on Monday, February 6, 2006 in the Commission’s Homer Street Hearing Room, Second Floor, 855 Homer Street, Vancouver, BC.

Yours truly,

Original signed by:

Robert J. Pellatt

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

and

British Columbia Transmission Corporation
Certificate of Public Convenience and Necessity Application for the
Vancouver Island Transmission Reinforcement Project

and

Sea Breeze Victoria Converter Corporation
Certificate of Public Convenience and Necessity Application for the
Vancouver Island Cable Project

HEARING ISSUES LIST

February 3, 2003

PART I

1.0 Reinforcement of Transmission System to Vancouver Island

1.1 Impact of delays to transmission reinforcement beyond mid-2008

1.1.1 Detailed review of bridging measures developed by BCTC to bridge the 2007/08 winter peak.

1.1.2 Can bridging measures provide adequate capacity beyond October 2008 if the in-service date cannot be met?

1.2 Timing and cost of subsequent reinforcement of transmission to Vancouver Island

PART II

2.0 VITR – Applicant

2.1 Technical capability

What is BCTC’s technical knowledge/understanding of AC and HVDC Light Alternatives (including static and dynamic VARs and voltage support; Charging of AC cables; EMFs; etc)?

2.2 Terms of CPCN approval sought by BCTC

Should approval of CPCN be conditional on, inter alia, BCTC first entering into discussions in good faith with Sea Breeze concerning the use of the Juan de Fuca project to provide transmission reinforcement to Vancouver Island?
2.3 Consultation with the public and First Nations

2.3.1 Has BCTC adequately consulted the public?

2.3.2 Has BCTC provided accurate and reliable information to the public?

2.3.3 Has BCTC made appropriate modifications to its application in light of the public input received through the consultation process?

2.3.4 Has BCTC adequately consulted First Nations?

2.3.5 Do the First Nations concerns with route option 4 (Highway 17) prevent selection of this option?

2.4 Community contributions to offset cost of specific options and enhancements

2.4.1 Should ratepayers pay any cost above the cost of the least cost option to address concerns of landowners whose properties are crossed by or adjacent to the right of way?

2.4.2 Should landowners whose properties are crossed by or adjacent to the right of way be required to pay contributions to advance the undergrounding of the second circuit, or to move to construction in city streets?

2.4.3 What are the specific cost estimates for the enhancements or changes requested in the Tsawwassen community?

2.4.4 Do the potential community contributions in Options 3 and 7 attract return on equity pursuant to Special Direction HC2?

3.0 VITR – Project Description

3.1 Engineering design

3.1.1 Implications of BCTC’s selection of AC technology for VITR.

3.1.2 Cable selection (including extra armouring on the cable).

3.1.3 Pole structure selection: Will the taller structures impact a larger number of residents? Does the smaller footprint reduce/increase overall impacts?

3.1.4 What is the useful life expectancy for VITR?

3.2 Project schedule

3.2.1 Is BCTC’s project schedule achievable?

3.2.2 Impact on VITR project schedule relating to determination of cable specifications, and cable tendering process.
3.2.3 Impact on VITR project schedule relating to obtaining necessary rights of way or expropriation.

3.2.3.1 Will nominal compensation to landowners in exchange for necessary rights of way satisfy landowner opposition to VITR?

3.2.3.2 Impact on VITR project schedule of potential legal challenges/claims/appeals by affected local residents/landowners, municipalities, First Nations, etc.

3.2.4 Impact on VITR project schedule relating to permitting.

3.2.5 Status of BCTC consultation/permitting arrangements with US agencies regarding US component of VITR Project.

3.2.6 What is the risk that VITR will be unable to meet Fall 2008 in-service date and related consequences?

3.3 Project Alternatives and Routing Options

3.3.1 Has BCTC conducted the necessary due diligence on the route and technology options, including consideration of:

   (a) seismic and geotechnical
   (b) submarine cable hazards,
   (c) impacts on municipal operations and other utilities, and,
   (d) non-natural hazards?

3.3.2 Should BCTC have consulted Sea Breeze and/or other customers or private sector entities concerning potential private sector/customer-provided solutions to Vancouver Island’s transmission constraints?

