

BRITISH COLUMBIA UTILITIES COMMISSION
IN THE MATTER OF THE UTILITIES COMMISSION ACT
S.B.C. 1996, CHAPTER 473

and

British Columbia Hydro and Power Authority
Call for Tenders for Capacity on Vancouver Island
Review of Electricity Purchase Agreement

Vancouver, B.C.
January 27, 2005

PROCEEDINGS AT HEARING

BEFORE:

R. Hobbs, **Chairperson**

L. Boychuk, **Commissioner**

VOLUME 14

APPEARANCES

G.A. FULTON
P. MILLER

Commission Counsel

C.W. SANDERSON, Q.C.,
H. CANE
J.C. KLEEFELD

B. C. Hydro

L. KEOUGH

Duke Point Power Limited

C.B. LUSZTIG
A. CARPENTER

British Columbia Transmission Corporation

D. PERTTULA

Terasen Gas (Vancouver Island) Inc.

G. STAPLE

Westcoast Energy Inc.

R. B. WALLACE

Joint Industry Electricity Steering Committee

C. BOIS

Norske Canada

D. NEWLANDS

Elk Valley Coal

F. J. WEISBERG

Green Island Energy

D. LEWIS

Village of Gold River

D. CRAIG

Commercial Energy Consumers

J. QUAIL.
D. GATHERCOLE

BCOAPO
(B.C. Old Age Pensioners' Organization, Council Of
Senior Citizens Organizations Of B.C., End Legislated
Poverty Society, Federated Anti-Poverty Groups Of B.C.
Senior Citizens' Association Of B.C., And West End
Seniors' Network)

W. J. ANDREWS
T. HACKNEY

GSX Concerned Citizens Coalition
B.C. Sustainable Energy Association
Society Promoting Environmental Conservation

R. MCKECHNIE

Himself

R. YOUNG

Gabriola Ratepayers' Associations

K. STEEVES

Himself

CAARS

VANCOUVER, B.C.

January 27th, 2005

(PROCEEDINGS RESUMED AT 1:30 P.M.)

THE CHAIRPERSON: Please be seated.

The application made by GSX CCC in Exhibit C20-35 is dismissed with Reasons to follow. Although Reasons will follow, I will make several comments relevant to the decision, in part to frame the issue raised during the *in camera* session.

At transcript Volume 13, page 2865, Mr. Andrews agrees with Mr. Keough regarding the importance of the facts to his application. And I will quote:

" The other aspects which he brought to your attention are that the approach to a reasonable apprehension of bias case must be suited to the facts of the case, with which I totally agree, and which is exactly what I did in my motion."

At transcript Volume 13, page 2868, Mr. Andrews identifies the facts that are important to his application. At line 3, on page 2868:

"...it is apparently being treated by the Panel as like a Tier 2 portfolio..." -- that it, in that comment, is a reference to DPP

1 with duct firing."

2 The "it" in that comment, is a reference to DPP with
3 duct firing. And then Mr. Andrews goes on to say:

4 "And that is the key issue, because once
5 we're talking about comparing the Tier 1
6 outcome, DPP without duct firing, to
7 anything else, we're talking a comparison of
8 a lot of different projects, not just DPP
9 with duct firing."

10 Mr. Andrews, we do not accept your factual
11 analysis. The Panel was only considering two outcomes
12 with Panel 2 during the *in camera* session. As stated
13 by Mr. Sanderson, at page 2777, lines 3 to 5:

14 "All that was done in the Tier 1 -- or
15 sorry, in the QEM analysis, was to compare
16 the Tier 1 outcomes, because they never went
17 to Tier 2 within the QEM."

18 Now, I am going to turn to transcript
19 Volume 12, page 2517, starting on line 16, where this
20 new issue is commented on by the panel.

21 **Proceeding Time 1:34 p.m. T2**

22 I will not read it into the transcript another time.
23 However, I will ask if it gives rise to any procedural
24 requests.

25 Hearing none, then I will move on to the
26 GSX CCC Panel.

1 Was that too quick? Well then, I will --
2 Mr. Sanderson.

3 MR. SANDERSON: Mr. Chairman, I was thinking -- it was
4 quick. While people are collecting their thoughts, I
5 indicated last night I have a bunch of procedural
6 filings to complete some of the Hydro stuff which
7 should be done before the GSX CCC Panel is up anyway.
8 I'm wondering whether it might be a good idea to do
9 that. I was going to take ten minutes and then assess
10 where we are at the end of that.

11 THE CHAIRPERSON: Yes. Did people hear my reference?

12 MR. WEISBERG: It would be helpful to repeat it please.

13 THE CHAIRPERSON: All right, I will provide it again.

14 Transcript Volume 12, page 2517, Transcript
15 Volume 12, page 2517 starting on line 16. As I said,
16 I will not read it into the transcript. However, if
17 you have any procedural requests that arise from that,
18 I would like to hear them. And I think, Mr.
19 Sanderson, that's sufficient clarify for everyone.

20 Mr. Andrews, I see you on your feet.

21 MR. ANDREWS: I am unclear whether you're inviting
22 submissions regarding your comments at page 2517 of
23 the transcript, or regarding your decision to dismiss
24 the application.

25 THE CHAIRPERSON: I am not requesting comments with
26 respect to the decision to dismiss the application.

1 However, I am giving you an opportunity to make any
2 procedural requests that you may have that arise from
3 -- perhaps I should just read it into the record for
4 you, but arise from that portion of the transcript
5 that I've identified for you. And I'll read it into
6 the record for you so it's less cryptic.

7 And I think Mr. Sanderson's suggestion is a
8 good one. If you wish time to consider it, then you
9 may.

10 MR. ANDREWS: I understand you're going to read a passage
11 into the record.

12 THE CHAIRPERSON: Yes, I'll prove to you that I can.

13 " And what is the significance of that?
14 Well, the evidence of Ms. Hemmingsen
15 suggests that the QEM model may have
16 resulted in the selection of a Tier 1
17 portfolio that may not be the optimal
18 portfolio for customers. If that ultimately
19 is the conclusion of the Panel, one of the
20 issues is, is that conclusion fatal to the
21 selected portfolio? If it is not fatal and
22 the Commission Panel concludes that one of
23 the Tier 1 portfolios should be accepted,
24 should the Panel disallow the selected or
25 filed EPA and state that it would accept a
26 new EPA with DPP that includes the duct

1 firing?"

2 The question I'm leaving with you is that
3 this is a new issue that's come up during the
4 proceeding. I'm giving you an opportunity to make any
5 procedural requests that you may have that arise from
6 it.

7 **Proceeding Time 1:38 p.m. T03**

8 MR. ANDREWS: I guess what left me a bit unclear was that
9 I had understood that you were providing, if not
10 Reasons for Decision, but an explanation of -- sort of
11 a short summary of the Reasons for Decision, and if
12 you're asking if there's any procedural motions
13 regarding the process by which you explain -- or defer
14 till later, the reasons for dismissing the
15 application, that's one thing. If you're asking if
16 there are motions that arise from the dismissal of the
17 application, that would be quite different, and --

18 THE CHAIRPERSON: I am not requesting motions with
19 respect to the dismissal of the application. However,
20 a new issue has arisen, during this proceeding, with
21 respect to matters that arose during the *in camera*
22 session, which have been identified for you. This has
23 been available to you since Monday. I'm giving you an
24 opportunity, if you wish to make any procedural
25 requests with respect to that, to make them.

26 But I am not -- I'll repeat it again, I am

1 not seeking comments with respect to the comments that
2 I had made with respect to the dismissal of your
3 application.

4 MR. ANDREWS: No, I think I -- I think now I understand,
5 then, and correct me if I'm wrong, you're asking
6 whether there are procedural motions that arise
7 subsequent to the Panel having dealt with the
8 application for disqualification arising from the
9 matters referred to on page 2517.

10 THE CHAIRPERSON: Well, actually, the --

11 MR. ANDREWS: A different matter from the Reasons for the
12 dismissal of the application.

13 THE CHAIRPERSON: That's right. It's a different matter,
14 and it's not so much that it's subsequent to, this has
15 been available to you since Monday. However, I am
16 giving you an opportunity, now that you know that your
17 application has been dismissed, to make any procedural
18 requests that you might have that arise from the
19 matters that were raised during the *in camera* session.

20 **Proceeding Time 1:40 p.m. T04**

21 MR. ANDREWS: Oh, thank you, that definitely clarifies
22 that we had moved from one item to the next, which I
23 hadn't fully understand -- understood, and in that
24 case, I do have a motion to make, which is that the
25 Panel recall Ms. Hemmingsen to be available for cross-
26 examination regarding the comments that she made in

1 the *in camera* session to the effect that the DPP
2 without duct firing is not the most cost-effective
3 means of meeting the perceived capacity shortfall on
4 Vancouver Island, and that DPP with cost -- with duct
5 firing is the most cost-effective means of meeting the
6 capacity shortfall on Vancouver Island.

7 THE CHAIRPERSON: I will hear that request. However, I
8 want to make sure that everybody else is also now as
9 far along as you've come in a very quick time.

10 Are there any other requests?

11 MR. LEWIS: I'd like to take the ten minutes that you
12 offered, and come back afterwards, but I do have some
13 other requests.

14 THE CHAIRPERSON: Thank you. I suspect -- Mr. Bois?
15 You're on your feet. You can have the mike.

16 MR. BOIS: Oh, go ahead, say what you were going to say.

17 THE CHAIRPERSON: Well, I'd rather hear from you.

18 MR. BOIS: I thought I may not have to say it.

19 THE CHAIRPERSON: I'd rather hear from you first.

20 MR. BOIS: Well, maybe I'd rather hear from you. I guess
21 -- although we've had the reference in transcript 2517
22 for some time, I think we would prefer to have a few
23 minutes to consider the ramifications of where that
24 may lead us. I am particularly concerned, and I want
25 to characterize it this way, and if I do characterize
26 it wrongly or incorrectly, Mr. Sanderson, I would hope

1 that you would leap to your feet and correct me.

2 During this proceeding, I believe Mr.
3 Sanderson has argued quite strongly that the only
4 issue before this Commission is whether the EPA should
5 be approved or not, as filed. What I'm struggling
6 with is the transcript reference of 2517 suggests that
7 we may be moving in a direction that is completely
8 contrary to that position, and which may be moving us
9 into a direction that sees the Commission encouraging
10 either amendments to that EPA or a new EPA. And I'm
11 also struggling with what the evidence on the record
12 suggests from B.C. Hydro that the rules of the CFT
13 prohibited amendments to the EPA, and whether we're
14 using a regulatory process that has effectively ousted
15 some potentially qualified bidders to achieve what
16 couldn't be achieved in the CFT.

17 And so I need to consult with my client and
18 deal with those questions. But I want to put them on
19 the floor so that we know what we're talking about.
20 And with that, I'd like to ask for the ten minutes.

21 THE CHAIRPERSON: I think we'll -- Mr. Weisberg, you're
22 on your feet now.

23 MR. WEISBERG: Mr. Chairman, I'm just concerned that the
24 time for consideration of whatever procedural motions
25 parties may wish to make has been compressed, sort of,
26 by suggestion to ten minutes. I don't have the

1 advantage today of having my client with me in the
2 hearing room. I would like time to be able to consult
3 with my client, to advise them, and get their
4 instructions. I think it's clear that you're -- the
5 Panel's intention is to proceed with the rest of the
6 hearing. So it's not apparent to me, at least, why
7 there would need to be an immediate response in terms
8 of any procedural motions.

9 So I'm asking that, at least for my client,
10 we would appreciate additional time beyond the next
11 ten minutes or so that Mr. Sanderson may take for
12 filing, to consider what, if any, motions we wish to
13 make, and to so advise the Commission Panel of that.

14 THE CHAIRPERSON: Thank you, Mr. Weisberg.

15 Are there any further comments?

16 MR. SANDERSON: Just this, Mr. Chairman. My offer of the
17 ten minutes was just because I knew I had the ten
18 minutes of filing to do, and I didn't mean by that to
19 suggest that I was arguing to limit anybody to
20 anything.

21 Second, now that Mr. Andrews has, within
22 those ten minutes, brought forward a motion, I
23 actually would like to request time to consider at
24 least that motion. In other words, before being
25 called upon to respond to that, I would like to take
26 instructions, and perhaps we can combine my need for

1 instructions for that purpose with others' needs to
2 consider additional motions.

3 **Proceeding Time 1:45 p.m. T5**

4 I do think we want to sort of close this
5 off because we're getting close to the end of the
6 hearing, so may I make a secondary suggestion which
7 is, after we file the outstanding requests we proceed
8 with GSX CCC's evidence and finish that, and then sort
9 of do two things, I guess. See if there's any other
10 motions, and see the extent to which we're prepared to
11 proceed with the motions that do exist at that point.

12 THE CHAIRPERSON: I think my preference is to address
13 this issue before GSX CCC is called.

14 Ms. Miller?

15 MS. MILLER: I guess what you just said sort of
16 contradicts what I was going to suggest, and that was
17 that as I understand it, B.C. Hydro is putting on a
18 panel tomorrow, is that correct, a rebuttal panel?

19 THE CHAIRPERSON: We may start the rebuttal panel this
20 afternoon.

21 MS. MILLER: Okay. But I think one of the big concerns
22 that many of the non-legal Intervenors has had, have
23 had, myself included, is that things happen so quickly
24 that we really feel disadvantaged. And I would
25 suggest that since the Commission has already on many
26 occasions stated that procedural matters would happen

1 before and after the close of -- the start or close of
2 a session, and in the interests of allowing those
3 Intervenor's who aren't even here and won't see the
4 transcript until this evening, to allow for comment or
5 suggestions and do it as a -- I don't know what you
6 call it technically, but before the hearing commences
7 tomorrow in the that's been allotted for procedural
8 matters. And so at 8:30 tomorrow morning, anyone who
9 has anything to say says it and then you carry on.
10 And it's still within the timeframe of the end of the
11 hearing, and as I understand it, even with the delay
12 of the last three days or two days, this hearing is
13 still on schedule.

14 THE CHAIRPERSON: Thank you, Ms. Miller.

15 MS. MILLER: Thank you.

16 THE CHAIRPERSON: Any further comments?

17 MR. SANDERSON: Mr. Chairman, only to ask, consistent
18 with what Ms. Miller is suggesting is, do we have any
19 indication of how long people intend to be with the
20 rebuttal panel? Because I still have no sense of
21 that. So the suggestion we're on schedule I hope is
22 correct, but I haven't any way of assessing that.

23 MR. FULTON: And I had indicated to Mr. Sanderson, Mr.
24 Chairman, before we started that I didn't propose to
25 canvass people with their time estimates until we knew
26 what the Commission's decision was going to be on the

1 bias application. So I have not done that yet. I can
2 certainly do that now. While Mr. Sanderson is filing
3 his material, I can send a time estimate list around
4 the room and have people fill in their time estimates,
5 and by that way get their estimates so we know where
6 we're at in terms of time.

7 THE CHAIRPERSON: What I will do is we will take Mr.
8 Sanderson's filings, we will then step down for 15
9 minutes, I will hear any motions that are made at that
10 time, we will deal with those motions, and I am not
11 establishing that process precluding Ms. Miller's
12 proposal. However, you should assume that it's at
13 risk. But I will make a decision with respect to that
14 when we finish the process that I just described.

15 So Mr. Sanderson, you may make your filings
16 and then we will step down for 15 minutes.

17 **Proceeding Time 1:50 p.m. T06**

18 MR. SANDERSON: Thank you, Mr. Chairman.

19 What I'm going to do is walk through the
20 filings, and I'm going to have reference to the table
21 that I previously distributed that became Exhibit B-
22 85. And I'll refer to the number on there, just so we
23 can keep things straight.

24 The first reference, though, is to one that
25 we -- is to item 13, which we had previously filed in
26 response to Mayor Lewis as Exhibit B-88. And he

1 pointed out on the record thereafter that he didn't
2 find the question responsive, and that by his
3 arithmetic, we hadn't provided a response, and I
4 indicated if that were so, we would.

5 So he was right, and the explanation for
6 why he was right and what the number is, using his
7 methodology, is contained in a new exhibit, and I
8 suggest it be exhibit -- just replace B-88. Because
9 it's responsive to the same request.

10 THE HEARING OFFICER: B-88A, then.

11 (REVISED RESPONSE TO INFORMATION REQUEST AT TRANSCRIPT
12 VOLUME 7, PAGE 1510, MARKED AS EXHIBIT B-88A)

13 MR. SANDERSON: And all I'll say about that is that the
14 result of it is, it changes a number from 81 and a
15 half to 83 percent, and the explanation then explains
16 the 81 and a half calculation was based on the
17 industry norm, but doing precisely what Mayor Lewis
18 asked gets you the 83.

19 THE CHAIRPERSON: Thank you.

20 MR. SANDERSON: The next response arises from item number
21 38 on the list. And we're now into some of the
22 undertakings which we'd called for for Wednesday. And
23 this one was one from the Commission, seeking an
24 update to a table of the CFT report -- in the CFT
25 report, to take into account the 2004 electricity load
26 forecast that was Table 5, and we can make this

1 Exhibit B-98.

2 THE HEARING OFFICER: B-98.

3 (RESPONSE TO INFORMATION REQUEST AT TRANSCRIPT VOLUME
4 10, PAGES 2203 TO 2205, MARKED AS EXHIBIT B-98)

5 MR. SANDERSON: Next is item 39 from Exhibit B-85. There
6 is no 39 shown there. It was just missed in the --
7 well, it wasn't missed in the numbering system
8 exactly, it's just that it was missed in the sheet,
9 and so there was an item 39, and that had to do with
10 the Commission request at volume 10, pages 2203 and
11 05, asking Hydro to rerun the cost-effectiveness
12 analysis and generate a revised attachment A to
13 Appendix J of Exhibit B-1 again, based on the December
14 load forecast.

15 The response comes in two parts. There's a
16 written part, which we'll distribute, and that
17 summarizes the results and reproduces Exhibit -- or
18 attachment A to Appendix J. There's also the back-up
19 data. And the back-up data contains information, of
20 course, with respect to all of the bidders. And so
21 we're filing those just in confidence.

22 THE HEARING OFFICER: B-99.

23 (CONFIDENTIAL REVISED ATTACHMENT A TO APPENDIX J OF
24 EXHIBIT B-1 BASED ON DECEMBER LOAD FORECAST, MARKED AS
25 EXHIBIT B-99)

26 **Proceeding Time 1:53 p.m. T7**

1 MR. SANDERSON: Next are items 40 and 41 on Exhibit B-85.
2 They're being filed together as one undertaking
3 response. And again, most of it is here in its
4 entirety but there is one page to be attached, which
5 again contains unsuccessful bidder data and we're
6 seeking to file in confidence. So that will be
7 Exhibit B-100 and the public record portion I've got
8 available for general distribution.

9 THE HEARING OFFICER: Marked Exhibit B-100.

10 (RESPONSE TO INFORMATION REQUEST AT TRANSCRIPT VOLUME
11 10, PAGES 2203 TO 2205, ITEMS 40 AND 41 ON EXHIBIT B-
12 85, MARKED AS EXHIBIT B-100)

13 MR. SANDERSON: Mr. Chairman, the next thing is not off
14 Exhibit B-85. When we came to complete the responses
15 in the series around 38 to 41, we noticed that Volume
16 10, page 2203 to 2205, in that series of questions
17 that you asked, we had actually not recorded one
18 aspect of it, which was to update any other responses
19 to BCUC information requests that are affected by the
20 December load forecasts or the changes in the December
21 load forecast.

22 That response comes in two parts. The
23 first is an update to one of the IRs 1 -- BCUC IR
24 1.14.7.2, and I'll file that as Exhibit 101.

25 THE HEARING OFFICER: B-101.

26 (UPDATE TO BCUC IR 1.14.7.2 MARKED AS EXHIBIT B-101)

1 MR. SANDERSON: And the second is responses to BCUC IRs
2 1.15.5 and 2.73.1. Both of those were filed in
3 confidence and so the update is similarly treated, but
4 I would suggest be Exhibit B-102.

5 THE HEARING OFFICER: Exhibit B-102.

6 (CONFIDENTIAL RESPONSES TO BCUC IR NOS. 1.15.5 and
7 2.73.1, MARKED AS EXHIBIT B-102)

8 MR. SANDERSON: Next, Mr. Chairman, is item number 30 --
9 sorry to jump around a bit, but this is a slightly
10 different request. This was the response again to
11 Mayor Lewis, that was a matter of quite a lengthy
12 discussion in terms of getting exactly what it was
13 that he was seeking.

14 **Proceeding Time 1:57 p.m. T08**

15 The upshot of that discussion was that we
16 think we did understand the question that was
17 ultimately being asked, and that the Commission wished
18 to assure that it received information on. The
19 Commission had ordered that that information be filed
20 in confidence, and so this is our compliance with the
21 request that ultimately came out of that exchange.

22 And just for the clarity of the record,
23 that includes the summary page describing what was
24 done, and then the confidential run of the QEM model
25 on a CD, which contains the actual data that Mr. Lewis
26 was after ensuring was filed.

1 THE HEARING OFFICER: B-103.

2 (CONFIDENTIAL RESPONSES TO REQUESTS OF MAYOR LEWIS,
3 MARKED AS EXHIBIT B-103)

4 MR. SANDERSON: Mr. Chairman, the next thing is that, not
5 on the record, but off the record Mr. Andrews
6 approached me and asked me to file certain of the what
7 I'll loosely call GSX CCC round 2 IRs, in which we had
8 provided him with notice of what the witnesses would
9 say, and he opted for some of those to be filed in
10 writing.

