

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 20, 2005

PROCEEDINGS AT HEARING

BEFORE:

R. Hobbs, Chairperson

L. Boychuk, Commissioner

VOLUME 9

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

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CAARS

VANCOUVER, B.C.

January 20th, 2005

(PROCEEDINGS RESUMED AT 8:30 A.M.)

THE CHAIRPERSON: Please be seated.

One of the matters that we were going to return to this morning was the *in camera* session from yesterday, but if you have not reached an accommodation with respect to that, we will be taking a two-hour break today, so that may provide an opportunity to finish those discussions if you need it.

MR. FULTON: Thank you, Mr. Chairman. Mr. Sanderson and I have spent time this morning on it, I think we're very close in reaching an accommodation in terms of what can be released from the transcript, but we do need a little more time, and then there will be the technological aspect of redacting portions of the *in camera* transcript so that the balance can be made available to the other parties.

Proceeding Time 8:32 a.m. T2

THE CHAIRPERSON: Thank you. And you will need to make it available -- you will need to make your recommendation to the Panel available to the Panel before it's released.

MR. FULTON: Yes, Mr. Chairman, we will do that.

1 THE CHAIRPERSON: Okay. Yesterday we spent a
2 considerable amount of time with a panel that the
3 Commission Panel had said, a witness panel that the
4 Commission Panel had said that we need not hear from.
5 I had hoped to make up some time yesterday. I'm
6 expecting that we will sit until 1:15 today, taking
7 frequent breaks, and then take a two-hour break and
8 return at 3:15, and then sit as long as we can until
9 Mr. Sanderson says we're sitting too long. And then
10 we will adjourn until tomorrow morning.

11 So I still, Mr. Keough, hope to get to your
12 panel tomorrow afternoon. And I think, unless there
13 are any other preliminary matters, we can proceed with
14 this panel, and Mr. Fulton, I'll have you call -- Mr.
15 Sanderson of course will need to introduce this panel,
16 but Mr. Fulton, I will have you call the cross-
17 examiners in the order.

18 MR. SANDERSON: Mr. Chairman, perhaps before I do that, I
19 can't get at my table for the burden of all the stuff
20 on here that needs filing, so perhaps I'll start off
21 with that.

22 I think yesterday, or last thing last
23 night, you indicated that you would prefer to be filed
24 on the record, hear the submissions with respect to
25 Mr. Andrews' motion. Those were circulated last night
26 but I don't think have been filed as an exhibit. So

1 at least B.C. Hydro should be filed now as the next
2 exhibit, and then I don't know whether you want -- I
3 know we were served with a bunch of others, so I don't
4 know if you want those all to go in at the same time.

5 THE CHAIRPERSON: Do the intervenors have them available
6 or is everyone prepared to file now?

7 MR. KEOUGH: Mr. Chairman, we do, and I think we've
8 circulated them throughout the room and provided them
9 to the Commission Clerk. So I think we're ready as
10 well.

11 THE CHAIRPERSON: Okay. My suggestion then, unless this
12 is -- subject to an objection from anyone, is that you
13 give them to Mr. Fulton, Mr. Fulton will label them,
14 give them to the Hearing Officer, and then we need not
15 introduce them on the record other than on the next
16 exhibit list.

17 **Proceeding Time 8:35 a.m. T03**

18 MR. SANDERSON: Mr. Chairman, I think the rest of my
19 filings this morning will make more sense if I do it
20 with this panel, so on second thought, I will ask Mr.
21 Bemister to swear the panel.

22 **B.C. HYDRO PANEL 4 - COST EFFECTIVENESS**

23 **MARY HEMMINGSEN, Resumed:**

24 **FRANK LIN, Affirmed:**

25 **BILL PETERSON, Affirmed:**

26 **KEN TIEDEMANN, Affirmed:**

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

2 MR. SANDERSON: Q: Mr. Chairman, this panel is chaired
3 by Ms. Hemmingsen. She's obviously previously been
4 sworn, and so I won't take any time with you, Ms.
5 Hemmingsen. But joining her, this time, on her right,
6 are Mr. Ken Farkingson -- sorry, gee. Sorry. Mr.
7 Tiedemann, Mr. Ken Tiedemann. Believe it or not,
8 Tiedemann looked like Farkingson with these glasses on
9 at that distance, but -- I do apologize for that. And
10 on her left, Mr. Bill Peterson, her far left, Mr.
11 Frank Lin.

12 Let me start with you, Mr. Peterson. I
13 understand you to be manager of program and contract
14 design at B.C. Hydro, is that correct?

15 MR. PETERSON: A: Yes, I am.

16 MR. SANDERSON: Q: And you've submitted pre-filed
17 testimony that appears at tab 4 of Exhibit B-35?

18 MR. PETERSON: A: Yes.

19 MR. SANDERSON: Q: If I could ask you to turn there,
20 you indicate there you were technical advisor to the
21 project management office and that your background in
22 Hydro is in the area of energy supply?

23 MR. PETERSON: A: Yes it is.

24 MR. SANDERSON: Q: Could you briefly outline the nature
25 of that work?

26 MR. PETERSON: A: Since joining B.C. Hydro about 15

1 MR. SANDERSON: Q: Thank you, Mr. Peterson. With that
2 caveat, then, can you adopt the evidence that appears
3 under your name at tab 4 of Exhibit B-35 as your
4 evidence in this proceeding?

5 MR. PETERSON: A: Yes.

6 MR. SANDERSON: Q: Thank you, Mr. Peterson.

7 Mr. Lin, I understand you to be the supply
8 investment specialist in the program contract design
9 group at Hydro, is that right?

10 MR. LIN: A: Yes, I am.

11 MR. SANDERSON: Q: And have you submitted pre-filed
12 testimony that appears at tab 4?

13 MR. LIN: A: Yes.

14 MR. SANDERSON: Q: In a general way, can you please
15 outline the nature of your work in the area of energy
16 supply?

17 MR. LIN: A: I primarily provide financial and
18 analytical support for the energy purchase agreements.
19 More specifically, leading the structuring and
20 analyzing the financial aspects of these agreements.

21 MR. SANDERSON: Q: Thank you. Do you have any
22 corrections or amendments you'd like to make to your
23 pre-filed testimony?

24 MR. LIN: A: None other than what Ms. Hemmingsen said
25 on Panel 2 with respect to the IR response allocation.

26 MR. SANDERSON: Q: With that caveat, do you then adopt

1 your -- as your evidence in the proceeding, the CFT
2 report, and your direct testimony in Exhibit B-35?
3 MR. LIN: A: Yes.
4 MR. SANDERSON: Q: Thank you, Mr. Lin.
5 Mr. Tiedemann, I understand you to be
6 manager of market forecasts at Hydro?
7 MR. TIEDEMANN: A: Yes, that's correct.
8 MR. SANDERSON: Q: And you similarly have pre-filed
9 testimony at tab 4 of Exhibit B-35?
10 MR. TIEDEMANN: A: Yes, that's also correct.
11 MR. SANDERSON: Q: Appearing in your pre-filed
12 testimony is a summary of your experience, but have
13 you actually prepared a CV?
14 MR. TIEDEMANN: A: Yes, I have.
15 MR. SANDERSON: Q: Do you have that in front of you?
16 MR. TIEDEMANN: A: A number of copies were made. I
17 believe that Mr. Kleefeld has them.
18 MR. SANDERSON: Mr. Chairman, we admit -- we omitted that
19 from the filing, so I wonder if I might file that as
20 perhaps Exhibit B-35-4A, or something like that.
21 THE CHAIRMAN: Yes.
22 THE HEARING OFFICER: B-35A.
23 (CURRICULUM VITAE OF KENNETH H. TIEDEMANN, MARKED AS
24 EXHIBIT B-35A)
25 MR. SANDERSON: Q: Mr. Bemister advises me 35A would
26 work better, so, Exhibit 35A I think that should be

1 called.

