

VANCOUVER ISLAND ENERGY CORPORATION

APPLICATION TO BRITISH COLUMBIA UTILITIES COMMISSION
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

ARGUMENT ON BEHALF OF NORSKECANADA

JULY 22, 2003

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1. INTRODUCTION AND EXECUTIVE SUMMARY

BC Hydro continually refers to VIGP/GSX as the “preferred alternative”. While VIGP may be BC Hydro’s preference, what this Commission must decide is the best alternative.

On November 25, 2002, British Columbia introduced its energy plan. Two of the cornerstones of that plan are low electricity rates and more private sector opportunities.¹ These policy directions should guide the Commission’s decision in this matter.

Policy Action #6 in the Plan provides that Vancouver Island Energy Generation Project will be reviewed by the BC Utilities Commission to determine if it is the most cost-effective means to reliably meet Island power needs. After an extensive and expensive hearing it is clear that BC Hydro:

- (1) has never searched for alternatives to VIGP; and
- (2) has not demonstrated that VIGP is the most cost-effective means to reliably meet Island power needs.

VIGP/GSX are an expensive and risky solution to Vancouver Island’s capacity problems. BC Hydro’s own transmission options and the projects presented by NorskeCanada and others are options with lower costs and higher reliability.

During the hearing BC Hydro proposed a call for tender (“CFT”) process to see if there are lower cost alternatives available. This is something that should have been done long before this CPCN process began. BC Hydro did not propose the CFT process for the benefit of alternative sources. It proposed the CFT process because it realized that its Application fails to demonstrate that VIGP/GSX is the lowest cost alternative and accordingly, fails to prove one essential element necessary to obtain a CPCN.

BC Hydro’s CFT process is badly flawed. It would have BC Hydro conducting and judging a competition for future electricity supply, in which it is participating as a competitor, in pursuit of which it has spent over one hundred million dollars. NorskeCanada is of the view that BC Hydro and many of its key personnel are too deeply committed to the VIGP/GSX Project to be considered fair and neutral in assessing alternative electric supply options. The reasonableness of NorskeCanada’s view is confirmed by a reading of BC Hydro’s July 2003 Argument in this matter. Clearly BC Hydro’s priority is building VIGP/GSX, not undertaking a fair CFT process, the discussion of which took only 2 pages out of the 76 page Argument and the details of which will only be discussed by BC Hydro in its Reply Argument.

The BCUC must take direct control of the proposed CFT process if it is to have any credibility with the public and potential bidders. NorskeCanada will not participate in a CFT process unless someone other than BC Hydro gives the final approval for:

- the CFT Benchmark level;

¹ Energy Plan for the Future: Plan for BC, p. 8

- the CFT rules;
- the selection of the independent reviewer; and
- what really is the best alternative.

2. BCUC REVIEW OF VIGP/GSX

2.1 CPCN

The Provincial Government has directed this Commission to carry out a review of the merits of VIGP. Policy Action #6 of the British Columbia Energy Plan states: "The Vancouver Island Generation Project will be reviewed by the Utilities Commission to determine if it is the most cost-effective means to reliably meet Island power needs."²

NorskeCanada supports this goal. While NorskeCanada is a proponent of a competing project it is also BC Hydro's largest customer by a factor of two. NorskeCanada's primary concern is that BC Hydro solve its problems on Vancouver Island at the lowest cost while maintaining or improving reliability. Because NorskeCanada is also one of the first to be curtailed if the system fails on Vancouver Island, as 90% of the on-Island industrial electricity load, its views on both cost and reliability should be of particular importance to the BCUC and to BC Hydro.

In its argument in this matter, BC Hydro sets up a number of "straw-men" and then proceeds to knock them down. One such straw-man is BC Hydro's discussion of the "public interest".³ This is not an issue. It is clear to everyone that the public interest will be met by the project with the best combination of low cost, high reliability and acceptable environmental impacts. As will be discussed later in this Argument, and it should be clear on the evidence already, BC Hydro has failed to demonstrate VIGP is the lowest cost alternative with acceptable reliability.

NorskeCanada submits that the BCUC cannot issue a CPCN for VIGP at this time. To do so would ignore the public interest and Policy Action #6. A CPCN can only be issued when, and if, BC Hydro demonstrates that VIGP is in fact the lowest cost alternative. A decision declining to issue a CPCN at this time is the only appropriate response. Issuing a conditional CPCN will have a very negative impact on any future CFT process. If a conditional CPCN is issued, most IPPs and particularly those who have read BC Hydro's July Argument, will almost certainly feel BC Hydro is simply going through the motions and IPPs will not be inclined to incur the substantial amount of costs necessary to participate.

The BCUC should issue a decision in which it clearly states what BC Hydro must do and how it must be done, prior to the BCUC once again considering issuing a CPCN for VIGP/GSX.

2.2 Section 71 Review

In its argument, BC Hydro suggested that a CPCN should be issued to BC Hydro whether or not the VIGP project was going to be sold⁴ and that furthermore the issuance of a CPCN would do

² Energy Plan for the Future: Plan for BC, p. 28

³ BC Hydro July 2003 Argument, para. 12-14

⁴ BC Hydro July 2003 Argument, para. 15-17

away with a need for a Section 71 Review of an Electricity Purchase Agreement ("**EPA**") between BC Hydro and a future purchaser.

NorskeCanada takes exception with these positions for two reasons. First, a CPCN is not required for an IPP project and should not be granted in the event that an IPP is known or anticipated to be purchasing this project. There is simply no jurisdiction to do so. A CPCN is only required to construct or operate a public utility plant or system.⁵ Second and most importantly, there is no connection between considering the merits of VIGP as a BC Hydro project and considering the merits of an EPA entered into between BC Hydro and a subsequent purchaser of VIGP.