3.3.2.1 What has BCTC done to comply with the Commission’s direction on this issue in the BCUC’s September 23, 2005 decision of the BCTC System Capital Plan F2006 to F2015 Application?

3.3.3 Has BCTC used the appropriate criteria and appropriate weighting for assessing which route option is preferred?

3.3.4 Is the risk of route selection in the Roberts Bank area acceptable?

3.3.5 Is running transmission lines through residential backyards an appropriate practice today?

3.3.6 Has BCTC properly maintained and managed the ROW?

3.3.7 Does an exchange of overhead for underground rights truly reflect BCTC’s proposal given one overhead 138 kV circuit will remain in place?

3.3.8 What other options and routes did BCTC consider as alternatives to VITR, and what analysis did BCTC do of such other options and routes?
3.3.9 What considerations did BCTC give to using HVDC Light technology to satisfy Vancouver Island’s need for transmission reinforcement, including construction of HVDC Light transmission on different potential routings than those identified in the VITR Application?

3.3.10 What if any information was obtained from ABB (or other parties) in relation to BCTC’s evaluation of the suitability of HVDC Light technology to satisfy Vancouver Island’s need for transmission reinforcement?

3.3.11 Adequacy of BCTC’s analysis of HVDC Light, and applicability of that analysis to alternative routing options, having regard in particular to the concerns identified in Sea Breeze’s response to BCUC IR 1.56.1 (VIC).

3.3.12 What other options are available to reduce transmission system reliance on facilities unable to withstand major seismic events (e.g., Arnott Substation; transmission towers in Fraser Delta soils), or to upgrade those facilities to reduce seismic vulnerability?

3.3.13 In considering VITR route selection, what consideration did BCTC give to risks from non-natural hazards (e.g., damage from Anchors, fishing gear, tug tow lines, risk to overhead power Lines form accident, security risks)?

3.3.14 Should parties requesting and receiving the benefit of route changes be required to pay for the incremental cost of such changes?

3.4 Advanced building of Stage 2 components, including double circuiting of the remaining 138 kV circuit

3.4.1 To what extent are these costs justified before the Commission considers the best options for future system upgrades in 2017?

3.4.2 To what extent will advance building of stage 2 components practically constrain the Commission’s ability to select the best option for future system upgrades?

3.5 Supply to the Southern Gulf Islands

3.5.1 Is supply of the Gulf Islands at distribution voltage and removal of the 138kV system from the lower mainland to the Gulf Islands a preferred supply solution?

3.6 Cost estimates

3.6.1 How firm are the cost estimates?

3.6.2 What is the confidence level of the project cost estimate of $245 million?

3.6.3 Are the cost estimates for each option correct, complete and clearly identified?

3.6.3.1 Questions arising from changes in BCTC cost estimates since the filing of its application.
3.6.4 Are the cost estimates for backyard restoration through Tsawwassen reasonable?

3.6.5 Have the cost estimates properly reflected construction cost inflation in British Columbia?

3.6.6 Do the cost estimates properly reflect any cost of acquiring the underground rights from Tsawwassen landowners given the opposition of landowners to the project?

3.6.7 Potential impact on VITR project cost estimates of delays in project in-service date.

3.6.8 Potential impact on VITR project cost estimates relating to the final determination of cable specifications, and the cable tendering process.

3.6.9 Potential impact on VITR project cost estimates of issues relating to obtaining necessary rights of way or expropriation.

3.6.10 Potential impact on VITR project cost estimates of legal challenges/claims/appeals by affected local residents/landowners, municipalities, First Nations, etc.

3.6.11 Potential impact on VITR project cost estimates related to final project specifications.

3.7 Project management, including schedule and cost control

3.7.1 Does BCTC have effective means of controlling costs and managing the project, including appropriate processes for tendering of VITR construction contract?

3.7.2 Should a CPCN be subject to a collar mechanism outside which cost variances would not affect rate payers?

3.7.2.1 Which project cost estimate should be the target cost for any collar mechanism: best estimate, P50 or P90?

3.7.3 Should BCTC’s plan of concurrent CPCN and EAC applications be accepted or should consideration of the CPCN await completion of the EAC application?