11 For convenience, we have put those into a
12 single document, which just has a series of responses
13 in it, in sort of undertaking form, and if that could
14 be marked Exhibit B-104.

15 THE HEARING OFFICER: B-104.

16 (SERIES OF RESPONSES TO GSX CCC UNDERTAKINGS, MARKED
17 AS EXHIBIT B-104)

18 MR. SANDERSON: Mr. Chairman, the only party that we
19 believe should feel aggrieved by what I've just done,
20 i.e., looked over as Mr. Bois. He asked for a letter
21 from Ms. Hemmingsen to Mr. Mansour of BCTC, and I
22 realized when I went to look at the package that it
23 wasn't in there. I have since obtained a copy, so Mr.
24 Bois can rest assured that he will have it
25 momentarily. I will file the rest -- or file it when
26 I've got it, but perhaps we could preserve the exhibit

1 number B-105 for it, because I've got it here, and --

2 THE HEARING OFFICER: B-105.

3 MR. SANDERSON: Thank you.

4 (LETTER FROM M. HEMMINGSEN TO Y. MANSOUR, DATED 18
5 NOVEMBER, 2004, MARKED AS EXHIBIT B-105)

6 MR. SANDERSON: And with that, I'm advised that Hydro
7 believes that it has now complied with all of the
8 undertakings it's made with respect to its evidence.

9 THE CHAIRPERSON: Thank you. If anyone has the
10 impression that that's not true, then please advise
11 the Panel, if in your view B.C. Hydro has not complied
12 with all of the undertakings that have arisen during
13 this proceeding to date.

14 **Proceeding Time 2:00 p.m. T9**

15 With that, Mr. Andrews was very helpful in
16 terms of identifying a notice of motion immediately
17 arising from the transcript reference I gave you,
18 because in part it's going to give Mr. Sanderson an
19 opportunity to give consideration to it. Are there
20 any others before we adjourn? Is anybody else ready
21 to make a motion arising from that before we adjourn?

22 With that we will adjourn for 15 minutes.

23 **(PROCEEDINGS ADJOURNED AT 2:00 A.M.)**

24 **(PROCEEDINGS RESUMED AT 2:20 P.M.)** **T10**

25 THE CHAIRPERSON: Please be seated.

26 I'll first hear if there are any notices of

1 motion.

2 Mr. Andrews, would you first like to speak
3 to your notice of motion then?

4 MR. ANDREWS: My notice of motion is for the Panel to
5 recall a witness, Ms. Hemmingsen, for the reasons that
6 I outlined previously. I don't think I really have
7 anything to add to that.

8 THE CHAIRPERSON: You should probably repeat them for us
9 then.

10 MR. ANDREWS: It's to ask her to confirm and explain
11 whether it's true that DPP without duct firing is not
12 the most cost-effective option for meeting the
13 perceived capacity shortfall on Vancouver Island; to
14 ask her whether it's true that it is her opinion that
15 DPP with duct firing is the most cost-effective option
16 for meeting the perceived capacity shortfall on
17 Vancouver Island; and to ask questions arising from
18 her responses to those issues.

19 **Proceeding Time 2:22 p.m. T11**

20 And I submit that the Commission does have
21 the jurisdiction to do that, both -- as an aspect of
22 its general authority to control its procedures.

23 THE CHAIRPERSON: Thank you, Mr. Andrews.

24 Is there anyone who would like to speak to
25 Mr. Andrews' motion?

26 MR. QUAIL: Mr. Chair, with some reluctance I must say

1 that I must speak in opposition to this motion. To
2 sort of frame the issue, I think in one piece of
3 correspondence that I filed before the hearing I
4 described a process, I think of being force-fed a ten-
5 course meal. I feel like I'm been offered an eleventh
6 course in that banquet.

7 We have the evidence of Ms. Hemmingsen.
8 She was under oath in the *In Camera*. We have her
9 testimony about her opinion about the issue of duct
10 firing and no duct firing. We've got it. In my
11 submission the evidence is on the record that this
12 Commission requires in order to determine the matter,
13 and frankly, other than the panels that will be
14 presenting new evidence, in my submission we're
15 getting into really diminishing return in terms of
16 probing levels of detail.

17 And furthermore, I am assuming that the
18 target date, which includes the final date for -- the
19 last possible date for Mr. Sanderson to file his reply
20 argument is a week from Monday. My position is that
21 time to prepare argument is a very precious commodity
22 for all counsel and concerned. And in my submission
23 it would be much more valuable to the parties, and
24 ultimately to the qualify of the decision, if that
25 time is conserved to that purpose and not taken up
26 with recalling a witness to cover ground which, in my

1 respectful submission, has already been dealt with on
2 the record to an adequate extent for the purpose of
3 argument.

4 Those are my submissions.

5 THE CHAIRPERSON: Thank you. Is there anyone else who
6 would like to -- before Mr. Sanderson does, is there
7 anyone else who would like to speak to Mr. Andrews'
8 request for Ms. Hemmingsen to be recalled?

9 MR. LEWIS: I would also like to state that unfortunately
10 I speak in opposition to it. I think the record is
11 very clear and I don't think it needs to be re-
12 examined further.

13 THE CHAIRPERSON: Thank you. Anyone else other than Mr.
14 Sanderson?

15 Mr. Sanderson, would you like to speak to
16 it?

17 MR. SANDERSON: Mr. Chairman, Mr. Andrews gives two
18 different lines of inquiry that he wishes to pursue.
19 The first has to do with whether or not DPP is not the
20 most cost-effective. I find myself in agreement with
21 my friends Mayor Lewis and Mr. Quail, that the record
22 would appear to be explored on that point.

23 **Proceeding Time 2:25 p.m. T12**

24 I'm not sure that there's any need to open things
25 further for that. I do concede that the issue is a
26 relevant one, but I subscribe to the remarks that the

1 record is fairly complete on that.

2 With respect to the second question, which
3 -- is it true that another one, another Tier 1 bid
4 with duct firing is the most cost-effective, in the *in*
5 *camera* session, it was my position -- I said I would
6 take the position in argument, and so I will; that
7 that comparison is beyond the scope of this
8 proceeding, and beyond the scope of the Commission's
9 jurisdiction in respect of this contract. That is, to
10 be looking at another one of the Tier 1 outcomes. And
11 I stand by that and, in consequence, don't think
12 that's an appropriate line of enquiry in any event to
13 take up with Ms. Hemmingsen.

14 THE CHAIRPERSON: Mr. Andrews, would you like an
15 opportunity to comment on Mr. Sanderson's comments?

16 MR. ANDREWS: Nothing arising.

17 THE CHAIRPERSON: Your request is denied, Mr. Andrews.
18 And I think that then brings us to GSX CCC's panel.

19 **GSX CONCERNED CITIZENS COALITION PANEL**

20 **MARK JACCARD, Affirmed:**

21 **STEVE MILLER, Affirmed:**

22 **EXAMINATION IN CHIEF BY MR. ANDREWS:**

23 MR. ANDREWS: Q: Mr. Miller, and Mr. -- Dr. Jaccard,
24 and panel members, I'm going to be referring to
25 Exhibit C20-21, and I'll just give these to everyone
26 at the same time. Mr. Miller's evidence, Exhibit C20-

1 31, GSX CCC's response to the B.C. Hydro IR number 1,
2 Exhibit C20-32, GSX CCC's response to BCUC IR 1, and
3 Exhibit C20-20, Dr. Jaccard's evidence filed by
4 GSXCCC.

5 Mr. Miller, referring to Exhibit C20-21,
6 are you responsible for preparing this document?

7 MR. MILLER: A: I am.

8 MR. ANDREWS: Q: And the Exhibit C20-31, regarding
9 questions 1 to 4, are you responsible for those
10 answers?

11 MR. MILLER: A: Yes.

12 MR. ANDREWS: Q: Exhibit C20-32, are you responsible
13 for the responses to questions 1 to 10?

14 MR. MILLER: A: I am.

15 MR. ANDREWS: Q: Do you have any comments or
16 corrections regarding those filed documents?

17 MR. MILLER: A: No, I don't.

18 MR. ANDREWS: Q: There is, in your answer to BCUC IR
19 3.1, which was a question about the use of a ten-year
20 period for weather normalization, do you have anything
21 to add to your response?

22 MR. MILLER: A: Yes I do. I'd like to call your
23 attention to the transcript from the VIGP, transcript
24 to Exhibit B-53, at page 379 and 380. There is
25 information there that concerns a ten-year design date
26 calculation.

1 MR. ANDREWS: Q: So that if the question was, are you
2 aware of any other utility that uses a ten-year time
3 period for weather normalization, and in short, what
4 is your answer -- what is the additional answer?

5 MR. MILLER: A: My answer is, I am, that utility is
6 B.C. Hydro.

7 **Proceeding Time 2:30 p.m. T13**

8 MR. ANDREWS: Q: And that's for energy purposes.
9 That's for energy?

10 MR. MILLER: A: Yes.

11 MR. ANDREWS: Q: Thank you. And do, with that
12 addition, do you adopt the filed material as your
13 evidence in this proceeding?

14 MR. MILLER: A: Yes.

15 MR. ANDREWS: Q: Mr. Miller, you prepared two new
16 documents arising out of the evidence provided by B.C.
17 Hydro in this hearing. I would ask -- and I'll have
18 these distributed. The first one is titled
19 "Consistency of Population and Employment Forecasts".

20 I believe that both are being distributed
21 at this time, so go ahead and we can do that, let's
22 just make sure we get the exhibit numbers straight.

23 THE HEARING OFFICER: C20-36 and C20-37.

24 ("CONSISTENCY OF POPULATION AND EMPLOYMENT FORECASTS
25 IN THE BC HYDRO DEC. 2004 LOAD FORECAST, STEVE MILLER
26 AND ASSOCIATES, JANUARY 24, 2005", MARKED AS EXHIBIT

1 C20-36)

2 ("REVISED LOAD AND SUPPLY GAP FORECAST, STEVE MILLER
3 AND ASSOCIATES, JANUARY 24, 2005", MARKED AS EXHIBIT
4 C20-37)

5 MR. ANDREWS: For the record, the document titled
6 "Consistency of Population and Employment Forecasts,"
7 I understand, is Exhibit C20-36. And the document
8 titled "Revised Load and Supply Gap Forecast" is C20-
9 37.

10 THE CHAIRPERSON: Thank you, Mr. Andrews.

11 MR. ANDREWS: Q: Mr. Miller, directing your attention
12 to the "Consistency of Population and Employment
13 Forecasts" document, can you please briefly summarize
14 for the Panel the conclusion that you draw here?

15 MR. MILLER: A: Yes. This document stems from
16 information that was filed by B.C. Hydro. In B-104
17 they show the population forecast that is used within
18 their October, 2004 load forecast, and they show the
19 employment forecast, which they've stated is sourced
20 from Malatest and Associates.

21 In this document, you'll see that we also
22 note that Mr. Tiedemann testified in transcript 9,
23 page 2063, that B.C. Hydro relies on the population
24 growth rates as general checks. And that he believes
25 that the employment forecast trends are consistent
26 with the population trends in general.

1 What I've done here is to look at the
2 trends in the population forecast, and look at the
3 trends in employment, taken from B.C. Hydro's document
4 B-104, with a view to seeing if indeed those two do
5 agree with each other. In the chart, you can see
6 that, given 2003 indexed as 100, that the employment
7 forecast shows a total growth over the forecast period
8 of 16 percent, whereas the population growth is 7
9 percent. So on the surface of it, there is a
10 disagreement between these two forecasts.

11 However, it is possible that this
12 disagreement is still within the realm of
13 believability, because of the fact that employment
14 itself is a component of population. So, on the
15 second page, you'll see my analysis as to whether it
16 is reasonable that the employment numbers that are
17 given could also be consistent with the population
18 numbers given.

19 My conclusion, which you'll see at the very
20 bottom, is that in fact the employment forecast is
21 inconsistent with the population numbers, and the
22 basis of that is a conclusion that, if those sets of
23 numbers were to coexist, the unemployment rate on
24 Vancouver Island would have to drop by more than half,
25 which, although not impossible, in my judgment is
26 highly unlikely.

1 MR. ANDREWS: Q: Thank you. Turning your attention now
2 to revised load and supply gap forecast, Exhibit C20-
3 37, would you summarize this evidence for the panel,
4 please?

5 **Proceeding Time 2:35 p.m. T14**

6 MR. MILLER: A: Again, this one stems from recently
7 released information by B.C. Hydro, particularly the
8 stress that they have put on most recent January 15th
9 load peak figures, and also on the stress that they
10 put in general in their forecasting on the most recent
11 actual figure. I think we've heard from Mr. Tiedemann
12 that they work this by treating the most recent actual
13 figure as an anchor point, then apply growth rates
14 from that point forward. It means that if you have a
15 spike or an anomaly in the most recent figure, that
16 they will accept that and grow from there.

17 I do not dispute the relevance of the most
18 recent information. What I dispute is the weight of
19 it. I say from my experience that economists,
20 statisticians don't only live in the present. To some
21 extent they must live in the past. Everything that
22 happens in the future comes from the past. The issue,
23 though, is how much of the past is relevant. We see
24 that B.C. Hydro in terms of weather adjustment, thinks
25 that 30 years is relevant or maybe 10 years. So there
26 is some issue there about how much of the past to

1 take.

2 What I've done for the graph on the second
3 page of this piece of evidence is to include into my
4 data set the most recent load information that B.C.
5 Hydro released during this hearing. And to use a
6 relative restricted amount of past history in my
7 database. Consequently my forecast does not take off
8 from the 2003-04 peak and head into the wild blue
9 yonder from there. You can see in this chart that --
10 "SMA" meaning Steve Miller Associates, follows a
11 similar pattern to the Hydro forecast, but is somewhat
12 lower.

13 On the third page you will see the
14 implications of this for the load balance. If you
15 look at '07-08 you'll see the figure of minus 281.
16 You'll probably recognize that from the filing to Mr.
17 Sanderson made today as minus 280. I assume there's
18 some rounding error one way or another in those
19 numbers, but that would be the load balance from the
20 most recent Hydro forecast, even as filed today. And
21 the result of the considerations that I've applied
22 produces minus 193. So that you have about a 100
23 megawatt difference for that year.

24 MR. ANDREWS: Q: Thank you. Dr. Jaccard, are you
25 responsible for preparing the evidence under your name
26 at Exhibit C20-20?

1 DR. JACCARD: A: Yes I am.

2 MR. ANDREWS: Q: Are you responsible for preparing the
3 evidence at Exhibit 20-31, the response to B.C. Hydro
4 IR 1 and question 5 in particular?

5 DR. JACCARD: A: Yes.

6 MR. ANDREWS: Q: Are you responsible for preparing
7 Exhibit 20-32, question 11 in response to BCUC IR 1?

8 DR. JACCARD: A: Yes.

9 MR. ANDREWS: Q: Do you have any comments or
10 corrections to those materials?

11 DR. JACCARD: A: No, I have nothing.

12 MR. ANDREWS: Q: And do you adopt the material I've
13 just referenced as your evidence in this proceeding?

14 DR. JACCARD: A: Yes I do.

15 MR. ANDREWS: Q: Do you have a -- well, I shouldn't
16 say, and I neglected to do this with Mr. Miller. Your
17 brief résumé is part of Exhibit 20-20, correct?

18 DR. JACCARD: A: Yes.

19 MR. ANDREWS: Mr. Chair, I would be prepared to explore
20 that if you would like, though I did -- when I
21 circulated the evidence in the brief résumé, I invited
22 the parties to let me know if anyone wanted to have a
23 full academic résumé provided, and no one indicated
24 that they did.

25 THE CHAIRPERSON: It won't be necessary.

26 MR. ANDREWS: Thank you. So I ask the same question then

1 I would like to start off by getting you to
2 turn up your direct evidence if I could. And I'm
3 specifically thinking of page number 2, the carryover
4 paragraph, and there, about three lines from the
5 bottom of that paragraph, you I guess recharacterize
6 the term "cost-effectiveness analysis" and say it
7 should be properly referred to as "expected cost-
8 effective analysis". Do you see that, sir?

9 DR. JACCARD: A: Yes.

10 MR. KEOUGH: Q: And I personally took that as an
11 indication that on your part you have a desire to be
12 as precise as possible when you can. Did I figure
13 that out right?

14 DR. JACCARD: A: Sure.

15 MR. KEOUGH: Q: Okay.

16 Now if I go back to page 21 of the
17 testimony, the point number 1, the purpose of your
18 testimony, and there are two purposes listed there,
19 and the first one is the latest -- you're going to
20 provide the latest information on future financial
21 risks. Do you see that?

22 DR. JACCARD: A: Mm-hmm.

23 MR. KEOUGH: Q: Would it be a bit more precise to say
24 "potential future financial risks"?

25 DR. JACCARD: A: No, because the word "risk" has -- you
26 could go either way but there would be a redundancy to

1 that. I could be guilty of that elsewhere. I
2 certainly have been. But the word "risk" has already
3 got that association.

4 MR. KEOUGH: Q: So you like precision but not
5 redundancy. That's okay.

6 DR. JACCARD: A: Yes. I'll take that as a compliment.

7 MR. KEOUGH: Q: Consider it meant that way.

8 Now I just wanted to also understand, and I
9 by no means am going to take you through your résumé
10 or anything. But are we to consider your testimony
11 here, if not expert testimony, testimony of someone
12 who is knowledgeable in this area, who keeps abreast
13 of what's going on regarding climate change,
14 greenhouse gases, that type of thing?

15 DR. JACCARD: A: Yes.

16 MR. KEOUGH: Q: Are you familiar with an event called
17 COP 10? And for the court reporters that's C-O-P.

18 DR. JACCARD: A: Not in any detail.

19 MR. KEOUGH: Q: Do you know what COP stands for?

20 DR. JACCARD: A: Conference of the Party something or
21 other. No, not precisely.

22 MR. KEOUGH: Q: So you did not follow the developments
23 from that recent session --

24 DR. JACCARD: A: This is the one in Argentina?

25 MR. KEOUGH: Q: Yes.

26 DR. JACCARD: A: No.

1 MR. KEOUGH: Q: Are you familiar with when it was held?

2 DR. JACCARD: A: Sometime in the last year, I believe.

3 MR. KEOUGH: Q: Because I found it curious actually in
4 your opening statement where you say, again under
5 point 1, that you are going to provide the latest
6 information on future financial risks, that you would
7 not have incorporated events that transpired or what
8 came out of the COP 10 meetings or conference.

9 DR. JACCARD: A: Yeah. I follow this generally in terms
10 of -- I follow it quite closely, although the
11 international negotiations related to COP, to be
12 honest with you, I refuse to put a lot of time
13 studying those. I spend almost all my time on
14 greenhouse gas, so I have to specialize and see what
15 to put one's time on. So the international
16 negotiations are things that I would learn about
17 secondarily, primarily through things I'm doing for
18 the Canadian Government right now.

19 MR. KEOUGH: Q: And so you do not think that what was
20 going on in these international discussions might
21 inform you about where trends are going regarding
22 greenhouse gases?

23 DR. JACCARD: A: Yes, I think they would, and people who
24 are participating in those brief me with respect to
25 where things are going in a general sense.

26 **Proceeding Time 2:45 p.m. T16**

1 MR. KEOUGH: Q: But you --

2 DR. JACCARD: A: The person that I would name, his name
3 is John Drexhage, and he's with the International
4 Institute for Sustainable Development, and he does go
5 to those, and he's the person who briefs me.

6 MR. KEOUGH: Q: But you have not been briefed, I take
7 it, on any measure of details as to what occurred on
8 or at COP 10.

9 DR. JACCARD: A: No.

10 MR. KEOUGH: Q: In the second point that you're making
11 here, that is the purpose of your evidence, point
12 number 2, still in paragraph one, you talk about the
13 latest techniques used by decision analysts. Do you
14 see that, sir?

15 DR. JACCARD: A: No, sorry, where is this?

16 MR. KEOUGH: Q: It's still in point 1, the purpose of
17 your testimony, point number 2, you're talking about
18 the latest --

19 DR. JACCARD: A: So page one?

20 MR. KEOUGH: Q: Yes, still page one, still first
21 paragraph, we actually haven't gotten that far down
22 the -- just under point number 2.

23 DR. JACCARD: A: Right.

24 MR. KEOUGH: Q: Bracketed point number 2. You talk
25 about the latest techniques used by decision analysts.
26 Do you see that, sir? It's first, purpose of

1 testimony --

2 DR. JACCARD: A: Oh, right. Okay.

3 MR. KEOUGH: Q: -- it's in the third lines.

4 DR. JACCARD: A: Under number one.

5 MR. KEOUGH: Q: Yes.

6 DR. JACCARD: A: Yeah, okay.

7 MR. KEOUGH: Q: Bracketed number two.

8 DR. JACCARD: A: Got it.

9 MR. KEOUGH: Q: Okay. We're talking about the latest
10 techniques used by decision analysts. I'm just trying
11 to understand, who are these decision analysts? I
12 mean, are they -- I don't know, people who work in the
13 business world, are they people who work in the
14 financial world, are they people who work in -- with
15 economic models? I'm just trying to understand who
16 they are.

