From: Sent: Cc:	Support BCPIAC [Support@bcpiac.com] Friday, February 04, 2005 11:27 AM johne@axion.net; alice.ferreira@bchydro.com; info@bcsea.org; cameron.lusztig@bctc.com; Commission Secretary BCUC:EX; keoughl@bennettjones.ca; rbw@bht.com; gfulton@boughton.ca; grdlewis@cablerocket.com; execdirector@citizensforpublicpower.ca; ebnet@comcast.net; tberry@compassrm.com; gstaple@duke-energy.com; sterilizers@excite.com; ccs_bc@hotmail.com; pierre.lamarche@hspp.ca; XT:AG JWSHCK@ISLAND.NET AG:IN; nabbey@Island.net; pgrignon@Island.net; thackney@Island.net; XT:Malcolmson, Sheila Islands Trust EAO:IN; Hunter.MLA, Mike LASS:EX; cbois@millerthomson.ca; chuckm@national-energy.com; dennis.fitzgerald@norskecanada.com; Iguenther@novuscom.net; macrain@pacificcoast.net; mairi@pacificcoast.net; julian@postcarbon.org; hcampbell@pristinepower.ca; TonyDuggleby@seabreezepower.com; bobmck@shaw.ca; danpotts@shaw.ca; jasparr@shaw.ca; kgroot@shaw.ca; moonbayhouse@shaw.ca; tranyoung@shaw.ca; shadybrook@shaw.ca; weislaw@shaw.ca; wjandrews@shaw.ca; brenda-john@telus.net; regulatory.affairs@terasengas.com; cjohnson@van.fasken.com; pcochrane@willisenergy.com; kwsteeves@yahoo.com Project_No_3068354_BCH_CET_EPA
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BCOAPO et al

submission.doc (8... Enclosed please find the Final Argument filed on behalf of BCOAPO et al. in these proceedings.

Thank you

# In the Matter of the Utilities Commission Act, RSBC 1996, chap. 473 And in the Matter of an application by British Columbia Hydro and Power Authority for Approval of an Energy Purchase agreement pursuant to section 71 of the Act

# SUBMISSION OF BCOAPO et al.

#### **February 4, 2005**

## **1. OVERVIEW**

The notion of constructing a natural gas-fired thermal electrical generating facility at Duke Point on Vancouver Island first found public expression approximately eight years ago, when the government of the day projected a goal of building three such facilities on Vancouver Island. One of the ostensible purposes then given by the Premier for adding the capacity represented by the three plants was to power a potential aluminum smelter on the Island.

One of the three, the Island Cogeneration Project, was ultimately built at Elk Falls near Campbell River. Its performance and utilization have fallen well below expectations. The second, at Port Alberni, failed to obtain zoning clearance and never progressed far beyond the drawing-board stage; the focus then searched for another site, and became fixed upon Duke Point (which had been one of the three originally-suggested candidates.)

This hearing is about whether the third of the trio of 1997 projects has finally amassed enough justification to warrant its proceeding, in the form of a "public private partnership" built and operated pursuant to an Energy Purchase Agreement between BC Hydro and Duke Point Power Limited Partnership.

This proposal has much of the look and feel of a project in search of a rationale; that is, it appears from the historical record that it was initiated as a political or policy-level concept, that launched a protracted effort to find a plausible reason to come into being.

The result is a large square peg, that BC Hydro is seeking to insert into the round hole of Vancouver Island's electrical capacity requirements.

Those requirements consist of two elements, with very different profiles and time-frames.

The first is a very short-term deficiency, mainly driven by the zero-rating of part of the transmission system linking the Island to the Mainland, which will be substantially remedied by the completion of BC Transmission Corporation's planned addition of new transmission cables in time for the winter of 2008-09.

The second deficiency arises in the context of BC Hydro's twenty-year planning horizon.

The fundamental conceptual flaw in the Duke Point proposal is that although it is a 25year contractual commitment on behalf of Hydro ratepayers, at best it would address only one year of the projected short-term deficiency, and would be approaching the end of its useful economic life by the time the longer-term 20-year horizon comes into play.

Between those two segments of the term of the EPA, it would not have the character of a critical capacity resource, but would be largely redundant to the Island's capacity requirements; rather, it would only be dispatched opportunistically according to market conditions as a source of electrical energy.

Despite the project's billing as a "capacity" resource, ambiguity as to its nature and justification runs through to the heart of the proposal. Duke Point Power lists its dispatchability as one of its key values:

**Q.8** Please explain why DPP considers that its plant is the most cost effective option available to B.C. Hydro.

**A.8** . . . . Another key consideration is to differentiate between a "dispatchable" plant and a "must-run" facility. This factor also has a significant impact on the fixed costs to ratepayers that a particular option will impose.