3.7.4 What process, and timing, are contemplated by BCTC for tendering of construction contract?

3.7.5 What is the status of BCTC consultation and permitting with US agencies regarding the US component of VITR?

4.0 VITR – Project Justification

4.1 System impacts of each project option

4.1.1 What project options and routes did BCTC consider in terms of system impact, and what specific analysis did BCTC do of the system impact of those options and routes?
4.1.2 What consideration did BCTC give to Sea Breeze’s Juan de Fuca proposal in analyzing system impacts of VITR project options?

4.1.3 VITR impact/contribution to system reliability.

4.1.4 Does VITR adequately plan for contingencies?

4.2 Socioeconomic impacts of project options, including safety, reliability, health, aesthetic, recreation, habitat, First Nations and construction impacts (Effect on property value may be a way of measuring some of these impacts)

4.2.1 To what degree should socio-economic impacts be considered by the Commission?

4.2.2 What is the impact of the existing 138 kV circuits on the value of properties along and adjacent to the ROW?

4.2.3 What is the impact of the proposed VITR project on the value of properties along and adjacent to the ROW?

4.2.4 Do any tax implications to Municipalities from the property value impacts of the proposed project warrant consideration in the comparison of options?

4.2.5 What is the risk of oil leaks from the proposed fluid filled cables and do those risks warrant rejection of fluid filled cables?

4.2.6 How should the preservation of the environment of the Gulf Islands as embodied in the objectives of the Islands Trust influence the alternative selection process?

4.2.7 Does the proposed project pose any unacceptable safety hazards?

4.2.8 What would a multiple accounts analysis of the attributes of the options indicate as to the preferred option?

4.2.9 What is the scientific consensus on the health effects of EMF and is it changing?

4.2.10 Are EMF exposure levels from the proposed circuits a health risk that should be considered by the Commission?

4.2.11 What decision-making principle(s) should the Commission adopt with respect to EMFs? (e.g., precautionary principle; principle of prudent avoidance.)

4.2.11.1 Does that approach suggest the need to alter the proposed project?

4.2.12 Should previous decisions by the Commission with respect to allowable EMF exposures from transmission projects still be followed?

4.2.13 What are the impacts on stress in the community of the project and how should they be considered?
4.2.14 Are there impacts on businesses from the proposed lines that need to be considered in assessing socio-economic impacts?

4.2.15 Can BCTC restore the backyards in Tsawwassen to an acceptable level?

4.2.16 Should BCTC pay for restoration of, or compensation for, non-conforming improvements on the ROW?

4.2.17 Do archeological concerns affect the ranking of the options?

4.3 Cost of service and rate impacts for each project option

4.3.1 Evaluation of BCTC’s analysis of capital and O&M costs.

4.3.2 Resulting rate impacts.

4.3.3 Uncertainty of BCTC’s forecast rate impacts for VITR.

4.4 Overall comparison of VITR project options

PART III

5.0 VIC – Applicant

5.1 Financial and technical capability

5.1.1 System planning and technical expertise of Sea Breeze team.

5.1.2 Financial backing provided by EIF and Soc Gen.

5.1.3 Involvement of ABB.

5.1.4 Capacity of Sea Breeze to complete VIC Project in a timely manner with respect to track record and requirements of financial backers.

5.2 Contemplated relationship with BCTC

5.2.1 Effect of Sea Breeze’s proposal for BCTC to manage and operate VIC as an integrated part of the provincial transmission system.

5.2.1.1 Possible contractual terms and conditions.

5.2.1.2 Rate implications.

5.2.2 Efficiency of operating regime that would exist if Sea Breeze owns facilities which form part of the BCTC-operated system.
5.2.2.1 What contractual mechanisms are available to provide for safe, reliable service in this operating regime?

5.2.2.2 Are there significant costs associated with these mechanisms?

5.3 Terms of CPCN approval sought by Sea Breeze

5.3.1 Should approval of CPCN be conditional on, inter alia, Sea Breeze first entering into discussions in good faith with BCTC, BC Hydro, and others concerning the use of the Juan de Fuca Project to provide transmission reinforcement to Vancouver Island?