17 DR. JACCARD: A: This would be the accumulated
18 knowledge and understanding that I have from dealing
19 with people in industry and in academia. So in the
20 testimony, I happen to reference Morgan and Henrian,
21 their work out of Carnegie Mellon, but I'm also
22 thinking of -- I happen to belong to the International
23 Institute of Energy Economics, and it's an interesting
24 organization, because it's comprised -- unlike a
25 typical academic organization, it's about half
26 industry people, oil and gas industry, electric

1 utilities, and about half academics. And at these
2 conferences, we have sessions on decision analysis and
3 other elements like that.

4 So it would be very hard for me right now
5 to say it's this person and that person. This is to
6 do with the cumulative experience that I've had.

7 MR. KEOUGH: Q: And I certainly by no means was looking
8 for names, and I certainly wasn't going to hunt them
9 down. I was just trying to understand --

10 DR. JACCARD: A: Yeah.

11 MR. KEOUGH: Q: -- the general concept.

12 DR. JACCARD: A: So does that answer your question?

13 MR. KEOUGH: Q: I think it does, I think you've given
14 me the answer.

15 Under point two, now, the background, in
16 the second line, you talk about approximating the
17 outcome of a competitive market. Are you referring to
18 the real-world competitive market here? Or are you
19 referring to some economic model of the competitive
20 market?

21 DR. JACCARD: A: No, a competitive market that -- we
22 call it "counterfactual". That is, a competitive
23 market that would exist if we were able to have
24 competition in this sector.

25 MR. KEOUGH: Q: So it's not the real-world competitive
26 market that you're talking about.

1 DR. JACCARD: A: We're trying to approximate what would
2 occur, a real-world competitive market.

3 MR. KEOUGH: Q: Right.

4 DR. JACCARD: A: In an industry that, if it's still a
5 monopoly, would not have a competitive market.

6 MR. KEOUGH: Q: All right, I understand. Now we're
7 going to flip over to page number two. I'm looking at
8 the first sentence of the first full paragraph. Now
9 again, I'm asking this solely out of curiosity because
10 of the language you've chosen. But you say "an
11 additional issue for economic regulators is their role
12 as agents of utility customers". And I found that to
13 be somewhat intriguing, because what sprung to my mind
14 immediately was the principal/agent relationship.

15 Is that the context in which you meant it?

16 DR. JACCARD: A: Yes.

17 MR. KEOUGH: Q: And did you mean it in the sense that
18 the principal gives direction to the agent to do their
19 bidding? Is that sort of the context?

20 DR. JACCARD: A: Not necessarily that the principal's
21 able to give that direction, but that there is a
22 principal/agent relationship. That the regulator, in
23 my view, ought to recognize that they're the agent of
24 someone else.

25 MR. KEOUGH: Q: And in this principal/agent
26 relationship between utility customers and the

1 economic regulators, is there a role for the economic
2 regulators to -- I guess as part of their public
3 interest mandate, I should add, recognize the
4 interests of the utility?

5 **Proceeding Time 2:50 p.m. T17**

6 DR. JACCARD: A: Only insofar as the utility is again
7 an instrument of the customers. The ultimate goal is
8 the customer and -- well, it's always been difficult
9 and confusing, but the word "public interest" is in
10 there as well. And so even though I say "customer", I
11 don't mean just customer. Customer and affected
12 parties.

13 MR. KEOUGH: Q: Okay, all right.

14 Moving down the page to the second full
15 paragraph, the first sentence talks about the fact you
16 will focus on what you consider to be a key source of
17 cost uncertainty. And can I infer from the words
18 "cost uncertainty" that you are reflecting things that
19 are only a possibility for the future?

20 DR. JACCARD: A: Yes.

21 MR. KEOUGH: Q: Thank you.

22 In section 3 under "Greenhouse Gases and
23 Natural Gas Financial Cost Risk" you start off by
24 citing from the VIGP decision a number of places here,
25 and you describe the approach the Commission Panel
26 took in that decision.

1 Did you think the approach the Commission
2 Panel took there was a reasonable one? In those
3 circumstances.

4 DR. JACCARD: A: I had some concerns with it, and those
5 come up later when I express the point that I think
6 you took an asymmetric approach to risk. And so
7 that's why later on in my testimony -- I can't find it
8 right now, I flip -- I say -- this is on page 5:

9 "Presumably the Commission Panel would also
10 endorse the converse of its statement,
11 namely that it should not use an unduly low
12 liability figure without solid reasons
13 indicating that such an outcome is likely."

14 So I had some problems with that.

15 MR. KEOUGH: Q: I'm sure the Commission Panel will take
16 those concerns to heart.

17 DR. JACCARD: A: I thought it was a good decision,
18 though.

19 MR. KEOUGH: Q: I just wanted to talk to you about the
20 greenhouse gas liability issue on a more general level
21 for a moment. You do understand that the first
22 commitment period is 2008-2012, is that correct? Have
23 you got an understanding or can we agree that beyond
24 this first commitment period there is currently no
25 further commitments?

26 DR. JACCARD: A: I'm hazy on that, but I'll -- that

1 wouldn't surprise me. I mean there is -- I've just
2 been listening to the Prime Minister talk about this
3 and I got confused. But that's my general
4 understanding, is in agreement with what you just
5 said.

6 MR. KEOUGH: Q: Many people suffer from that confusion
7 in those circumstances, but we don't need to go there.

8 Do you have a general understanding that
9 certain parties have indicated that they don't even
10 want to talk about commitments beyond 2012?

11 DR. JACCARD: A: Certain parties?

12 MR. KEOUGH: Q: Certain countries.

13 DR. JACCARD: A: I'm aware that the United States
14 doesn't want to talk about commitments to the year
15 2010, but I'm not aware of any parties not wanting to
16 talk about commitments in the post-2010 period. No,
17 I'm not aware of that.

18 MR. KEOUGH: Q: Okay. But as you said, you were aware
19 that -- or are you aware that the Government of
20 Canada's position is that right now there are no
21 commitments beyond 2012?

22 DR. JACCARD: A: Yes -- or I think so, but with the
23 qualification that the Prime Minister is talking about
24 how in the second commitment period there's going to
25 be some equilibrating effect between our inability to
26 meet our commitment in the first commitment period,

1 and that carrying over into the second commitment
2 period.

3 MR. KEOUGH: Q: Okay.

4 DR. JACCARD: A: And I'm involved in a lot of research
5 for the federal government right now on that precise
6 question. As I say, I don't know a lot about the
7 international negotiations going on. My job is to try
8 to churn out numbers for the government, actually in
9 the second commitment period. But I don't know about
10 commitments anyone has made.

11 MR. KEOUGH: Q: All right, and it's funny you should be
12 talking about churning out numbers, because I did want
13 to take you next to the last paragraph on page 3 which
14 talks about a middle-of-the-road estimate for the
15 marginal cost of Canada achieving its Kyoto
16 commitments of the 150 to 180 dollar per tonne CO₂
17 equivalent. You see that?

18 **Proceeding Time 2:55 p.m. T18**

19 DR. JACCARD: A: Mm-hmm.

20 MR. KEOUGH: Q: Now, again, if I -- if you don't know
21 this, that's fine, I'll -- we can move on, but are you
22 aware that Canada's current commitment is for a 240
23 megatonne reduction in GHG emissions from the 1990
24 levels?

25 DR. JACCARD: A: I'm not sure what I'm allowed to say
26 or not, but it's looking like internal documents have

1 upped that to 300.

2 MR. KEOUGH: Q: From the 1990 levels?

3 DR. JACCARD: A: Those are the numbers that I'm being
4 asked to play with right now.

5 MR. KEOUGH: Q: Okay. I won't ask you to go into any
6 confidences that you're uncomfortable with, so we can
7 use the 240, because it'll certainly be more than
8 satisfactory from my point of view, and in fact the
9 300 might obviously take it further. Anyway, those
10 numbers sound fairly big to me. The megatonne thing,
11 right?

12 What kind of cost do we come up with if we
13 take your low-end number of \$150.00 per tonne and
14 multiply it by even the 240 number?

15 DR. JACCARD: A: I don't know. I didn't bring my
16 calculator. What are you asking me, to do the
17 multiplication?

18 MR. KEOUGH: Q: Yeah. Do the multiplication. How
19 about 3.6 billion, is that --

20 DR. JACCARD: A: Do you mean per year? Or -- like,
21 these are annual amounts. And actually, I should
22 correct one other thing. When you said, take the 150;
23 this number, 150 to 180, is generated -- I took that
24 number because at least I could reference, it's out of
25 the book that I published. It's actually when Canada
26 was only trying to achieve 180 megatonnes, and when

1 the start date would be about the year 2000, with our
2 actions.

3 Now, if capital stock turns over while you
4 do nothing, that cost to achieve it in the 2008-2012
5 time period starts to jump up very much. So I would
6 say the 150 to 180 is misleading if you're going to
7 mention 240 megatonnes, or I'm going to mention 300
8 megatonnes. It's a much higher number than that.

9 MR. KEOUGH: Q: And directionally, that's helpful. I
10 was simply doing the math between the 150 and the 240
11 to get the 3.6 billion.

12 DR. JACCARD: A: That's an annual figure, then.

13 MR. KEOUGH: Q: Right.

14 DR. JACCARD: A: Okay.

15 MR. KEOUGH: Q: And that would only increase if we went
16 to 300, and if we went to a higher number than 150.

17 DR. JACCARD: A: Sure. But I don't know if your math's
18 right, but I'm just taking your word for it.

19 MR. KEOUGH: Q: Well, simply I did, you know, one and a
20 half times 24 plus, you know, 12, 36. Wasn't magical.
21 Could be wrong.

22 DR. JACCARD: A: Well, when I chaired the Commission, I
23 saw lawyers make some interesting calculations, but
24 anyway.

25 MR. KEOUGH: Q: And I would never suggest that you take
26 my calculations. Take it subject to check.

1 Anyway, big number, right?

2 DR. JACCARD: A: In fact we generally report it as a
3 net present value number. So it's usually way bigger
4 than the 3 billion you're talking about. But the
5 number I came up with in our book was about 45
6 billion. In present value terms.

7 MR. KEOUGH: Q: That's helpful. And if I understand
8 the context of the 240 megatonnes that we were
9 discussing, and I'll -- we don't have to go back to
10 the fact that you may have information that that's
11 increasing, but -- that's only, I guess, you know, the
12 current -- from the current level. If we wanted to go
13 back to 240 from -- that's 240 from the 1990 level,
14 but we still need to get back to 1990, right?

15 DR. JACCARD: A: No, no. The 240 is from where we
16 expect to be in the year 2010, to work your way down
17 to 6 percent below what were your 1990 emissions.

18 MR. KEOUGH: Q: Okay.

19 DR. JACCARD: A: That's what the 240 is. So it's --
20 first you forecast where you're going to be, and then
21 you say, "Oh oh, how far do we have to drop down to
22 get to that line that is 6 percent below what was our
23 1990 level?" That's why the amount keeps rising.
24 Because we -- our forecasts keep showing greenhouse
25 gas, as you do a new oil sands project, or whatever --
26 or a new natural gas plant, you see the amount getting

1 higher and higher.

2 MR. KEOUGH: Q: I had misread the last sentence of your
3 first paragraph, but thank you for that.

4 **Proceeding Time 3:00 p.m. T19**

5 DR. JACCARD: A: So with each new plant that you
6 approve, you're making it more expensive for Canada to
7 achieve any of its goals.

8 MR. KEOUGH: Q: Right. Now, that math assumes that
9 you're going to meet the commitment within the first
10 commitment period.

11 DR. JACCARD: A: Yes.

12 MR. KEOUGH: Q: Now, I have to confess when I turned
13 the page -- before I turned the page, actually, I had
14 not thought that you were prone to understatement, but
15 when I turned the page and looked at the first
16 sentence, I quickly changed my mind. Because there,
17 you say politically it would be difficult to implement
18 this level of GHG tax in Canada, in the Kyoto time
19 frame. And there, any thoughts of my earlier
20 impression went out the window, because would it be
21 more correct to say that to try to do this would be
22 political suicide?

23 DR. JACCARD: A: To do all of it, yes. Or, I mean, I
24 don't know. I have no idea. To do all of it would be
25 very difficult.

26 MR. KEOUGH: Q: Very difficult, yeah.

1 DR. JACCARD: A: But just so you know, all of my
2 expressions and terms are very cautious, and not
3 overstated.

4 MR. KEOUGH: Q: Many can look at it and debate that,
5 but we don't need to. Are you aware of a letter that
6 then Prime Minister Chrétien sent to the Canadian
7 Association of Petroleum Producers back in July of
8 2003, which attached a series of principles, including
9 one that there would be a \$15.00 per tonne CO₂ price
10 assurance? You ever seen that letter?

11 DR. JACCARD: A: Oh. I'm not aware of that letter in
12 particular, but I'm -- the number \$15.00 I'm aware of,
13 yes.

14 MR. KEOUGH: Q: Okay.

15 DR. JACCARD: A: In the context that you're talking
16 about.

17 MR. KEOUGH: Q: Okay.

18 DR. JACCARD: A: Which is to the year 2010.

19 MR. KEOUGH: Q: Have you, I guess, examined what might
20 be the impacts on industry of having penalties imposed
21 of the magnitude that we've been discussing?

22 DR. JACCARD: A: Yes. That's what my book is all
23 about, and that's what I generated for the Canadian
24 Government in the period 1998 to 2001, and then in
25 subsequent studies that we've done. They're called
26 "cost curve reports," they're public information now.

1 And so I have -- all of the numbers that I'm talking
2 about from our analysis are run through a
3 macroeconomic model, to show the percentage impacts on
4 Gross Domestic Product, and to show the regional
5 impacts and sectoral impacts. And that's all in the
6 main reports I did for the federal government, but
7 it's also summarized in the book that I'm referring to
8 there. "Cost of Climate Policy".

9 MR. KEOUGH: Q: I'm not going to buy it. I may borrow
10 it, though.

11 DR. JACCARD: A: It's not that stimulating, actually.

12 MR. KEOUGH: Q: I would never have said that.

13 Do you have an understanding of the percent
14 of generation in Canada that is gas-fired generation?

15 DR. JACCARD: A: So, the percentage of electricity
16 produced by natural gas?

17 MR. KEOUGH: Q: Yes.

18 DR. JACCARD: A: Including co-generation? So --
19 because this is hard data to get, by the way.

20 MR. KEOUGH: Q: I'm just wondering -- I'm trying to get
21 the extent of your knowledge. I'm not going to ask
22 you to go dig it out --

23 DR. JACCARD: A: Oh.

24 MR. KEOUGH: Q: -- I'm just asking, do you know.

25 DR. JACCARD: A: I think it might be -- I'm just
26 guessing 10 percent. I know hydro's like 65 percent,

1 and I know we have a lot of coal. So some residual
2 out there is natural gas, but I don't have the right
3 -- the exact number.

4 MR. KEOUGH: Q: Now, in terms of more or less
5 desirability on the scale of greenhouse gas emissions,
6 what fuels would be less desirable to generate
7 electricity than natural gas? Like, you know, coal,
8 oil, distillate? I mean, would they be less
9 desirable?

10 DR. JACCARD: A: Actually, to answer your question, we
11 can't talk about it in that way any more, because
12 every fuel can produce energy emission free or with
13 almost zero emissions. That's the next book that I've
14 written. But --

15 Proceeding Time 3:05 p.m. T20

16 MR. KEOUGH: Q: Well, maybe we can find --

17 DR. JACCARD: A: So natural gas with zero emissions is
18 something that if we wait ten years, that's what we'll
19 be constructing. I feel very confident about that.
20 Likewise with coal.

21 So a decision now to put in capital stock
22 that would combust a fossil fuel is causing pollution.
23 Some of them will cause more pollution than others --
24 more greenhouse gases, sorry, than others. Coal would
25 cause more per kilowatt hour than would natural gas.
26 I call natural gas with co-generation, though,

1 something that produces quite a bit less. That's the
2 general agreement of the Intergovernmental Panel on
3 Climate Change because you're attributing the other
4 heat uses to the combustion of the natural gas. And
5 then we have all of these options that don't emit
6 greenhouse gases.

7 MR. KEOUGH: Q: And what I was trying to do was put it
8 in the context of the existing infrastructure as
9 opposed to new infrastructure or modifications to the
10 current infrastructure that might be able to produce
11 it. I'm trying to deal with what we have.

12 DR. JACCARD: A: Okay, no, I think that answered it.
13 Coal more than gas.

14 MR. KEOUGH: Q: What about oil? Is that more or less?

15 DR. JACCARD: A: Between the two.

16 MR. KEOUGH: Q: Okay. But gas still less, the more
17 preferred of those three.

18 DR. JACCARD: A: Yes. And so in Canada's mix, gas is
19 less preferred because we're 65 percent hydro, so gas
20 is over there on the troublesome side.

21 MR. KEOUGH: Q: Okay. What about something like
22 nuclear? Where does that stack up?

23 DR. JACCARD: A: Again we're just focused on greenhouse
24 gases.

25 MR. KEOUGH: Q: Yeah, yeah.

26 DR. JACCARD: A: So nuclear would be very close to

1 hydro.

2 MR. KEOUGH: Q: Okay. And do you have an understanding
3 of the amount of electricity generation in Canada
4 that's currently produced by the aggregate of gas-
5 fired generation, coal-fired generation, and oil-fired
6 generation?

7 DR. JACCARD: A: Well, I actually -- you just reminded
8 me that I forgot nuclear when you were asking me --
9 you're asking me these questions that I tend to rely
10 looking at a chart, but my general knowledge is that
11 hydro power is about 65 percent. I forgot nuclear in
12 Ontario, so what is that? I don't know, 10 percent.
13 Coal is significant in Alberta, Saskatchewan, New
14 Brunswick, Nova Scotia, and then there's natural -- so
15 yeah, natural gas is small. I don't know what -- what
16 did I say, 10 percent for natural gas? Maybe even
17 lower than that.

18 MR. KEOUGH: Q: All right. Just a small point before
19 we move on. On page 3 of your testimony, the last
20 paragraph, you talk about the middle-of-the-road
21 estimate for the marginal cost of Canada achieving
22 these goals. Can we agree that in this proceeding
23 we've got a lot less lofty objectives? Here we're
24 just trying to see or talk about the impacts of the
25 Duke Point Power Project?

26 DR. JACCARD: A: In what I quoted here, the Commission

1 said it was concerned about greenhouse gas liability.
2 Greenhouse gas liability affects every project
3 everywhere in the world, because the climate change
4 issue is a collective issue. So I would assume that
5 the Commission Panel was interested in greenhouse
6 gases, and I really tried to be very careful to make
7 sure that my testimony fit right into what the
8 Commission Panel was interested in. That's why I very
9 much narrowed it down. So I believe we are talking
10 about what you call a lofty goal.

11 MR. KEOUGH: Q: Well, not wanting to get into an overly
12 lengthy debate on it, but aren't we here dealing with
13 a single project and the impact it's having, if any?

14 DR. JACCARD: A: And its impacts, in my submission, is
15 global.

16 MR. KEOUGH: Q: Okay.

17 DR. JACCARD: A: And the Commission has said that
18 that's of concern to it.

19 MR. KEOUGH: Q: All right. Now with regard to page 4
20 and I'm still in the first large paragraph, about a
21 half dozen lines down you say:

22 "Thus the Canadian policy response following
23 from Russia's ratification is likely to fall
24 somewhere between the two extremes, meaning
25 perhaps 30 to 50 percent of Canadian
26 reductions will be domestic."

1 that American governments, state governments, are
2 taking more action than Canada is with respect to
3 greenhouse gas emissions, and that a lot of my work is
4 in China, and I would say the same for the Chinese.
5 And in fact, that's -- I've been quite impressed with
6 the effect Kyoto had on people who were non-
7 signatories.

8 MR. KEOUGH: Q: Is there any sort of -- I was going to
9 ask for support for your position, but that's fine.
10 It's your opinion.

11 DR. JACCARD: A: Yeah, the one on China is based on --
12 I go to China twice a year, I'm one of six
13 international experts that advises the Chinese
14 government at a senior level on energy environment
15 issues, I've been doing that for twelve years, about
16 21 trips to China for high-level meetings, and we do
17 analysis in between. And prior to 1997, '98, the
18 Chinese government was not interested in taking any
19 action with respect to greenhouse gas emissions.
20 Afterwards, I sensed a significant difference, a fear
21 to be behind the industrialized world in this new
22 endeavour, and at that point the Chinese finally
23 followed our recommendation to reduce and almost
24 eliminate their subsidies to the coal industry, they
25 started a coal-bed methane national corporation, and
26 now are doing research and collaboration into carbon

1 capture and storage, as well, for the development of
2 their coal. And I've been intimately involved in all
3 those processes. They also implemented a renewable
4 portfolio standard that I designed.

5 MR. KEOUGH: Q: All right, sir. Moving on to the last
6 part of that sentence, you talk about a more ambitious
7 target over the long time frame. I'm going to suggest
8 to you that the only indications we have so far --
9 maybe you are or aren't aware of this -- but you
10 talked about the Prime Minister. Are you familiar
11 with the fact that there's been an acknowledgement
12 that we might be significantly off meeting the --
13 Canada's goals by 2012?

14 DR. JACCARD: A: Yes. And it was in that context that
15 the Prime Minister said we'll make it up in the next
16 ten-year period. I read -- and I don't talk to the
17 Prime Minister, I read this in the Globe and Mail, so
18 just in the last few days.