2 Now, your testimony indicates, Mr.
3 Tiedemann, that you're responsible for preparing B.C.
4 Hydro's load forecast, including the load forecast for
5 Vancouver Island?

6 MR. TIEDEMANN: A: Yes, that's correct.

7 MR. SANDERSON: Q: And I understand that there is a
8 more recent load forecast than has been filed in this
9 proceeding. The most recently filed in this
10 proceeding is the October forecast. Am I correct in
11 thinking there's a later forecast?

12 MR. TIEDEMANN: A: Yes, we prepared an update in
13 December to reflect the decision of the Commission
14 with respect to the rate filing.

15 MR. SANDERSON: Q: Yes. And can I just take you for a
16 minute to Exhibit B-1, which is the CFT report. And
17 if you look to page 14 --

18 THE CHAIRMAN: Did you say page 14, Mr. Sanderson?

19 MR. SANDERSON: Page 14, lines 22 to 24.

20 MR. TIEDEMANN: A: Would you please repeat that?

21 MR. SANDERSON: Q: Yes, page 14, lines 22 to 24.

22 MR. TIEDEMANN: A: Yes, mm-hmm.

23 MR. SANDERSON: Q: You'll see the sentence:

24 "It is noted this forecast will need to be
25 revised upward to reflect the actual rate
26 increase approved by the Commission, thereby

1 be able to identify and file them. Mr. Tiedemann will
2 be able to indicate whether any specific ones to
3 particular intervenors during cross-examination he
4 thinks are likely impacted by anything in there. But
5 the ones that we've been able to identify we will be
6 filing an update on.

7 MR. SANDERSON: Q: Mr. Tiedemann, do you have any
8 other corrections or -- I shouldn't say "other". Do
9 you have any corrections or amendments to your
10 prefiled testimony?

11 MR. TIEDEMANN: A: Yes, I would like to make amendments
12 to B.C. Hydro's response to GSX CCC IR 1.22.3.2 which
13 can be found in Exhibit B-12. So just to repeat then,
14 that's Exhibit B-12.

15 The response indicates that the January 4th,
16 2005 peak that we recently experienced on Vancouver
17 Island was 2250 megawatts. That figure was
18 preliminary and has subsequently been revised to 2235
19 megawatts. To explain this, and put it into context,
20 I prepared a table of the preliminary peaks for the
21 first 15 days of January 2005 and am prepared to speak
22 to that table.

23 MR. SANDERSON: Q: Okay. Now, I understand Mr.
24 Tiedemann that you've, along with that table, provided
25 a sort of descriptive narrative that explains the
26 table?

1 MR. TIEDEMANN: A: That's correct.

2 MR. SANDERSON: Mr. Chairman, I think that's a useful
3 thing to file. It's a 2-page document that leads into
4 the table and explains how it works.

5 THE HEARING OFFICER: B-68.

6 (2-PAGE "VANCOUVER ISLAND DAILY PEAK - JANUARY 1, 2005
7 THROUGH JANUARY 15, 2005", MARKED EXHIBIT B-68)

8 MR. SANDERSON: Q: Give us a minute, Mr. Tiedemann. I
9 think it would be useful for people to have this in
10 front of them.

11 **Proceeding Time 8:45 a.m. T7**

12 Mr. Tiedemann, perhaps you could walk us
13 through the document that I've just distributed.

14 MR. TIEDEMANN: A: Okay, this is a table of preliminary
15 estimates of the Vancouver Island peak for the first
16 15 days of January. So in the second column, we have
17 the daily temperature, daily average temperature for
18 that particular day. So that's the average of the
19 high and the low temperatures for that day. In the
20 third column we have the third hour of the recorded
21 peak for that day.

22 MR. SANDERSON: Q: Mr. Tiedemann, just to orient
23 people, you're on the second page of the exhibit.

24 MR. TIEDEMANN: A: Yes, on the table.

25 MR. SANDERSON: Q: Thank you.

26 MR. TIEDEMANN: A: That's correct.

1 MR. SANDERSON: Q: Yes.

2 MR. TIEDEMANN: A: So please turn to the table if you
3 haven't done so.

4 MR. SANDERSON: Q: Okay.

5 MR. SANDERSON: Q: So I'll just repeat that. So the
6 second column is the daily average temperature. So
7 that's the average of the high and the low for the
8 day. The third column provides the confirmed hour of
9 the recorded peak. So the peak occurred in the hour
10 ending at that time. The third column has the
11 confirmed peak, excluding the Gulf Island peak load.
12 It's metered separately and we get those results with
13 a bit of a lag. So that column there has the
14 Vancouver Island load minus the Gulf Island load.

15 Last year we experienced a peak on the Gulf
16 Islands of approximately 58 megawatts, which we
17 believe will be in the vicinity of 60 megawatts for
18 this year. So what we've done to estimate the total
19 Vancouver Island peak load is add together the
20 information in the fourth column, plus 60 megawatts.
21 So that provides our estimate of the total Vancouver
22 Island peak load.

23 Then in the final column we've weather
24 adjusted that information based on an assumed increase
25 in load of 40 megawatts per degree Celsius. And
26 that's based on our weather normalization for last

1 winter.

2 So I have two caveats that I need to
3 address. The first is that the Gulf Island load is
4 estimated, but it's likely to be within 2 or 3
5 megawatts of the 60 megawatts that we have there. The
6 second caveat is that our weather normalization
7 procedure is non-linear, so away from the design
8 temperature there can be a change greater or less than
9 40 megawatts but it's approximately correct.

10 So I think there are two key messages from
11 this information that I'd like to point out. First of
12 all, if one looks at the weather adjusted peaks we
13 have exceeded the forecast from the October 2004
14 forecast for this fiscal year's peak on eight days
15 already in January. The second is that we've exceeded
16 the forecast peak from that forecast document for 2008
17 already this January. And third, as you can see, the
18 pattern is such that there's not merely a high peak on
19 a given day. There's an extended period or an
20 extended set of days of relatively high peaks.

21 So I believe that explains what I wanted to
22 say.

23 MR. SANDERSON: Q: Let me just take you to a couple of
24 specific points on there, Mr. Tiedemann, that perhaps
25 are helpful to the Commission. On January 6th I see
26 there's a footnote attached to the weather adjusted

1 peak for January 6. Can you elaborate a little bit on
2 that?

3 MR. TIEDEMANN: A: Okay. On January 6 there was a
4 major drop in the load of one large customer on the
5 Island due to a mechanical failure. It's impossible
6 for us to accurately estimate the impact of that on
7 the load, but if you look at the load profile for that
8 customer, their load dropped in the vicinity of 200
9 megawatts. We haven't had the opportunity to do a
10 detailed comparison of that customer's day with an
11 average profile, but we're confident that its load
12 dropped by at least 100 megawatts.