5.4 Consultation with the public and First Nations

5.4.1 Has Sea Breeze adequately consulted the public?

5.4.2 Has Sea Breeze provided accurate and reliable information to the public?

5.4.3 Has Sea Breeze made appropriate modifications to its application in light of the public input received through the consultation process?

5.4.4 Does Sea Breeze have an obligation to consult and if necessary, accommodate First Nations?

5.4.5 Has Sea Breeze adequately consulted First Nations?

6.0 VIC – Project Description

6.1 Engineering design

6.1.1 Differences between AC and HVDC Light® technology, and implications of Sea Breeze’s selection of HVDC Light® technology for VIC.

6.1.2 Evaluation of BCTC’s analysis of HVDC Light® and the applicability of that analysis to VIC.

6.1.2.1 Evaluation of Sea Breeze’s response to BCTC’s analysis of HVDC Light®.

6.1.3 Is HVDC Light® technology sufficiently proven in similar situations?

6.1.4 What is the useful life expectancy of VIC?

6.1.5 Are HVDC Light cables certified for use in the deep waters of the Strait of Georgia?

6.1.6 Are HVDC Light cables certified for the seismic conditions of the route?
6.2 Project schedule

6.2.1 Is Sea Breeze’s project schedule achievable?

6.2.2 Is there any potential impact on project schedule associated with use of extruded insulation cables?

6.2.3 What are the risks to the project schedule of ROW acquisition?

6.2.4 What impact could permitting have on the project schedule?

6.2.4.1 What is the status of consultation and permitting with US agencies regarding the US portion of VIC?

6.2.5 What is the risk that Sea Breeze will be unable to meet the Fall 2008 in-service date, and what are the related consequences?

6.3 Routing

6.3.1 Has Sea Breeze conducted the necessary due diligence on the route, including consideration of:

(a) seismic and geotechnical,

(b) submarine cable hazards,

(c) impacts on municipal operations and other utilities, and,

(d) non-natural hazards?

6.3.2 Can community concerns along the VIC route reasonably be assumed to be similar to those for VITR?

6.3.3 What are the implications of the proposed National Marine Conservation Area south of Active Pass and Salt Spring Island?

6.3.4 Is the width of the corridor in Boundary Pass adequate for repairs to the cable?

6.4 Cost estimates

6.4.1 How firm are VIC cost estimates?

6.4.2 How reliable are vendor estimates without the benefit of preliminary design?

6.4.3 Are the cost estimates correct, complete and clearly identified?

6.4.4 Have the cost estimates properly reflected construction cost inflation in British Columbia?
6.4.5 Potential impact on project cost estimates of delays in project in-service date.

6.4.6 Potential impact on VIC project cost estimates relating to the final determination of cable routing.

6.4.7 Potential impact on VIC project cost estimates of issues relating to obtaining necessary rights of way or expropriation.

6.4.8 Potential impact on VIC project cost estimates of legal challenges/claims/appeals by affected local residents/landowners, municipalities, First Nations, etc.

6.4.9 Potential impact on VIC project cost estimates related to final project specifications.

6.4.10 Are offsetting benefits associated with VIC realistic and achievable?

6.4.11 Are there any additional costs associated with future upgrades that should be taken into account?

6.5 Project Management, including schedule and cost control

6.5.1 Ability to conclude any necessary agreements with BC Hydro, BCTC, ABB, municipalities, lenders, etc.

6.5.2 Contemplated arrangements with ABB for project construction.

6.5.3 What mechanisms are contemplated for avoidance of delay and cost overruns in construction of VIC?

6.5.4 Should a CPCN be subject to a collar mechanism outside which cost variances would not affect ratepayers?

6.5.5 Should consideration of the CPCN await completion of the EAC application?

6.5.6 Degree of Commission control over construction and operation of VIC, including:

   6.5.6.1 Ability of Commission or stakeholders to compel performance.

   6.5.6.2 Recourse available to Commission or stakeholders if financing or other regulatory approvals are not obtained, or project is abandoned.