**Q.11** Please elaborate further on the difference between a "dispatchable" facility versus a "must-run" facility.

**A.11** The DPP Project will be a dispatchable facility, meaning it can be "turned-on" or "turned-off" as desired, depending on the technical or commercial circumstances prevailing at any point. This is to be contrasted with a "must-run" facility, which essentially must operate most of the time (ie. except during planned outages, etc.). The financial implications of DPP's dispatchable capability means that if power prices are high relative to prevailing gas prices (a positive spark spread), the plant can be turned-on to generate positive margins for B.C. Hydro. Likewise, if the cost of gas exceeds the market cost of power (a negative spark spread), the plant can be turned-off and no negative margins experienced. Therefore, the dispatchable nature of DPP's Project ensures that in addition to the essential Vancouver Island capacity value, the plant will contribute positive margins to B.C. Hydro; and removes the fuel risks associated with running the plant when it is not beneficial to do so.

(Exhibit C17-6, p 9-10)

That is to say, one of its "advantages" is that it can be shut off when cheaper sources of electricity are available; however, the project's economic justification relies upon its running virtually all of the time, to produce a utilization rate in excess of 80%.

Again, square peg meets round hole.

Added to that, we have an EPA which fails to transfer any significant share of the market risk attendant upon the project.

The end result is that, although BC Hydro's analytical models have a certain internal elegance, they do not properly take account of the real world in which they operate. They cannot transform the square peg into a round one.

# 2. THE THREE ALTERNATIVES

On November 30, 2004, the Commission defined the Principal issue:

Is Tier 2, Tier 1, or the No Award option the most cost-effective option to meet the capacity deficiency on Vancouver Island commencing in the winter of 2007/'08?

Tier 2 and Tier 1 are portfolios assembled by BC Hydro and outlined in its November 19, 2004 Application. The Tier 1 option selected by Hydro is the subject-matter of this hearing, the Duke Point EPA.

On the other hand, "No Award" translates into "every other possibility." It is the option of sending BC Hydro to develop, in conjunction with BCTC, the optimum solution to the "capacity deficiency on Vancouver Island commencing in the winter of 2007/'08."

We submit that the best choice is "No Award." The evidence shows not only that the EPA is an inappropriate and high-risk alternative, but that other alternatives are readily available and have been developed in BCTC's planning processes to secure the Island's capacity needs. BCTC has amassed a stack of resources which it is confident are adequate to bridge the Island's needs until the new 230 kV transmission facilities are installed. This outcome would meet the need identified by the Commission as the purpose of the whole exercise, without saddling ratepayers with the expense and risk of a dubious major thermal generating plant.

## 3. VANCOUVER ISLAND CAPACITY REQUIREMENTS

#### Duke Point and the First "Round Hole": Short-term Peak Capacity Shortfall

In its September 8 2003 Decision in the Vancouver Island Generation Project proceeding, the Commission determined at page 27, "the Commission Panel accepts the evidence of BC Hydro that there is a capacity shortfall on Vancouver Island commencing in the winter of 2007/08." The Commission projected a peak capacity shortfall by that year of 116 MW. BC Hydro has revised its estimate upward in response to recent experience; Its response to BCUC IR 1.4.1 indicates a forecast deficiency of 262 MW for 2008..

The principal reason why BC Hydro undertook the call for Tenders and entered into the Agreement was to meet this identified looming capacity shortfall. The jumping-off point

for the justification of the Call for Tenders and ultimately for the Energy Purchase Agreement is the Commission's determination at page 27 of the September 8 2003 decision in the Vancouver Island Generation Project proceedings:

The Commission Panel accepts the evidence of BC Hydro that there is a capacity shortfall on Vancouver Island commencing in the winter of 2007/08. Moreover, BC Hydro does not have committed resources, including load curtailment contracts, to meet this capacity shortfall. In Chapter 9 the Commission Panel addresses the issue of Resource Planning and concludes that it is not necessary for the purposes of the CFT process. However, the Commission Panel generally accepts the importance of Resource Planning for other resource additions for Vancouver Island and the system.

That is, the motivating purpose for the EPA is the projected peak capacity deficiency on Vancouver Island that will commence in the winter of 2007/08.

The potential event that would trigger this deficiency is the failure of either of the 138 kV High Voltage Direct Current transmission lines that form part of the connection of the Island to the Mainland grid. While the likelihood of failure of these lines at any date cannot be predicted, in the VIGP decision the Commission accepted BC Hydro's view that these lines should be "zero-rated" ("rated at zero dependable capacity") by the winter of 2007-2008.

"Zero-rating" means that, although the lines may be expected to continue to function, their reliability will have declined to a level where they cannot be counted on for transmission planning purposes. In its response to BCUC IR 1.40.3, BC Hydro said, "BCTC's analysis indicated that the estimated reliability is not sufficient for the HVDC transmission system to be considered as firm capacity beyond 2007." BCTC will replace the zero-rated lines; BC Hydro designed the current CFT process on the assumption that this would be completed by the winter of 2008-09.

Once the replacement transmission facilities are in service, the short-term problem will be solved:

MR. WALLACE: Q: But once that 230 kV line is in, you **[page 1101]** will have the capacity on the Island?