13 So in order to compare January 6 with the
14 other days, one should add at least 100 megawatts to
15 that total, and that smoothes out the profile over the
16 15 days

17 **Proceeding Time 8:50 a.m. T08**

18 MR. SANDERSON: Q: Thank you, Mr. Tiedemann. I think
19 that covers that exhibit.

20 THE CHAIRPERSON: I have one question, Mr. Sanderson.

21 MR. SANDERSON: Of course.

22 THE CHAIRPERSON: Is the second note the change that
23 you've identified with respect to 1.22.3.2?

24 MR. TIEDEMANN: A: I'm sorry, I don't understand your
25 question.

26 THE CHAIRPERSON: Well, you took us to a change to GSX

1 CCC 1.22.3.2.

2 MR. TIEDEMANN: A: That's right, yeah.

3 THE CHAIRPERSON: And I missed -- you were a step ahead
4 of me. I missed your change and really what I'm
5 asking you for is the change that you've made to GSX
6 1.22.3.2, is it covered by the note to this table?

7 MR. TIEDEMANN: A: That's correct.

8 THE CHAIRPERSON: Thank you.

9 MR. SANDERSON: Q: Mr. Tiedemann, with those
10 elaborations, are you able to adopt the testimony at
11 tab 4 as your evidence in this proceeding?

12 MR. TIEDEMANN: A: I would also like to adopt the by now
13 standard caveat from Ms. Hemmingsen, but other than
14 that, yes.

15 MR. SANDERSON: Q: Thank you. Ms. Hemmingsen, I don't
16 have any direct questions for you other than to ask
17 you whether, to your knowledge, there's any other
18 corrections or amendments you wish to make to the
19 evidence you've previously spoken to as part of Panel
20 2?

21 MS. HEMMINGSEN: A: None other than the caveats that I
22 outlined in Panel 2.

23 MR. SANDERSON: Q: Thank you.

24 Mr. Chairman, as I say, I do know that
25 there are some consequential amendments and
26 clarifications to a couple of IRs that I'm aware of.

1 There may be more. I hope to have those later in the
2 morning, but as I say, I hope people bear with me. I
3 think it's just changing the numbers, not the
4 direction of any of them, I think. So.

5 And that's all I have for this panel.

6 MR. FULTON: Going to Joint Industry Electricity Steering
7 Committee.

8 MR. WALLACE: Mr. Chairman, I intend to refer to two
9 pieces of material during my cross-examination. It
10 might be easiest if they are put forward first. I
11 have provided them to Mr. Bemister.

12 THE CHAIRPERSON: Thank you.

13 MR. WALLACE: Mr. Chairman, if we could mark the Summary
14 Table Cost Effectiveness Analysis, Appendix J to CFT
15 Report C19-20, and I did provide a copy to Mr.
16 Sanderson in advance.

17 ("SUMMARY TABLE - COST EFFECTIVENESS ANALYSIS -
18 APPENDIX J TO CFT REPORT (EX. B1)", MARKED EXHIBIT
19 C19-20)

20 MR. WALLACE: And the other is an excerpt from the 2004
21 Integrated Electricity Plan, and if that could be
22 marked C19-21.

23 (EXCERPT FROM THE 2004 INTEGRATED ELECTRICITY PLAN
24 "SUMMARY OF AVAILABLE RESOURCE OPTIONS", MARKED AS
25 EXHIBIT C19-21)

26 **CROSS-EXAMINATION BY MR. WALLACE:**

1 MR. WALLACE: Q: And Mr. Chairman, panel, I will be
2 referring, I think pretty well exclusively with the
3 exception of those two exhibits to Appendix J to
4 Exhibit B-1, the cost effectiveness analysis.

5 I'd like to start by looking at the cost
6 effectiveness analysis and attachment A to it, the
7 result summary and there you have an adjustment for
8 the two -- cable coming in service in each of your
9 three scenarios. And I note that you refer to 2009
10 cable in-service, and I'm wondering does 2009 mean it
11 comes in-service in October 2009 or in fiscal 2009?

12 **Proceeding Time 8:55 a.m. T9**

13 MS. HEMMINGSEN: A: It refers to in-service in October
14 2008, which would be fiscal 2009.

15 MR. WALLACE: Q: Thank you very much.

16 Then I would like to turn to the table I
17 provided you that is now C19-20, and this is an
18 attempt to summarize in a way that I hope clarifies
19 things, at least for me, the cost effectiveness
20 analysis that is done. And if I can just briefly go
21 through it, you have Tier 1. That's approximately 260
22 megawatts of generation. The nature of the energy --
23 the nature of the option is capacity and energy. And
24 the energy is 1800 gigawatt hours. Is that correct so
25 far?

26 MS. HEMMINGSEN: A: Yes.

1 MR. WALLACE: Q: And I then have a column for backfill,
2 which as I understand it is the attempt to equalize
3 the -- or adjust the energy over the three options so
4 that it does not -- I guess the different durations or
5 the different natures of the facilities don't distort
6 the results too much, is that correct?

7 MS. HEMMINGSEN: A: That's the general approach we
8 took, yes.

9 MR. WALLACE: Q: Okay. If you want to make it more
10 articulate, I quite accept that also. Now, you'll
11 accept my description for the moment.

12 So there's no backfill then associated with
13 Tier 1.

14 MS. HEMMINGSEN: A: No.

15 MR. WALLACE: Q: And then, so the energy -- or the
16 basis for the energy margin then is the 1800 gigawatt
17 hours that would be generated by the Tier 1 facility?

18 MS. HEMMINGSEN: A: That's correct.

19 MR. WALLACE: Q: And it's evaluated, I take it, at the
20 EIA forecast minus the EPA costs?

21 MS. HEMMINGSEN: A: It's evaluated using the two
22 scenarios that we used in the QEM. So the 25 percent
23 return scenario and the 100 percent return scenario --

24 MR. WALLACE: Q: Okay, so the --

25 MS. HEMMINGSEN: A: -- in the analysis. And then
26 there's a stress test that further evaluates it under

1 a high gas and low electricity price scenario.

2 MR. WALLACE: Q: Okay, but when we look at Attachment
3 A, we're basically looking at the full and partial
4 minus the EPA?

5 MS. HEMMINGSEN: A: Well, Attachment A includes the
6 high gas/low electricity price forecast as well. It's
7 the third table there.

8 MR. WALLACE: Q: Okay, thank you, I'm sorry. And there
9 is reference in the text of Appendix J to the use of a
10 EIA forecast. And I'm just wondering, when that is
11 mentioned in that sense, is that really EIA gas
12 adjusted as you did in the QEM model?

