



**Bull,  
Housser  
& Tupper**

3000 Royal Centre . PO Box 11130  
1055 West Georgia Street  
Vancouver . BC . Canada . V6E 3R3  
Phone 604.687.6575 Fax 604.641.4949  
www.bht.com

Reply Attention of:	R. Brian Wallace
Direct Phone:	604.641.4852
Direct Fax:	604.646.2506
E-mail:	RBW@bht.com
Our File:	03-2375
Date:	April 14, 2003

British Columbia Utilities Commission  
6<sup>th</sup> Floor, 900 Howe Street  
Vancouver, B.C.  
V6Z 2N3

**Attention:** Mr. Robert Pellatt, Secretary

Dear Sirs/Mesdames:

**Re: Vancouver Island Energy Corporation ("VIEC") Application for a CPCN for the Vancouver Island Generation Project**

We refer to the information requests in this matter issued by the Commission in accordance with Order G-21-03.

NorskeCanada understood that it had an agreement with BC Hydro that NorskeCanada would respond directly to questions 9.1, 9.2 and 9.5 as these questions requested information with respect to the NorskeCanada Proposal and NorskeCanada is more familiar with these details than BC Hydro. We now understand that notwithstanding any agreement or understanding that was in place, BC Hydro currently does not believe that NorskeCanada should respond to these questions.

NorskeCanada believes the responses are relevant to the consideration of the Duke Point Project and should be made available to all parties.

Yours truly,

Bull, Housser & Tupper

R. Brian Wallace

RBW/sg/1106568  
Copy to Vancouver Island Generation Project  
Attn: Mr. Lachlan Russel  
Lawson Lundell  
Attn: Brian Wallace  
B.C. Hydro  
Attn: Alice Ferreira

**Vancouver Island Energy Corporation  
Certificate of Public Convenience and Necessity Application  
Vancouver Island Generation Project**

**NorskeCanada Response to BCUC Information Request #1  
Questions 9.1, 9.2 and 9.5**

**Preamble:**

NorskeCanada (Norske) understood it had agreed with BC Hydro (BCH) that Norske would answer BCUC Information Request #1 Questions 9.1, 9.2 and 9.5 as these questions pertain to Norske's supply options and accordingly Norske is in the best position to respond fully. It now appears that notwithstanding any agreement or understanding that was in place, BC Hydro currently does not believe that NorskeCanada should respond to these questions. NorskeCanada believes the responses are relevant to the consideration of the Duke Point Project and should be made available to all parties. Norske is also prepared to provide representation at the Workshop to answer questions regarding this material.

NorskeCanada's supply proposal has been evolving steadily as Norske gains a better understanding of what is required and the various possible solutions that are available. The following answers are based on Norske's most recent update of its proposal.

**Question:**

**9.1 Please provide further detail about the NorskeCanada Proposal, describing the components, locations and estimated capacity and energy achieved through load displacement, power generation and efficiency improvements.**

**Response:**

Norske anticipates that were it to supply electricity to BC Hydro it would do so under a firm Electricity Supply Agreement at a negotiated price and accordingly Norske's actual supply cost is information which Norske considers to be competitive and confidential information. That being said, Norske will attempt to provide sufficient aggregated information in this process to demonstrate that the full cost of its suite of projects will be less than the full cost of the VIPG and GSX and it will provide other significant benefits.

Norske has refined its proposal and now believes that it can provide up to 362 MWs and 2300 GWh/year at a price that will be lower than the VIPG and GSX transportation cost to BC Hydro, when accounted for on an equivalent basis.

The facilities or projects that would provide this capacity and energy are:

Two GTs <sup>1</sup> & one CST <sup>2</sup> at Elk Falls	102 MW	Generation from gas & Steam
Two GTs & one CST at Crofton	105 MW	Generation from gas & Steam
One GT & one CST at Port Alberni	<u>50 MW</u>	Generation from gas & Steam
<i>GENERATION TOTAL</i>	257 MW	
Energy conservation & efficiency	25 MW	New TMP at Elk Falls
Demand management	<u>80 MW</u>	Reduction of peak demand
<i>PROJECT TOTAL</i>	362 MW	

The installation of the first two GTs & CSTs could be achieved within 18 to 24 months. The full capacity of 362 MW could be in place by 2006 if necessary, or scheduled to meet demand load growth. The total capital cost for these projects is approximately \$420 million.

#### Gas Generation - 257 MW:

Steam flows from the cogeneration unit are utilized within each mill system to replace fossil fuel generated steam. The mills with a second generation unit have a condensing turbine to extract all the electrical energy. Collectively, these units are more fuel efficient than BCH VIGP.