On a Section 71 Application for Approval of an EPA, BC Hydro will have to demonstrate that the EPA would result in ratepayers paying less than the least cost alternative in order to satisfy the public interests test. At bare minimum, the EPA would have to cost ratepayers less than VIGP, built and operated by BC Hydro. However, there is no evidence on the record of this proceeding that this would be the case. On the contrary, there is considerable reason to believe that an IPP, which could not finance this project on debt alone, would have materially higher financing costs. The minimum test of the public interest on a Section 71 Application would be to require the EPA to cost less than the cost found in this Application, adjusted to form a benchmark for the CFT, as discussed later in this Argument.

3. URGENCY

NorskeCanada accepts that there is a significant problem facing Vancouver Island that must be addressed. However it does not believe that the problem is so urgent that we do not have time to select the lowest-cost reliable solution. If the lowest cost reliable solution requires more time to complete, as is apparently the case for some of the transmission alternatives, NorskeCanada is committed to working with BC Hydro to find reasonable mutually beneficial solutions to bridge the near-term time constraints. This offer is extended whether or not the ultimate solution includes the NorskeCanada Project Suite.

NorskeCanada believes that it can offer a contracted demand reduction solution that would back-up BC Hydro's HVDC facilities thereby providing BC Hydro with the security it needs to complete the least cost solution.

4. BC HYDRO'S FAILURE TO INVESTIGATE ALTERNATIVES TO VIGP

The simple fact is that since BC Hydro was ordered to undertake a natural gas co-generation plant in July 1997⁶ it has pursued the construction of a gas generation plant, in partnership, or on its own, to the exclusion of all other alternatives. This was confirmed in the clearest possible terms during Ms. Farrell's discussion with Mr. Doherty:⁷

Mr. Doherty: Q: Thank you. Now, we had testimony on the first day of the hearing that B.C. Hydro's determination to proceed with VIGP was a result of what it

⁵ Utilities Commission Act, R.S.B.C. 1996, Ch. 473, Sec. 45(1)

⁶ Exhibit 4-8, series of letters from the Government to BC Hydro

⁷ Transcript, Vol. 10, P. 2116, L.1-10

believed to be binding directions from the provincial government requiring it to do so. Once that determination had been made, is there anything, short of perhaps the ultimate determination by this Commission, that could have resulted in VIGP no longer being B.C. Hydro's preferred alternative?

Ms. Farrell: A.: I do not believe so.

It was only the week before this hearing commenced that Mr. Bell first indicated before a legislative standing committee that an alternative project could delay VIGP.⁸ This was subsequently followed up on by Mr. Elton in his direct evidence⁹ and elaborated on during the course of the hearing as the CFT proposal developed, almost day by day.

While the direction of this stated willingness to look at alternatives is commendable, the fact remains that BC Hydro has done nothing to ascertain that VIGP is the least-cost alternative.

- BC Hydro never went to NorskeCanada, whose coincident peak demand is in the range of 400 MW and consumes approximately 3500 GWh of energy per year¹⁰, to say words to the following effect: "Look we have a major problem coming up. We are about to spend around \$700 million on capital to meet a capacity issue for a short period each year. Is there anything we can do together?"¹¹ This is particularly distressing when one considers that the transmission upgrades, which are considered by BC Hydro transmission to be the principle alternatives, have been ruled out due to reliability concerns which could be overcome with a solution as simple as contracted curtailment.
- BC Hydro did not hold a Request for Proposals (RFP) prior to committing to VIGP/GSX, or at any time during its creation.
- The last RFP for generation that was not subject to price caps and risk transfer issues was issued in 1994 and was not based on today's current needs or costs.¹²
- The Green Power and CBG calls for generation imposed risks on IPPs that ratepayers will carry in the case of VIGP/GSX. For example, IPPs were limited to a maximum price of approximately \$58 MWh on Vancouver Island, price increases under the RFPs were limited to one-half of inflation, and the IPP was expected to bear the full gas price and gas transportation cost risk. If BC Hydro proceeds with VIGP/GSX, then ratepayers will pay a higher price, bear the full cost of inflation and assume the full gas price and gas transportation risks. Clearly CBG and Green Power were not a good test for assessing available capacity on Vancouver Island. This fact is acknowledged by Mr. Elton at Transcript Volume 1, pages 64 to 68.

⁸ Transcript Vol. 1, p. 42

⁹ Exhibit 2

¹⁰ Exhibit 4(I)

¹¹ Transcript Vol. 2, p. 360

¹² Transcript Vol. 1, p. 64

- BC Hydro does not have and has not had a current full Integrated Resource Plan for more than five years. Such a plan would have established early on that VIGP was not in fact the lowest cost alternative.

The failure to demonstrate VIGP/GSX as the least cost proposal was effectively acknowledged by Bev van Ruyven when pressed on B.C.Hydro's intentions in holding a CFT.¹³

In our submission, BC Hydro is only preparing a CFT now in an attempt to get around a major deficiency in its Application and evidence.

5. TRANSMISSION V. GENERATION SOLUTIONS FOR VANCOUVER ISLAND

NorskeCanada recognizes that there is a debate as to whether a transmission or a generation solution is the appropriate solution at this time for Vancouver Island. NorskeCanada believes that its Projects Suite is both a lower cost alternative to VIGP/GSX and that it possesses additional benefits including flexibility, reliability and reduced environmental impacts. However, it has not made a similar comparison with respect to the transmission option and therefore only wishes to make a few observations at this time.

5.1 Reliability

It appears clear that while Vancouver Island needs additional transmission and generation before it reaches the level of reliability enjoyed on the mainland, proceeding with transmission first gives the greatest improvement in reliability.

Mr. Mansour, clearly the most senior transmission expert that testified at this proceeding, had the following to say about transmission versus generation reliability:

"MR. R.B. WALLACE:Q: Okay. And given the ICP experience that you spoke to, how happy are you as a transmission planner with getting another large combined cycle gas turbine to fill the gap until there's a transmission solution?"

MR. MANSOUR: A: The generation, whether the ICP or the next generation on Vancouver Island, in a case like Vancouver Island when there is a large deficiency on the Island between the demand and the supply, the Island generators would be exposed to severe dynamics on faults. So initial stage when you have those one or two generators at the first stage, the early stages, it would not be compatible from a reliability point of view to a transmission solution to the Lower Mainland.

