

Le Plan global d'efficacité énergétique (PGEÉ) 2003-2006
d'Hydro-Québec Distribution
Budget 2004

Analyse des coûts évités

**Extrait de la Décision de la *British Columbia Utilities*
Commission portant sur le
« Vancouver Island Generation Project : Application For A
Certificate Of Public Convenience and Necessity »**

Pièce GRAME-5, document 2



IN THE MATTER OF

VANCOUVER ISLAND ENERGY CORPORATION

(A WHOLLY-OWNED SUBSIDIARY OF
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY)

VANCOUVER ISLAND GENERATION PROJECT

**Application for a
CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY**

DECISION

September 8, 2003

Before:

**Robert H. Hobbs, Chair
Nadine F. Nicholls, Commissioner**

BCOAPO argued that the Commission Panel's consideration of environmental and social impacts needed to include environmental as well as financial costs, in order to comply with the ruling of the British Columbia Court of Appeal. The BCOAPO recognized that a hearing into a CPCN application should not deal in-depth with environmental considerations, and submitted that the BC Clean designation was an appropriate indicator or comparison tool for the broader range of environmental considerations in the VIGP hearing.

The Energy Plan gives the following definition of BC Clean electricity:

BC Clean electricity refers to alternative energy technologies that result in a net environmental improvement relative to existing energy production. Examples may include small/micro hydro, wind, solar, photovoltaic, geothermal, tidal, wave and biomass energy, as well as cogeneration of heat and power, energy from landfill gas and municipal solid waste, fuel cells and efficiency improvements at existing facilities. This broad definition will allow for the development of a diverse range of cost-effective and environmentally responsible resources across the province.

Policy Action #20 states Electricity distributors will pursue a voluntary goal to acquire 50 percent of new supply from BC Clean electricity over the next 10 years .

BCOAPO summarized the BC Clean status of VIGP and alternatives as follows:

- VIGP is not BC Clean (T2: 469-71);
- The Hillsborough proposal is not BC Clean (T12: 2746);
- The Maxim Power proposal is BC Clean (T13: 2927);
- The Green Island proposal is BC Clean (T13: 2962); and
- For the NorskeCanada proposal, 165 MW or 58 percent is BC Clean (Exhibit 10F).

Based on the BC Clean comparison, BCOAPO argued that VIGP is inferior to competing proposals.

In Final Argument, VIEC stated that BC Hydro plans to meet the 50 percent target through its Power Smart, Resource Smart, Green Energy and CBG programs. It calculated that the resource additions under Portfolios 1, 2 and 3 would be 64 percent, 64 percent and 78 percent BC Clean, respectively (Exhibit 40).

5.10.2 Greenhouse Gas Emissions

Several intervenors raised the issue of greenhouse gas (GHG) emissions from VIGP, and the contingent liability that BC Hydro may face from possible future GHG emission regulations. VIEC included \$2 million in the total net present value costs of Portfolios 1 and 2, as the expected cost of meeting its voluntary

commitment to offset 50°percent of the GHG emissions from VIGP through 2010 (T3: 595).

In addition, BC Hydro has developed a \$3/MWh price adjustment for proposals with near-zero GHG emissions that are submitted in response to its Green Energy and CBG programs. VIEC stated that \$3/MWh equates to approximately \$10/tonne CO₂ equivalent, assuming a CCGT GHG emission factor of 0.36 tonnes/MWh. The federal government has stated that it will provide access to GHG offsets at less than \$15 per tonne CO₂ equivalent, and BC Hydro assumed a range of \$5 to \$15 per tonne for greenhouse gas liability (Exhibit 6, GSXCCC IR 8.2 and 8.6). During the hearing, VIEC indicated that its analysis of potential GHG liability for VIGP could be between effectively zero dollars and upwards of \$400 million (T7: 1432).