The project suite generating the 257 MW would utilize NorskeCanada's existing capacity on the Centra gas pipeline and will result in a more efficient use of fossil fuel by the company. In addition to Norske's existing capacity, 30,000 GJ per day of additional capacity on the Centra line will be required. Norske has been advised this can be achieved with the addition of compressors. The increase in the Centra pipeline capacity would require capital (funded by Centra) but also provides an economic return to Centra.

The engineering / technical capability of the Gas Turbines and Condensing Steam Turbines are proven and sound. NorskeCanada currently operates high pressure boilers and an electrical generator at each of its mills in a safe and efficient manner. In addition, NorskeCanada has integrated steam systems, high voltage electrical infrastructure, effluent treatment facilities and available, permitted locations for these projects. Currently, NorskeCanada also provides many of these services to ICP at Elk Falls.

NorskeCanada has a proven project management and commissioning skills for large capital projects.

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<sup>1</sup> Gas Turbine

<sup>2</sup> Condensing Steam Turbine

### Energy Conservation & Efficiency - 25 MW:

Adopting new Thermomechanical Pulp (TMP) refining technology is more energy efficient and will reduce electricity consumption by 18 MW for the same pulping production volumes.

The new TMP refining capacity will be installed with modern heat recovery technology allowing it to capture all residual energy and direct it into a steam turbine to generate 7 MW. New TMP capacity is capital intensive but requires no fuel and is an integral component of demand management.

### Demand Management - 80MW

Demand management will result from increased TMP capacity / pulp storage and the use of the following actions:

- Reduction of the combined peak load from all three Vancouver Island mills will reduce peak load significantly. This will require coordination through integrated controls to meet the needs of the BCH system. BCH and NorskeCanada have begun a monitoring program to work towards this objective.
- With the installation of increased TMP capacity and storage tanks, the energy use can be fully utilized during non-peak times of the day for peak load shifting of 14 MW. In addition, the use of the existing TMP lines with additional storage capacity can load shift 66 MW to smooth the electricity demand within a 24 hour period.
- In the event of a BCH transmission line loss, after all other actions have been exhausted, NorskeCanada is prepared to temporarily curtail one paper machine (out of 9 on Van Island) and corresponding pulping capacity, thereby reducing electricity consumption. No job loss would result.

### Environmental Considerations

The NorskeCanada proposal has the following attributes:

- Air emissions will be distributed over three air sheds at established industrial sites instead of one.
- Increases in GHG emissions on a per MW basis are expected to be about 15-20% lower than VIGP.
- Very minor air emissions impacts with increases in NO<sub>x</sub>, SO<sub>x</sub>, CO and CO<sub>2</sub>. The whole project would result in an ambient level increase in emissions of approx. 3% of current regulatory limits.
- Wastewater treatment to be provided by host mill secondary effluent treatment plant and will be well within normal operating parameters.

- NorskeCanada's mills have excellent environmental records.
- Overall the NorskeCanada projects have a more beneficial environmental project than VIGP. Benefits include:
  - Less volumes of natural gas consumed with cogeneration
  - Full utilization of the economic capacity of the Centra pipeline, delaying the necessity for GSX installation
  - Improved electrical energy efficiency for the largest user on Vancouver Island
  - The use of Demand management avoids unnecessary peaking electrical generation

### Summary of NorskeCanada Project (362 MW) Benefits

The VIGP and GSX projects can be postponed.

The fuel efficiency of the Norske project suite are superior to VIGP:

- The mill acts as a reliable steam host for the cogeneration units
- Energy conservation projects and demand management do not require fossil fuel

Projects can be phased in:

- The projects can be built in phases, first projects can be completed within 18-24 months
- Compared to VIGP, early implementation would reduce near term supply risks

There are a number of environmental benefits:

- Lower greenhouse gas emissions (15-20% lower than equivalent VIGP)
- Current sites are large industrial mills with proven environmental track records
- Projects are very fuel efficient
- Air emissions are distributed over three air sheds instead of one

Social benefits:

- Construction and operation performed on existing industrial sites, located in three forest based communities and preserves mill employment
- Improved NorskeCanada long term cost competitiveness, i.e. preserves all the indirect economic benefits and tax base for all levels of government
- Addresses community concern that energy efficiency issues are addressed first.

Reliability of new power generation:

- Overall risk profile lower as new power generation sourced from several smaller units versus one large generation plant
- All power can be consumed by NorskeCanada and stability of electricity supply to NorskeCanada mills is enhanced
- In the unlikely event of a temporary mill shutdown, the electrical load on Vancouver Island is reduced substantially and it may be feasible to export electricity from the site.

**Question:**

**9.2 Please provide the estimated cost of capacity and energy resulting from each component.**

**Response:**

See Response to Question 9.1

**Question:**

**9.5 Please provide the conceptual estimates provided by NorskeCanada of the energy and capacity that would be delivered by each component.**

**Response:**

See Response to Question 9.1