   6.5.6.3 Ability of Commission or stakeholders to ensure VIC Project is built to appropriate reliability standards, and to enforce reliability standards after VIC is built.
7.0 VIC – Project Justification

7.1 System impacts of the project

7.1.1 System benefits identified in Sea Breeze’s evidence.

7.1.1.1 Avoidance of seismic upgrades to Arnott substation.

7.1.1.2 Elimination of need for Synchronous Condensers on Vancouver Island.

7.1.1.3 Avoidance of O&M costs for existing HVDC system.

7.1.1.4 Avoided/deferred costs in relation to Lower Mainland VAR support.

7.1.1.5 Deferral/avoidance of system upgrades in relation to Cut-Plane D.

7.1.1.6 Other “operational issues” for which Sea Breeze asserts “improved operational performance” for VIC in comparison to VITR, which have not been quantified as part of Sea Breeze’s cost-benefit analysis in Table 4.3.1.

7.1.2 VIC system impacts/contribution to system reliability.

7.1.3 Losses associated with VIC.

7.1.4 System impacts of VIC in combination with Juan de Fuca.

7.2 Socioeconomic impacts of the project (and route options if any), including safety, reliability, health, aesthetic, recreation, habitat, First Nations and construction impacts (Effect on property value may be a way of measuring some of these impacts)

7.2.1 Exposure of VIC to seismic, geotechnical, and other risk.

7.2.2 Health risks associated with VIC.

7.2.3 Other environmental impacts of VIC which are materially different from those associated with VITR.

7.2.4 Potential impact/lack of impact of VIC on property values and on local residents’ enjoyment of their property.

7.2.5 What will be the aesthetic benefits to Salt Spring Island and Galiano Island?

7.2.6 Other socio-economic costs and benefits of VIC.

7.2.7 Safety issues associated with direct burial of terrestrial cables.

7.2.8 Impact on municipal road allowances in White Rock.

7.2.9 Potential environmental impacts in and around Semiahmoo Bay.
7.3  **Cost of Service and rate impacts of the project (and route options if any)**

7.3.1 Evaluation of Sea Breeze’s estimates of VIC capital and O&M costs – What is a reasonable estimate of BCTC O&M costs for VIC?

7.3.2 Does the VIC project attract property taxes that are not payable by BCH/BCTC? If it does, why and how much? Would treatment of this facility as a part of the BC regulated transmission system impact the tax treatment?

7.3.3 Evaluation of Sea Breeze’s quantification of the value of certain system benefits, including avoided/deferred system costs attributable to VIC Project [see, in particular, Sea Breeze’s response to BCUC IRs 1.17.1 and 1.73.2 (VIC)]

7.3.4 What is the capital structure and rate of return on equity requested by Sea Breeze vis-à-vis BCH and BCTC? Is the equity component of either BCH or BCTC appropriate for Sea Breeze?

7.3.5 What costs should be borne by Sea Breeze and what costs should be borne by rate payers?

7.3.6 Is the actual cost of capital for Sea Breeze a relevant consideration in determining the VIC revenue requirement and/or for comparing the cost of the projects?

7.3.7 Forecast rate impacts resulting from VIC.

7.3.8 Uncertainty of forecast rate impacts.

**PART IV**

8.0  **Juan de Fuca Project**

8.1  **Certainty regarding the Juan de Fuca Project: will Sea Breeze be able, and will it choose, to proceed with the project?**

8.1.1 What are the risks associated with Sea Breeze obtaining necessary regulatory approvals for Juan de Fuca to proceed?

8.1.2 From which regulatory agencies are approvals required, and what are the established criteria and precedents for issuing such approvals?

8.1.3 What socio-economic and environmental impacts may affect approvals?

8.1.4 What are the conditions precedent of Sea Breeze for proceeding with the project?

8.1.5 What is Sea Breeze’s investment threshold, i.e. its hurdle rate? What internal rate of return can be expected from using a discount from VITR?

8.1.6 Other financial issues that could affect Sea Breeze’s willingness to proceed.
8.1.7 Contractual relationship with BCTC and/or BC Hydro, including charges to BCTC and/or BC Hydro.