MS. VAN RUYVEN: A: We will be able –

MR. WALLACE: Q: The capability to deliver the -

MS. VAN RUYVEN: A: We will have the capability to provide capacity to the Island.

(Transcript vol. 6, page 1100-1101)

British Columbia Transmission Corporation is confident that it can meet the projected inservice target date (see, for instance, Transcript vol. 10 p. 2288 lines 2 to 16). It will proceed on that schedule regardless whether the Duke Point project is approved and built (Transcript vol. 10 p. 2288 line 17 to p. 2289 line 23).

BCTC's level of confidence is a significant issue: it is BCTC, and not BC Hydro, that bears ultimate responsibility for ensuring that the capacity requirements of the Island are met, and in this regard BC Hydro is accountable to BCTC for the adequacy of whatever arrangements it makes:

MR. QUAIL: Q: Could you – in terms of responsibility, sort of where the buck stops in terms of capacity to Vancouver Island, could you describe the relationship between BCTC's responsibility and B.C. Hydro's responsibility?

MR. MANSOUR: A: Thank you. BCTC is the entity responsible for the security of Vancouver Island from a capacity and transmission prospect. B.C. Hydro have the generation adequacy and they own the customers, **[page 2316]** but the reliability of the Vancouver Island and the transmission system is the responsibility of BCTC and BCTC alone.

(Transcript, vol. 8, p. 2315-2316)

MR. QUAIL: Q: Is B.C. Hydro accountable to you folks for getting it right?

MR. MANSOUR: A: You mean getting the -

MR. QUAIL: Q: Duke Point to resolve the capacity on Vancouver Island?

MR. MANSOUR: A: Duke Point performing the – yet.

MR. QUAIL: Q: Are they accountable to for that on your – [page 2318] to BCTC?

MR. MANSOUR: A: To me and everyone.

MR. QUAIL Q: Okay.

MR. MANSOUR: A: Primarily to us. From a performance point of view. To have a generator available 95 percent or higher availability, to address the transmission capacity issue, yes. They are accountable.

(Transcript vol. 8, p. 2317-2318)

BCTC has assembled a suite of resources (excluding Duke Point) in order to bridge the short-term capacity deficiency, and is comfortable with the adequacy of these alternatives.:

MR. WALLACE: Q: Okay. But while [the HVDC lines are] on life-support, are you going to be able to squeeze another year or two of life out of them?

MR. MANSOUR: A: . . . Every one of those ones of these mitigating measures, none of them is firm on its own, none of it is, I'm sure, of 100 percent. But that's why I have four or five of them. Each one of them have a capacity or a capability ranging for small to large. In total, if you add them up, you find them that are very big, but if you add every one of them with a lower level of certainty, in combination I can use them for operational purpose with a reasonable level of certainty. But every one on its own is not as good.

MR. WALLACE: Q: No, that's very helpful to me. And with -- how much, in terms of megawatts, would you [**Page: 2294**] feel you would have available to you with, as you say, a reasonable level of certainty?

MR. MANSOUR: A: .... I mean, if you add -- again, depending on the length of time, so if you, for example, if you add the peak or the maximum of each one of those options, you'll find that the HVDC name plate rating is about 600 megawatts. And there's some times when we had to, with it. Norske is providing, but with some restrictions, up to 210 megawatts. The upgrading of the 500 kV could be up to 120 megawatts. And there's some other median [sic] measures. So if you add them up, you're talking about, you know, it's a deceiving, very high number, which is it's like 7 or 800 megawatts.

MR. WALLACE: Q: Right.

MR. MANSOUR: A: But each one of them has a limited level of availability that, if you ask me for the first year, for example, maybe I would be comfortable maybe with 200 megawatts, maybe. Again, not with a 98 percent probability, but

a reasonable level that I can depend on it. Now, if you leave it for another year, or third year, or so on, then time will work again you. First the HDVC would be older and older, and we all have heard the experts in the last hearing saying that you really, at that time, you're just working [Page: 2295] against time very much. So you kind of -- as I said, you kind of lose things as you go. But the shorter the period you rely on or bridging time, the more certain I am.

MR. WALLACE: Q: So for 2007 you would be comfortable with a reasonable level of reliability, to use your terms, of about 200 megawatts?

MR. MANSOUR: A: Reasonable comfort. Not necessarily the usual certain comfort that I do.

MR. WALLACE: Q: Right.

MR. MANSOUR: A: But reasonable comfort. Like I would sleep six hours instead of two.

(Transcript vol. 10 p. 2293 – 2295)

BCTC, the agency that is ultimately responsible for ensuring adequate dependable capacity for Vancouver Island, would clearly be satisfied with an outcome in which alternate bridging peak resources (like the Norske proposal) would be available in case of need for the winter of 2007/08, with the new 230 kV transmission facilities coming into place for 2008/09.

Once the 230 kV facilities are in place, Duke Point will be largely redundant in relation to the peak capacity requirements of Vancouver Island. This compels one to ask: what problem that we need Duke Point to fix?