13 MS. HEMMINGSEN: A: The EIA gave forecast that used is
14 the same as used in the QEM.

15 MR. WALLACE: Q: Okay.

16 MS. HEMMINGSEN: A: As well as the electricity
17 forecast.

18 MR. WALLACE: Q: But if you look at page 2 of Appendix
19 J, there's a statement:

20 "Various scenarios were performed based on
21 (1) different load requirements on Vancouver
22 Island; (2) different in-service dates for
23 the 230 kV AC cable. In addition to the EIA
24 electricity price forecast described
25 earlier, a high gas price forecast scenario
26 without a corresponding high electricity

1 price was also developed and analyzed."
2 And I'm wondering when you refer to an EIA electricity
3 price forecast, are you referring to electricity price
4 forecast by EIA, or the gas forecast adjusted by it?
5 MS. HEMMINGSEN: A: The same basis that we use the
6 electricity price forecast in the QEM. It did not
7 change. So all we did is vary the gas input.
8 MR. WALLACE: Q: Okay. And we would agree that that
9 isn't actually an EIA electricity price forecast.
10 It's a forecast made by Hydro based on the gas price.
11 MS. HEMMINGSEN: A: Correct.
12 MR. WALLACE: Q: Thank you.
13 Can you -- well, I'll then go through the
14 next --
15 **Proceeding Time 9:00 a.m. T10**
16 MS. HEMMINGSEN: A: Sorry, just one clarification on
17 that.
18 MR. WALLACE: Q: Sure.
19 MS. HEMMINGSEN: A: The electricity price forecast that
20 was used there is the same forecast that was used
21 under the QEM models. The input cost of gas changed,
22 so you had the lower electricity price against a
23 higher gas price. That's how that scenario was
24 constructed.
25 MR. WALLACE: Q: Now, that's the stress test, isn't it?
26 Yes. Okay, with Tier 2, we have, as I understand it,

1 and again under the facilities, and if the megawatts
2 are off by a megawatt or two, I'm not too concerned
3 about that. But I want to make sure I have the nature
4 right, and the basic levels; 75 megawatts of biomass,
5 47 megawatt gas peaker, and 140 megawatts of DSM?
6 MS. HEMMINGSEN: A: Mr. Lin can confirm that.
7 MR. LIN: A: This is correct.
8 MR. WALLACE: Q: Okay. And in terms of nature of
9 output, the biomass provides capacity and energy,
10 whereas the peaker and the DSM provide capacity only?
11 MR. PETERSON: A: That's correct.
12 MR. WALLACE: Q: And the energy you've attributed to
13 the biomass is 600 gigawatt hours?
14 MR. PETERSON: A: That's correct.
15 MR. WALLACE: Q: Okay. And accordingly, the backfill
16 is about -- or is 1200 gigawatt hours.
17 MR. PETERSON: A: That's correct.
18 MR. WALLACE: Q: And the backfill starts in 2010?
19 MR. LIN: A: That would be fiscal year 2010.
20 MR. WALLACE: Q: Thank you. And that is because that
21 is when B.C. Hydro has determined that it will need
22 additional energy?
23 MS. HEMMINGSEN: A: Based on B.C. Hydro's current
24 supply/demand balance, if there is no addition with
25 the Vancouver Island project, we require energy in
26 that fiscal year.

1 MR. WALLACE: Q: Okay, thank you. And the basis for
2 the energy margin calculation, as I understand it, for
3 the 600 gigawatt hours that's attributable to the
4 biomass would be your EIA less the costs of the
5 biomass, as estimated by Hydro?

6 MR. PETERSON: A: That's correct, except it's just less
7 the variable costs.

8 MR. WALLACE: Q: Okay, thank you. And with respect to
9 the peakers, the 1200 backfill is based on the same
10 EIA price less the mainland CCGT costs?

11 MR. LIN: A: Could you please repeat that question one
12 more time.

13 MR. WALLACE: Q: My understanding is that for the
14 energy -- the value of the energy margin on the 1200
15 backfill, it's calculated using the same electricity
16 price forecasts we've been talking about, less the
17 costs of a mainland CCGT.

18 MR. LIN: A: Essentially, it's -- what we're taking is
19 the value of the energy contribution from each
20 outcome, which is about 1800 gigawatt hours a year,
21 across all three outcomes. And we're assigning a
22 value to that energy using the EIA drive price
23 forecast.

24 MR. WALLACE: Q: Right. And I understand that, but
25 that's the value of the energy. To get to the margin,
26 you have to deduct a cost. And I understand that for

1 the backfill cost you used a mainland CCGT, is that
2 correct?

3 MR. LIN: A: No --

4 MS. HEMMINGSEN: A: That's not correct.

5 MR. LIN: A: -- yeah. The price for the backfill, or
6 the cost of the backfill, was determined using the
7 levelized cost of the Tier 1 project. But then it was
8 assumed to be coming from mainland generation that was
9 not gas-fired.

10 MR. WALLACE: Q: Sorry. You used the levelized cost
11 based on gas-fired --

12 MR. LIN: A: Yes.

13 MR. WALLACE: Q: -- Tier 1 --

14 MR. LIN: A: Yes.

15 MR. WALLACE: Q: -- and then -- but you assumed it came
16 from the mainland that wasn't gas-fired. I --

17 MS. HEMMINGSEN: A: That's right, because we have a
18 series of representative prices that are in the same
19 range as was bid into the CFT for Vancouver Island.
20 So what we did is, we said, "That's one recent binding
21 price that we've received, and we have some other
22 binding prices from past calls that are a similar
23 product," and they were in the same range of costs,
24 and that's what we used.

25 MR. WALLACE: Q: Okay. So -- sorry. I apologize if
26 I'm slow here, but which did you use, the levelized

1 costs of the EPA or the Mainland costs of other
2 energy?

3 **Proceeding Time 9:05 a.m. T11**

4 MS. HEMMINGSEN: A: The levelized cost of the EPA for
5 Vancouver Island minus the tolls, the gas tolls on
6 Vancouver Island, was the same price as we've seen in
7 other calls that offer the same product. So the two
8 were equivalent. And on that basis, we established
9 that it was not a gas-fired unit on the Mainland.
10 It's a product. It's a firm energy product that has
11 capacity.

12 MR. WALLACE: Q: Okay.

13 MS. HEMMINGSEN: A: And it was priced by reference to
14 recent calls.

15 MR. WALLACE: Q: Okay. And what -- okay, if I've got
16 it right now then, I think you're saying you did use
17 the costs, the levelized costs from the EPA, which you
18 tested as being the same as other bids you have got on
19 firm -- recent firm calls.

20 MS. HEMMINGSEN: A: Correct.

21 MR. WALLACE: Q: Okay. And what was that number then?

22 MS. HEMMINGSEN: A: Well --

23 MR. LIN: A: The number that we used was about \$64.00
24 per megawatt hour in 2006 dollars.

25 MR. WALLACE: Q: 2006. Okay, and what recent firm
26 energy calls have you had?

1 MS. HEMMINGSEN: A: Under the customer base generation
2 we received a number of firm bids that were in that
3 range.

4 MR. WALLACE: Q: And did you --

5 MS. HEMMINGSEN: A: And under the past green energy
6 call, we received a number of firm bids that were also
7 in that range.

8 MR. WALLACE: Q: So essentially we have the energy
9 then, if I get it correct, for the 1800 gigawatt hours
10 for Tier 1, clearly based on the EPA; for Tier 2,
11 based on the -- for 600 megawatts and the biomass, for
12 1200 megawatts based on the EPA, which you say is
13 confirmed by the two other calls.

14 MS. HEMMINGSEN: A: Correct.

15 MR. WALLACE: Q: Okay, and for the no award, 1800
16 gigawatt hours, again based on the EPA.

17 MS. HEMMINGSEN: A: Confirmed by prior calls.

18 MR. WALLACE: Q: Confirmed by prior calls. So not
19 surprisingly then, I guess the energy margin should be
20 pretty well the same throughout the three?