However, if you look at the 30-year horizon and we get the vision of keeping in mind that at some point of time there will be a good combination closer to balance between load and supply on Vancouver Island supported by transmission, then you get to a level that's comparable to good service. But in the initial stages you may argue, you

¹³ Transcript Vol. 2, p. 347

know, and reasonably, that generators, the first one or two generators on the Island will add a lot to the reliability of today, but it would not be comparable in the first stage to that of a transmission. On the long run it would help.

MR. R.B. WALLACE: Q: Okay, so as a transmission planner you would put the transmission first and the generation second, I take it.

MR. MANSOUR: A: In 1995 that was our actual plan until we lost the time for transmission, and now we are on the generation track as the first step.

MR. R.B. WALLACE: Q: And from your point of view, that's simply a matter of timing.

MR. MANSOUR: A: It's a matter of timing.

MR. R.B. WALLACE: Q: And again just to be clear, with respect to using the generation, does it concern you that you are going with another combined cycle generation turbine of a similar size to ICP on the Island at this time?

MR. MANSOUR: A: It concerns me from a performance point of view, but it is mitigated by our plans to try to keep as much as possible of the HVDC remaining alive by modest refurbishment. That was part of mitigating that concern."¹⁴

If there was any question in anyone's mind what Mr. Mansour thought the preferred alternative was, the following discussion between the Chairperson and Mr. Mansour eliminated all doubt:

"THE CHAIRPERSON: And I think it's your evidence that if there was no regulatory risk, your preference would be to have the 230 kV AC Cables?

MR. MANSOUR: A: Based on all the results, yes.

THE CHAIRPERSON: All right.

MR. MANSOUR: A: If there's no uncertainty risks. The uncertainty of the 230 kV, if they are eliminated, then it is a higher reliability than the VIGP.

THE CHAIRPERSON: Yes. So, but for the regulatory risk you would prefer the 230 kV AC option.

MR. MANSOUR: A: Yes, technically 230 kV option as the first step is better than the VIGP.

¹⁴ Transcript Vol. 4, p. 782-784

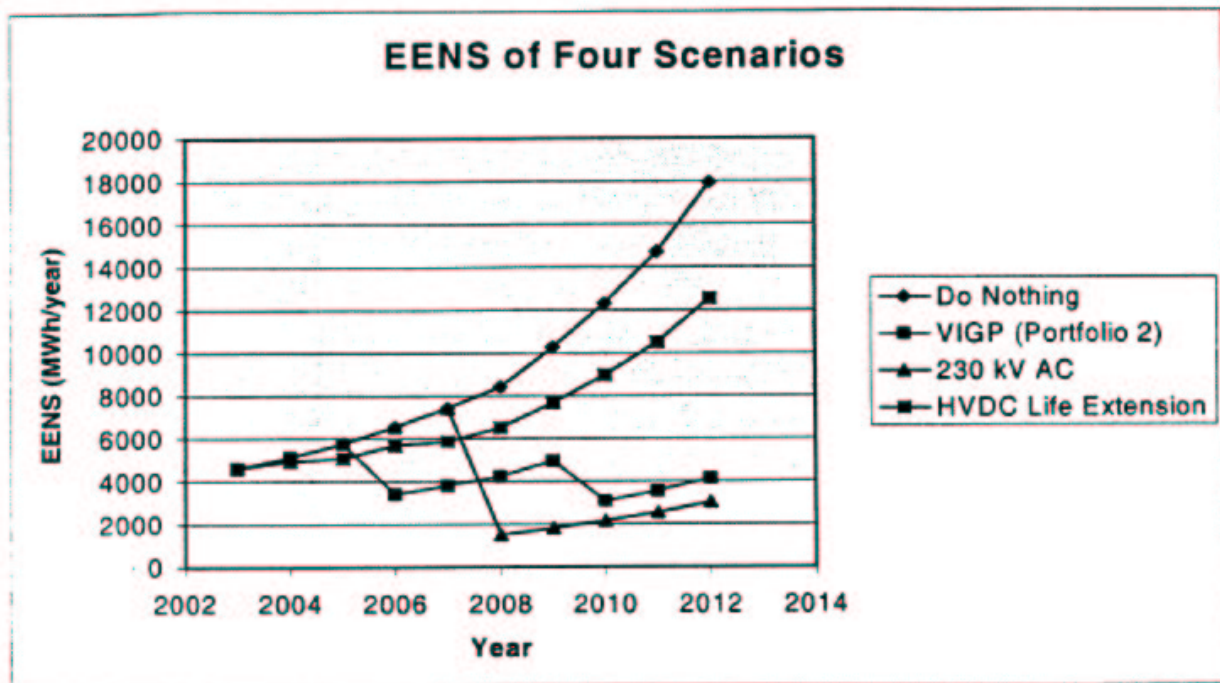
THE CHAIRPERSON: And what swings the balance for you in the decision that you've made - -

MR. MANSOUR: A: Is the uncertainty in the time line and the delay in time line of the 230 kV.

THE CHAIRPERSON: It all boils down to that.

MR. MANSOUR: A: Correct."¹⁵

Mr. Mansour's position is supported by the Expected Energy Not Served ("EENS")¹⁶ study which clearly shows in the following graph that transmission options offer the most reliability.



Clearly a combination of more generation and more transmission is ultimately required to give Vancouver Island the same level of stability as the Mainland. The only issue would appear to be the order in which the projects are completed. While Mr. Mansour preferred transmission but settled for generation first, the Commission does not need to do so.

5.2 Temporary Back-up of the Transmission Option by NorskeCanada

If the Commission thinks that transmission is a better option than generation, one option is the one put to Mr. Mansour by Mr. Fulton:

¹⁵ Transcript Vol. 5, p. 1067

¹⁶ Ex. 4E, BCUC IR 60.1, piv

"... is not one alternative, based on what this table shows, to accept somewhat lower reliability for a year or two in order to obtain the improved reliability from the 230 kV system over the longer haul? Isn't that one alternative?"