# Duke Point and the second "Round Hole": Long-term capacity requirements

BC Hydro also identifies an eventual capacity deficiency emerging after the short-term problem is fixed by the installation of the 230 kV transmission lines. This more distant requirement arises only when one applies a twenty-year outlook horizon:

MR. WALLACE: Q: But once you have the 230 kV lines in **[Page 1102]** place, from a reliability planning point of view, the Vancouver Island will not require

any premium for generation. It should be treated the same as generation anywhere else.

MS. VAN RUYVEN: A: Well, with that cable replacement we have the ability to do open calls and to serve the Island as their needs grow, to a certain point in time, and then there may be required an on-Island addition for capacity that we would potentially have to pay a premium or build another cable.

MR. WALLACE: Q: But that's way down the road, right? When you put that 230 kV in, that's not the situation.

MS. VAN RUYVEN: A: Well, way down the road in utility planning, 20 years is not that far away. We have to think in those kinds of timeframes.

MR. WALLACE: Q: The 230 kV can be doubled, and that will continue to take care of your growth for a considerable period.

MS. VAN RUYVEN: A: Yes, potentially for a 20 or 30-year period, that cable will certainly help us, and we need it to ensure reliability for the Island going forward because the load continues to grow.

(Transcript, vol. 6, p. 1101-1102)

BC Hydro does not attempt to suggest that, aside from the short-term peak deficiency problem, it would propose the EPA on the basis of the longer-term analysis. Clearly, it could not be justified on that basis.

One of the fundamental reasons why Duke Point represents itself as a "square peg" in relation to this projected capacity requirement, is that its utilization rate is expected to decay over the twenty-five year life of the EPA, due to relative obsolescence. As an "opportunistically" dispatched resource, it will compete with increasingly more cost-effective and ecologically sound alternatives in an evolving technological context:

The Commission came to the following determination in its September 8, 2003 Decision in the Vancouver Island Generation Project proceedings, at page 42:

VIGP would be a relatively efficient generating plant, but this advantage is likely to decline over the 25-year life of the facility. For example, the next generation of General Electric turbines, the 7FB model, will be more efficient than the unit chosen for VIGP. VIEC acknowledged that the difference in efficiency is

significant (T10: 2150, 2151). Moreover, VIGP will also compete with more efficient gas-fired cogeneration facilities, with generation that is not gas-fired and with resources like wind and tidal power that do not have a fuel cost.

All of these factors are likely to cause some erosion of the utilization of VIGP.

BC Hydro's Panel 2 conceded that this will also apply to the current version of the project:

MR. QUAIL: Q: Yes. That is that given that this plant is expected to be dispatched on an opportunistic basis, and assuming that during the 25-year life of the -- at least the initial term of the agreement, technology will continue to evolve. Today's latest thing is, you know, next decade's dinosaur. That may be overstating it a little. But it will be competing with increasingly efficient new technologies. Isn't that correct? That's quite predictable, is it not, Mr. O'Riley?

MR. O'RILEY: A: Yeah.

(Transcript, vol. 7, p. 1577)

MR. QUAIL: Q: It would also be competing with cleaner alternate available resources over that period of time, as well as more efficient ones. Isn't that correct?

MR. O'RILEY: A: Yes, and those -- cleaner resources are included in the Henwood model, which we're using for part of our price forecasting process.

MR. QUAIL: Q: You'd agree with me that your models do not indicate a drop-off in the utilization rate of the plant during the 25-year term of the initial agreement, do they?

MR. O'RILEY: A: We're not indicating a profile over time, but there is a substantially lower utilization in our 25 percent or so-called 25 percent recovery case.

(Transcipt vol 7, p. 1578)

One of the principal difficulties with BC Hydro's model in this respect is that the **shape** of the utilization curve over the lifetime of the EPA is of key significance: it is the likelihood of declining utilization precisely at the point when the long-term capacity justification would come into play that indicates that the facility is ill-suited to meet this projected need. And the degree of obsolescence by that time will likely be very substantial:

MR. QUAIL: Q: Twenty-five years is a lot of time for incremental [technological] evolution, is it not?

MR. O'RILEY: A: It is.

(Transcript vol 7, p. 1581)

The picture that emerges is that Duke Point would not represent a cost-effective solution to the projected capacity requirement that only emerges some twenty years after the 230 kV installation. By that time, its utilization rate, based on economic and ecological factors, would have decayed significantly, and better alternatives are expected to be available. Its strategic value to BC Hydro and its customers would have deteriorated substantially; if the proposed Duke Point facility were not already in place at that time, BC Hydro would not be proposing its construction, in the present format, to meet that projected capacity requirement.

During the intervening nineteen of its twenty-five years of life, between the point when the 230 kV installation resolves the short-term deficiency and the point when the twentyyear planning threshold comes into play, the plant's only projected use will be for opportunistic dispatch as a source of energy supply when market conditions make it the lowest-cost available power resource.

Although conceived as a capacity resource, for most of its life it will operate as an energy resource, and one that will become progressively uneconomic to dispatch over time.