21 MR. PETERSON: Q: Throughout the three outcomes you're
22 talking about?

23 MR. WALLACE: Q: Yes.

24 MR. PETERSON: A: No.

25 MR. WALLACE: Q: Can you -- actually I've got a column
26 there that's blank for margin size. Can you tell me

1 what the quantity of the margin for each of the three
2 options was?

3 MS. HEMMINGSEN: A: I just have to check if part of
4 this is confidential. I know we provided an IR that
5 summarized some of the NVP inputs to -- and outputs to
6 the cost effectiveness study. But I'm not sure that
7 we released the specific margins. And since it
8 relates to unsuccessful bidder information, I just
9 want to check that.

10 MR. SANDERSON: I guess my question, the screen that we
11 applied in determining confidentiality was whether or
12 not disclosure of the number would disclose the value
13 of unsuccessful bids. And I'm unclear, frankly, as to
14 whether or not filing in Mr. Wallace's margin-size
15 column would offend that principal or not.

16 MR. PETERSON: A: Yeah, okay, we'll release the
17 numbers.

18 MR. SANDERSON: Good.

19 MR. WALLACE: Q: Thank you. Are you able to do that
20 now or --

21 MR. PETERSON: A: Yeah, I can give you the numbers.
22 For Tier 1, the energy margin was approximately 172
23 million. One seven two. For Tier 2 the energy margin
24 was approximately 315 million, three one five. And in
25 the no award case, the energy margin is essentially
26 zero.

1 **Proceeding Time 9:10 a.m. T12**

2 MR. WALLACE: Q: Okay, can you explain the third one in
3 particular to me?

4 MS. HEMMINGSEN: A: Well, because the cost of Mainland
5 resources are higher than the market prices.

6 MR. PETERSON: A: I'm sorry, maybe to help clarify.
7 These numbers I gave you are coming from the
8 quantitative evaluation methodology.

9 MR. WALLACE: Q: Yeah.

10 MR. PETERSON: A: And of course, we didn't have a no
11 award scenario in the QEM.

12 MR. WALLACE: Q: Right. But my understanding of Tier 1
13 is that it's 1,800 gigawatt hours priced at the same
14 price as used in all three scenarios, but using your
15 pricing, minus the EPA, and I thought no award was
16 1,800 --

17 MR. LIN: A: That's not quite correct.

18 MR. WALLACE: Q: -- using the same pricing, minus the
19 EPA, which was the same as the Mainland cost.

20 MR. LIN: A: Okay, can I take you back to your first
21 statement? About the Tier 1. The energy margin is
22 essentially the energy value less the variable costs.

23 MR. WALLACE: Q: Yes.

24 MR. PETERSON: A: Not the full EPA costs.

25 MR. WALLACE: Q: Okay.

26 MR. LIN: A: So it's the energy value per the

1 electricity price forecast, essentially, less the gas
2 costs. And any variable O&M costs. This does not
3 include the fixed charges.

4 MR. WALLACE: Q: Right.

5 MR. PETERSON: A: Okay?

6 MR. WALLACE: Q: I accept that.

7 MR. PETERSON: A: Okay.

8 MR. WALLACE: Q: But I would have thought you would be
9 treating the no award similarly.

10 MR. PETERSON: A: I don't think we actually computed
11 the energy margin in the cost effective analysis
12 separately for the no award case. We may have to
13 calculate that afterwards, if --

14 MR. LIN: A: Just to clarify, in the no award scenario,
15 the energy margin may not be necessarily equal to the
16 Tier 1 energy margin, because Tier 1 is assumed to be
17 a dispatchable plant. In the no award, we assume it's
18 a must-run 1800. So subject to confirmation, that may
19 or may not be true. So just to clarify that.

20 MR. WALLACE: Q: Why would you make a different
21 assumption when you're backfilling on that?

22 MS. HEMMINGSEN: A: Because we didn't want to backfill
23 with the gas-fired unit, because we've been criticized
24 for doing that, and other resources don't have the
25 same dispatchability, so they tend to be fixed-price,
26 fixed-volume resources. That's what we've got from

1 our past calls.

2 So with gas-fired resources, you carry the
3 risk of the gas price but you also carry the benefit
4 of dispatchability.

5 MR. WALLACE: Q: Yes, but if you're -- the only way you
6 moved away from being a gas turbine on the Lower
7 Mainland was that you said "We use the gas costs," as
8 I understand it, and then confirmed them against your
9 calls. So if you're going to do that, surely you've
10 taken everything from the CCGT anyway, why wouldn't
11 you take --

12 MS. HEMMINGSEN: A: No, I don't think we did. We said
13 that it's a similar product, it offers a similar firm
14 energy and capacity, and the price of that is \$64, as
15 Mr. Peterson explained. And the way that comes to us,
16 if it's non-gas-fired, is as a fixed price, fixed
17 volume resource.

18 MR. WALLACE: Q: Okay. If you used -- if you decided
19 the alternative then was a Mainland CCGT, as I thought
20 I understood you did in the material, would it be fair
21 to say the margin would be 172 million then?

22 MR. PETERSON: A: Not exactly the same, because first
23 of all there is losses to be considered, and the
24 backfill of the no award starts in fiscal 2010, and
25 not 2008. So there are a couple of years of
26 difference there. So --

1 MR. WALLACE: Q: Okay. Do you know what it would be,
2 if it were a CCGT?

3 MS. HEMMINGSEN: A: No, we didn't run that scenario.

4 MR. WALLACE: Q: Can you calculate that? And provide
5 that?

6 **Proceeding Time 9:15 a.m. T13**

7 MR. SANDERSON: I guess I'd like to reserve on that. I'd
8 like to talk to this panel about what's involved in
9 running new scenarios through the cost-effectiveness
10 study. I frankly don't know how onerous that is. It
11 strikes me it's not going to be a useful exercise
12 unless it can get done today, and I'm not sure -- or
13 at least by tomorrow, and I'm not sure whether that's
14 possible or not. I'll check at the break.

15 MR. WALLACE: Mr. Chairman, I would like -- very much
16 like to have this information, because here is margin
17 being attributed to two plants, no margin, apparently
18 a backfill, the differences between these three
19 scenarios is far smaller than the 170 million,
20 approximately, we're talking about here. And
21 accordingly, this could be absolutely vital to assume
22 it's not a CCGT, because we get criticized for doing
23 that. If the CCG is the cheapest by 170 million
24 dollars, then surely the sensitivity analysis, got to
25 look at it, and we have to have that information.

26 THE CHAIRMAN: I'm sympathetic, Mr. Sanderson. If you

1 can return to this after the break and tell me how
2 much time it might take, that would be useful.

3 MR. WALLACE: Okay, and Mr. Chairman, then, I would like
4 to simply reserve my right to follow up on any cross-
5 examination that might come out of that response.

6 THE CHAIRMAN: I will -- I'm nodding -- which doesn't, as
7 Mr. Fulton reminds me, doesn't work on the record.

8 I'll accept your reservation but I -- in
9 doing so, I'm not ruling on whether or not you'll have
10 an opportunity to return to it.