MR. MANSOUR A: That's one alternative."¹⁷

NorskeCanada believes there is a better and more reliable alternative. In assessing whether transmission options are available one has to consider the risks customers might face due to the one to two year delay that might be required to bring on capacity and the ways those risks might be mitigated. The planning criteria indicate that a customer would only be affected if one of the 500 kV lines to the Island is out and it happens to be one of the three coldest days of the year and there is no transmission capacity available between Southern Vancouver Island and the Mainland on the HVDC line¹⁸.

NorskeCanada believes that it and BC Hydro should be able to enter into an agreement for contracted curtailment that will provide the necessary level of security to ensure that proceeding with the 230 kV option is no riskier than proceeding with VIGP at a fraction of the cost of VIGP. The reasons NorskeCanada feels confident that it can do this are:

- (1) the events being protected against are remote; and
- (2) NorskeCanada is already armed and ready for an N-2 occurrence¹⁹, all that needs to be done is for BC Hydro to reach an agreement with NorskeCanada that will allow BC Hydro to curtail in specific N-1 situations.

In its argument, BC Hydro suggests that load curtailment is not a long term resource option and thus not a substitute for the VIGP²⁰ and that "industrial load curtailment participants do not perform at a 100% even when the penalties are extreme"²¹. These arguments are simply another straw-man, put up just to be struck down. Clearly NorskeCanada is not suggesting load curtailment as a long term replacement for generation or transmission. Rather the offer is put forward to assist in meeting the limited difficulties described in BC Hydro's own planning criteria in order to delay or avoid all or part of a \$680 million investment. For example a load curtailment contract with NorskeCanada could back-up HVDC upgrades making them secure enough to be relied upon until the 230KV upgrade was complete. Second, to suggest the experience in California is comparable to what BC Hydro could contract for is uninformative and potentially misleading. BC Hydro knows NorskeCanada can be armed and can be knocked off the system virtually instantaneously if required. NorskeCanada would not have the alternative of remaining on at any price if it enters into a contract with BC Hydro giving it the right to curtail.

¹⁷ Transcript Vol. 5, p.1016

¹⁸ Transcript Vol. 4, p. 801-802

¹⁹ BC Hydro July 2003 Argument p. 12, para. 30

²⁰ BC Hydro July 2003 Argument, para. 173

²¹ BC Hydro July 2003 Argument, para. 174

During cross-examination, Mr. Fulton asked the NorskeCanada panel how much notice it would like prior to curtailment.²² The panel responded it would like a day's notice but NorskeCanada is capable of responding more rapidly and will if that is what is negotiated with BC Hydro.

The proposed demand curtailment bridge would remove all pressure to construct VIGP/GSX immediately and allow future transmission and generation on Vancouver Island to be built in the most cost effective and reliable way.

NorskeCanada is frustrated and disappointed in BC Hydro's attitude. It appears from its Argument that BC Hydro is continuing to seek even the faintest excuse to prove solutions will not work rather than creatively seeking to find the best solutions which can work. NorskeCanada knows it cannot solve Vancouver Island's capacity and energy problems alone but strongly believes that if BC Hydro and NorskeCanada were to work together some excellent solutions could be achieved. Unfortunately, so far BC Hydro has shown no interest in doing this.

6. VIGP COSTS AND RISKS

VIGP costs and financial risks to ratepayers are critically important to any comparison to be made in the future with alternative projects. The Commission must assess those costs now in order to set a benchmark to which alternatives can be compared. Setting the CFT Benchmark costs cannot be left to BC Hydro which has demonstrated such a strong commitment to building VIGP/GSX.

6.1 Capital Costs

VIGP/GSX is not a cheap solution to the capacity shortage on Vancouver Island. It is a high risk expensive solution. Together the Projects' total capital cost is approximately \$680 million.²³ Even a small percentage overrun can be a large sum of money. Overruns must be regarded as a distinct possibility in spite of the best intentions. Furthermore, foreign exchange risks still remain. Cost increases in the estimates for GSX over the last couple of years have been substantial and rapid. While the worst of the cost escalation is likely over, the risk remains that there may be more to come. VIGP has also experienced increases in its estimates and those costs may also rise. It must be remembered BC Hydro is not bringing the Commission signed turn-key contracts. Rather, it is merely presenting estimates.

In order to minimize the possibility of substantial overruns NorskeCanada recommends that the CFT Benchmark costs be based on BC Hydro's current P90 estimate in order to give rate payers the same level of confidence in BC Hydro's cost estimates as contract bids from IPP's who must absorb construction cost overruns.

6.2 Natural Gas Costs

Natural gas costs are the largest variable cost for the VIGP proposal yet little effort has been made to assess the project's true sensitivity to fuel costs. BC Hydro's scenario analysis

²² Transcript Vol. 12, p. 273

²³ Exhibit 4FF, GSX @ \$296.5 million & VIGP @ \$386 million (P90, \$nominal)

essentially compares VIGP to quite similar CCGT configurations and ignores alternatives based on alternate fuels or higher efficiency gas configurations.

The NorskeCanada Project and alternate fuel projects can significantly reduce exposure to future natural gas price escalation. VIGP consumes 45 TJ per day to generate electricity or approximately 5 TJ more than the NorskeCanada Project Suite gas generation projects for approximately the same amount of electricity. This is a substantial amount of natural gas over the life of a 20 year contract. In addition NorskeCanada has the TMP related capabilities. While these capabilities come with a higher capital per megawatt cost they do not have fuel costs.

While BC Hydro has regularly questioned NorskeCanada's costs generally, it has never challenged NorskeCanada's assertion that it is significantly more energy efficient than VIGP.

For the purpose of the CFT Benchmark, BC Hydro should be directed to use a gas cost of \$6.07/GJ plus 2% annual inflation in nominal 2004/5 dollars. This is the gas cost directed in EX 4E BCUC IR #63.0 and represents one plausible scenario and which should also be high enough give some idea of the impact of VIGP's higher gas consumption in comparison to other gas and non-gas alternatives.