Dr. Bramley of the Pembina Institute appeared on behalf of GSXCCC. Dr. Bramley identified a plausible scenario of VIGP emission costs ranging from \$2°million per year during 2008-12 to \$64°million per year during 2023-31, with a present value liability over the life of VIGP of \$207 million. He recognized that there are too many policy uncertainties to calculate a precise financial liability to BC Hydro for GHG emissions from VIGP . Nevertheless, Dr. Bramley felt that the financial liability from GHG emissions is an important factor that should be included in any analysis of a full range of options for managing electricity supply (Exhibit 19B, pp. 10, 11). Dr. Bramley stated that the federal government and most experts are broadly in agreement that the most likely expected price of GHG emission offsets is \$10 per tonne (T7: 1380-82).

In Final Argument, GSXCCC suggested that the system-wide requirement for new generation could be met with zero and low GHG generation resources. GSXCCC disagreed with BC Hydro s claim that it is managing its GHG liability risk, particularly past 2010.

GSXCCC acknowledged that natural gas has a lower GHG intensity than other fossil fuels, and is a relatively preferred energy source. However, GSXCCC argued that the cost of VIGP cannot be adequately evaluated without explicit factors for its GHG liability. It acknowledged that the \$3/MWh price adjustment reflects GHG liabilities in relation to Green Energy and CBG projects, but noted that the adjustment had not been applied to VIGP.

The Society Promoting Environmental Conservation (SPEC), other intervenors and several Interested Parties expressed similar concerns about GHG emissions from VIGP.

VIEC argued that potential future GHG liabilities will not preclude the development of CCGT generation. In Reply Argument, it noted there is a range of plausible future scenarios and that it expects the magnitude of future GHG regulatory costs to be nothing like those suggested by Dr. Bramley. It also stated that BC

Hydro's purchases of Green Energy and CBG and associated emission reduction credits are intended to address its future GHG liability. It defended a portfolio approach to GHG risk management as being consistent with industry best practice.

5.10.3 Siting of VIGP

The Application described in some detail the site selection and screening process that VIEC used to select the Duke Point location for VIGP. The objective was to find a site that met engineering and business requirements and offered socio-economic benefits to the community, while minimizing or avoiding adverse impacts to the environment, public health and cultural-heritage values. A long list of potentially suitable candidate sites on Vancouver Island was ultimately narrowed to the selected site. The process included open houses regarding the selection process and identification of the Duke Point site as the preferred location in February 2002 in Cedar and Nanaimo and on Gabriola Island.

The Duke Point site near Pope & Talbot's Harmac Mill scored the highest in VIEC's evaluation of the short-listed sites in large part because of the reduced amount of development and lower environmental impacts that would result from the use of existing water supply and wastewater treatment infrastructure, the short pipeline connection to natural gas supply and the distance from residential areas. The site is located in an existing industrial area and further development of industrial operations at the site is consistent with the official community plan. VIEC has purchased the property, and has an agreement for the supply of water to VIGP and the treatment and discharge of effluent from VIGP (Exhibit 1, pp.°53-62).

A number of local residents submitted Letters of Comment that generally opposed VIGP (Exhibit 26). Several of the Letters of Comment expressed concern about the impact of VIGP on air quality, especially with regard to particulate emissions. Some letters noted the GHG produced by VIGP, and the contribution this would make to global climate change. Many Letters of Comment also were concerned about the cost of power from VIGP, and recommended alternatives that the writers felt would be lower cost, more sustainable and more green.

SPEC in Final Argument noted that VIEC had not included costs associated with re-location of people whose health was adversely affected by VIGP. The Islands Trust opposed VIGP on the basis that VIGP would run counter to its goal to discourage activities or projects that would reduce the natural and aesthetic values of the Local Trust Area.

5.10.4 Commission Panel Determination

The Commission Panel has previously determined the scope of environmental and social matters that are to be considered within the context of the Application. The submissions on behalf of the BCOAPO have not persuaded the Commission Panel it was in error in its earlier determination.