19 MR. KEOUGH: Q: Are you aware that there's also
20 discussions going on about reducing the target that
21 has been set for the large emitters group?

22 DR. JACCARD: A: I read that in the paper as well.
23 There's a comment from Minister Efferd, Natural
24 Resources Canada.

25 MR. KEOUGH: Q: I just wanted to talk to you a little
26 bit more about your numbers. Are you aware that

1 commodity markets exist for trading greenhouse gases?
2 DR. JACCARD: A: Yes, I'm vaguely aware of these
3 markets.
4 MR. KEOUGH: Q: Can I take it from the vague comment
5 that you are not aware of what they're trading on
6 those markets?
7 DR. JACCARD: A: At what price the permits are trading?
8 MR. KEOUGH: Q: At what price they're trading.
9 DR. JACCARD: A: I believe it would be very low. I
10 heard of recent trades of \$8.00.
11 MR. KEOUGH: Q: And would those \$8.00 trades have been
12 in European countries?
13 DR. JACCARD: A: Pardon me?
14 MR. KEOUGH: Q: Would the \$8.00 trades have occurred in
15 European countries?
16 DR. JACCARD: A: Can't remember.
17 MR. KEOUGH: Q: You've got the --
18 DR. JACCARD: A: I am aware of the legislation that's
19 before the European Commission for a tradeable permit
20 system to be implemented fairly soon, and I've worked
21 with the economists in Europe who have done the
22 calculations of what that might cost. And in fact I
23 think I referenced that here somewhere. And that's,
24 again, where I'm -- my numbers are coming from things
25 like that.
26 MR. KEOUGH: Q: Right. And do you have any

1 understanding of what commodity trades are occurring
2 at, or could occur at, on the North American side of
3 the continent?

4 DR. JACCARD: A: On the --

5 MR. KEOUGH: Q: North American side of the continent.

6 DR. JACCARD: A: North American side of the continent?

7 MR. KEOUGH: Q: Well, North American continent.

8 **Proceeding Time 3:15 p.m. T22**

9 DR. JACCARD: A: Yeah, okay. I thought there was
10 something in geology -- geography I'd missed here.

11 What they're trading on the North American
12 -- well, actually I thought the \$8.00 was from North
13 America.

14 MR. KEOUGH: Q: So --

15 DR. JACCARD: A: So I don't know.

16 MR. KEOUGH: Q: You don't have any knowledge, okay.

17 Now on page 4 of your evidence in the
18 carryover paragraph, you state that -- or you express
19 the opinion that there is a strong likelihood that
20 taxes of this magnitude will be standard policy in
21 Canada. Do you see that?

22 DR. JACCARD: A: Mm-hmm.

23 MR. KEOUGH: Q: Again, not being as delicate this time,
24 can we agree that's pure speculation on your part?

25 DR. JACCARD: A: Speculation based on my expertise.

26 MR. KEOUGH: Q: Okay.

1 DR. JACCARD: A: And I qualify it because you may have
2 a different definition of the word "speculation" than
3 I have.

4 MR. KEOUGH: Q: We can just speculate on that.

5 Could I get you to flip to page 5, the last
6 paragraph, and there you're talking about -- about
7 five lines from the bottom, you talk about:

8 "Although the \$10.00 and \$100.00 outcomes
9 are unlikely, there is still considerable
10 uncertainty, so the probability distribution
11 should be portrayed as fairly broad."

12 I just want to understand what you're saying there.
13 Are you saying that there is an equal probability of
14 the outcome being, say, \$20.00 and \$90.00?

15 DR. JACCARD: A: Well, that's just to do with whether
16 or not we think it's a normal shaped probability
17 distribution. So the answer is yes, I assume it's
18 normally shaped.

19 MR. KEOUGH: Q: Okay.

20 DR. JACCARD: A: But that would be different than the
21 probability of it being 60 or 70 dollars, which would
22 be a higher probability. So it's a standard bell-
23 shaped probability distribution.

24 MR. KEOUGH: Q: All right, sir, thank you.

25 Now with regard to your comments on page 6
26 under section 4.2, and I was particularly interested

1 in the comments in the first sentence, I suppose,
2 where you're talking about the risk to B.C. Hydro and
3 its customers. Are you aware or were you advised that
4 in this situation we have before us here, that the
5 project proponent, Duke Point Power, has assumed
6 responsibility for greenhouse gas liability?

7 DR. JACCARD: A: Yes, prior to writing that, I had read
8 the clause on page 16, I guess it's -- I don't know
9 what it is, 8.10, clause (c), something like that.

10 MR. KEOUGH: Q: So you are familiar with that.

11 DR. JACCARD: A: Yes, I've got it in front of me.

12 MR. KEOUGH: Q: So in other words, can we agree the
13 risk here is to the project proponent, not to B.C.
14 Hydro or its customers?

15 DR. JACCARD: A: That's what the clause states, and
16 it's my contention that that might not be the outcome
17 depending on future regulatory and market
18 developments.

19 MR. KEOUGH: Q: And there, not wanting you to be too
20 evasive in that response, are you getting into the
21 scenario that you reference in the centre of that
22 paragraph where the tax levels are at such a level it
23 drives the company into bankruptcy?

24 DR. JACCARD: A: That's one scenario. Another scenario
25 is where a greenhouse gas liability, or greenhouse gas
26 policy is manifested as a tradable permit system

1 upstream, as we say, which is on the carbon content of
2 fuels basically as they're coming out of the ground.

3 Now, an economist prefers that any kind of
4 charge be at the point of emission, but often you have
5 to settle for some second best solution because of
6 administrative complexities or even political
7 difficulties in doing a policy.

8 If the policy ends up being enacted on the
9 carbon content in fuels upstream, then you can have a
10 process in which the price of natural gas and coal and
11 oil products goes up. And it's actually because of
12 that policy, but it would be very difficult to
13 attribute it to the policy.

14 **Proceeding Time 3:20 p.m. T23**

15 And that is another example of a case where
16 B.C. Hydro and the purchaser -- or B.C. Hydro and Duke
17 Point Power could be in dispute over what had caused
18 this rise in the cost of natural gas. Could it be
19 attributed to a greenhouse gas policy or not? And
20 with respect to greenhouse gas policy, I don't --
21 that's me -- my opinion. I've seen disputes similar
22 to that with respect to sulphur emission tradeable
23 permit policies.

24 MR. KEOUGH: Q: You're not giving us your legal opinion
25 of the outcome of that, though?

26 DR. JACCARD: A: No.

1 MR. KEOUGH: Q: Oh, okay.

2 DR. JACCARD: A: I'm just saying that -- and I say this
3 elsewhere, I think, in a response to Information
4 Request that I was quite impressed in my five years
5 with the Commission, and one stint as an arbitrator,
6 how lawyers can show you quite cleverly a different
7 take on a particular clause in a contract. And I had
8 -- I was somewhat naïve to that, but was very much
9 educated in those years.

10 MR. KEOUGH: Q: On behalf of my brethren, I'll take
11 that as a compliment, sir.

12 DR. JACCARD: A: Oh, absolutely. It's meant as a
13 compliment.

14 MR. KEOUGH: Q: Thank you.

15 Just a final point, and I don't know if
16 your counsel drew this to your attention, because I
17 think the response was given in the context of his
18 questioning of the Duke Point Power Panel, and it was
19 at transcript page -- volume 10, page 2243, I don't
20 think you need to look it up, but were you advised
21 that the evidence in these proceedings is, if you
22 ended up being in the bankruptcy situation that you
23 refer to, that B.C. Hydro would have available to it
24 something in the order of 35 to 36 million dollars a
25 year in what would have been capacity payments to
26 satisfy such liabilities? Did anyone bring that to

1 your attention?

2 DR. JACCARD: A: Vaguely. But I -- yeah.

3 MR. KEOUGH: Q: Okay. Thank you very much. And thank
4 you, Mr. Miller. I was going to ask you if you ever
5 get teased about your band, but I'm sure no one ever
6 has raised that.

7 Thank you, Mr. Chairman, thank you,
8 gentlemen.

9 MR. BOIS: Mr. Chairman, I think I should punish Mr.
10 Keough for that bad joke.

11 **CROSS-EXAMINATION BY MR. SANDERSON:**

12 MR. SANDERSON: Q: Mr. Miller, if I could start with
13 you. Well, to be fair. And ask you to turn to page
14 13 of your testimony, please.

15 MR. MILLER: A: Yes.

16 MR. SANDERSON: Q: And I think you made my task
17 somewhat more straightforward with your opening
18 comments tonight -- well, it's afternoon, But I just
19 wanted to confirm that the trend line that we see in
20 the table -- or the graphic that is at page 13 under
21 heading (f), Historical Peak Loads, that's a trend
22 line which trends what actually happened in each of
23 the years that you've measured from 1990 to 2003?

24 MR. MILLER: A: Yes.

25 MR. SANDERSON: Q: And so, with the benefit of
26 hindsight, if Hydro had managed -- and I appreciate

1 that nobody can ever do this, but if they had built a
2 system capable of delivering precisely the capacity
3 that is represented by that trend line, then they
4 would have been unable to meet load -- or, sorry, not
5 load; but would have been unable to meet -- or would
6 have been out of compliance with planning criteria in
7 those years that are above the trend line. Is that
8 correct?

9 MR. MILLER: A: The trend line recognizes that there
10 can be values above it and below it.

11 MR. SANDERSON: Q: Yes.

12 MR. MILLER: A: That's the meaning of a trend line.
13 The B.C. Hydro objective is to have an unbiased
14 forecast. In -- once receiving an unbiased forecast,
15 B.C. Hydro may have decided to build the capacity in
16 advance of the trend. That would be a different topic
17 of B.C. Hydro's own response, and the Commission's own
18 response, to risk.

19 MR. SANDERSON: Q: So you're interpreting Hydro's
20 notion of what is biased or unbiased in a particular
21 way. I'd like to explore what you mean by biased or
22 unbiased, rather than what you think Hydro means. And
23 in looking at that graph, what I take you to mean is
24 that you're as likely to be in compliance at peak,
25 with your planning criteria, as not. That is, half
26 the time you'll be in compliance and half the time

1 | you'll be not; on average you will be in compliance.

2 MR. MILLER: A: The mathematics behind the line itself
3 does not conform exactly to how you put it, since it's
4 a least-squares line that has a slightly different
5 notion of calculation, but it is true that the line
6 doesn't skirt along the top of the peaks, it goes
7 somewhere through the "middle".

8 Proceeding Time 3:25 p.m. T24

9 MR. SANDERSON: Q: And were B.C. Hydro to wish to plan
10 so that it could maintain and meet its planning
11 criteria in foreseeable circumstances, then would you
12 agree with me that the trend line that you've
13 developed is not what it should employ for that
14 purpose?

15 MR. MILLER: A: No, I wouldn't agree with that. A
16 trend line in general *ex ante* is not an invalid
17 statistical tool.

18 MR. SANDERSON: Q: I'm assuming in fact it were a
19 perfect statistical tool just for the moment, from the
20 point of view of this discussion, in the sense that
21 you could with that trend line exactly predict what
22 would happen, and you could exactly forecast future
23 peaks. But I'm suggesting to you that if you could do
24 that, and I appreciate we can't, but if you could, it
25 would be inappropriate to use that trend line if your
26 objective was to stay in compliance with planning

1 criteria during all of those peaks.

2 MR. MILLER: A: Except for the sole case where a
3 statistical series has zero variance, no statistical
4 method can exactly forecast anything. And that
5 includes the B.C. Hydro methodology or anyone on
6 earth. So --

7 MR. SANDERSON: Q: I gave you that in my assumptions.

8 MR. MILLER: A: -- appropriate method is to look at the
9 likely variance about the measure of central tendency.

10 MR. SANDERSON: Q: Yes. Maybe I can, as I say, make
11 this more direct by going to the exhibit that you
12 filed just now, and that is somehow in my own -- aha.
13 Yes. I have a remarkable capacity to lose documents
14 quickly, but I've recovered this one.

15 If you could refer to C20-37, which you
16 spoke to when Mr. Andrews was questioning you, and if
17 you look -- I'm sorry, Mr. Miller, I'll give you a
18 moment to find it. That was the revised load and
19 supply gap forecast? Have you found that?

20 MR. MILLER: A: No, I'm not with you yet. Can you tell
21 me what its content is?

22 MR. SANDERSON: Q: Yes, it's the table that you filed
23 just now entitled "Revised Load and Supply Gap
24 Forecast" and it shows the Steve Miller & Associates
25 updated forecast compared to the Hydro forecast of the
26 Gap.

1 MR. MILLER: A: Okay.

2 MR. SANDERSON: Q: Yes, for your reference that's
3 Exhibit C20-37.

4 Now, if I go to the Hydro and the SMA lines
5 in the second page, the table there, roughly speaking,
6 those lines, and I think you made this comment in your
7 evidence, are close to parallel now. In other words,
8 the slope of those two lines is not significantly
9 different. Would you agree?

10 MR. MILLER: A: The significance of the lines is
11 something which is difficult to make out. 100
12 megawatts four years out may or may not be
13 significant.

14 MR. SANDERSON: Q: I'm sorry, my point was not that the
15 gap wasn't significant. I'll come to the gap in a
16 moment. But I was just suggesting to you that when I
17 look at these graphs as opposed to some of your
18 earlier graphics in your main evidence, it seems to me
19 the slope of the two lines, they're not exactly
20 parallel but they're getting close.

21 MR. MILLER: A: I really am not equipped to judge the
22 closeness of parallelity.

23 MR. SANDERSON: Q: All right.

24 MR. MILLER: A: Sorry.

25 MR. SANDERSON: Q: Well, let me try it a different way
26 then. I thought this might shortcut it but apparently

1 it won't. Let me suggest that what's significantly
2 different between the Hydro approach and the SMA
3 approach as depicted here is more the starting point
4 than it is -- and I think you said this in your
5 testimony, than it is the slope of the growth line.

6 MR. MILLER: A: Certainly if you wanted to look at some
7 point in future time that's on this graph, you could
8 disaggregate the difference between the two lines with
9 regard to the difference in slope and the difference
10 in start point.

11 MR. SANDERSON: Q: Yes, and -- well, let's just pick --
12 take it as far as that will allow us to go. If we
13 look at the difference in start point, the start point
14 that you've got is -- do you have a number that goes
15 with actually the bottom, the 2005-06 point on your
16 SMA graph? Could I get that from the next page?

17 **Proceeding Time 3:30 p.m. T25**

18 MR. MILLER: A: No, unfortunately the next page is a
19 summary, and -- oh, I take it back. Yes, if you look
20 at '04-05.

21 MR. SANDERSON: Q: Yes.

22 MR. MILLER: A: Updated SMA Forecast, you'll see 2317.
23 And Hydro December 2004 you'll see 2282.

24 MR. SANDERSON: Q: Well now, maybe I'm not reading this
25 right, but that rather --

26 MR. MILLER: A: That's a difference of 35.

1 MR. SANDERSON: Q: Yeah, that rather confuses me. I
2 guess maybe I want to look, then I suppose -- yes, I
3 suppose what I want to do is look at '05-06, because
4 '05-06 you drop way down again. 2317 represents the
5 peak as you acknowledge it to have been actually in
6 '04-05, just a week or two ago, correct?

7 MR. MILLER: A: '04-05 is the year for which you most
8 recently -- you released your most recent peak figure.

9 MR. SANDERSON: Q: No, I'm sorry, the 2317 that I see
10 on '04-05 in the updated SMA forecast, where did that
11 number come from?

12 MR. MILLER: A: That number results from my own
13 calculations, which I could explain to you if you
14 want.

15 MR. SANDERSON: Q: Well, I'm only somewhat taken aback
16 from that response because in Exhibit B-68, if I could
17 take you there.

18 MR. MILLER: A: Oh, I'm sorry. You're talking about
19 '04-05. Okay. '04-05 2317 is the number that you
20 released.

21 MR. SANDERSON: Q: Pardon me? I'm sorry?

22 MR. MILLER: A: '04-05, I'm sorry, --

23 MR. SANDERSON: Q: Yes.

24 MR. MILLER: A: -- is the number that you released.

25 MR. SANDERSON: Q: Yes.

26 MR. MILLER: A: And which you will see in your Exhibit

1 B-68.

2 MR. SANDERSON: Q: Yes.

3 MR. MILLER: A: Fine.

4 MR. SANDERSON: Q: So you do have a copy of Exhibit B-

5 68?

6 MR. MILLER: A: Yes.

7 MR. SANDERSON: Q: Thank you. And in fact, just for

8 the benefit of the record, if you look to January 15th,

9 the last date of that series of data, you will see the

10 peak which is an actual peak including the Gulf

11 Islands, of 2317 in the last row, correct?

12 MR. MILLER: A: Correct.

13 MR. SANDERSON: Q: And that's the number you've taken.

14 MR. MILLER: A: In the second -- the last row in the

15 second to last column.

16 MR. SANDERSON: Q: Right.

17 MR. MILLER: A: Yes.

18 MR. SANDERSON: Q: And so then you've predicted with

19 that actual peak of 2317, that next year load will

20 reduce by something in excess of 100 megawatts on the

21 peak in '05-06, correct?

22 MR. MILLER: A: No, as I explained to you, the meaning

23 of these lines is that they are the measures of

24 central tendency --

25 MR. SANDERSON: Q: Right.

26 MR. MILLER: A: -- of series which have dispersion.

1 That is to say, you might call that -- if you want to
2 say the most likely value, you might say that, but I'm
3 not saying that that will be the value. The
4 probability of the value you see on the chart will be
5 the value depending on the distribution, maybe half.

6 MR. SANDERSON: Q: I see. That reduction in peak that
7 is found there, I can see on the graph if I go back to
8 the graph, down to the bottom of the slope into '05-
9 06, so that's the low point from which you then start
10 your trend line, correct?

11 MR. MILLER: A: That point is the point from which I
12 start the trend line.

13 MR. SANDERSON: Q: Yes.

14 MR. MILLER: A: The previous point is your point. The
15 next point is the first point of the forecast.

16 MR. SANDERSON: Q: Yes.

17 MR. MILLER: A: If you want to say that's where it
18 starts, first point is where it starts.

19 MR. SANDERSON: Q: Thank you. All right, that's what I
20 want to say.

21 So would you agree with me that your trend
22 line does start from a point of deficit in relation to
23 the actual peak we might expect, if weather conditions
24 were as they have been this last -- or the first two
25 weeks of January this year?

26 MR. MILLER: A: I think I have to ask you, Mr.

1 Sanderson, to repeat that question. I'm not sure it
2 makes sense yet.

3 MR. SANDERSON: Q: What I was asking you to do was
4 confirm that your start point would have been a point
5 which would have rendered -- if that had been the
6 capacity of Hydro's system, would have rendered the
7 system out of compliance with its planning criteria in
8 the first two weeks or the first 15 days of this year.

9 MR. MILLER: A: You're asking me if next year's value
10 on this line labelled SMA, which value is 2206 --

11 MR. SANDERSON: Q: Yes.

12 MR. MILLER: A: -- is less than your current estimate
13 of capacity of your system --

14 MR. SANDERSON: Q: No, I'm not asking if it's less than
15 the current estimate. I'm asking if it's left in the
16 actual load that was on that system in the first two
17 weeks of this year.

18 **Proceeding Time 3:35 p.m. T26**

19 MR. MILLER: A: If you're asking me whether 2206 is
20 less than 2317, I don't need a calculator to confirm
21 that for you.

22 MR. SANDERSON: Q: Well, that's progress. Thank you.

23 MR. MILLER: A: Okay.

24 MR. SANDERSON: Q: Now, in fact, if I look to your page
25 21, you present a numerical version -- and I'll turn
26 to the Vancouver Island load forecast and load

1 balances. Do you see that table?

2 MR. MILLER: A: The table called "B.C. Hydro and
3 alternative Vancouver Island forecast load balances"?
4 Are you --

5 MR. SANDERSON: Q: No. It's page 21. It's called
6 "Alternative Vancouver Island load forecast and load
7 balances".

8 MR. MILLER: A: It's a table, "Alternative Vancouver
9 Island load forecast and load balances."

10 MR. SANDERSON: Q: That's the one. That's the one.

11 MR. MILLER: A: A table which has now been superseded
12 by the latest information that you provided.

13 MR. SANDERSON: Q: Oh, I'm sorry.

14 MR. MILLER: A: So that --

15 MR. SANDERSON: Q: Are you taking me back --

16 MR. MILLER: A: If you look at the table --

17 MR. SANDERSON: Q: 37?

18 MR. MILLER: A: If you look at the table in C20 -- I'm
19 not quite sure if it's 57 or 37.

20 MR. SANDERSON: Q: 37, I think.

21 MR. MILLER: A: 37.

22 MR. SANDERSON: Q: The reason that I didn't use that,
23 actually, in my question, was that I didn't think --
24 and you can correct me if I'm wrong, that it contained
25 quite the data that page 21 did. But maybe we'll
26 explore that.

1 In the forecast that you are making, when
2 this evidence was filed, you presented two alternate
3 ways to, as I read this table, to forecast load. One
4 was based on population and one was based on
5 employment. Is that right?

6 MR. MILLER: A: That's right.

7 MR. SANDERSON: Q: All right. And at that time, at
8 least, looking at the population-based forecast, your
9 forecast would not have predicted the load equal to
10 what was experienced in the first two weeks of this
11 year until, as I read the table, 2019. Is that
12 correct?