6.3 Allowance for Equity

BC Hydro has based its cost of capital for VIGP on the assumption that it is 100% debt financed at 6%. This is simply not plausible, whether VIGP is owned by a Crown Corporation or an IPP.

Mr. Elton acknowledged that VIGP is a long-term capital investment but would not acknowledge that it should be funded with a long-term capital structure. BC Hydro's position is contrary to normal regulatory practice which requires that long-term assets be financed with the weighted average cost of capital of the utility, which must include equity. It is almost a truism of the regulatory world to say that capital dollars cannot be traced and applied to specific projects. This is even more clear in the case of BC Hydro, which has a statutory and regulatory mandate pursuant to Special Direction Nos. 8 and 4 to maintain an equity component of at least 20%. In the long run, these assets will require BC Hydro to have equity to support them at least to the extent of 20%.

This also accords with common sense. No one, with the possible exception of BC Hydro, would suggest that one could build this project on a stand alone basis without a substantial equity investment. What makes this case only slightly different from the stand alone case is that it can be constructed by trading off the equity already existing within BC Hydro. Doing that however is not without cost. If the equity is already there and not required to support other investments the capital structure is currently inefficient. If there isn't sufficient equity in the existing capital structure then it will have to be obtained to support this investment.

The "no-equity" scenario is even more implausible when one considers that in the long run BC Hydro plans to sell VIGP to the private sector. Any rates that an IPP might charge back to BC Hydro will have to recover the cost of an appropriate equity component which depending on the contract the IPP has with BC Hydro could reasonably be expected to fall somewhere between 20 and 40% of the capital structure.

The Benchmark Costs should, at minimum, include a cost of capital based on BC Hydro's current average weighted cost of capital.

6.4 Failure to allow for Terasen On-Island Changes

Another major omission in VIGP's costs is the failure to include any amounts for costs to be paid to Terasen for On-Island transportation.

BC Hydro seems to take the position that because its volumes will be going against the flow, Terasen will not incur any costs in serving BC Hydro and therefore should not charge a rate for the service provided. This is a startling proposition to hear coming from a utility even in the context of another utility's charges. As pointed out by Mr. Johnson during cross-examination, BC Hydro does not provide transmission access free of charge to customers wishing to go against the flow on its electricity transmission system. Moreover, BC Hydro through the years has been one of the most vigilant utilities and one of the most sanctimonious in defending against any possibility of a "free rider" situation arising.

BC Hydro's position in this matter must be rejected and a reasonable allowance for On-Island transportation included in the costs of VIGP.

Terasen charges in the amount of \$0.60/GJ plus inflation of 1% annually should be included in the Benchmark Costs for evaluation purposes.

6.5 Load Factor

One of the most difficult things to come to grips with in this proceeding has been BC Hydro's lack of clarity on exactly what problem it is trying to solve, capacity or energy. Related to this is the problem of determining the appropriate load factor to use for calculating the cost of VIGP and the cost to be used in any CFT Benchmark.

NorskeCanada believes that a proper CFT process will separate out energy and capacity in a meaningful way in order to ensure the most efficient solution is found. What is the cost of solving the capacity problem alone? We still do not know.

BC Hydro promotes VIGP as a base load plant solving a capacity problem. It suggests that it produces relatively low cost energy, based on a high load factor, while discussing the virtue of dispatchability. In our submission you can't have it both ways.

In Exhibit 4, BC Hydro Response to BCUC IR No. 63, BC Hydro calculates its unit costs based on an 80% load factor. In our submission this is a reasonable load factor for a "dispatchable plant". It is higher than ICP has achieved to date and lower than BC Hydro's optimistic estimates that this plant would be operating at a load factor of close to 90%.

6.6 GSX

The construction of GSX, while not the subject of this Hearing, depends on the Commission's decision in this matter. If VIGP is approved and proceeds, GSX will proceed. If VIGP is not approved, and not sold to the private sector, GSX will not proceed.

GSX is a major and expensive underwater pipeline. There are no guarantees against cost overruns, and if there are overruns they will be paid for by the ratepayers. The Precedent Agreement provides that all costs will flow through to BC Hydro and ultimately the ratepayers or its shareholder. This was confirmed by Mr. Smyrl in cross examination.²⁴

In its VIGP Application BC Hydro has abandoned incremental cost when it comes to GSX and sought to split the GSX costs between VIGP and ICP. This move does something for ICP by relieving the necessity for ICP's contractors to solve the distillate problems that prevent it from operating on an interruptible transportation agreement effectively, but does far more for VIGP by reducing its annual costs by 50% or approximately \$21 million/year.²⁵ This is wrong and all of the GSX costs, together with a fair contingency, should be included in the Benchmark Costs.

NorskeCanada recommends GSX costs of \$42 million/yr. should be included in the Benchmark Costs.

6.7 Cost Summary

VIGP has high operating costs – much higher than its \$68²⁶ levelized cost calculation would lead one to believe. This was clearly demonstrated in Ex 4E BC Hydro Information Response to BCUC #63 where the BCUC staff requested BC Hydro to provide a financial impact assessment of the VIGP based on two ownership scenarios and 6 key assumptions. The calculated results were dramatic. The Levelized Cost/MWh rose to \$142 and \$152.²⁷

BC Hydro argued in its response that "some of the assumptions mandated exceeded the potential worse case scenario and significantly overstate the level of risk." While there is some chance that all of the assumptions would not occur at one time as projected most are certain and the probability of the others occurring is high and accordingly must be taken into account in assessing the electricity production costs of VIGP and establishing a CFT Benchmark.

The following adjustments should be added to BC Hydro's costs for CFT Benchmark purposes:

- Add \$30 million in Capital Costs to take the VIGP cost to the P90 level;
- Increase BC Hydro's Cost of Capital to at least BC Hydro's Special Direction #8 weighted average Cost of Capital;
- Raise natural gas costs to CDN\$6.07/GJ plus 2% inflation per year;
- Increase costs from GSX to \$42 million/yr,
- Utilize an 80% load factor for CFT Benchmark and bid purposes; and
- Add \$0.60/GJ for on-island Terasen costs plus 1% inflation per year.