11 MR. WALLACE: Thank you, Mr. Chairman.

12 MR. SANDERSON: Mr. Chairman, I have reserved, I hope,
13 the right to make submissions once I've consulted with
14 this panel. I mean, it -- I don't have any difficulty
15 with Mr. Wallace's reservation if we can produce it,
16 but I've still not addressed that question, and will
17 after the break.

18 THE CHAIRMAN: Right.

19 MR. WALLACE: Q: Well, then, just in case we don't get
20 a better number, the 172 million -- if it was a
21 mainland CCGT, you mentioned would have to be adjusted
22 for losses?

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

24 MR. WALLACE: Q: And that would be, I think you say in
25 the information, 4.8 percent?

26 MR. LIN: A: That's correct.

1 MR. WALLACE: Q: Is there anything else that you're
2 aware of that would have to be adjusted for?

3 MR. LIN: A: As I said, there is a difference in a
4 matter of two years, a difference in terms of the
5 backfilling. So that may have an impact on the energy
6 margin as well.

7 MR. WALLACE: Q: So that could be a total of 3,600
8 gigawatt hours. From 2008 to 2010.

9 MR. LIN: A: No, that depends on the dispatch of Tier 1
10 for those two years.

11 MR. WALLACE: Q: Okay.

12 MR. LIN: A: Exactly what number, I don't know.

13 MR. WALLACE: Q: And it would also depend on the
14 profitability for those two years.

15 MR. LIN: A: That's correct.

16 MR. WALLACE: Q: Okay. And the 172 million is a margin
17 -- the net present value of a margin accrued over 25
18 years?

19 MR. PETERSON: A: That's correct.

20 MR. WALLACE: Q: Thank you.

21 You did mention that you went back to the
22 customer base generation and the green energy call.
23 What was the largest capacity provided -- bid in under
24 either of those calls?

25 MS. HEMMINGSEN: A: I don't remember off the top of my
26 head, I think that produced about 300 gigawatt hours

1 of energy out of that call, but there was also some
2 reference pricing in the last green call as well.
3 There's a couple of larger projects.

4 MR. WALLACE: Q: Okay, if you could just go back when
5 you get a chance and have a look and put on the record
6 the capacity of the largest item bid into those calls?

7 MS. HEMMINGSEN: A: Sure.

8 **Information Request**

9 MR. WALLACE: Q: Thank you.

10 THE CHAIRMAN: Mr. Wallace, if you're moving on to
11 another area, I would like to ask a few questions.

12 MR. WALLACE: Yes, I am. By all means, Mr. Chairman.

13 THE CHAIRMAN: Thank you.

14 This is, unfortunately, Mr. Wallace, going
15 to deal with some confidential information, so it may
16 not be very helpful to you, but I would like the panel
17 to turn to BCUC 1.14.2.

18 Do you have it?

19 **Proceeding Time 9:20 a.m. T14**

20 MS. HEMMINGSEN: A: We do.

21 THE CHAIRPERSON: Can you derive the energy margins from
22 the numbers that are shown on those tables?

23 MR. LIN: A: Mr. Chairman, I assume you're looking at
24 1.14.2.3, page 5?

25 THE CHAIRPERSON: I'm looking at page 5, that's correct.
26 I don't see -- I've got 1.14.2. I don't have .3 but I

1 have page 5 -- oh, I'm sorry, you're right. It's
2 Table IR 1.14.2.3. You're correct.

3 MR. LIN: A: Yeah, I think we can. It may take a bit
4 of time, but I think we can produce the energy margin
5 based on these numbers.

6 THE CHAIRPERSON: That would be helpful for me.

7 MR. LIN: A: However, with one caveat. This is a set
8 of numbers for one scenario, and that's for the
9 cabling service of fiscal 2010.

10 THE CHAIRPERSON: Right. I think that's -- rather than
11 providing the scenario that generates the margins that
12 you've just given to Mr. Wallace -- if you're able to
13 use the scenario that leads to the energy margin that
14 you've just given Mr. Wallace, that would be better.
15 But in the absence of that, if you use the numbers on
16 Table IR 1.14.2.3 to get me to the energy margin, that
17 would be a useful and -- and I think I'm going to need
18 that before I make a ruling with respect to the
19 outstanding issue here that Mr. Wallace raises.

20 May I ask -- I want to make sure I
21 understand this. If I look at the no award scenario
22 on that page, have you told Mr. Wallace that for the
23 purposes of calculating the cost of Mainland
24 generation you're using the \$64.00 a megawatt hour
25 number? And for the purposes of the value of energy,
26 you're using the outcome from the QEM model.

1 MS. HEMMINGSEN: A: We're using the energy value from
2 the QEM model.

3 THE CHAIRPERSON: Right, and we know how you derive that
4 number. That's very much in evidence. And so that
5 suggests for the same amount of energy, you're using
6 one method to get to the cost and a different method
7 to get to the value, and your evidence is that you
8 need to do that because you've been criticized in the
9 past for using a different number for backfilling.

10 MS. HEMMINGSEN: A: For assuming that the Mainland
11 generation resource is a CCGT. So we've changed that
12 assumption going forward and represented a more
13 blended product based on what we've acquired in the
14 past.

15 THE CHAIRPERSON: So you have a value for that energy and
16 you have a cost for that same energy. They're
17 different. And you get to the value and the cost
18 differently. And when you give me the calculation of
19 the energy margin, presumably you're going to be using
20 at least those two numbers.

21 MS. HEMMINGSEN: A: Yeah, the problem is that as Mr.
22 Peterson has stated for the units that have a fixed
23 and a variable pricing component, the energy margin is
24 determined by the variable component only. So for the
25 no award, you have a product that's just a fixed
26 price. So our issue is a difference in how the two

1 are calculated.

2 THE CHAIRPERSON: They also lead to significant
3 differences in terms of the cost and the value of --

4 MS. HEMMINGSEN: A: Pardon me?

5 THE CHAIRPERSON: Sorry. They also lead to a significant
6 difference in the cost of that energy and the value of
7 that energy.

8 MS. HEMMINGSEN: A: The net cost is approximately the
9 same. The value of energy might be slightly different
10 because of the dispatchability of the CCGT unit and
11 the avoided losses, as Mr. Lin has outlined.

12 **Proceeding Time 9:25 a.m. T15**

13 THE CHAIRMAN: What I'm struggling with is the notion n
14 that for the same energy, you're using different
15 methodology to get to the cost and different
16 methodology to get to the value. And the difference
17 is significant.

18 MS. HEMMINGSEN: A: I think what we're actually doing
19 is, we're using the same cost. We are using an
20 approach to value the energy margin that is based on
21 variable costs only. So when you go into the no award
22 scenario, you don't have any variable costs, so
23 there's no cost to deduct against that energy margin.
24 So it's difficult to compare them using the current
25 definition of energy margin, is what I'm saying.