13 MR. MILLER: A: Yes.

14 MR. SANDERSON: Q: And using the employment-based
15 forecast would not have predicted the load we
16 experienced in the first two weeks of this year until
17 approximately 2014.

18 MR. MILLER: A: That's right.

19 MR. SANDERSON: Q: All right. Now, the prediction that
20 you wish to make today, if I understand it, I'm not
21 sure whether it's a population-based or an employment-
22 based forecast that I see.

23 MR. MILLER: A: It's employment-based.

24 MR. SANDERSON: Q: It's employment-based, so it's --
25 you haven't brought forward the population-based one,
26 you've only brought forward the employment-based one.

1 Correct?

2 MR. MILLER: A: Correct.

3 MR. SANDERSON: Q: And now, it would yield a load equal
4 to what we've seen in the first two weeks of this
5 year, in 2009 and 10. So it's moved forward four
6 years from what you were predicting in your previous
7 forecast, correct?

8 MR. MILLER: A: I'm going to accept that you've spotted
9 that right, just to proceed.

10 MR. SANDERSON: Q: All right.

11 MR. MILLER: A: You're probably right.

12 MR. SANDERSON: Q: And the basis for that change is
13 what actually happened this year, is it?

14 MR. MILLER: A: It is what actually happened this year,
15 plus a demonstration of some of the effect of
16 curtailing the amount of historical data that is put
17 into the calculation.

18 MR. SANDERSON: Q: And --

19 MR. MILLER: A: That is to say, these are to some
20 extent demonstrations of the variability that can come
21 from forecasts based on decisions as to what is
22 irrelevant in history.

23 **Proceeding Time 3:40 p.m. T27**

24 MR. SANDERSON: Q: Well, I appreciate that the forecast
25 can vary dramatically, depending on how you handle
26 different assumptions. Why would you have changed the

1 way you handled historical data between your original
2 evidence and Exhibit C20-37?

3 MR. MILLER: A: The reason was to try as much as
4 possible within the realm of my professional judgment
5 to align myself with B.C. Hydro's view of how these
6 things should be done, to see the difference that
7 could occur when we were aligned as closely as we
8 could be, and to merely isolate what I take to be a
9 main point of difference between yourselves and myself
10 on the methodology.

11 MR. SANDERSON: Q: Thank you. I'm going to suggest to
12 you that that main source of difference, really, now,
13 is pretty transparent, which is that B.C. Hydro is
14 planning to meet its peak loads and stay within
15 compliance of its planning criteria in all weather
16 conditions. Your approach is designed to --

17 MR. MILLER: A: That -- I'm sorry, that isn't correct.

18 MR. SANDERSON: Q: Well, I'll let you correct me in
19 just a moment.

20 MR. MILLER: A: Yes.

21 MR. SANDERSON: Q: But let me finish. By contrast, I'm
22 going to suggest to you that you're planning to meet
23 load in average conditions. Go ahead.

24 MR. MILLER: A: You are also planning to meet load in
25 average conditions. Your design day is not the
26 coldest of 30 years, it's the average of 30 years.

1 And furthermore, your various forecasts of drivers
2 have not been presented with ranges. I can only
3 assume, therefore, that you are seeking to present the
4 Panel with the midpoint of your forecast. We heard
5 from Mr. Tiedemann, unfortunately, that he has not
6 performed any simulations to show the range
7 surrounding your forecasts. I assume, therefore, that
8 you're presenting the midpoint.

9 MR. SANDERSON: Q: Just to elaborate or explore that
10 point for a moment, is it your understanding that B.C.
11 Hydro has used historical data with -- to determine,
12 on average, the coldest day -- or an assumption with
13 respect to the coldest day as a means to determine the
14 design day for the purpose of its system? Is that the
15 way you understand it?

16 MR. MILLER: A: In my answer, that was one of the areas
17 in which B.C. Hydro is using averages, yes.

18 MR. SANDERSON: Q: And how would you distinguish that
19 from the conditions which you seek to measure from the
20 past?

21 MR. MILLER: A: On that particular question, the only
22 difference between B.C. Hydro and myself is the span
23 of relevant historical time and the specific
24 methodology. By which I mean to say to you that the
25 effects of weather are in the line I've produced as
26 well as in the line that you've produced.

1 MR. SANDERSON: Q: Let me -- and perhaps I didn't
2 phrase the question appropriately initially. What I
3 think I understand you to be saying is that you don't
4 quarrel with Hydro's estimate, and -- of what the
5 coldest day average might be. Rather, you quarrel
6 with the proposition that the system should be
7 designed so as to be capable of meeting planning
8 criteria on the assumption that cold day could happen
9 in any year.

10 MR. MILLER: A: No, that isn't what I was trying to
11 tell you. I was trying to correct you. What I
12 believed you said that Hydro was planning for the
13 coldest day. In fact, Hydro is planning for the
14 average cold day.

15 MR. SANDERSON: Q: Yes, I understand. And --

16 MR. MILLER: A: Which means that even if you can
17 characterize that you've got it covered, it could be
18 minus 15 any time.

19 MR. SANDERSON: Q: Sure. I see.

20 Mr. Chairman, the only additional questions
21 I may have arise from the other exhibit that was
22 introduced today, which was C20-36. And -- of Mr.
23 Miller. And actually I do have one question of Dr.
24 Jaccard, so maybe I'll ask that, but then I'm going to
25 ask if we can take the break, and I can get
26 instructions with respect to that one exhibit, because

1 it was over my head in terms of the statistical
2 analysis that was the back page, and whether it claims
3 to be responsive to something Mr. Tiedemann said, I do
4 need to speak to Mr. Tiedemann.

5 Proceeding Time 3:40 p.m. T28

6 Dr. Jaccard, the only question I had for
7 you, I think, arose out of a discussion you had with
8 Mr. Keough around the circumstances which would arise
9 if extreme hardship was introduced to Duke by virtue
10 of the greenhouse gas obligations, or there were some
11 other event which caused taxes to be imposed. But --
12 well, let me start with the first case first, I'm
13 sorry.

14 So, let me start with the case that
15 hardship is imposed on Duke because of its acceptance
16 of the burden of paying greenhouse tax -- emission
17 taxes, or whatever other form it might take. And I
18 understood you to have responded to Hydro that you
19 didn't do a legal analysis, and you confirmed this
20 with Mr. Keough, to understand the remedies.

21 MR. MILLER: A: That's correct.

22 MR. SANDERSON: Q: And you're not able to really
23 elaborate on what other contractual remedies might be
24 available to B.C. Hydro beyond \$36 million cushion to
25 which Mr. Keough referred?

26 MR. MILLER: A: That's right.

1 MR. SANDERSON: Q: All right. Thank you. Those are my
2 questions, thank you.

3 THE CHAIRPERSON: We will take a 15-minute break now.

4 **(PROCEEDINGS ADJOURNED AT 3:46 P.M.)**

5 **(PROCEEDINGS RESUMED AT 4:02 P.M.)** **T29**

6 THE CHAIRPERSON: Please be seated.

7 MR. SANDERSON: Mr. Chairman, if I might, I have just one
8 question following up on C20-36.

9 MR. SANDERSON: Q: And Mr. Miller, if I could take you
10 to that exhibit, that's the Consistency of Population
11 Unemployment Forecast document. The second page, you
12 list a number of variables that you've looked at, and
13 you use them in an equation, and this is the equation
14 about two-thirds of the way down the page, the top
15 one:

16 "From the equation above we have..."

17 And then you have an expression.

18 Can you tell me whether the values for the
19 various variables, and I'll start with population 0 to
20 14 and add in unemployment and NLF, and I can't
21 remember what that is --

22 MR. MILLER: A: Not in the labour force.

23 MR. SANDERSON: Q: Yes, not in the labour force --
24 where those numbers came from. Are they sourced from
25 B.C. Hydro?

26 MR. MILLER: A: So you're interested in the variables

1 on the right-hand side of that equation.

2 MR. SANDERSON: Q: Correct.

3 MR. MILLER: A: The B.C. Stats population forecast,
4 which is the one that B.C. Hydro uses, is a cohort
5 survival model. That means that it looks at the
6 population by single year of age in historic year, and
7 it advances to population to age each single year of
8 age cohort by one year. And then it looks at the
9 females of childbearing age and estimates number of
10 births. It looks at migration and breaks that down,
11 again by age. It looks at mortality on an age-
12 specific basis. So for each year of the forecast, a
13 single year of age population structure is generated.

14 Therefore, the population zero to 14 is a
15 natural consequence of the cohort survival B.C. Stats
16 model. So I'll give you the short answer on that,
17 population zero to 14 comes from B.C. Stats. The --

18 MR. SANDERSON: Q: I'm sorry, and then you did the
19 calculation that was necessary to reflect what you
20 just said to the number you obtained from those stats.

21 **Proceeding Time 4:05 p.m. T30**

22 MR. MILLER: A: I calculated the change over the length
23 of the forecast year.

24 MR. SANDERSON: Q: Thank you.

25 MR. MILLER: A: Should I continue then?

26 MR. SANDERSON: Q: Yes.

1 MR. MILLER: A: The change of employment comes from the
2 Malatest forecast which is B.C. Hydro's number.

3 MR. SANDERSON: Q: Yes.

4 MR. MILLER: A: And the not in labour force number is
5 estimated by looking at the not in labour force
6 historical proportion to the population 15 plus.

7 MR. SANDERSON: Q: When you say "estimated", that's
8 estimated by you?

9 MR. MILLER: A: The proportion is calculated by me,
10 yes, so that proportion is quite stable but is -- if
11 you want to put the source of change in not in labour
12 force, that would be me.

13 MR. SANDERSON: Q: Yes.

14 MR. MILLER: A: And change in unemployment is what we
15 are trying to uncover from the estimates of the other
16 variables. So if you look one equation down, you'll
17 see it moved over to the left-hand side and it becomes
18 a function of the variables we've mentioned, plus of
19 course the total population where the source is B.C.
20 Stats.

21 MR. SANDERSON: Q: All right, thank you. Those are my
22 questions, thank you.

23 **CROSS-EXAMINATION BY MR. FULTON:**

24 MR. FULTON: Q: Good afternoon, panel. I'll be
25 relatively brief and I'll begin with you, Mr. Miller.
26 And although I hope you won't have to refer to them,

1 I'm going to be referring to Exhibit C20-32, the GSX
2 CC response to BCUC IR 9.0, and Exhibit C20-31, the
3 GSX CCC response to B.C. Hydro 1.0, and your evidence.

4 And I'd like to begin with the response to
5 BCUC IR 9.0 first, and that was one of the responses
6 that you were responsible for?

7 MR. MILLER: A: Yes.

8 MR. FULTON: Q: Okay. And in that response there's the
9 statement that temperature is not the only
10 determinative peak load, and its relation to peak load
11 is not necessarily better known than the relationship
12 of other variables. Agreed?

13 MR. MILLER: A: Yes.

14 MR. FULTON: Q: And then in the response to B.C. Hydro
15 IR 1, and you're responsible for that response as
16 well, correct?

17 MR. MILLER: A: Are you talking about 1.1?

18 MR. FULTON: Q: Yes, 1.1.

19 MR. MILLER: A: Yes.

20 MR. FULTON: Q: Okay. And there the statement appears
21 that normalized figures are more akin to forecasts
22 than to actuals.

23 MR. MILLER: A: Yes.

24 MR. FULTON: Q: Can you tell us if there are any
25 circumstances where SMA in forecasting demand would
26 normalize actual peak loads?

1 MR. MILLER: A: The forecasts which we've provided take
2 into account weather, the impact of weather on loads,
3 because the historical data contains that impact. So
4 whereas we don't do a separate step in which we
5 attempt to isolate the impact of the weather variable,
6 the weather variable is in the answers.

7 MR. FULTON: Q: Thank you. If you move forward to the
8 GSX CCC response 7.1 to BCUC IR -- that BCUC IR, and
9 it's referring to your evidence at page 13.

10 MR. MILLER: A: Yes.

11 MR. FULTON: Q: And I take it you were also responsible
12 for that answer?

13 MR. MILLER: A: Yes.

14 MR. FULTON: Q: And that answers includes a comment
15 that the figures from the 1980s belong to a different
16 era in terms of growth from the 1990s.

17 If I turn to your evidence at page 16, and
18 I'm looking at the penultimate paragraph on that page,
19 as I understand your stated methodology, it is that
20 you want to adhere as closely as possible to the
21 status quo because it is the responsible and
22 conservative approach.

23 MR. MILLER: A: Are you looking at the paragraph that
24 says: "By which we mean the linear projection of
25 employment trends"?

26 MR. FULTON: Q: No, I'm looking at the one that says:

1 "In light of this situation, a responsible and
2 conservative approach is to adhere as closely as
3 possible to the status quo."

4 MR. MILLER: A: And it continues: "By which we mean
5 the linear projection of employment trends."

6 MR. FULTON: Q: I'm sorry, yes, that's the paragraph
7 I'm talking about.

8 MR. MILLER: A: Okay.

9 MR. FULTON: Q: Would you agree with me that in the
10 next decade, Vancouver Island could experience a new
11 era in terms of growth which would be different from
12 your linear projections?

13 MR. MILLER: A: Yes.

14 MR. FULTON: Q: Thank you.

15 **Proceeding Time 4:11 p.m. T31**

16 MR. MILLER: A: It could also experience a new era of
17 decline.

18 MR. FULTON: Q: Yes, thank you. You just don't know at
19 this point.

20 MR. MILLER: A: No one knows.

21 MR. FULTON: Q: Yes, thank you. Dr. Jaccard, just --
22 your evidence, page 7. In the first full paragraph,
23 about a third of the way down, you refer to the
24 substantial liability risks associated with stand-
25 alone fossil fuel combustion facilities.

26 DR. JACCARD: A: Yes.

1 MR. FULTON: Q: Do you agree with me that such
2 financial risks can include price risk for the fossil
3 fuel itself?

4 DR. JACCARD: A: Yes.

5 MR. FULTON: Q: And have you made any assessment of
6 such fuel price risks with respect to Duke Point, and
7 the EPA?

8 DR. JACCARD: A: Only with respect to greenhouse gas
9 liability. And as I explained in earlier cross-
10 examination, that may be manifested in the price of
11 natural gas in a way in which the greenhouse gas
12 liability may be all or partly masked.

13 MR. FULTON: Q: Okay. Towards the end of that same
14 paragraph, you make reference to a premium for
15 ratepayers that would allow them to avoid the
16 financial liability risks associated with a new fossil
17 fuel combustion plant. Correct?

18 DR. JACCARD: A: Yes.

19 MR. FULTON: Q: And the next -- or the last sentence
20 indicates that the value of this premium is unlikely
21 to be higher than \$3.00 per year for a residential
22 customer. By \$3.00 per year, do you mean value to the
23 customer or cost to the customer?

24 DR. JACCARD: A: Oh, cost to the customer.

25 MR. FULTON: Q: Okay.

26 DR. JACCARD: A: And as I say, that number comes from

1 research done and that is reported in the article by
2 Murphy and Jaccard.

3 MR. FULTON: Q: Okay. And would a premium of that type
4 avoid the financial liability risk related to fossil
5 fuel price risks?

6 DR. JACCARD: A: At -- yes, 80 to 90 percent of it.
7 Because some of that portfolio has co-generation in
8 it, and then -- so that would become a percentage, a
9 small percentage of the total B.C. Hydro or, you know,
10 of purchases plus its own hydro power resources. So
11 there would still be some risk there, because there
12 would be combustion of fossil fuels, in part,
13 associated with the electricity.

14 MR. FULTON: Q: Thank you. Thank you, panel, thank
15 you, Mr. Chairman, those are my questions.

16 THE CHAIRPERSON: Dr. Jaccard, I was interested in your
17 comments about an economist's preference for the tax
18 to be on the emissions as opposed to upstream, and
19 although that might be an economist's preference, that
20 the necessity of administration or whatever might
21 cause you to in fact -- or that the tax might land on
22 the upstream side, and then get buried in the tax.
23 And I was wondering if, in fact, that might create
24 even greater burdens than the alternative of putting
25 it on the emissions side?

26 **Proceeding Time 4:15 p.m. T32**

1 DR. JACCARD: A: And by burdens on whom? On --

2 THE CHAIRPERSON: Well, I wasn't thinking of so much of
3 the cost burdens, but the administrative burdens of
4 doing that, of putting it on the upstream side.

5 DR. JACCARD: A: Oh. Administratively? No, I think --
6 or at least my view is that if you put it on the
7 upstream side, you have very few players to deal with.
8 You're just basically dealing with the fossil fuel
9 industry, the people who provide -- who mine coal and
10 provide it to electricity generation plants, to the
11 petroleum producers. Those are the few players that
12 you would apply your tax to. So it would -- tax or
13 tradeable permit system, which is really the way I
14 think we'll go. And it's -- so you have very few
15 players to deal with that.

16 If you tried to do a tradeable permit
17 system at the final consumer end, administratively,
18 it's argued that it can be very difficult. I've
19 actually designed one that is like a credit card that
20 you'd use when you buy gasoline, that shows what's the
21 tradeable permit price for emissions. And other
22 economists have done this, for governments, to show
23 how it could be done. But governments generally are
24 very -- you know, I haven't been able to win any
25 battles with that one yet.

26 THE CHAIRPERSON: Well, that leads to my next question,

1 then. Of those two alternatives, on emissions or
2 upstream, which is more likely?

3 DR. JACCARD: A: Upstream. That's what I'm saying.
4 That administratively I think it will be upstream.
5 Because it's easy with greenhouse gas. Well, it's
6 easy with carbon. In fact, it will be a mixture,
7 because when we're talking methane, or we're talking
8 other greenhouse gases, it could be different. At
9 least with carbon, it's the embedded carbon in the
10 fuel. So, it's easy to measure at that point.

11 THE CHAIRPERSON: Do you think that if they -- if it's
12 upstream, the cost -- are the numbers that you've
13 provided in your evidence making assumptions about it
14 being on the emissions side or the upstream side?

15 DR. JACCARD: A: Emissions side. It will be more --
16 policies that we do on the upstream side will be more
17 costly because they will miss -- they will not create
18 incentives in certain circumstances for actions that
19 would reduce emissions.

20 THE CHAIRPERSON: So the costs on the upstream side will
21 actually be greater than they would be on the
22 emission --

23 DR. JACCARD: A: For achieving the same target, yes.
24 And that's why economists will rant and rave and say,
25 you know -- economists tend to ignore what we call
26 transaction costs, or administrative costs, and they

1 will say, wow, get that charge right on the emissions.
2 For example, what I do a lot of research now on is
3 carbon capture and its geological storage. Well, that
4 should be a reward. There should be a financial
5 reward for someone who does that. So putting the
6 charge on the emissions ensures that's a reward.

7 Instead, now, you'd have to put a policy in
8 that has a charge on carbon upstream, but then gives
9 people rebates for any carbon that they put back into
10 the ground. It's a bit complicated, but I'm
11 personally convinced that we're going to stay with
12 using fossil fuels for centuries to come, great
13 amounts of fossil fuels. But that we're going to move
14 fairly rapidly towards zero emission investments over
15 the next five to fifteen years.

16 THE CHAIRPERSON: Right. Can you give us a sense of what
17 the increase would likely be if you put it on the
18 upstream side?

19 DR. JACCARD: A: Oh, the increase in the cost of --

20 THE CHAIRPERSON: Relative to the putting it on the
21 emissions.

22 DR. JACCARD: A: Right. So, for example, if I had it
23 being \$180.00 -- that is hard to say. It could be --
24 you've got me already thinking about what I would say
25 to government. It could be 10 or 15 percent higher if
26 you -- but you have to create all of these other

1 mechanisms, and you would probably do that. You know,
2 when you put the tradeable system on the upstream
3 side, you will -- you know, you'll have someone from
4 industry coming and saying, wait a minute, you've just
5 killed my incentive to store carbon underground -- to
6 separate carbon and store it underground, so that kind
7 of policy will be a polyglot policy. It'll be a
8 combination of things.

9 And I'm thinking about how the Norwegians
10 have done their \$70.00 per tonne tax. They have --
11 they have a whole bunch of other dispensations in
12 there, for different industrial sectors. Once one of
13 -- they've started to separate carbon and bury it
14 underground, and they're planning electricity
15 generating plants that would do that. And I know from
16 colleagues of mine in Norway, it's getting quite
17 complicated. So there will be administrative costs.

18 **Proceeding Time 4:20 p.m. T33**

19 So I'm saying that in terms of what gets
20 done where in the economy, even when you go upstream
21 like that you'll probably design it in a way where
22 there'll be people screaming to say, "Let's make sure
23 we get all of these emission reductions wherever
24 they're supposed to be able to occur economically in
25 the economy." So going upstream for reasons of ease
26 will be in part compensated by some other mechanisms

1 that will have some administrative complexity to them.

2 THE CHAIRPERSON: When you say on page -- Mr. Keough took

3 you here, but on the top of page 4 you say:

4 "Politically it'll be difficult to implement

5 this level of greenhouse gas tax in Canada..."

6 And then you go on. And politically is it your

7 impression that it's reasonable to assume that

8 there'll be a carbon tax on the upstream side?

9 DR. JACCARD: A: I think -- I believe it's reasonable

10 to assume that there will be a tradable permit system

11 with what we call a safety valve on the upstream side.