²⁴ Transcript, p. 76

²⁵ Exhibit 4FF, p. 1

²⁶ Exhibit 1, Application, p 82

²⁷ Exhibit 4E BC Hydro Response to BCUC Tables IR 63.1.1 and 63.1.2

Once these adjustments are made the total average cost of VIGP comes very close to the \$140 – 150/MW/h disclosed in Ex. 4E, BC Hydro Response to BCUC IR #63.

One other adjustment that could be made that does not affect VIGP's total costs to date is to base the VIGP costs for the CFT Benchmark only on costs going forward. While NorskeCanada believes this hides the true cost of VIGP and rewards proliferate spending early in the project's life without regard to the lowest cost solution, it does allow BC Hydro to realize the value, if any, of the early expenditures and achieve the lowest cost going forward. Basing the CFT on going-forward costs should also end any arguments to add costs to other bids.

The fact that BC Hydro does not accept that these adjustments are valid (with the exception of using forward looking cost) is of serious concern for its customers and anyone contemplating responding to the proposed CFT. It appears that in BC Hydro's view, risks are something that are only found in other's projects, not its own.

7. NORSKECANADA PROJECT SUITE

Contrary to suggestions by BC Hydro, the NorskeCanada Project Suite is well developed and defined.

NorskeCanada filed with the Commission:

- Direct evidence – Exhibit 8;
- Project Suite Technical Report and Cost Estimate – Exhibit 8 (A) and (B); and
- Responses to Information Requests – Exhibits 10 (A), (B) and (C).

A review of the Project Suite Technical Report and Cost Estimate discloses a substantial amount of work has been done on the Project in preparation for filing the evidence. The Engineering Report is the result of an intensive engineering effort building on top of work which had been done previously. The cost of the engineering report was between \$500,000 and \$1 million dollars.²⁸ This is a substantial amount to spend studying a project in the absence of any request for proposals.

In response to Information Request No. 1 from BC Hydro, question 3.1, Exhibit 10(C) NorskeCanada also provided a detailed breakdown of the capital costs for its Project Suite divided into Power Islands and TMP and Demand Management. These costs were not challenged by BC Hydro.

The NorskeCanada Project has a number of advantages over VIGP:

²⁸ Transcript Vol. 12, p. 2697

7.1 Lower Capital Cost

VIGP/GSX costs approximately \$680 million²⁹ for 265 MW³⁰. NorskeCanada's gas generation suite and associated Terasen capital costs are approximately \$468 million³¹ for a similar amount of capacity.

7.2 Lower Gas Consumption

NorskeCanada's Project consumes approximately 41 TJ's natural gas per day for electricity generation purposes. This is approximately 10% lower than BC Hydro's VIGP proposal. With high gas prices this difference leads to a very significant benefit over the 25 year life of the Project. BC Hydro did not challenge or dispute at any time in its evidence or its argument NorskeCanada's advantage with respect to gas consumption or gas transportation.

7.3 Lower Gas Transmission Costs

The NorskeCanada Project Suite, relying on interruptible capacity on the Vancouver Island Terasen system, provides substantial benefits not available under the VIGP/GSX proposal. First, costs are lower. While NorskeCanada does not have a signed contract with Terasen VI, estimates of both the capital costs associated with delivering supply to NorskeCanada and tolls are significantly lower than proposed for VIGP/GSX. Terasen capital costs for NorskeCanada, with an interruptible ICP, are estimated at \$163 million³² vs. GSX at \$296.5 million³³. Terasen tolls also include on-island delivery costs whereas GSX tolls do not.

The NorskeCanada proposal with its interruptible Terasen VI transmission option also makes better utilization of existing facilities resulting in a net benefit for Terasen.

7.4 More Flexibility

The NorskeCanada Project Suite consists of a number of smaller projects. This means it can be brought on faster, or delayed as required, allowing a better match of supply and demand. Particulars of possible schedules are provided in the NorskeCanada Technical Report.³⁴

7.5 Better Reliability

The NorskeCanadaProject Suite has a greater degree of reliability than VIGP. During cross-examination, BC Hydro's witnesses acknowledged that the reliability of the turbines proposed by NorskeCanada is similar to the VIGP gas turbine³⁵ and that because the NorskeCanada Project

²⁹ Exhibit 4FF, GSX @\$296.5 million & VIGP @ \$386 million (P90, \$nominal)

³⁰ Exhibit 1, Application, page 47

³¹ Exhibit 10C, BCUC TR#1, question 3.1, Norske \$305 million (\$2002, without IDC), Exhibit 13A, Terasen Evidence, Table A.3, \$163 million (\$2003 but spent over time) (Note: The NorskeCanada Project Suite with Interruptible ICP does not require LNG, Transcript Vol. 6, p. 1228)

³² Exhibit 13A, Table A3

³³ Exhibit 4FF p. 1

³⁴ Exhibits 8A & 8B

³⁵ Transcript Vol. 9, p. 1941

Suite has five turbines versus VIGP's one it is less likely that NorskeCanada would lose all capability to generate at one time.³⁶ Finally NorskeCanada can provide reliability assurances that VIGP cannot. It is possible for NorskeCanada to reduce its demand if its generation fails, providing 100% assurance to customers of Vancouver Island that they will not be impacted by a failure of generation at NorskeCanada.³⁷ VIGP cannot give this assurance.

7.6 Better Environmental Profile

The NorskeCanada Project Suite contains co-generation, load reduction and load management aspects which leads to lower natural gas requirements per MWh. Because the NorskeCanada Project Suite consumes less natural gas than VIGP, it also produces less greenhouse gases overall and per MWh produced.

8. CFT REQUIREMENTS

NorskeCanada is disappointed that BC Hydro did not address this issue in more depth in its Argument, saving the full details of its position for Reply. While NorskeCanada has attempted to anticipate BC Hydro's views, if BC Hydro raises new issues for the first time in its Reply Argument NorskeCanada may wish to respond to those issues.