## 4. RISKS

The BC Government's energy plan does not call for greater private sector involvement in the energy sector as an abstract value, or an end in itself; rather, it asserts that greater reliance on the private sector (so-called "Public-Private Partnerships") can benefit the public by redistributing cost and risk, from the public to the private sector:

**B.C.** taxpayers. Taxpayers will continue to receive the benefits from public investment in BC Hydro. New power development by the private sector will protect them from the financial risks of building new generation.

Energy for our Future: A Plan for BC, p. 26

Indeed, this is the major rationale that governments raise generally in support of "P3" financing of public-sector-initiated projects and programs.

If this is one of the underlying reasons why VIGP has resurfaced as a "P3" project, then the proposal has failed to satisfy this justification. The only significant financial risk that appears to have been assigned to Duke Point Power in the current reincarnation of the VIGP is the risk of capital cost overruns. In its February 1 2004 Final Submission, Duke Point can identify only one risk which it would shoulder under the EPA, and that is a share of responsibility for greenhouse gas ("GHG") emission liability.

In fact, arrangements like the Duke Point EPA achieve the very converse of the riskshifting objective of government policy. Banks regard private sector thermal generating plants as too risky to finance unless the proponents have obtained a long-term contract with an entity like BC Hydro:

MS. HEMMINGSEN: A: Within B.C. Hydro's portfolio we want to balance it in terms of long-term and shortterm resource commitments and with our flexible system we already have an opportunity to buy a lot of shortterms resources. So in this case our preference was for a long-term resource and it was consistent with the Commission's decision that asked us to look for on-Island generation. **The proponents came back and said they needed long-term contracts to facilitate financing.** That seemed pragmatic and practical, and there's every risk that prices can actual rise in the [Page: 1583] and that this could be a very attractively priced unit.

(transcript vol. 7, p. 1582-1583, emphasis added)

## **Greenhouse Gas Liability Risk**

In fact, there is a noteworthy divergence between the testimony of BC Hydro's witnesses and the evidence of Duke Point as to the division of risk between the two entities under the EPA, and the Agreement itself bears out Duke Point's more limited analysis of its exposure.

The following extract is typical of BC Hydro's position on this issue:

MR. LEWIS: Q: When B.C. Hydro purchases energy on the open market they're not responsible for greenhouse gas costs, are they? MS. VAN RUYVEN: A: Well, in this case we did not take responsibility for greenhouse gas costs.

(Transcript vol. 6, p. 1143)

Hydro appears to base this assessment on the terms of the contract:

MR. LEWIS: Q: Does it state anywhere in the EPA that if environmental offset costs relating to this project are required, that they will be Duke Point Power Limited Partnership's sole responsibility?

MR. ECKERT: A: The EPA does address that, in Section 8.10(a), where it specifically says that the seller is responsible for any greenhouse gas costs.

(Transcript vol. 7, p. 1478)

Duke Point's position is stated in Exhibit C17-20, in its response to an undertaking given to counsel for BCOAPO et al.:

#### **Question:**

"If Canada were to implement regulations to meet its Kyoto Accord commitments that resulted in B.C. Hydro being required to reduce the total greenhouse gas emissions produced by its entire energy supply portfolio encompassing both contracted and directly owned assets, what in your view would be the liability of Duke Point Power to B.C. Hydro in meeting the cost of that requirement?"

#### **Response:**

Duke Point Power is responsible for all regulatory requirements pertaining to greenhouse gas emissions from its plant to the extent described in section 8.10 of the EPA. The question indicates that the "regulations" would impose the obligation on BC Hydro; therefore, the EPA would govern the obligations of Duke Point Power.

The operative provisions of the EPA (and the one which BC Hydro relies upon in stating its position: see transcript vol. 7 p. 1568) is section 8.10(c), which says:

8.10(c) The Seller is solely responsible at the Seller's cost for compliance with all regulatory or other legal requirements with respect to all emissions from the Seller's Plant, including greenhouse gas emissions. The Buyer has no responsibility or liability of any kind whatsoever with respect to any such emissions and the Seller shall indemnify the Buyer for any liability suffered or incurred by the Buyer with respect to any such emissions.

What is noteworthy here is that the only liability assigned to Duke Point is with respect to "requirements with respect to all emissions from the Seller's Plant, including greenhouse gas emissions." The obligation to indemnify BC Hydro similarly is restricted to liability with respect to "any such emissions."

Thus any regulatory costs or other burdens that are not directly tied to emissions from the plant remain on the shoulders of BC Hydro and its ratepayers. As Dr. Jaccard testified, it is far more probable that government will employ taxes or other obligations at the natural gas production point than the emission point. (Transcript vol. 14 pages 2967 – 2969). In that event, Duke Point will bear absolutely no share of the GHG burden.

Similarly, if government policy were to approach BC Hydro's total emissions profile on a portfolio basis, rather than focus on each facility in isolation, then it is unlikely that Duke Point will have to make any contribution to the cost of compliance: in that scenario, the liability is not specifically related to relatable to the Duke Point facility in isolation; at a minimum, the EPA is ambiguous on the outcome.