26 Another approach is to say, "What is the

1 value of energy across that entire 1800 gigawatt
2 hours, and what is the total cost of that portfolio?"
3 THE CHAIRMAN: Right.
4 MS. HEMMINGSEN: A: And then you get to the final NPV
5 number. It's just very difficult to allocate the
6 components between them, because they represent two
7 different resources. One's a dispatchable resource by
8 its nature, has variable and fixed costs, the other is
9 a fixed price resource.
10 THE CHAIRMAN: So it becomes very difficult to compare
11 the different scenarios.
12 MS. HEMMINGSEN: A: Using that metric, yes. I mean,
13 that's why you go to the NPV value, because that
14 covers all of the values and summarizes them.
15 THE CHAIRMAN: But these are NPV numbers.
16 MS. HEMMINGSEN: A: Right. But the total NPV number
17 captures all the values and costs.
18 THE CHAIRMAN: But the component, to get the two -- you
19 know, the two key -- well, two significant numbers to
20 get to the aggregate NPV numbers are those two
21 numbers.
22 MS. HEMMINGSEN: A: It's just not possible to calculate
23 the energy margin based on variable costs for the
24 resource that doesn't have a variable component.
25 THE CHAIRMAN: Right. I'm going to need to think about
26 this. Thank you.

1 Thank you, Mr. Wallace.

2 MR. WALLACE: Thank you, Mr. Chairman, that was also
3 helpful to me, if not the confidential part at least
4 the rest.

5 MR. WALLACE: Q: Just then, I thought I'd finished the
6 table, but I guess I gathered a bit more understanding
7 there. We've spoken about the no award energy backfill.
8 Do I take it that the Tier 2 energy backfill was
9 calculated in a similar manner?

10 MS. HEMMINGSEN: A: It was.

11 MR. WALLACE: Q: And it would have a similar value.

12 MS. HEMMINGSEN: A: It has the energy margin attributed
13 to the resource that has a variable component, which
14 would be the biomass unit.

15 MR. WALLACE: Q: On the backfill?

16 MS. HEMMINGSEN: A: No, on the 600 --

17 MR. WALLACE: Q: Yes, but on the 1200 on the backfill
18 was calculated in the same way as the 1800 backfill in
19 the no award?

20 MS. HEMMINGSEN: A: That's correct.

21 MR. WALLACE: Q: And is it fair, then, to assume that
22 the 1200 has zero value also?

23 MS. HEMMINGSEN: A: Well, according to the definition
24 of how the energy margin is calculated, that would be
25 true, because there'd be no other variable costs.

26 MR. WALLACE: Q: So the backfill didn't do much to --

1 well, I'll just leave it, that's for argument.

2 Now, I'd like to turn to the \$64.00 figure,
3 which fits in quite closely, I guess, with Exhibit
4 C19-21. Questions that I had intended to pose to you
5 anyway. They would show, I think, that at 64 there
6 would be a number of different options, and I also
7 want to raise for you that we've been recently advised
8 that for the purposes of stepped rates the average
9 long-term cost of energy is in the range of \$55, which
10 would seem more in accord with C19-21, and I wonder if
11 you can explain the difference between those numbers
12 and \$64.00.

13 MS. HEMMINGSEN: A: Sure. So these are the unit energy
14 estimates, representative estimates for an energy
15 product only. So it doesn't include the capacity
16 values. And we have another table from our Integrated
17 Electricity Plan that includes those resources that
18 provide capacity. And as I recall, I testified to
19 this in the VIGP hearing, about some of the trips and
20 traps of using unit energy costs as proxies for value,
21 because the products differ quite significantly. And
22 you need to reflect that in your application of those
23 prices.

24 So, for example, small hydro resources are
25 (a) not firm, and (b) don't contribute much capacity,
26 so they're not a good representative price for the

1 product that we're buying on Vancouver Island.

2 **Proceeding Time 9:30 a.m. T16**

3 MR. WALLACE: Q: Okay, but I thought in your
4 effectiveness analysis and on Exhibit C-19-20, that we
5 were already taking care of the capacity charges in
6 another way, that what we were really trying to look
7 up was the value of the energy when we were looking at
8 the backfill.

9 MS. HEMMINGSEN: A: Right, but unfortunately all energy
10 isn't the same. Some of it's more firm than other
11 energy, and small run-of-the-river hydro isn't very
12 firm.

13 MR. WALLACE: Q: I understand that, but we've already
14 paid for the gas peaker or for the DSM to provide the
15 firmness, the capacity. The energy value itself,
16 whether it's firm or not, if you get it during the
17 year and can sell it and make a profit, it doesn't
18 matter if it's firm or not firm, does it?

19 MS. HEMMINGSEN: A: That's not true.

20 MR. PETERSON: A: When we backfill to get up to the
21 1800 level after 2010 for all three outcomes, we're
22 trying to equalize not just on the energy but on the
23 capacity as well. So, for example, in Tier 1 we've
24 got about 252 megawatts, so we're basically trying to
25 get also, when we backfill, the equivalent amount of
26 capacity on the backfill for Tier 2 and for the no

1 award.

2 MR. WALLACE: Q: I suggest to you you're charging
3 twice, that you're already paying for the capacity in
4 the peaker. It will be there when you need it.

5 MR. PETERSON: A: Are you referring to the 47 megawatt
6 peaker?

7 MR. WALLACE: Q: I'm referring to the 120 megawatts of
8 the peakers in the no award scenario.

9 MR. LIN: A: Just to clarify, those 120 megawatt peaker
10 are the temporary generator peakers. They will be
11 decommissioned once the cables is in service.

12 MR. WALLACE: Q: Well, I understand that, but when you
13 did your costs you put the peaker costs in, and
14 they're --

15 MS. HEMMINGSEN: A: For the first two years till the
16 cable is in service.

17 MR. WALLACE: Q: Okay, and then you're evaluating the
18 energy, and you -- okay.

19 So I think I understand your point then, at
20 least with respect to that. But again, then your view
21 is that with respect to the capacity, that there's the
22 firmness, and Mr. Hemmingsen, you were going through
23 and saying, "Well, small hydro isn't as firm." I
24 accept that. Resource Smart?

25 MS. HEMMINGSEN: A: Resource Smart --

26 MR. WALLACE: Q: Can it be as firm?

1 MS. HEMMINGSEN: A: Resource Smart is already fully
2 reflected in our supply/demand balance.

3 MR. WALLACE: Q: Okay.

4 MS. HEMMINGSEN: A: Any economic Resource Smart
5 options.

6 MR. WALLACE: Q: Coal is an option?

7 MS. HEMMINGSEN: A: Coal is an option, and you see it
8 in the range of prices which we've assumed for this
9 analysis.

10 MR. WALLACE: Q: Well, it seems to me it's lower. It
11 tops out at the range of prices you've assumed.

12 MS. HEMMINGSEN: A: Right, but we also included a
13 scenario that reflects a 10 percent reduction in that
14 price, which puts you in the lower range.

15 MR. WALLACE: Q: Okay, and I'll come back to that. And
16 with respect to natural gas, the prices that were
17 devised when this 2004 integrated plan was put
18 together, natural gas prices were considerably lower
19 than they are today, weren't they?

20 MS. HEMMINGSEN: A: I believe we used a range of
21 natural gas prices, but I'd have to check what that
22 range was.

23 MR. WALLACE: Q: Okay, when B.C. Hydro says that its
24 average long-term cost of new energy, for the purpose
25 of things like stepped rates, is \$55.00, what type of
26 energy are they referring to?

1 MS. HEMMINGSEN: A: We had used our electricity price
2 forecast, and as part of our 2005 Integrated
3 Electricity Plan, we're looking at a range of projects
4 and resources to update that number.

5 MR. WALLACE: Q: Okay, but that's a general average
6 number, isn't it? It's not a specific firm or low run
7 of the river hydro. That's an average of your
8 resources?