How the CFT is structured is crucial to how it will be accepted by IPPs. How the Commission decides to handle the obvious conflict BC Hydro faces in its roles as buyer and proponent will probably be the biggest single influence on IPPs who are considering whether to participate in the CFT.

BC Hydro is not yet clear on whether it will sell VIGP, freeing it to compete as an IPP, or whether it will retain it as an internal backstop. This causes some uncertainty but it can be handled with appropriate terms.

The following are some of the key elements that are required for a successful bid process:

8.1 The Independent Reviewer

- Because BC Hydro is both a bidder and a judge of the proposals an Independent Reviewer must be appointed by, and report to the BCUC, not BC Hydro.
- The Independent Reviewer must approve the CFT criteria and tender terms, but only after meeting separately with BC Hydro and potential bidders.
- The Independent Reviewer must report to the BCUC, BC Hydro and all bidders at the completion of the process certifying results as fair and reasonable.

8.2 Bid Process

- There must be an assurance that the best combination of bids under the CFT Benchmark, up to the limits of the CFT, will be selected.

³⁶ Transcript Vol. 9, p. 1941

³⁷ Exhibit 10E, NorskeCanada Opening Statement, page 2

- BC Hydro must clearly define its long and short-term requirements which would be reviewed by the BCUC. BC Hydro must publish its criteria, and the weights to be given each, in advance. The criteria would include:
 - Maximum and Minimum system and project capacity requirements
 - Maximum and Minimum system and project energy requirements
 - Anticipated annual load requirement (capacity and energy)
 - Timing of needs for all of the above
- All bidders must bid both capacity and energy. Bids could be structured to contain a selection of demand/commodity charges but if an anticipated load factor is to be used in assessing bids, it must be disclosed in advance.
- Demand side management and load curtailment must be bid in a similar manner as generation. They must not be handled under the PowerSmart program which has failed to develop sufficient interest on Vancouver Island to solve the current problems. How demand and energy bids can be compared is not clear on the record. Pure stand alone peak capacity bids could possibly be compared to a distillate peaking plant.
- If a Portfolio methodology model will be used to assess bids it must be available to Bidders in advance in order to give all Bidders a proper opportunity to design their project to best meet BC Hydro's requirements.
- If BC Hydro decides to proceed with the sale of VIGP, there must be full disclosure of all of the terms and conditions of the sale.
- A (potential) purchaser of VIGP/GSX must bid into the process like any other bidder with a capacity/energy bid. Whatever the purchaser is willing to pay for GSX/VIGP work to date should be considered to be part of its project costs. The amount the purchaser/bidder paid could be deducted from the net present value of its capacity/energy bid for bid comparison or evaluation purposes.

8.3 Bid Evaluation

- IPP projects must be judged against a VIGP/GSX CFT Benchmark cost determined by the BCUC.
- Bids and the CFT Benchmark should be forward looking. BC Hydro's sunk cost must not be added onto IPP bids. This is because:
 - They are not forward looking;
 - Other parties sunk costs are not added to BC Hydro's bid; and
 - The sunk costs are not necessarily valuable assets thrown away e.g. the losses on the cancelled turbines have no value and will never be recovered. Similarly other "sunk" costs may have no value.
- The CFT Benchmark Costs, must include the following:
 - Current P90 Capital Costs (less expenditures to date)

- An appropriate level of equity to reflect the long term nature of BC Hydro's long term investment in VIGP/GSX;
 - Gas Price Forecast used in Ex. 4E, BCUC IR 63.0;
 - Full costs of GSX at \$42 million/yr;
 - An 80% load factor;
 - Defined foreign exchange and inflation factors;
 - Costs for On-Island transportation on the Terasen VI system; and
 - An adjustment for the fact that in proceeding to construct VIGP/GSX itself, BC Hydro puts ratepayers at risk in a manner they would not be if BC Hydro purchased electricity under contract.
- Bids must be evaluated on a NPV basis, not on the basis of levelized costs which are not readily understood by those outside BC Hydro.
 - BC Hydro must take the actual Gas Price Variation Risk for all proposals and the Gas transportation risk where reasonable to do so. For example if Terasen costs are lower than GSX it would be reasonable for BC Hydro to carry some or all of the transportation cost risk on Terasen as it will be carrying the full transportation cost risk on the more expensive GSX proposals.
 - BC Hydro must not be permitted to include an excess profit review test. This will discourage IPPs who must take risks in the hope of making a profit. BC Hydro's position that this is necessary is not credible. If VIGP is really a low-cost option, anything that is even lower cost is more attractive. It should not matter to ratepayers what profit the IPP is making if BC Hydro is paying less for purchased capacity and energy.

8.4 Bid Acceptance

- BC Hydro's own ability to achieve CFT Benchmark performance levels (except gas price risk) should be guaranteed by the Province which would accept reduced returns if the Benchmark is not met or if VIGP/GSX is subsequently sold on terms which increase costs to ratepayers.

This suggestion is made because there needs to be some meaningful commitment to achieving the CFT Benchmark costs by BC Hydro and its shareholder in the same manner that an IPP and its shareholders will commit to its projections.

- The BCUC should approve the outcome only if satisfied it represents lowest cost.
- Unsuccessful Bids should not be made public on the conclusion of the CFT process as it is likely that the bidders in this process will be bidding in future processes and would be prejudiced by public disclosure.

8.5 CFT Bottom Line

If the BCUC decides generation is the right solution for Vancouver Island, NorskeCanada is confident there are better solutions than VIGP/GSX and recommends a CFT should be issued to allow those other options to come forward.

However, NorskeCanada cautions that a CFT will only attract bidders if it is clear that the process will be transparent and fair. This means BC Hydro must not be both a bidder and in control of the CFT process. If it does not appear that all competing projects will be assessed objectively and fairly using the same fully disclosed basis for measurement then NorskeCanada will not participate.