The Duke Point EPA carries with it a host of very serious risks, all of which are substantially borne by BC Hydro and its ratepayers.

## Gas Transportation Cost Risk

The EPA would expose BC Hydro and its customers to an unacceptable level of risk, arising the absence of a long-term with Terasen Gas (Vancouver Island) for the necessary firm pipeline capacity to meet Hydro's obligation to deliver gas to the facility.

While BC Hydro's witnesses suggest that they are not particularly worried about this, Hydro's efforts to cast about for alternatives belie this non-concern: thus, for instance, we have the amazing suggestion that tankers might moor offshore from the facility (close to the BC Ferries terminal) and offload liquefied natural gas to run the facility.

As to the adequacy of LNG as an alternative source of fuel, BC Hydro filed and relies upon the December 2004 edition of the periodical <u>The Desk</u>, Exhibit B-84. At pages 34 to 35, it cautions strongly against reliance on LNG as an alternative to pipeline-delivered gas.

Hydro's concern about the terms of its access to Terasen's pipeline capacity is evident in the in camera testimony of Ms Hemmingsen:

MS. HEMMINGSEN: A: Per the rules, because we explored this. This was a significant issue for us. Per the rules of the CFT we had to select their non-duct firing bid. We could conceivably enter into an agreement with them to revise the terms of their EPA. I would also like to get the dual fuel capability option in there as well to mitigate the Terasen impacts. So perhaps that could be a recommendation that stems from the decision that the contract is supportive but it's recommended that B.C. Hydro secure these two additional features.

(Transcript vol. 8, in camera, p. 1742, emphasis added)

However, BC Hydro's evidence is that the introduction of dual fuel capacity would mean having to obtain new environmental clearances; this would not be feasible within the timelines that BC Hydro insists are critical for the approval of the EPA and the construction of the facility::

## **QUESTION:**

How long is it likely to take to get regulatory approval for dual fuel capability for the Duke Point plant?

## **RESPONSE:**

Regulatory review timelines could likely be obtained in six to eight months. This would require an amendment to the environmental assessment certificate, which would require an application and an environmental review limited to issues that, may arise with distillate firing. An amendment to the air permit would also be required, which could be carried out concurrently with the environmental review. Both processes require public consultation.

Exhibit B-80, Response to Undertaking to GSXCCC

BC Hydro's evidence is that it expects to know by November 2005 what the general shape of its capacity arrangements will be with Terasen. That is well past the point-of-no-return with respect to Duke Point: if the result is bad news, the only course would be for Hydro's customers to swallow it.

MR. BOIS: Q: Mr. Simpson, you indicated yesterday that Terasen and B.C. Hydro had not yet signed a gas transportation agreement. Can you give the Commission any comfort as to a timeline when you're going to do that?

MR. SIMPSON: A: I think we've indicated that we would expect to have some sort of an agreement in place by November of 2005.

MR. BOIS: Q: And what would happen if you don't?

MR. SIMPSON: A: Well, I don't think that's a reasonable outcome. I think there is a very good likelihood that we would have an agreement in place by November 2005. If we didn't, I would assume that initially we may have to accept interruptible service for Duke Point.

(Transcript vol. 7, p. 1395)

It is worth emphasizing just how ludicrous this scenario may be: a 25-year facility whose whole reason for existence is to cover one year of a projected peak capacity deficiency, could well be operating on interruptible gas during that year.

It is a fair comment to observe that this aspect of BC Hydro's Application is in serious disarray.

# 5. NOT THE MOST COST-EFFECTIVE ALTERNATIVE

The record shows, quite clearly and unequivocally, that the Cost Effectiveness Analysis applied by BC hydro to scrutinize the various bids in response to its Call for Tenders, was fatally flawed: it selected a bid which was not the most cost-effective alternative.

This was essentially admitted under oath by Ms Hemmingsen, testifying on behalf of BC

Hydro, both in the public hearing and in the in camera session on January 19:

THE CHAIRMAN: Is the third portfolio better value to customers than the first portfolio?

MR. SOULSBY: A: Are you asking me if the values in the cells related to the third portfolio are higher or lower than the first portfolio?

THE CHAIRMAN: Well, no, I know the answer to that question. I'm asking you if the value of that portfolio is better value to customers than the first portfolio.

MS. HEMMINGSEN: A: I think that would be an appropriate conclusion.

THE CHAIRMAN: Thank you.

MS. HEMMINGSEN: A: Because you get 28 megawatts of capacity for a low price.

(Transcript vol. 8 p. 1718)

#### THE CHAIRPERSON: Please be seated.

I think, Mr. Soulsby, we should return to the results summary. And as Ms. Hemmingsen said, the Pristine with duct firing is better customer value than Pristine without duct firing. Is it also true that you're proposing the Pristine without duct firing because that's the lowest NPV?