The Commission Panel further observes that the *Environmental Assessment Act* SBC 2002 Chapter 43, (EAA, 2002) provides for an environmental assessment process for reviewable projects as defined by that Act. It prohibits, among other things, the construction of all or part of the facilities of a reviewable project unless the person first obtains an Environmental Assessment Certificate for the project or the executive director has determined that an Environmental Assessment Certificate is not required for the project.

The EAA, 2002 replaced the *Environmental Assessment Act* RSBC 1996 Chapter 119 (EAA, 1996). The latter Act (except for the waste management provisions) came into force on April 21, 1997, which was subsequent to the decision in the *BC Hydro Court of Appeal* case. The UCA does not specifically refer to environmental considerations. The enactment of the EAA, 1996 and its replacement by the EAA, 2002 have served to provide another provincial body with primary responsibility over environmental considerations (other than those that have financial impacts in the determination of public convenience and necessity), especially for reviewable projects.

In the context of the Application, the Commission Panel considers the BC Clean designation is a useful qualitative measure for comparing generation projects. From this comparison, it is evident that VIGP is less desirable from an environmental perspective than several alternative projects. Nevertheless, VIGP would not seem to impede BC Hydro's ability to acquire 50 percent of new supply from BC Clean electricity over the next ten years.

On a more quantitative basis, the Commission Panel considers that the financial analysis of VIGP and alternative projects needs to explicitly recognize potential GHG liability. At the same time, the concerns expressed by Dr. Bramley and VIEC about the uncertainties in calculating this liability appear to be well justified. Also, noting the possible range identified by VIEC, the Commission Panel is concerned that it not assign an unduly high liability figure without solid reasons indicating that such an outcome is likely.

The evidence indicates that a GHG emission offset cost of \$10 per tonne CO₂ equivalent is broadly supported at this time. This represents a cost of about \$3.60/MWh for VIGP (Exhibit 6, GSXCCC IR 8.6). It would

also indicate a zero cost for hydroelectric and wind, and a nominal cost for generation fueled with biomass. A typical coal-fired generation plant would have a cost of \$10/MWh. Treating potential GHG liability as a cost rather than as a credit for low GHG projects will simplify the comparison of alternatives from a least-cost or cost-effectiveness perspective. Including GHG liability costs in the comparison of alternatives will also address and give reasonable weight to the greenhouse gas emissions concern that several parties raised. **The Commission Panel determines that a GHG emission offset cost of \$3.60/MWh in real 2002 dollars should be used in the analysis of VIGP.**

The proposed site for VIGP was selected by a thorough process that included public consultation. The Environmental Assessment Office is responsible for identifying restrictions and mitigation requirements that will apply for the use of the site. **The Commission Panel concludes that, in the context of its review of the Application, the proposed site is suitable for the project.**

5.11 VIGP Cost of Service

The Commission Panel recognizes that there remains considerable uncertainty in the costs of VIGP, especially gas costs, gas transportation tolls and capital costs. The utilization rate for VIGP is also uncertain. Therefore, the Commission Panel has developed two plausible scenarios that cover the likely range of the cost of electricity supply from VIGP. Table 5.4 shows costs for the two scenarios for 2010/11 that are taken from the 25-year cost of service schedules that are attached as Appendix A to the Decision.

Table 5.4

VIGP Cost of Service in 2010/11 (Millions of Nominal Dollars)

	<u>Lower Cost</u>	<u>Higher Cost</u>
Capital charges, Section 5.5	28	32
OMA cost, Section 5.6	17	17
Gas commodity, Section 5.7	72	90
Motor fuel tax, 7% gas commodity	5	6
GSX gas transportation, Section 5.9	23	46
TGVI gas transportation, Section 5.9	10	0
GHG offset cost, Section 5.10	8	7
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Total Cost of Service	163	199
Annual Energy, GWh, Section 5.8	1,857	1,741
Unit Energy Cost, \$/MWh	88	114
Unit Energy Cost, 2002 \$/MWh	73	96
25-Year Average Cost, 2002 \$/MWh	69	103