12 And that safety valve will operate like a carbon tax,

13 and at least the colleagues I have at Harvard and MIT

14 who are working with the American government are

15 already designing those kinds of instruments.

16 THE CHAIRPERSON: When you're making recommendations to

17 the government, I assume that's your role, are you

18 recommending that it be on the emission side or the

19 upstream side?

20 DR. JACCARD: A: Oh, I always recommend on the emission

21 side.

22 THE CHAIRPERSON: So this is assuming you're going to

23 lose that argument.

24 DR. JACCARD: A: I lose a lot of arguments.

25 THE CHAIRPERSON: Thank you.

26 DR. JACCARD: A: Yes.

1 THE CHAIRPERSON: The Panel has no further questions. Is
2 there any re-examination?

3 MR. ANDREWS: No re-examination.

4 THE CHAIRPERSON: Thank you, you're excused.

5 (WITNESSES ASIDE)

6 **Proceeding Time 4:22 p.m. T34**

7 MR. FULTON: Mr. Chairman, the next panel to give
8 evidence is a panel from the Village of Gold River.
9 It is a panel of one and comprised of David Lewis,
10 mayor of the Village of Gold River.

11 **VILLAGE OF GOLD RIVER PANEL**

12 **DAVID LEWIS, Affirmed:**

13 MR. FULTON: Mr. Chairman, Mayor Lewis has prepared a
14 written text of the statement that he wishes to make
15 to the Commission, but I'll ask the mayor a few
16 questions to start off.

17 **EXAMINATION IN CHIEF BY MR. FULTON:**

18 MR. FULTON: Q: Mr. Lewis, you are the mayor of the
19 Village of Gold River?

20 MR. LEWIS: A: Yes.

21 MR. FULTON: Q: And you have held that position since
22 approximately December of 2002?

23 MR. LEWIS: A: That's correct.

24 MR. FULTON: Q: The evidence of the Village of Gold
25 River is found at Exhibit C5-6?

26 MR. LEWIS: A: Correct.

1 MR. FULTON: Q: Can you tell us what your involvement
2 has been in the preparation of that evidence?

3 MR. LEWIS: A: I had no direct involvement in that
4 preparation. It was prepared by others, just simply
5 submitted by me, and I accept it as such.

6 MR. FULTON: Q: All right, now when you say you accept
7 it as such, are you adopting --

8 MR. LEWIS: A: Yes.

9 MR. FULTON: Q: -- the evidence in Exhibit C5-6 on
10 behalf of the Village of Gold River?

11 MR. LEWIS: A: Yes, I am.

12 MR. FULTON: Q: All right. And I understand that you
13 have a statement that you wish to make to the
14 Commission.

15 MR. LEWIS: A: I do.

16 MR. FULTON: Q: All right, please proceed.

17 MR. LEWIS: A: Thank you.

18 I think I should begin by stating that the
19 nature of my involvement in these proceedings to date,
20 and some of the comments that I may make going
21 forward, that it's only appropriate that I provide
22 others the opportunity to question me as I have
23 questioned them. I'm willing to accept that as an
24 occupational hazard of having a big mouth and being
25 willing to challenge B.C. Hydro, that they have
26 ignored cheaper, cleaner and less risky alternatives

1 to successfully meet Vancouver Island's short-term
2 capacity needs.

3 I am here for many reasons. All of them
4 stem from my interest to uphold the public's interest.

5 **Proceeding Time 4:25 p.m. T35**

6 Although many parties claim to be pursuing the same
7 goal, I believe they must maintain the public's trust
8 in order to be convincing. That's a good lesson for
9 all politicians and civil servants at all levels of
10 government to remember, especially come election time.
11 Abusing the public's trust trumps all other sins.

12 There is, of course, a significant local
13 interest that brings me here, far away from my family,
14 friends and home. That, of course, is the tax base,
15 the jobs and the economic stability that a large
16 industrial development brings to a small town or
17 village.

18 I'm also here, however, as a proponent of
19 economic development on the North Island. I will not
20 stand idly by as B.C. Hydro insists on ignoring the
21 abundant, clean, cheap and low risk power alternatives
22 that the North Island has to offer.

23 I am motivated to be here as a ratepayer
24 who is unwilling to accept unquantified risks,
25 especially in the absence of unquantified benefits. I
26 came here in order to ensure that B.C. Hydro met the

1 burden of proof that is required of them. I am under
2 the impression that the role of the Commission Panel
3 is not to act as judge presiding over these hearings,
4 tasked with choosing one side over another. Rather I
5 thought that they would require B.C. Hydro to prove
6 that beyond all reasonable doubt, that their EPA is
7 indeed within the public's best interest.

8 Given the lack of quantifiable analysis
9 with regard to gas price alone, I would seriously
10 doubt that B.C. Hydro has met its burden of proof. I
11 am here before you today because 500 residents put one
12 hand up in the air to show their support of our
13 involvement in this process. They wanted to ensure
14 that the process was fair, and reasonable alternatives
15 were evaluated. I can't help but think they're
16 probably now feeling like they should have put both
17 hands up in the air after being robbed of that
18 opportunity.

19 The citizens of Gold River, once more for
20 the record, want to state that they had hoped that the
21 Commission panel would at least consider the cheaper,
22 cleaner and less risky alternatives available to them.
23 Ignoring the most cost effective and sensible
24 solutions to our short-term power needs on Vancouver
25 Island, simply due to regulatory criteria also seem
26 abhorrent to me.

1 Thank you very much. I am prepared to take
2 questions now.

3 MR. FULTON: Mr. Chairman, if that statement might be
4 marked the next exhibit, Exhibit C5-10.

5 THE HEARING OFFICER: Exhibit C5-10.

6 (VILLAGE OF GOLD RIVER - PANEL OPENING STATEMENT,
7 MARKED AS EXHIBIT C5-10)

8 MR. FULTON: Before I ask Duke Point Public Power
9 Limited Partnership if they have any questions for
10 this panel, I'll ask if any of the intervenors have
11 any questions of this panel.

12 Ms. Miller.

13 **CROSS-EXAMINATION BY MS. MILLER:**

14 MS. MILLER: Q: Thank you very much, and thank you,
15 Mayor Lewis for putting yourself forward as a panel of
16 one.

17 MR. LEWIS: A: You're welcome.

18 MS. MILLER: Q: I would like to ask you on what basis
19 you would make the claim that the Gold River proposal,
20 the Green Island Energy proposal is the cheaper,
21 cleaner and less risky of the alternatives available?

22 MR. LEWIS: A: Well, I could try an get into details.
23 I probably wouldn't do them justice. Green Island
24 Energy submitted in its evidence, I think, an
25 overwhelming abundance of proof to back up that
26 statement. Although I wasn't allowed to question it,

1 I sat by waiting for others to listen to their
2 critiquing of it. I believe that it stands on the
3 record. There was nothing to disprove that evidence.
4 So from what I've taken from it, I adopt that as being
5 truthful.

6 MS. MILLER: Q: Thank you very much.

7 MR. FULTON: Any other intervenors? Duke Point Power
8 Limited Partnership.

9 MR. KEOGH: No, thank you.

10 MR. FULTON: British Columbia Hydro and Power Authority?

11 MR. SANDERSON: Thank you, Mr. Fulton.

12 **CROSS-EXAMINATION BY MR. SANDERSON:**

13 MR. SANDERSON: Q: I have one question for you, Mayor
14 Lewis, and that is whether, if in the CFT process
15 Calpine had entered a compliant bid or someone else
16 had come forward with a peaker or some other smaller
17 project, had been contributed to the process, with the
18 result of the successful outcome through the QEM model
19 would have included the Green Island Project and
20 others, do you think you would have been here?

21 MR. LEWIS: A: Sorry, do I think I would be here?

22 MR. SANDERSON: Q: Would you have been here for the
23 last two weeks?

24 MR. LEWIS: A: Yes, I would.

25 MR. SANDERSON: Q: And would you have been, do you
26 expect, testifying in support of that outcome?

1 MR. LEWIS: A: I think that the comment I made earlier
2 is relevant to the process and I'm sure, to answer
3 your question, yes, I probably would be speaking in
4 support of it if it met the criteria and the merits of
5 the processes and if indeed the QEM model is shown to
6 be an accurate method to determine the least-cost way
7 to determine the most efficient way to meet Vancouver
8 Island's power needs.

9 **Proceeding Time 4:30 p.m. T36**

10 MR. SANDERSON: Q: Yeah. My proposition to you is that
11 if the QEM, as you know it to be now, after having
12 read the testimony and listened for the last couple of
13 weeks, had produced a result that included Green
14 Island, then I'm suggesting to you you would have been
15 enthusiastically supporting the use of that model.

16 MR. LEWIS: A: I would have been supportive of the
17 lowest-cost solution. If Green Island were a part of
18 it and it did prove to be an effective way to measure
19 that. I think that what I have learned here is quite
20 possibly the QEM was not the most effective way to
21 measure that, and I believe that I would have to
22 qualify any statement based on a determination along
23 those lines.

24 MR. SANDERSON: Q: All right, thank you. Those are my
25 questions, thank you.

26 MR. LEWIS: A: Thank you.

1 COMMISSIONER BOYCHUK: Mayor Lewis, I just -- I hope this
2 won't sound gratuitous or self-serving, but your
3 comment about being robbed of that opportunity. What
4 I'd like to suggest to you is that the issues that you
5 and other parties have raised are alive and well
6 before this Commission panel, and I would encourage
7 you to make the effort, to continue to make the effort
8 that you have shown in this proceeding. Sorry.

9 MR. LEWIS: A: I've heard everything you've said so
10 far, so that's fine, yeah.

11 COMMISSIONER BOYCHUK: To continue to make that effort,
12 and not feel that because of a decision this panel has
13 taken today, and other decisions, that we are not
14 going to listen to you.

15 MR. LEWIS: A: Thank you, I appreciate your comments.

16 THE CHAIRPERSON: Have you ever had occasion to speak to
17 Mayor Korpan?

18 MR. LEWIS: A: In previous -- I don't want to use the
19 word "proceedings," but on other events, not relative
20 to this at all, I have.

21 THE CHAIRPERSON: Mayor Korpan is, as you know, I
22 suspect, supportive of the approach -- the acceptance
23 of the EPA that's been filed with us, and I was
24 curious as to whether or not you had an opportunity to
25 discuss that with Mayor Korpan.

26 MR. LEWIS: A: No I didn't. I purposely didn't. I

1 think that sometimes when municipal politicians get
2 involved in a bigger issue, sometimes it gets narrowed
3 down to a municipal pissing match, pardon my language.

4 I think that with regard to Mayor Korpan,
5 what I can understand is, the protocol. And when he
6 made reference in his submission that the village or
7 the City of Nanaimo supported Duke Point, it was based
8 on a resolution from a previous council. And as a
9 mayor, I think it's very important that you deal with
10 current councils and current thoughts, and there was
11 no position at that point; and in fact, from what I've
12 read, the council has decided to move itself from a
13 position of support to a position that they are not
14 going to take a position at this time, until they
15 receive more information.

16 So if we were to characterize the City of
17 Nanaimo's support or lack thereof for Duke Point, it
18 is neither. And I believe Mayor Korpan put forward
19 that the city of Nanaimo did support it. So with
20 regard to my correspondence relating to Mayor Korpan,
21 it was along those lines.

22 THE CHAIRPERSON: Thank you.

23 MR. LEWIS: A: Thank you.

24 MR. FULTON: May Mayor Lewis be excused, Mr. Chairman?

25 THE CHAIRPERSON: Yes.

26 MR. LEWIS: Thank you very much.

1 THE CHAIRPERSON: Thank you, you're excused.

2 (WITNESS ASIDE)

3 MR. FULTON: That completes the evidence of the other
4 Intervenor panels, Mr. Chairman. So the next step
5 would be the evidence from the B.C. Hydro rebuttal
6 panel.

7 MR. SANDERSON: Mr. Chairman, if then I could call the
8 panel to the stand. I'm not sure how far or how long
9 you wish to go tonight, but I do think it would be
10 desirable to at least do their direct, because there
11 are some elements of it which have some information
12 that hasn't been seen before in response to some
13 evidence given earlier this week. So, there's not
14 much, but there's a little bit, so we should get that
15 on the record at least tonight, I would submit.

16 MR. FULTON: Mr. Chairman, what I would propose,
17 depending on how long the direct evidence takes, is
18 that on the time estimates that I have, I have two of
19 approximately half an hour, one of fifteen minutes,
20 and one of less than three hours. I would propose
21 that to the extent we can, we deal with the shorter
22 crosses tonight and leave the longer one until
23 tomorrow.

24 **Proceeding Time 4:35 p.m. T37**

25 THE CHAIRPERSON: Do you have any concerns about that,
26 Mr. Sanderson?

1 MR. SANDERSON: No, subject to beginning to get concerned
2 as the evening wears on, but as a proposition starting
3 now I have no concerns.

4 THE CHAIRPERSON: Okay.

5 MR. SANDERSON: If I could ask while the Hearing Officer
6 is identifying the witnesses, if he could either swear
7 or affirm them as they choose while he's there.

8 **B.C. HYDRO REBUTTAL PANEL**

9 **FREDERICK PICKEL, Affirmed:**

10 **RICHARD LAUCKHART, Affirmed:**

11 **CHRIS O'RILEY, Resumed:**

12 **Proceeding Time 4:37 p.m. T38**

13 MR. SANDERSON: I was just looking, Mr. Chairman, and
14 I've now got the exhibit number for the rebuttal
15 testimony which is B-97, which you'll want to have in
16 front of you.

17 **EXAMINATION IN CHIEF BY MR. SANDERSON:**

18 MR. SANDERSON: Q: And Mr. O'Riley, if I can direct
19 some questions to you first, you've previously
20 testified in this proceeding?

21 MR. O'RILEY: A: Yes, I have.

22 MR. SANDERSON: Q: And your testimony in rebuttal
23 appears as part of Exhibit B-97, which also comprises
24 the testimony of Dr. Pickel and Mr. Lauckhart,
25 correct?

26 MR. O'RILEY: A: Yes, it does.

1 MR. SANDERSON: Q: I will take you to that testimony in
2 just a minute. But before I do that, I understand
3 that there's a couple of additional matters that you
4 have some useful evidence to provide on. And the
5 first of those, as I understand it, is in response to
6 some comments of Mr. Fulton that appear at Volume 12,
7 and this is not the Mr. Fulton who's present with us
8 today but the Mr. Fulton who was here on Monday on
9 behalf of the JIESC. And I'm referring particularly
10 to transcript 2561 where Mr. Fulton acknowledges that
11 market fundamentals can be used and should be used to
12 determine obligation. However, he goes on to
13 criticize the lack of consideration of the
14 fundamentals in B.C. Hydro's model and in its
15 forecasting.

16 What that moved me to ask you was whether
17 in developing the price forecasts used in the QEM
18 model, Hydro did attempt to consider market
19 fundamentals, and if so, how?

20 MR. O'RILEY: A: We did consider market fundamentals.
21 We looked at the increase in the heat rate, I think it
22 was referred to as a jump in 2012, between 2012 and
23 2013, and we believe that to be consistent with a
24 tightening of the supply/demand balance in light of
25 these market fundamentals, and we see this tightening
26 occurring in the near-term forward markets as

1 indicated in Mr. Fulton's evidence in Figure 7, and he
2 showed an increasing forward heat rate through 2010.
3 We see this tightening in our own runs of the Henwood
4 model that we discussed through 2012.

5 We also see it in the longer-term runs of
6 the Henwood model that we've periodically done to
7 support the rationale for use of the CCGT for the
8 period 2013 to

9 **Proceeding Time 4:40 p.m. T39**

10 MR. SANDERSON: Q: Thank you. Is there any written
11 evidence of where and how you considered these
12 fundamentals in the material you filed as part of your
13 rebuttal?

14 MR. O'RILEY: A: Yes, there is. There is -- B.C. Hydro
15 has a risk management committee which is charged with
16 overseeing the development and ongoing changes to its
17 forward price curve, price forecasts and we provided
18 three sets of presentations that went to that
19 committee during that period of January and February
20 2004 and we believe these are indicative of the
21 thinking that went into that and the consideration
22 that went into that, and the -- and demonstrate the
23 degree to which market fundamentals were considered in
24 the development of those long-term curves.

25 MR. SANDERSON: Q: Thank you, Mr. O'Riley. Now, as I
26 understand that attachment to your rebuttal evidence,

1 those are PowerPoint presentations that were serving
2 as speaking notes, is that correct?

3 MR. O'RILEY: A: Yes, they were.

4 MR. SANDERSON: Q: And are you able to just quickly
5 orient this through this, the sort of succession of
6 thinking that was going on in those meetings by
7 reference to those overheads or PowerPoints?

8 MR. O'RILEY: A: Yes, I could that. The first
9 presentation was dated January 27th, 2004 and it was a
10 workshop of the risk management committee, and this
11 committee is made up of senior executives, primarily,
12 and some management staff and it meets on a monthly
13 basis and this was a special meeting to deal with
14 price forecast issues. And the primary purpose of
15 this meeting was to review the proposed scenario
16 approach that we moved to, and to seek endorsement of
17 the specific method by which we developed those gas
18 and electricity price scenarios.

19 The outcome -- I can go through a few of
20 the slides, starting with Slide 2 which just talks
21 about the objectives there and maybe from there move
22 onto slide 5. Slide 5 just indicates some of the
23 applications that this price forecast would be implied
24 to, and they are listed at the bottom, the net income
25 forecasting, Vancouver Island call for tenders,
26 integrated electricity plan analysis, and just really

1 speaks to the importance of the price curve forecast
2 to our company.

3 Slide 8 talks about the windows with which
4 we forecast and we have a one to three year window and
5 a four to twenty year window, and as we say here,
6 there are different applications for the two windows.
7 The first window tends to relate to income forecasting
8 and acid optimization and such. The long-term window
9 relates to -- is used for planning, long-term planning
10 and decisions around, for example, the issue we are
11 considering here today. And as I said, there are
12 different methodologies which we can show for each
13 window.

14 Slide 13 talks about our use of forward
15 prices for the near term window and our belief that
16 those prices are the best estimate of future spot
17 prices. We acknowledge and have acknowledged in the
18 course of this that we don't expect those prices to be
19 accurate in terms of their forecast to the spot
20 prices, and in many cases they will be wrong. What we
21 mean is we don't think there's a bias in terms of
22 either over-forecasting or under-forecasting, and we
23 have tested that over time particularly with gas
24 prices.

25 We do benchmark these forward prices
26 against third party proprietary forecasts like Pyra

1 and Seera and such.

2 If I move to Slide 39, this indicates some
3 of the output of our initial sort of proposed regime
4 of scenarios and I just point to -- make just one
5 point here. We talk about the Confer electricity
6 price scenario, and of course Confer doesn't produce
7 an electricity price scenario, they produce a gas
8 price. So when we talk about the Confer price
9 forecast, we are referring to the Confer gas applied
10 to our electricity forecasting approach, the Henwood
11 and the combined cycle generating plant. Similarly
12 the --

13 MR. SANDERSON: Q: Sorry, so you use the Confer gas
14 price and then use your own modeling to determine
15 electricity price derivative from that.

16 MR. O'RILEY: A: Yes.

17 MR. SANDERSON: Q: Okay.

18 MR. O'RILEY: A: And the shorthand for that is that's
19 the Confer electricity price forecast. Similarly with
20 the EIA, so this is -- the EIA referred to here is the
21 EIA gas forecast put through our longer-term modeling
22 approach.

23 MR. SANDERSON: Q: And can I take it from that that EIA
24 is not a reference to the EIA power forecast?

25 MR. O'RILEY: A: That is correct. If we go to the next
26 set of slides which is February 9th.

1 **Proceeding Time 4:45 p.m. T40**

2 MR. SANDERSON: Q: By the way, these are all 2003,
3 right?

4 MR. O'RILEY: A: Yes, they're all -- no. They're 2004.

5 MR. SANDERSON: Q: Sorry, four. Yes. I'm sorry.

6 MR. O'RILEY: A: 2004.

7 MR. SANDERSON: Q: We're in five now, yes. Right.

8 MR. O'RILEY: A: February 9th, at the output of the
9 outcome of the first meeting is we did not achieve
10 consensus on the alternative heat rate approach, the
11 scenario around a lower heat rate, and we -- February
12 9th was really another meeting to drill down and look
13 at that issue in more detail. So there was no initial
14 -- additional work done beyond producing more detailed
15 slides.

16 So if I look at slide 3 in this package,
17 this was the proposed architecture for our power price
18 forecasting. We had four gas price scenarios at the
19 top, we put them through the Henwood model and our
20 long-term -- the combined cycle generator, to come out
21 with four power price forecasts. We also took an
22 average of the four gas prices and put it through this
23 lower alternative heat rate scenario and generated a
24 power price forecast. And so that was the proposal
25 here. And we looked in more detail at several
26 alternative ways of developing that -- that forecast.

1 If I point to slide 11, it shows some of
2 the heat rates that will -- it shows the heat rates
3 that were considered, and we show two options here of
4 different ways of calculating that alternative partial
5 recovery heat rate scenario.

6 Slide 12 talks about some input changes
7 that we were also seeking approval to, so both EIA and
8 Confer had increased their long-term gas price
9 forecast, and we -- the method -- the process inside
10 the company is, we go and get approval for that change
11 with -- from our risk management committee. And we
12 talk here again about the EIA gas forecast increasing
13 by 16 percent, and the corresponding electricity price
14 forecast increasing by 11 percent. And again, that
15 electricity price forecast there refers to the price
16 forecast generated with the approach that we talked
17 about, our internal approach. But also getting
18 approval here for a change in the exchange rate, based
19 on a strengthening of the Canadian dollar.