MS. HEMMINGSEN: A: Right. And we were actually troubled by this outcome, and we explored whether, within the rules, we'd have an opportunity to take duct firing. And we confirmed with the independent review that we couldn't. We would be violating the selection on the lowest-cost dollar basis.

(Transcript vol. 8, in camera, p. 1741)

MS. HEMMINGSEN: A: Per the rules, because we explored this. This was a significant issue for us. Per the rules of the CFT we had to select their non-duct firing bid. We could conceivably enter into an agreement with them to revise the terms of their EPA. I would also like to get the dual fuel capability option in there as well to mitigate the Terasen impacts. So perhaps that could be a recommendation that stems from the decision that the contract is supportive but it's recommended that B.C. Hydro secure these two additional features.

(Transcript vol. 8, in camera, p. 1742)

It is not reasonable that BC Hydro ratepayers should be required to pay a premium in their rates for the next 25 years arising from the failure of Hydro's methodology.

Duke Point "without duct firing" and "without dual fuel capacity" is Tier 1. Duke Point with those two features falls within the "No Award" outcome. Thus, even if some version of Duke Point is the most cost effective (which our clients question), according to the evidence "No Award" is "the most cost-effective option to meet the capacity deficiency on Vancouver Island commencing in the winter of 2007/08."

## 6. RESPONSES TO POINTS RAISED IN BC HYDRO ARGUMENT

We wish to comment on some of the specific points asserted in BC Hydro's Argument filed February 1, 2005. This is not by any means an exhaustive list of the points upon which our clients take issue with that Argument.

## Paragraph 2

We cannot accept BC Hydro's characterization of what they were required to demonstrate through the process.

While we concur that the "criminal" standard of proof – proof "beyond a reasonable doubt" – is not the applicable standard, the onus on the Applicant is essentially defined by the Utilities Commission Act.

Section 71(2) provides:

71 (2) The commission may make an order under subsection (3) if the commission, after a hearing, finds that a contract to which subsection (1) applies is not in the **public interest** by reason of

(a) the quantity of the energy to be supplied under the contract,

(b) the availability of supplies of the energy referred to in paragraph (a),

(c) **the price and availability of any other form of energy**, including but not limited to petroleum products, coal or biomass, that could be used instead of the energy referred to in paragraph (a),

(d) in the case only of an energy supply contract that is entered into by a public utility, **the price of the energy referred to in paragraph** (a), or

(e) any other factor that the commission considers relevant to the public interest.

Simply put, BC Hydro must demonstrate that the contract is in the public interest. It is not in the public interest if the cost to BC hydro ratepayers may be excessive (section 71(2)(d)), if it does not bear comparison with alternative resources (section 71(2)(c)), or for any other reason affecting the public interest (section 71(2)(e)). Those reasons could include an inappropriate distribution of risk as between the energy supplier and ratepayers, for instance. Intervenors in these proceedings have sought to address a host of reasons why the Commission should reject the EPA. The Commission has an obligation to consider all relevant factors when determining whether the EPA passes muster pursuant to section 71.

#### Paragraph 9

BC Hydro has sought throughout the proceedings to restrict the Commission's jurisdiction to the selection of fixed-choice options. The Commission has designated "Tier 1" and "Tier 2" as alternatives; as the Tier 1 candidate is Duke Point, the Commission's approach appears to set up "Tier 2" as the only defined package of comparitors for the purposes of determining whether the EPA is cost-effective. However, the Commission preserved the full range of its jurisdiction – in spite of Hydro's efforts to constrain it – by including the "No Award" alternative.

"No Award" does not mean "all hypothetical projects," as Hydro seems to suggest in Paragraph 9. "No Award" contains the recognition that when all is said and done, the Commission is required by the Act to satisfy itself that the EPA is in the public interest; sections 71(2)(c) and (e) require the Commission to consider alternatives that are not merely "hypothetical" but feasible, as means of addressing the pending peak capacity deficiency.

This consideration is especially important in view of the failure of the methodology adopted by BC Hydro, and which determined the contents of "Tier 1" and "Tier 2," was acknowledged by BC Hydro to have been seriously flawed (Transcript vol. 8, pages 1718 and vol. 8 in camera, pages 1741 - 1755). The "garbage in-garbage out" maxim may apply regarding the extent to which the Commission should rely on BC Hydro's NPV Analysis (and therefore the design of Tiers 1 and 2), in the exercise of its jurisdiction under section 71.

In Paragraph 9, BC Hydro appears to suggest that the Commission should defer to the outcome of "a competitive process," even if the outcome is inconsistent with that which would have been selected by a rational "planning process." It is interesting to consider

what Hydro says in this paragraph with its efforts in paragraph 16 to gloss over the failure of its CFT:

The evidence is clear that the CFT process favoured smaller portfolios because of the NPV methodology that was employed. Accordingly, it is not surprising that the CFT process failed to secure the additional cost-effective resource available through duct firing. While this is a concern for the design of future processes and is perhaps a reason to introduce more flexibility in such processes, the concern is effectively met here because the duct firing aspect of the proposal will be built in any event.