8.1.8 Time frame for entering into contractual arrangements.

8.1.9 Current status and timing of the project.

8.2 Terms of the order sought by Sea Breeze

8.3 System impacts of the project

8.3.1 Juan de Fuca impact/contribution to system reliability, and its ability to satisfy Vancouver Island’s need for transmission reinforcement.

8.3.2 Ability to ensure firm supply of power at Port Angeles (e.g. through return of DSBs; power purchased at Mid-C; wheeling of power from Blaine intertie).

8.3.3 Is it necessary to change the terms of the Columbia River Treaty for Juan de Fuca to be a viable alternative?

8.3.4 Effect of contemplated upgrades to BPA system.

8.3.5 Potential impacts on provincial energy policy and BC Hydro supply planning.

8.3.6 Should Juan de Fuca be considered and studied by BCTC or by BC Hydro?

8.4 Does the Juan de Fuca Project eliminate or delay the need for either VIC or VITR?

8.5 Does the Juan de Fuca Project change the ranking of VIC and VITR if it proceeds?

8.5.1 Long-run system planning implications of Juan de Fuca in conjunction with VIC or VITR.

8.5.2 Financial impacts.

8.6 Nature of regulatory oversight over Juan de Fuca Project, both during construction and after completion

8.6.1 Ability of Commission and stakeholders to ensure Juan de Fuca Project will be completed as planned and on schedule.

8.6.2 Ability of Commission and stakeholders to ensure reliability standards are met after Juan de Fuca Project is built.
PART V

9.0 Comparison of Projects

9.1 Is each of the projects sufficiently well defined and devoid of serious impediments to its completion and ongoing viability?

9.1.1 How does the Juan de Fuca proposal affect the project comparison?

9.2 How should local impacts, the need for electricity supply on Vancouver Island, reliability, and cost-effectiveness be considered in public interest determination?

9.2.1 To what extent should the distribution of costs and benefits among groups of residents and ratepayers be considered?

9.3 Overall comparison of the socioeconomic impacts of all projects, including safety, reliability, health, aesthetic, recreation, habitat, First Nations and construction impacts including how to evaluate considerations that may be difficult to quantify and the weighing of impacts and benefits between different subclasses of customers.

9.3.1 To what extent should the Commission consider socio-economic and environmental impacts as part of the total costs of the projects?

9.3.2 To what extent should community contributions be considered in the cost comparison?

9.3.3 To what extent would the application of decision-making principles such as the precautionary principle or the principle of prudent avoidance affect project comparison?

9.4 Comparison of specific system impacts and related financial impacts for the projects, including:

9.4.1 Seismic issues, including Arnott.

9.4.2 Synchronous condensers on Vancouver Island.

9.4.3 Costs in relation to existing HVDC system.

9.4.4 VAR requirements in the Lower Mainland.

9.4.5 Reinforcement of transmission on Vancouver Island.

9.4.6 Upgrading of supply to Salt Spring and Galiano Islands.

9.4.7 Transmission losses.

9.4.7.1 Has BCTC evaluated the losses for VITR on the same basis as evaluated for VIC?
9.4.8 Has BCTC conducted the powerflow studies necessary to properly compare VITR and VIC?

9.4.9 Advancement of Second Circuit to Vancouver Island.

9.5 **Comparison of overall operational impacts of all projects, including reliability and system restoration.**

9.6 **Comparison of the overall financial costs and rate impacts for all projects.**

9.7 **Comparison of cost and schedule risks for all projects.**

**PART VI**

10.0 **Request for Removal of Existing 138 kV lines in Tsawwassen**

10.1 **Health and other impacts of existing 138 kV lines in Tsawwassen**

10.1.1 Has BCTC complied with standards concerning safe levels of EMFs?

10.1.2 Do the 138 kV lines in Tsawwassen meet generally accepted industry standards?

10.1.3 Do the existing lines pose a safety hazard to students, given the proximity of the lines to emergency exits at South Delta Secondary School?

10.2 **Cost of removing Tsawwassen portion of the lines, including replacement facilities**