20 And just slide 13 indicates our range of
21 gas prices that we considered. So we have a high gas
22 price forecast based on recent market conditions
23 carried forward, and then we have the three -- we have
24 four other -- three other forecasts, Confer, EIA and
25 National Energy Board, which we later dropped.

26 The last presentation was on February 26th,

18 And I'll just point out something we talked
19 about earlier, was the relationship between -- for
20 example, with the gas, the average gas price was very
21 close to the average EIA price, and that was one of
22 our rationales for going to the single scenario when
23 we developed the -- or we finalized the QEM model.
24 And a similar relationship applies with the
25 electricity and with the heat rates.

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1 MR. SANDERSON: Q: Just before you move on, if I could
2 take you back to slide 3 in that group, that is the
3 structure, do I understand from what you've just said
4 that the structure identified in slide 3 is the
5 structure that was ultimately used in the QEM model,
6 with the exception that the EIA forecast was the
7 single price forecast that went into the top box?

8 MR. O'RILEY: A: Yes, there was only one gas price
9 forecast and two -- and then we applied the two
10 methods of conversion, and that translated into two
11 electricity price forecasts.

12 MR. SANDERSON: Q: Right, and that's what you --

13 MR. O'RILEY: A: Yes.

14 MR. SANDERSON: Q: -- used in QEM. Thank you.

15 There was one more response, this time to
16 Mr. Fulton, at 2554 of the same volume of the
17 transcript, Volume 12. And there at lines 12 to 14,
18 he's observing what he sees in the material you'd
19 filed to that point and the forecast, and he says of
20 it at line 12:

21 "But in point of fact, we have this sharp
22 elbow jumping from 2010 to 2013 when this
23 one comes in as the price-setting mechanism.
24 So I go, 'Whoa.'"

25 Now, Mr. O'Riley, did you go "Whoa"? If you did or
26 you didn't, can you more generally explain what you

1 saw going on at the sharp elbow that Mr. Fulton was
2 referring to?

3 MR. O'RILEY: A: I guess we didn't go, "Whoa." First
4 of all we recognized that that was one scenario out of
5 two -- two methods of converting gas to electricity
6 prices, so we don't have the same elbow, if you will,
7 in the 25 percent recovery case. We have a very
8 smooth transition. And as I started to say
9 previously, we viewed that increase in heat rates as
10 being an indication of the tightening of the market in
11 terms of supply and demand and the market
12 fundamentals.

13 I think it's important to remember that the
14 forecast for 2013 and beyond really represents a long-
15 term trend, and therefore the exact trend -- the shape
16 of the transition from 2012 to 2013 is really not as
17 significant as it seems. And the rationale for using
18 that combined cycle generator for that period is that
19 new supply is required in the market, in the broader
20 WECC region, to meet load growth and to replace
21 retirements. And we see in the larger WECC, we see
22 that -- a lot of that new supply coming from gas-fired
23 plants such as this.

24 So the logic is that if the owners of those
25 plants don't see that they're recovering their energy
26 margin on a merchant basis or equivalent to a

1 merchant, those new -- new versions of those plants
2 will tend not to get built, and that will lead to a
3 tightening of supply and a rise in prices and a rise
4 in heat rates.

5 As we've seen in previous periods, if you
6 look back over the ten years the exact pattern of when
7 we will see prices and heat rates above the line
8 versus below the line, I mean that will depend on the
9 commodity cycle that Mr. Fulton talked about. But we
10 see generally on average that companies and
11 individuals building those kind of plants will be able
12 to recover their margin over time, and the market will
13 self-correct if they're not able to.

14 **Proceeding Time 4:53 p.m. T42**

15 And we are concerned that this scenario
16 might not come to pass, and we talk about some of the
17 reasons in our slides, how that might occur. And
18 that's why we're very insistent on including the 25
19 percent recovery scenario. And that's also following
20 on comments by the Commission in the VIGP decision,
21 related to concern that we might have hard-wired a
22 relationship between gas and power, so we really
23 wanted to test that with the lower heat rate scenario.

24 MR. SANDERSON: Q: All right, thank you. Mr. O'Riley,
25 I'll come back to you in a moment. But before I do
26 that, I just wanted to introduce and ask a few

1 questions of Mr. Lauckhart.

2 THE CHAIRPERSON: Just before you do that, Mr.

3 Sanderson --

4 MR. SANDERSON: Yes, of course.

5 THE CHAIRPERSON: In BCUC 1.13.1, which I'm sure you're

6 familiar with --

7 MR. O'RILEY: A: Yes.

8 THE CHAIRPERSON: -- you refer to, on page 2 of that,

9 scenarios that were considered, I think was what

10 you're suggesting you're -- on February the 26th, and I

11 notice that you've provided slides for January 27th,

12 and February the 9th. I'm thinking that you may have

13 slides for the February the 26th --

14 MR. O'RILEY: A: Yes.

15 THE CHAIRPERSON: -- meeting as well. And you've chosen

16 not to include them.

17 MR. O'RILEY: A: No, no, I have included them. I

18 apologize if that wasn't clear, but we made a

19 transition at one point there, and so we had three

20 sets of slides here for January 27th, February 9th and

21 February 26th.

22 THE CHAIRPERSON: Oh, I'm sorry, I --

23 MR. O'RILEY: A: They're a smaller piece. And we

24 looked at slide 3 in that package and slide 8.

25 THE CHAIRPERSON: Okay.

26 MR. O'RILEY: A: Slide 8 is the table which summarizes

1 the whole result.

2 THE CHAIRPERSON: Can you take me to the -- sorry, I'm
3 behind you.

4 MR. O'RILEY: A: Okay.

5 THE CHAIRPERSON: Can you take me to the slides for
6 February 26th?

7 MR. O'RILEY: A: Okay. They should be the third --
8 they should be at the -- they should be the third
9 section there. There's a --

10 **Proceeding Time 4:55 p.m. T43**

11 MR. SANDERSON: Mr. Chairman, you can work from the back,
12 and you're into February 26th if you're working from
13 the back.

14 MR. O'RILEY: A: There's 15 of them.

15 COMMISSIONER BOYCHUK: Some of which are blacked out?

16 MR. O'RILEY: A: Yes.

17 COMMISSIONER BOYCHUK: That's okay, we're in the same
18 area.

19 MR. O'RILEY: A: Yes, yeah. The blacked-out ones
20 contained proprietary forecasts from Pyra and Sira, so
21 we didn't have permission to release those.

22 THE CHAIRPERSON: Okay. Now I'm with you. Thank you.

23 MR. O'RILEY: A: Okay. So we looked at slide 3 and I
24 described this as the final architecture, if you will,
25 of our price forecasting scenario approach. So we end
26 up with three gas price scenarios that reflect a broad

1 range of outcomes. We have two methods of converting
2 these to** two** electricity prices, both of which
3 rely on the Henwood for the front part and the CCGT in
4 the latter part. And then we end up with six
5 electricity price forecasts at the end. And then the
6 output from that is summarized in Table 8 or slide 8
7 in the table, and these are sort of summary values of
8 the levelized across different windows, and then
9 average as well, simple average.

10 And one point I was making was that if we
11 take the gas price, for example, the average of the
12 three scenarios is very close to the EIA, which was
13 one of the supporting reasons for using that EIA
14 forecast in a simplified QEM model.

15 THE CHAIRPERSON: Right, thank you.

16 MR. SANDERSON: Q: Mr. Chairman, I'll move on to Mr.
17 Lauckhart if I may, and ask you to confirm, Mr.
18 Lauckhart, that you are a vice-president of Global
19 Energy Advisors?

20 MR. LAUCKHART: A: Yes.

21 MR. SANDERSON: Q: And I understand that Global Energy
22 Advisors was previously known as Henwood Consulting,
23 is that correct?

24 MR. LAUCKHART: A: Well, a large part of Global Energy
25 Advisors was Henwood, right?

26 MR. SANDERSON: Q: All right, and that's the Henwood

1 that developed the model when Mr. O'Riley talks about
2 the Henwood model?

3 MR. LAUCKHART: A: Yes, it is.

4 MR. SANDERSON: Q: All right, thank you.

5 Can you just explain what the Henwood model
6 is and where it's used to just a very high level?
7 It's in your testimony, but if you could just capture
8 that in a paragraph or two, that would be useful.

9 MR. LAUCKHART: A: Sure. The Henwood model was
10 developed by Mark Henwood starting in 1985, but he
11 started with a computer program that had been
12 developed by the Tennessee Valley Authority, TVA. He
13 found that a useful platform to build a more complex
14 set of analytic tools that could be used in the energy
15 industry to perform analysis.

16 Over the last 20 years, that has grown.
17 The basic dispatch engine is the same that was
18 developed by TVA but it was adapted to allow different
19 applications in the energy industry. A number of
20 players in the energy industry use it outside of the
21 Henwood, they licensed that model from us, and some of
22 the uses are forecasting market clearing prices, which
23 we're talking about here. Some of the uses are
24 valuing assets in the industry when questions about
25 valuation of assets come up. And we use -- clients
26 use it extensively on their own.

1 MR. SANDERSON: Q: And previously were a vice-president
2 of Tabers Carmanas and Associates [phonetic]?

3 MR. PICKEL: A: Yes, I was.

4 MR. SANDERSON: Q: And as I understand it, Tabers
5 Carmanas and Associates is now part of Charles River
6 Associates.

7 MR. PICKEL: A: Yes, it is.

8 MR. SANDERSON: Q: Okay, thank you. My understanding
9 is that in preparing your analysis that appears in the
10 evidence, you did not use the Henwood model but rather
11 used a model that's referred to in your testimony as
12 the GE Maps simulation, is that correct?

13 MR. PICKEL: A: Yes we did.

14 MR. SANDERSON: Q: And are you able to tell me a little
15 bit, again in the same sort of way that Mr. Lauckhert
16 did about the Henwood model, something about the
17 background too, and use of the GE Maps model.

18 MR. PICKEL: A: GE Maps model is an economic dispatch
19 model and production cost estimation model that was
20 developed by General Electric in the '70s and early
21 '80s. It's been refined by use throughout the
22 industry for over 25 years, used by over 20 major
23 utilities, generation developers and industry
24 organizations in North America.

25 One of the key advantages of this
26 particular approach to simulating the market is its

1 ability to represent and simulate in detail the
2 operation of the transmission system in conjunction
3 with the individual generating units. In particular,
4 it considers transmission constraints and inter-nodal
5 flows in the dispatch of generation with greater
6 detail than is available in some other models.

7 MR. SANDERSON: Q: Thank you. Dr. Pickel, I understand
8 that you have a correction to make to one of the
9 tables that appears in your testimony, is that
10 correct?

11 MR. PICKEL: A: I do.

12 MR. SANDERSON: Q: And if you turn to page 8 Mr.
13 Chairman, perhaps you could describe that correction,
14 Dr. Pickel.

15 MR. PICKEL: A: There was a typographical error in
16 preparing the table. It doesn't affect the results of
17 the analysis but 2300 megawatts of geothermal was left
18 out of the QF solar and refuge group. In the
19 correction I add that as a separate line.

20 MR. SANDERSON: Q: And I understand you prepared a
21 table that shows the existing table as taken out of
22 your evidence at page 8 and then the corrected table
23 to reflect the comments you've just made.

24 MR. PICKEL: A: Yes, I did.

25 MR. SANDERSON: Mr. Chairman, I wonder if I might mark
26 that as Exhibit B-97A so it stays with the --

1 THE HEARING OFFICER: Marked B-97A.

2 (CORRECTED TABLE TO PAGE 8 OF MR. PICKEL'S EVIDENCE,
3 MARKED AS EXHIBIT B-97A)

4 MR. SANDERSON: Q: With that correction, Dr. Pickel,
5 are you able to adopt the testimony that appears under
6 your name in Exhibit B-97 as your evidence in this
7 proceeding?

8 MR. PICKEL: A: Yes.

9 MR. SANDERSON: Q: Mr. O'Riley, if I can go back to you
10 for a moment, my last question is for you, and that
11 is, in the evidence of Dr. Pickel and in the evidence
12 of Mr. Lauckhert there are forecasts of utilization
13 factors for the Duke plant. Were you able to consider
14 how those forecasts relate to previous forecasts,
15 particularly with respect to heat rates, as found in
16 Exhibit 81, which has previously been filed in this
17 proceeding?

18 **Proceeding Time 5:03 p.m. T45**

19 MR. O'RILEY: A: Yes. We made some additions to
20 Exhibit 81 to include forecasts of a heat rate
21 calculated by Mr. Lauckhart and Mr. Pickel. Mr.
22 Lockhart calculated the heat rate for the period 2008
23 through 2023, Mr. Pickel calculated the heat rate for
24 individual years 2008 and 2012, and these are shown in
25 comparison to the market heat rates calculated using
26 B.C. Hydro's approach and also using the EIA gas and

1 power price forecasts, cost of service forecasts, for
2 the electricity.

3 MR. SANDERSON: Q: I understand you to have done that
4 at least first on a sort of a full-scale basis?

5 MR. O'RILEY: A: Yes. We provided two versions of it.
6 One uses a full scale, showing the heat rates ranging
7 from zero to 36, and the reason we needed such a broad
8 scale was to capture the high heat rates for the
9 period 2000 and 2001. This makes it difficult to look
10 at the -- makes it difficult to look in detail at the
11 forward heat rates, which are clustered in a much
12 narrower range, so we've provided another version that
13 chops off the scale at 18, and you can see much more
14 granularity and the differences between the forward
15 heat rate curves.

16 These are -- so what we've shown is --

17 MR. SANDERSON: Q: Let me stop you there, Mr. O'Riley.

18 MR. O'RILEY: A: Sure.

19 MR. SANDERSON: Q: I think what I'll do is suggest, Mr.
20 Chairman, that these be marked Exhibit 81A and Exhibit
21 81B, and then I'll circulate them before Mr. O'Riley
22 starts to talk about them, so people can follow.

23 THE HEARING OFFICER: Exhibit 81A and 81B.

24 (COLOURED GRAPHS "MARKET HEAT RATE FOR SELECT
25 FORECASTS: REPRODUCTION OF FULTON FIGURE 1...", FIGURE
26 1b, MARKED AS EXHIBIT B-81A)

1 (COLOURED GRAPHS "MARKET HEAT RATE FOR SELECT
2 FORECASTS: REPRODUCTION OF FULTON FIGURE 1...", FIGURE
3 1c, MARKED AS EXHIBIT B-81A)

4 MR. SANDERSON: Q: Now, Mr. O'Riley, I understand from
5 what you've said so far that the data behind these two
6 is identical, it's simply that the presentation and
7 the scale is a bit different.

8 MR. O'RILEY: A: Yes. It's important to -- for context
9 to show the full scale, beginning at zero, so you get
10 a full -- a real sense of the information. And if I
11 start with the chart that shows the zero to 36 scale,
12 first of all the point is that the heat rates in 2000
13 and 2001 are much greater than anything you see on the
14 chart, whether they're the calculations by B.C. Hydro
15 or the calculations by Mr. Lauckhart and Pickel.

16 **Proceeding Time 5:06 p.m. T46**

17 If I point you to the next chart, it shows
18 the reduced scale of zero to 18. A couple points
19 here. So we've shown the curves in, it's the brown
20 with the circle dots and the two green marks for Mr.
21 Lauckhart and Mr. Pickel respectively. These are
22 shown in comparison to market heat rates on a
23 historical basis and just reiterating the point that
24 Mr. Sheldon Fulton made earlier in the week that we
25 need to consider at least five years of market history
26 when evaluating heat rates.

1 Using an approach based on market
2 fundamentals Mr. Lauckhart independently calculated,
3 came to a higher heat rate than B.C. Hydro had
4 calculated in its hundred percent recovery case, and
5 you see that in the chart. Mr. Pickel came -- also
6 working independently came to values that were very
7 close to those calculated by B.C. Hydro for the
8 periods 2008 and 2012.

9 The actual market heat rates in four of the
10 last seven years were much greater than any of the
11 curves that any of us forecasted on a go-forward
12 basis. So our conclusions from that are that the
13 market heat rates calculated by B.C. Hydro for the two
14 scenarios, using the combination of the Henwood model
15 and the cost structure of the combined-cycle gas-fired
16 plant, we think those are reasonable, and the low heat
17 rates we've seen in the current markets as indicated
18 by the numbers for 2002 through 2004, those are not
19 sustainable given a view to market fundamentals.

20 MR. SANDERSON: Q: Thank you. My final question for
21 you, Dr. Pickel, is whether you had seen Mr.
22 Lauckhart's work at the time you prepared your
23 estimates of 2008 and 2012, utilization rates?

24 MR. PICKEL: A: No, I had not.

25 MR. SANDERSON: Q: And Mr. Lauckhart, had you,
26 likewise, seen Dr. Pickel's work when you prepared the

1 material you filed in Exhibit B-97.

2 MR. LAUCKHART: A: No, I hadn't seen that before I did

3 mine.

4 MR. SANDERSON: Q: Thank you. Thank you both gentlemen

5 -- or thank you all three. And Mr. Chairman, that

6 completes my direct of this panel and they are

7 available for cross-examination if you wish to proceed

8 tonight.

9 THE CHAIRPERSON: I think we will proceed.

10 MR. FULTON: Commercial Energy Consumers?

11 **CROSS-EXAMINATION BY MR. CRAIG:**

12 MR. CRAIG: Q: Thank you, Mr. Chairman. Panel. My

13 name is David Craig, I'm with the Commercial Energy

14 Consumers and my first question is for Mr. Lauckhart.

15 Are you aware of any reason that B.C. Hydro could not

16 have a dispatchable combined cycle plant on the

17 mainland?

18 MR. LAUCKHART: A: No I'm not.

19 MR. CRAIG: Q: And would you go so far as to say that

20 that could be done?

21 MR. LAUCKHART: A: Put a dispatchable combined cycle

22 plant on the mainland?

23 MR. CRAIG: Q: Right.

24 MR. LAUCKHART: A: I think it could be done.

25 MR. CRAIG: Q: Could be done. And now I'd like to just

26 turn to the energy margin that is calculated from the

1 forecasts that you put forward here. My
2 understanding is that that's dependent on the market
3 prices from the larger power and gas markets and the
4 opportunities that are available in those markets,
5 that it's dependent on the water conditions in the
6 B.C. Hydro system and on the constraints in the B.C.
7 Hydro system, the transmission constraints and
8 generation constraints in the system. Would that be
9 correct?

10 MR. LAUCKHART: A: Well, the deterministic analysis
11 that I've included in my testimony assumes that
12 everything in the next 23 years is normal, and so we
13 have forecast prices, really day ahead spot market
14 prices that we believe will exist in each of these
15 hours in the next 25 years if everything is normal.
16 And then we dispatch the -- actually the energy
17 purchase agreement arrangement against those prices as
18 we viewed them to be in the British Columbia area.
19 And that provided these results that we have.

20 **Proceeding Time 5:10 p.m. T47**

21 MR. CRAIG: Q: Right. And I understood from reading
22 your evidence that in fact some of the issues and
23 variables that I'd just listed are in fact
24 dependencies on which these prices are dependent.

25 MR. LAUCKHART: A: Yes. I indicate in here some of the
26 things that if they vary from what we had assumed, and

1 our view of normal conditions, if they vary that will
2 impact the results, yes.

3 MR. CRAIG: Q: Right. And the overall collection of
4 these market price opportunities, and the water
5 conditions do not present an opportunity for an
6 endless earning of energy margin? It's not an open-
7 ended capability, it's dependent on the -- on the
8 whole system?

9 MR. LAUCKHART: A: I'm not quite sure I understand the
10 question.

11 MR. CRAIG: Q: Well, we've agreed that the energy
12 margin is dependent on these conditions of the system.
13 If we had a different system, like the Alberta system,
14 we would have something quite different, in terms of
15 what we were looking at.

16 MR. LAUCKHART: A: Well, in my analysis of the market
17 that this plant would be subject to, I've included
18 Alberta, I've included, you know, all of the Western
19 interconnect, as we call it, because we can -- Henwood
20 considers that the market that this project has access
21 to.

22 Now, there are some transmission limits
23 that we're taking into account here. But having said
24 that, you know, we've done our forecast with
25 everything normal, and then if things aren't normal,
26 either because of weather or other things that are

1 different than we thought would be normal, then it
2 would change the results.

3 MR. CRAIG: Q: Right. And so the conditions that give
4 rise to this come from, as I understand your evidence,
5 from all the resources available in the system as a
6 whole?

7 MR. LAUCKHART: A: Right. But the demands and the
8 supplies both.

9 MR. CRAIG: Q: And then there are local considerations
10 when we come into the B.C. Hydro system and to the
11 Island? In terms of --

12 MR. LAUCKHART: A: I just might turn you to page 7 of
13 my portion of this exhibit, where I break out the
14 topology that we use when we do this analysis, and the
15 local part that we're dealing with here is the B.C.
16 bubble in here, as it interacts with the rest of the
17 region, in this kind of a --

18 MR. CRAIG: Q: Right. And is it, the B.C. bubble
19 interacts with the rest of the region, and there's --
20 for the purposes of this hearing, being DPP on the
21 Island, there's in fact constraints between the
22 Island, and B.C., and then B.C. and the rest of the
23 system.