The final phrase of this extract is particularly interesting: BC Hydro says it intends to proceed with something <u>other than</u> the Tier 1 EPA proposal that is the subject-matter of this Application. That is, it really doesn't matter if the Commission approves a sub-optimal EPA, because BC Hydro will take it upon itself to do something different from what is approved.

#### Paragraph 20

BCH continues to assert that planning should be done on the basis of a F2010 in-service date for the 230 kV Circuit, despite BCTC's current plans to complete for October 2008 (i.e. F2009), and its confidence that this target will be met.

With respect to their assertion that the BCUC has called for the next "resource" to be on island generation, we wish to point out that our clients' position does not really disagree with this proposition: it's really a matter of timing. Once we get beyond the short-term (one year) problem the next resource isn't needed for a substantial period of time – the question facing the Commission is "why should it be constructed now?"

#### Paragraph 22

It is highly inappropriate for BC Hydro to argue, at the final submission stage, that the Duke Point plant is needed system-wide, when the scope of the proceeding was specifically limited to on-island supply demand balance. This is particularly galling given Hydro's exertions throughout the hearing to constrain its scope. Their selectivity, when it comes to "sticking to the issues" defined by the Commission, is troubling.

This proceeding was not designed to answer how best to resolve BC Hydro's overall demand/supply balance; that undertaking is a matter to address in the context of integrated resource planning. The evidence certainly did not seek to demonstrate that Duke Point is the best "solution" for the system overall, and BC Hydro should not be permitted to slide this alien argument into these proceedings through the back door, at this last moment.

## Paragraph 26

The first sentence is somewhat misleading:

"Mr. Mansour's remarks relate to the fact that the plant is not just to address what has been characterized as a few cold days or weeks; it fulfills the N-1 planning criterion, which relates to such things as making sure that a facility is in place if one of the 500 kV cables goes down or if another plant has an outage."

The supply/demand outlook for Vancouver Island (as shown in Table 5 of the Application) already includes allowances for single contingencies (N-1 Planning criteria) – this is confirmed in BC Hydro's response to BCOAPO 1.14.2

#### Paragraphs 29-33

While BC Hydro "explains" here why it was reasonable to assume the gas price risk, they acknowledge (paragraph 33) that this introduces added risk. However, they do not - anywhere - explain why there was no cost premium included in the analysis to recognize this risk to ratepayers.

## Paragraph 77

While BCTC acknowledges that the "Norske" proposal cannot in itself meet the criteria, it said, at page 4 of its Evaluation of the Norske proposal filed in Exhibit C2-9:

Notwithstanding the above, BCTC believes that NorskeCanada's proposal, in combination with other stopgap measures, could help resolve the forecast short term capacity shortfalls prior to the installation of the proposed Vancouver Island Transmission Reinforcement Project. BCTC identified a number of measures that may be used to resolve short-term capacity shortfalls, in BCTC's response to BCUC IR No. 1 1.1 for the VI CFT EPA Review. These include:

- The Transmission Emergency Constraint Management Process (TECMP);
- Dynamic monitoring (and upgrade/uprating) of the 500 kV cables;
- HVDC operational reliability improvement (life support); and
- Remedial Action Schemes.

Depending on the anticipated reliability and economics of these various measures, and the forecast shortfall in supply, NorskeCanada's proposal is one element of the optimal solution during the period of time between fall 2007 and the projected in-service date of the 230 kV cables.

#### Paragraph 97

It is important to note that the problems BC Hydro identifies here, concerning the Green Island Energy analysis (i.e. lower NPV for lower capacity) are precisely the same problems as existed with their QEM, process which led to the rejection of the "Duke Point with duct firing" option.

# 7. APPROPRIATE OUTCOME

The sensible available solution to the identified need for additional peaking capacity for Vancouver Island would be for BC Hydro to secure a suite of "bridging" resources, such as the Norske proposal, pending the installation of the 230 kV transmission facilities.

To achieve that result, the Commission should:

1. Determine that the most cost-effective alternative, drawn from the menu set out at the outset of the proceeding, is "No Award."

2. Reject the proposed Energy Purchase Agreement with Duke Point Power.

3. Indicate its views as to what version of the "No Award" outcome is preferable: the pending 230 kV circuits to Vancouver Island, together with the stack of briding resources that are identified by BCTC as adequate and available .

4. To the extent that the implementation of that outcome may require further approvals by the Commission, design a follow-up process which can incorporate all of the evidence filed in this proceeding and be conducted in writing.

On that footing, there is still ample time to ensure that the peak requirements of Vancouver Island will be met during the winter of 2007/08, and for the foreseeable future, in an efficient, cost-effective manner that retains sufficient flexibility to respond to the exigencies of an unknowable future, in an energy sector that is nothing if not in flux.

All of which is respectfully submitted this 4<sup>th</sup> day of February, 2005.

ORIGINAL IN FILED SIGNED

James Quail, solicitor for BCOAPO et al.