9. RESPONSE TO ALLEGATIONS IN BC HYDRO'S ARGUMENT TARGETED AT NORSKECANADA

In its argument BC Hydro made a number of comments directed specifically at the NorskeCanada Energy Project in paragraphs 151 through 158. NorskeCanada believes that many of these comments are not based on the evidence or fact and should be responded to.

9.1 Paragraph 152

BC Hydro suggests that it "lacks the financial, regulatory and timing detail necessary" to judge this project. While admittedly NorskeCanada's project lacks the certainty that comes with spending \$100 million prior to applying for a CPCN, NorskeCanada has testified, and there can be little doubt, that its smaller projects at existing industrial locations can be completed without putting electricity supply to Vancouver Island at risk.

9.2 Paragraph 153

In paragraph 153 of its argument, BC Hydro complains that "NorskeCanada, ..., makes no firm commitments to either a schedule or a detailed explanation of the project costs, making it impossible to compare the proposal to the VIGP on a present value basis". NorskeCanada, through the evidence and responses to IRs has provided sample schedules and time tables that are flexible enough to meet a variety of timing requirements. Detailed schedules were also provided that demonstrated overall project time tables could be met.³⁸

Detailed costs were not provided because NorskeCanada contemplated, quite correctly as it turns out, BC Hydro would not enter into an agreement with it except as a part of a broader call for tenders process. NorskeCanada did, however, provide detailed breakdown of the capital costs and demonstrated, in a matter that has not been challenged, that the principle operating costs, gas purchases (i.e. gas consumption for electricity generation) and gas transportation, would be lower for the NorskeCanada Project Suite than for VIGP/GSX.

NorskeCanada deliberately relies upon interruptible gas supply for its generation. This creates a substantial cost advantage. NorskeCanada has sufficient distillate to back up its gas supply to assure continuous service. Ultimately, it can guarantee that ratepayers will not be impacted by

³⁸ Exhibit 8A

its failure to generate by reducing load. This is a combination of cost savings and reliability that VIGP cannot meet.

9.3 Paragraph 154

In this paragraph, BC Hydro has the facts wrong. It presumes that because NorskeCanada's total gas requirements are 52 TJ/day with 41.5 TJ/day required for electricity generation that NorskeCanada is only using 10.5 TJ/day to make steam for non-generation purposes and then compares that number to NorskeCanada's current demand, assuming approximately double the volume.

The 21 TJ/day is incorrectly characterized as gas consumption, although in the evidence (Exhibit 10A), it is clearly defined as capacity. With the reduced gas transportation availability after NCEP for process requirements (21 TJ/day to 10.5 TJ/day) there will be an increased requirement for oil for process needs for which NorskeCanada will manage and retain the price and delivery risk.

NorskeCanada is not proposing shifting fuel cost and delivery risks to ratepayers. If BC Hydro's projections were correct, NorskeCanada would be using approximately 20.5 TJ/day (41.5 TJ/day – 21 TJ/day) compared to VIGP which would be using approximately 45 TJ/day to generate a similar amount of electricity. NorskeCanada projects are more efficient than VIGP, but they are not twice as efficient.

Again there is no shifting of fuel cost and delivery risks for ratepayers. All gas that is provided by BC Hydro for NCEP will be used for production of electricity. All gas and oil used in its processes will be managed at the risk of NorskeCanada.

9.4 Paragraph 155

BC Hydro suggests that ". . . Regarding the TMP component of NorskeCanada Suite of options, NorskeCanada intends to recover its full costs of increasing the efficiency of pulp production from BC Hydro ratepayers while receiving all the benefits of the improved efficiency of its own production". This statement reflects one of the major problems in BC Hydro's thinking. What BC Hydro is concentrating on is not the value it receives by obtaining the lowest price, but the value the supplier receives in entering into an agreement with BC Hydro. What NorskeCanada proposes to do is to make electricity available to BC Hydro at a lower cost than VIGP by investing in its TMP process. Whether at the end of the contract life NorskeCanada's investment in TMP facilities is repaid is no more relevant to BC Hydro than whether at the end of the contract life an IPP's investments in the generation facilities used to generate electricity for sale to BC Hydro is fully repaid. What is relevant is, did BC Hydro get a good price for the electricity received?

9.5 Paragraph 157

In paragraph 157, BC Hydro complains that "many critical planning elements required for the NCEP are not in place". Once again, NorskeCanada acknowledges it is not in the same position that VIGP, with its \$100 million expenditures, is in. NorskeCanada is not apologizing for this. Up until November 25, when the British Columbia Energy Plan was announced, it did

not appear that NorskeCanada or anyone else for that matter, would have an opportunity to compete to replace VIGP/GSX in BC Hydro's plans. Up until March, when BC Hydro's Application in this matter³⁹ was filed, the full extent of the cost of VIGP/GSX was not known to potential suppliers. Accordingly, it was hard to assess whether there was, or was not, an opportunity to replace VIGP at a lower cost until very recently.

Since the filing of the Application, NorskeCanada has worked very hard and committed substantial resources to putting itself in a place where it can better understand BC Hydro's needs and demonstrate to the Commission in a meaningful way, that NorskeCanada can do what it needs to be done for a fair price.

9.6 Paragraph 158

In paragraph 158, BC Hydro delivers what has to be one of the most lukewarm welcomes to NorskeCanada to the CFT Proposal that one could imagine. Once again NorskeCanada wishes to make it very clear that it has no intention of submitting a bid into a CFT process under the terms and conditions outlined in Exhibits 4(kk) and 4(qq).

Substantial issues raised previously in this argument must be addressed before NorskeCanada will have any confidence that the CFT process will be fair and transparent. As stated in opening this argument, an acceptable process requires that someone other than BC Hydro gives the final approval for:

- the CFT Benchmark level;
- the CFT rules;
- the selection of the independent reviewer; and
- what really is the best alternative.

All of which is respectfully submitted.



R. Brian Wallace
Counsel for NorskeCanada
July 22, 2003

³⁹ Exhibit 1