24 MR. LAUCKHART: A: Yes. At times, I will actually make
25 a more complicated topology for focusing on it -- in
26 on a particular area, but we did, in the process of

1 this engagement, discuss whether we should break out a
2 separate zone here for the Island, and concluded that
3 for the kind of conditions we were going to be
4 studying, which is sort of normal weather, that that
5 wouldn't really impact the results. So we didn't
6 break it out separately.

7 MR. CRAIG: Q: Right. So, the limitations within the
8 B.C. Hydro system to earn and develop this energy
9 margin are based on those variables that I've talked
10 about, and some of those limitations.

11 MR. LAUCKHART: A: Yes, as described in my testimony,
12 yes.

13 MR. CRAIG: Q: Correct. That's good. Thank you very
14 much, Mr. Chairman, that's all my questions.

15 MR. FULTON: Mr. Steeves?

16 | **Proceeding Time 5:15 p.m. T48**

17 MR. STEEVES: Good afternoon, Mr. Chairman. Where are
18 we? Are we in the B.C. Hydro rebuttal?

19 THE CHAIRPERSON: That's correct.

20 MR. STEEVES: Okay. Well, where am I? Should I not have
21 been in the other intervenors?

22 THE CHAIRPERSON: That's a question that you can ask Mr.
23 Fulton when we finish today.

24 MR. STEEVES: Okay.

25 THE CHAIRPERSON: Or Mr. Fulton can comment on that now.

26 MR. STEEVES: Perhaps he should comment on it now.

1 MR. FULTON: Mr. Chairman, the only individual who
2 indicated that they wished to make a statement as a
3 panel, as another intervenor panel, to me, was Mayor
4 Lewis. And so having not received any statements from
5 anybody else, I assumed when I said we were finished
6 with the intervenor panels and no one came forward,
7 that we were finished with the other intervenor
8 panels.

9 THE CHAIRPERSON: That was the procedure that we
10 established, Mr. Steeves, that anyone who wished to
11 appear and give testimony was to advise us of that by
12 the end of the day on Monday. The only party or
13 participant that advised us that they would do that,
14 according to Mr. Fulton, was Gold River. So in that
15 sense at least you're out of time.

16 MR. STEEVES: Well, I was under the assumption that I
17 would be an intervenor and that people would be asking
18 me questions with regards to the submissions that I
19 had put forward to the Commission.

20 MR. FULTON: Well, what happens, Mr. Chairman, and this
21 acme up with Ms. McLennan as well, who came on
22 Saturday, was that no one had questions for her. So
23 her evidence is on the record, it's there as to
24 whatever weight that the Commission chooses to attach
25 to it, and generally unless people say to me they have
26 a pressing need to their evidence -- I won't say

1 pressing need but they want to speak to their
2 evidence, and no one wants to cross-examine them, then
3 we generally don't go forward with them unless they're
4 insisting upon it.

5 THE CHAIRPERSON: Mr. Steeves, if you wish to make a
6 written submission, you're going to --

7 MR. STEEVES: I have made a written submission back on
8 December 24th. I dropped it off here at your office at
9 4:00 p.m. sharp. I had to get the security guard to
10 let me in the office. I submitted the documentation,
11 left it on the desk, the secretary's desk, that's the
12 reception desk, and I believe you do have it because I
13 did phone to Mr. Fulton -- this is back on --

14 THE CHAIRPERSON: Mr. Steeves, I don't doubt that you've
15 done that. What I was extending to you was an
16 alternative to you now appearing and testifying, and
17 that is to file additional written evidence if you
18 wish. I'm trying to reach a compromise. You are out
19 of time, and the time was well established. It would
20 be quite unusual for me to now, after a rebuttal
21 evidence panel, to give you an opportunity to appear.
22 It would be highly unusual.

23 And so I'm trying to find another
24 alternative for you that may work, to meet your --
25 presumably you want to testify so that you can give us
26 more information than you already have, than what you

1 have already filed.

2 MR. STEEVES: To basically support the information that I
3 have submitted.

4 THE CHAIRPERSON: I'm sorry, I didn't hear you.

5 MR. STEEVES: To basically support the information that I
6 have submitted.

7 THE CHAIRPERSON: Right. And unless there are no
8 objections from Mr. Sanderson, I think I'd entertain
9 you doing that. But that's an alternative only to you
10 appearing and testifying at this point.

11 MR. STEEVES: Okay.

12 THE CHAIRPERSON: So if there are no objections from Mr.
13 Sanderson --

14 MR. SANDERSON: No, there are none, Mr. Chairman. I was
15 digging for the document. I'm not exactly sure what
16 the suggestion on the table is, but certainly we'll
17 accommodate anything we can to have Mr. Steeves do it,
18 whatever the Chair determines is appropriate. I
19 wouldn't want to interrupt tonight for that purpose,
20 but --

21 THE CHAIRPERSON: Well, and if what we've just
22 established, Mr. Steeves, is -- I know it's not as
23 much as you were hoping for when you first approached
24 me on this, but if it's satisfactory to you to simply
25 make a further written submission to provide further
26 support to your earlier submission of December 24th. I

1 think that's an option I'll provide to you.

2 **Proceeding Time 5:19 p.m. T01A**

3 MR. STEEVES: Well, I don't know what to do at this point
4 in time so I'd have to leave it and give it some
5 further thought.

6 THE CHAIRPERSON: Well, I'm going to make a decision now
7 on this matter, and unless -- no, Mr. Steeves, as
8 reluctantly as I am to do this, I do need to ensure
9 that this proceeding proceeds orderly and I think that
10 means that your only option now is to provide further
11 support to your earlier submissions in writing. So I
12 will take those. You can file those with argument, if
13 you wish, or you can file them tomorrow if you wish,
14 but only in writing.

15 MR. STEEVES: All right.

16 MR. FULTON: And Mr. Chairman, just so the record is
17 clear, Mr. Steeves' letter in evidence that he was
18 referring to that he filed on December 24th do form
19 part of the record and that is Exhibit C1-3.

20 COMMISSIONER BOYCHUK: Yes, we have it.

21 MR. FULTON: Thank you.

22 MR. STEEVES: All right, so we are in the B.C. Hydro
23 rebuttal session. I believe the documentation for
24 that was placed on the tables yesterday, and I haven't
25 even had too much time look at it, just a quick glance
26 so I really can't comment on it. But I do have one

1 question.

2 THE CHAIRPERSON: Well, Mr. Steeves, I am prepared to
3 give you until tomorrow morning to cross-examine this
4 panel unless, again, Mr. Sanderson objects.

5 MR. SANDERSON: I don't object at all, Mr. Chairman, but
6 I would like the record to be clear, that evidence has
7 been on that table since Saturday morning.

8 THE CHAIRPERSON: Right. So Mr. Steeves, you can either
9 proceed now to cross-examine this panel, or you can
10 wait until tomorrow morning, but I will not give you
11 an opportunity to cross-examine the panel this evening
12 unless we adjourn first, but it's unlikely I think,
13 and again tomorrow morning. So at your election you
14 can proceed now to cross-examine this panel or you can
15 wait until tomorrow morning.

16 MR. STEEVES: I think it would wiser to wait until
17 tomorrow morning until I have a chance to look at the
18 documentation.

19 THE CHAIRPERSON: Okay.

20 MR. STEEVES: Thank you.

21 MR. FULTON: Village of Gold River.

22 **CROSS-EXAMINATION BY MR. LEWIS:**

23 MR. LEWIS: Q: Thank you very much. Just a quick
24 simple clarification, Mr. O'Riley. When you were
25 talking about getting updated forecasts, I just want
26 to clarify you said that the gas price forecast

1 increased 16 percent?

2 MR. O'RILEY: A: Yes.

3 MR. LEWIS: Q: Okay, and the electricity price forecast
4 increased 11 percent.

5 MR. O'RILEY: A: Yes.

6 MR. LEWIS: Q: Okay, so the price of gas in your most
7 updated forecast is increasing at a greater rate than
8 power?

9 MR. O'RILEY: A: It did, yes.

10 MR. LEWIS: Q: Okay, so given that relationship, or I
11 guess the diverging nature of it, wouldn't it tend to
12 indicate that there are cheaper additions or
13 alternatives that the energy market is accepting than
14 natural gas fired projects? Unless of course there is
15 significant technological advances that happened at
16 that time or other cost reductions.

17 MR. O'RILEY: A: I think it's an artifact of how the
18 calculation is done.

19 **Proceeding Time 5:23 p.m. T02A**

20 The Henwood model calculates a market
21 clearing price, based on the cost of the marginal
22 source of generation required to meet the load in any
23 given time, and in not all periods is the marginal
24 generation gas-fired generation. So in certain times
25 of the year, in the spring, for example, there could
26 be coal-fired generation on the margin, or in the off-

1 peak hours. So I think that's why you don't get the
2 one-for-one relationship in the -- that's during the
3 Henwood period.

4 In the period 2013 through to the end of
5 the period where we run the combined cycle plant,
6 there's a fixed and a variable component to the
7 conversion approach and so the -- obviously the change
8 in gas prices is only applying to the variable
9 component and the fixed price is what it is. And so
10 that is constant in the two electricity price runs
11 with and without the higher gas price forecast.

12 MR. LEWIS: Q: Okay, so have you done this calculation
13 looking backwards? Or, I mean, you're working on
14 updated forecasts from updated information.

15 MR. O'RILEY: A: We are -- yes. The calculation was 16
16 -- the 11 percent was based on different runs of our
17 forecasting approach like using the 2003 EIA gas price
18 and then the 2004 gas price.

19 MR. LEWIS: Q: Right. So the most recent data we have
20 shows this divergence going on.

21 MR. O'RILEY: A: Yeah. I'm not sure I'd call it a
22 divergence, but it's just -- it's the way that gas
23 prices translate through the electricity market.

24 MR. LEWIS: Q: Sure. And they're translating higher
25 right now, basically.

26 MR. O'RILEY: A: Yeah.

1 MR. LEWIS: Q: Going forward.

2 MR. LAUCKHART: A: I'd just like to add to that piece
3 in the Henwood model that when we calculate a market
4 clearing price, we find a margin resource which is
5 generally a gas-fired resource in the West. The
6 variable costs aren't entirely gas, so if gas goes up
7 by, you know, X percent, the total cost doesn't go up
8 by X percent.

9 MR. LEWIS: Q: Right. Wouldn't that indicate that
10 there's other factors or other generations that are
11 holding the electricity price down?

12 MR. LAUCKHART: A: Well, with the same unit, for
13 example the combined cycle unit, you've got variable
14 O&M that's part of the market clearing price. So just
15 because the gas price goes up, it doesn't mean the
16 variable O&M goes up.

17 MR. LEWIS: Q: Sure, I accept that, and that's what I
18 meant by technological change. So my next question
19 is: Has there been such a drastic technological
20 change that would cause this cost reduction over the
21 2003 to 2004 period?

22 MR. O'RILEY: A: Well, we're talking about the same --
23 the same generation fleet in 2003 to 2004, so I think
24 it's -- the cause of the difference between the
25 increase in gas and the increase in power is a
26 combination of the two things that Mr. Lauckhart and

1 myself are talking about. It's the fact that not all
2 the costs of -- not all the marginal costs driving the
3 electricity price are related to gas. Some of them in
4 our long-term model are based on the fixed costs,
5 include the fixed costs of the unit as well as the
6 variable costs.

7 MR. LEWIS: Q: Okay, so --

8 MR. O'RILEY: A: In the short term, there's fixed and
9 variable costs, so --

10 MR. LEWIS: Q: Sure, fair enough. So I guess looking at
11 those facilities, everything incorporated with them,
12 we're seeing the cost of running those gas-fired
13 facilities increasing greater -- at a higher rate or a
14 faster rate than the price of power based on your
15 updated forecast.

16 MR. O'RILEY: A: Yeah.

17 MR. LEWIS: Q: Okay, thanks.

18 MR. FULTON: Mr. Chairman, that concludes the cross-
19 examinations, apart from the cross-examination by Mr.
20 Steeves, by Mr. Wallace, and by myself.

21 THE CHAIRPERSON: Thank you. We are adjourned until --
22 well -- Mr. Fulton?

23 MR. FULTON: First of all, there is a motion, I
24 understand, that's coming forward, and secondly, I
25 have a point that I need to speak to that I left
26 outstanding on the record from the transcript at 2652

1 to 2654 in respect to a confidential question I asked
2 that Mr. Weisberg expressed some concern that we were
3 seeking another definition of Tier 2. So perhaps, Mr.
4 Chairman, if this panel could stand down, we can deal
5 with those procedural matters.

6 **Proceeding Time 5:27 p.m. T3A**

7 THE CHAIRPERSON: Yes, you're excused.

8 (PANEL STOOD DOWN)

9 MR. FULTON: And if I might first of all address the
10 outstanding issue that was raised by Mr. Weisberg, and
11 at transcript 11, page 2653, lines 20 to 24, I said
12 that I would address his concerns that he had
13 expressed at transcript 2652 to 2654 in respect of the
14 confidential response to Exhibit B96. And having
15 looked at the questions that we asked, or that I
16 asked, I can see how the questions may have led to the
17 concern raised by Mr. Weisberg.

18 I can say, however, that the question was
19 merely intended to probe how B.C. Hydro defined Tier 2
20 and was attempting to reconcile that definition with
21 other statements on the record. The question itself
22 did not propose that the Commission redefine Tier 2.
23 The focus was on the tender cost on a unit capacity
24 basis for the various tender alternatives. And that
25 having been said, the questions for which the answer
26 was sought and received are probably better framed as

1 follows, and I'll put the questions on the record and
2 will add, however, that the response in Exhibit B-96
3 does not provide an alternative definition of Tier 2,
4 if that's -- and I understand that that was one of Mr.
5 Weisberg's concerns.

6 So the questions hopefully more helpfully
7 will be:

8 "Since some of the costs are not available
9 on a disaggregated basis from the CFT cost-
10 effectiveness evaluation -- for example,
11 network upgrade costs, firm gas tolls -- can
12 B.C. Hydro provide net tender costs per
13 megawatts for the various tender
14 alternatives, including network upgrade
15 costs and firm gas tolls, to confirm that
16 the Tier 2 portfolio selected has the lowest
17 net tender cost per megawatt after
18 adjustments for net upgrade costs and firm
19 gas tolls?

20 Can B.C. Hydro explain why it selected
21 the Tier 2 portfolio it did, consistent with
22 its definition of Tier 2 in the filing?"

23 And the answer at B-96 responds to that question, or
24 those questions.

25 **Proceeding Time 5:30 p.m. T4A**

26 So hopefully that will resolve the

1 difficulty that Mr. Weisberg had about further
2 definitions of Tier 2.

3 MR. WEISBERG: I confirm on the record. I nodded my head
4 at the back of the room, but in response to Mr.
5 Fulton's question that is helpful and that satisfies
6 me, his response.

7 THE CHAIRPERSON: Mr. Sanderson is going to need an
8 opportunity to respond to this, and you may wish to do
9 that in the morning, Mr. Sanderson.

10 MR. SANDERSON: Mr. Chairman, if I understood Mr. Fulton,
11 and I may well not have, I understood that it was his
12 position that the response that's already been
13 tendered in Exhibit B-96 is responsive to the question
14 that he's now asked. And if that leaves Commission
15 Staff content with that response, and Mr. Weisberg
16 content with the fact that the question was one that
17 didn't raise the concerns he'd addressed, then I don't
18 think I have anything more to say.

19 THE CHAIRPERSON: And that's satisfactory to you, Mr.
20 Weisberg?

21 MR. WEISBERG: Yes, it is.

22 THE CHAIRPERSON: Okay.

23 MR. WEISBERG: Mr. Chairman, I recognize how late in the
24 day it is. I do have a motion. Perhaps I can just
25 briefly describe the nature of the motion, and you can
26 decide if you'd like to proceed with that with

1 submissions now or tomorrow. I think it will become
2 clear that it could be dealt with tomorrow.

3 THE CHAIRPERSON: And it involves E-122 and E-123.

4 MR. WEISBERG: It does.

5 THE CHAIRPERSON: My thinking is we should hear you
6 this evening, and I expect -- well, Mr. Sanderson is
7 going to need an opportunity to respond and maybe that
8 can wait until tomorrow morning.

9 MR. WEISBERG: I'll proceed on that basis then, if you
10 wish.

11 THE CHAIRPERSON: I think we want to hear from you
12 tonight.

13 MR. WEISBERG: Okay. In the course of my submissions it
14 will, I hope, become clear why I am before you at this
15 time in the proceeding and not earlier in the
16 proceeding, with this motion. We're here making an
17 application for an order directing B.C. Hydro to
18 confidentially file for review by the Commission Panel
19 and Commission Staff, two items which are as follows:
20 One, Calpine's Island Cogeneration Project bid,
21 including the price information form that was
22 submitted in response to the VICFT. And secondly,
23 Appendix 3 of Epcor Power Development Corporation's
24 Peaker Project bid in the VICFT. I have phrased the,
25 I'll call it the draft order as I have, because I have
26 taken that language verbatim from the two letters that

6 Proceeding Time 5:34 p.m. T05A

11 For purposes of the application, I'd direct
12 the Commission to consider, in particular, the
13 following subsection of Section 71(2) of *The Utilities*
14 *Commission Act*. 71(2) says that:

20 and I'll move then to subsection (c):

26 And subsection (e):

1 "Any other factor that the Commission
2 considers relevant to the public interest."

3 We submit that the information sought in
4 this application is essential for the Commission panel
5 to determine the price of alternative projects that
6 may be included in various Tier 2 portfolios. In its
7 statement of the principal issue for this proceeding,
8 the Commission panel specifically identified Tier 2 as
9 one of three options it would consider to determine
10 the most cost-effective option to meet the capacity
11 deficiency on Vancouver Island commencing in the
12 winter of 2007/2008.

13 Green Island submits that the Commission
14 panel's statutory mandate to determine whether the --
15 whether or not the EPA is in the public interest
16 requires that it consider relevant information that is
17 available to it.

18 We submit that that information is
19 available to the Commission panel. In transcript
20 volume 2, at page 312, lines 18 to 22, the Chairman
21 stated, and this has been quoted at other times in
22 this proceeding:

23 "However, the Commission panel also notes
24 that in the absence of evidence from
25 developers, it may not be persuaded that the
26 CFT is not satisfactory evidence, that Duke

1 Point is the most cost-effective resource
2 for Vancouver Island at this time."

3 In the pre-hearing conference held on
4 December 22nd, 2004, the Chairman actively encouraged
5 me, as counsel for Green Island, to seek instructions
6 to file Green Island's confidential price information,
7 and ultimately that filing was made on January 13th.
8 For reasons known only to Calpine and Epcor, both
9 parties chose not to fully participate in this
10 proceeding. And with the close of the evidentiary
11 phase of this proceeding perhaps only hours away, it
12 is now apparent that Epcor and Calpine are unlikely to
13 seek leave to file any additional evidence. Green
14 Island had harboured some hope that that might be the
15 case, and as I suggested at the beginning of my
16 submissions, that forms the basis for us not bringing
17 this motion to you before this time, because those
18 parties' actions are not within our control and we
19 wanted to allow that opportunity at least to play out
20 and exhaust itself.

21 **Proceeding Time 5:38 p.m. T6A**

22 However, Epcor in its letter dated January
23 5th, 2005, and that is Exhibit E-122, clearly stated
24 that it would have no objection to an order, and I
25 would say to an order on the terms sought in this
26 application. And as I've indicated, I've quoted

1 verbatim from that letter.

2 As well, Calpine in its letter dated
3 January 6th, which is Exhibit E-123, clearly stated
4 that it would not object to a Commission order, again
5 on the terms that are specifically sought in this
6 application.

7 Therefore the parties whose interests are
8 directly affected by the requested order have given
9 the Commission Panel a clear, and we say unhindered
10 path to obtain their price information. All that is
11 now is required is for the Commission panel to avail
12 itself of the opportunity that the affected parties
13 have provided.

14 And as a last point in support of this
15 application, we submit that the information itself is
16 important for the determination of principal issue.
17 In argument, Green Island intends to address issues
18 which include the following: first, whether the
19 privative clause in section 17.3 of the CFT should
20 have been invoked; second, whether non-compliance per
21 section 18.17 was material; third, whether resource
22 option bias, stringent or inflexible requirements, or
23 other fairness considerations should put the CFT
24 outcome in question; and four, whether the effect of
25 minimum portfolio was 115 megawatts or 150 megawatts.

26 We submit that if the Commission panel

1 determines that even one of those arguments has
2 validity, and those arguments being tested for that
3 after they have been received and considered, then
4 fairness will require that it evaluate Green Island's
5 project in some combination with the Epcor and/or the
6 Calpine project bids in that new light. And that is
7 the only way to ensure that all possible Tier 2
8 portfolios that should have been evaluated will be
9 evaluated.

10 And in closing we say that doing so can
11 only assist the Commission panel in determining
12 whether the EPA is in fact in the public interest.

13 Those are my submissions.

14 THE CHAIRPERSON: Thank you, Mr. Weisberg. We'll return
15 to this tomorrow morning.

16 Is there anything else before we adjourn
17 this evening?

18 We are adjourned until 8:30 tomorrow
19 morning.

20 **(PROCEEDINGS ADJOURNED AT 5:41 P.M.)**

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