9 MS. HEMMINGSEN: A: The average of the acquisitions
10 that we've made over the past number of years, which
11 reflect a mix of firm and non-firm resources.

12 MR. WALLACE: Q: Thank you, okay. Now, you mentioned
13 that you had a 10 percent lower scenario on Appendix
14 A. But that -- for the Mainland resources?

15 MS. HEMMINGSEN: A: That's correct.

16 MR. WALLACE: Q: And that is offset by the 4.8 percent
17 additional transmission that you have charged to the
18 Mainland resources?

19 MS. HEMMINGSEN: A: I'm not sure what you mean by
20 "offset".

21 **Proceeding Time 9:35 a.m. T17**

22 MR. WALLACE: Q: Well, there's a 10 percent decrease,
23 but then there is a 5 percent transmission -- or 4.8
24 percent transmission cost for losses attached to your
25 Mainland calculations.

26 MS. HEMMINGSEN: A: That's correct, because there's a

1 value in generating on Vancouver Island, in order to
2 serve the load there.

3 MR. WALLACE: Q: Okay. So it is -- now, that 4.8
4 percent is, as I read it, avoided transmission losses
5 for energy on Vancouver Island versus generation in
6 the Interior, and was also accounted for based on 4.8
7 percent energy losses differential between these two
8 locations. So that 4.8 percent compensates from the
9 interior of British Columbia to Vancouver Island?

10 MS. HEMMINGSEN: A: That's correct.

11 MR. WALLACE: Q: And I -- maybe I misunderstood you
12 when I last was talking to you, Ms. Hemmingsen, I
13 thought you said the 4.8 percent related Lower
14 Mainland to Vancouver -- or Lower Mainland to
15 Vancouver Island, not Interior to Vancouver Island.

16 MR. LIN: A: The 4.8 percent is the loss between Kelly
17 Lake and Nicola, and Vancouver Island.

18 MR. WALLACE: Q: Okay. Thank you.

19 THE CHAIRMAN: But it's one -- it's 3.6 to the Lower
20 Mainland, and 1.2 across to the Island.

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

22 MR. WALLACE: Q: That was my understanding initially,
23 and I thought I got a different answer the other day,
24 and I may be wrong. I'll have to review it,
25 obviously.

26 Now, one of the -- and I think as you

1 pointed out to me, Mr. Lin, is that the no award
2 option essentially is peakers for a few years, and
3 then you can go out and do something different, and
4 one of those different things might be a coal plant on
5 Vancouver Island, for example, might not?

6 MS. HEMMINGSEN: A: Well, I suspect we'd run an open
7 call and we would secure the most economic resource.

8 MR. WALLACE: Q: Okay. Wherever it was located?

9 MS. HEMMINGSEN: A: Wherever it was located, reflecting
10 locational values.

11 MR. WALLACE: Q: Yes. And that may be on Vancouver
12 Island, it may be in the Interior. You don't know
13 that at this stage.

14 MS. HEMMINGSEN: A: That's correct.

15 MR. WALLACE: Q: Thank you.

16 Thank you, Mr. Chairman, that completes my
17 questions, subject to the one issue that was
18 outstanding.

19 THE CHAIRMAN: Thank you. Let's take a 15-minute break
20 now.

21 **(PROCEEDINGS ADJOURNED AT 9:37 A.M.)**

22 **(PROCEEDINGS RESUMED AT 9:55 A.M.)**

T18

23 THE CHAIRPERSON: Please be seated.

24 MR. SANDERSON: Mr. Chairman, just one preliminary
25 matter. I did confer over the break with the panel in
26 terms of the one potential undertaking for Mr.

1 Wallace, and we can produce that table. So we'll do
2 that hopefully before this panel is off.

3 THE CHAIRPERSON: Thank you.

4 I would like to ask one question and it's
5 with respect to Table IR 1.14.2.3.

6 MS. HEMMINGSEN: A: And just if it's helpful to the
7 other intervenors, portions of this table have been
8 provided in BCUC IR 2.46.6. So I thought we had
9 represented some of the elements of the NPV analysis
10 and summarized them.

11 THE CHAIRPERSON: Thank you, and I will have a look at
12 that and maybe be able to provide more disclosure
13 after looking at it. I will ask my question with
14 respect to this, though.

15 You're going to provide for me your
16 calculation of the energy margin based on the numbers
17 that are here. And I also think you told me, Ms.
18 Hemmingsen, that the value of energy for the no award
19 doesn't include any variable costs. And is the
20 difference between the value of energy for each of
21 those three scenarios largely the difference with
22 respect to the variable costs?

23 MS. HEMMINGSEN: A: The difference basically reflects
24 the differences in the dispatch in the first couple of
25 years.

26 THE CHAIRPERSON: Right.

1 MS. HEMMINGSEN: A: The value of energy. The only way
2 to produce a comparable calculation would be to take
3 all of the costs of the resources, so the CFT costs
4 that are represented there, as well as the avoided
5 losses, and the cost of Mainland generation, and then
6 net that off the energy value. That would be the only
7 consistent way to represent that metric across the
8 three scenarios.

9 THE CHAIRPERSON: The metric being the energy margin.

10 **Proceeding Time 9:58 a.m. T19**

11 MS. HEMMINGSEN: A: Yeah. So it addressed the problem
12 of the fixed and variable components.

13 THE CHAIRMAN: Right. Okay, well, I'll leave it at that
14 and look forward to your calculation of the energy
15 margin from that, and that may be helpful for me to --
16 particularly as it relates to the no award, if you can
17 do it from the numbers that are there. It may help me
18 in understanding how you got to the zero margin for
19 the no award scenario. Okay. Thank you.

20 Mr. Weisberg?

21 MR. WEISBERG: Mr. Chair, just a point of clarification.
22 I'm standing here in place, I guess, of Mr. Bois, who
23 precedes me in the order of cross-examination. By
24 agreement of counsel, I've taken his place. There was
25 a logistic matter with an exhibit, and you should not
26 take that to mean that Mr. Bois has given up his right

1 to cross-examination.

2 One other preliminary matter. We received
3 a letter from Mr. Sanderson. It's entered as Exhibit
4 B-58. And that letter addresses an Information
5 Request from Green Island that, up until now, was
6 outstanding. I should say that the letter from Mr.
7 Sanderson was dated the 17th, and provided notice at
8 that time that the data would be provided in response
9 to those IRs.

10 I acknowledge receipt of that data now.
11 Given the nature of it, and the form, I'm unable to
12 review it at this point. Mr. Sanderson and I have
13 discussed it and agreed that the consequences of Green
14 Island's review of this will be left to be determined,
15 but I noted to Mr. Sanderson, and I'll note to you,
16 that we may request a brief cross-examination solely
17 on this material that was just produced.

18 THE CHAIRMAN: Of whom?

19 MR. WEISBERG: And Mr. Sanderson has not agreed to that,
20 I've simply indicated to him that there's that
21 possibility, and I wanted to bring it to your
22 attention as well.

23 MR. SANDERSON: What Mr. Weisberg says is completely
24 accurate, and my suggestion would be to deal with any
25 residual issues that we haven't yet resolved if and
26 when they arise. They may not, so I suggest we deal

1 with it later.

2 THE CHAIRMAN: Thank you.

3 **CROSS-EXAMINATION BY MR. WEISBERG:**

4 MR. WEISBERG: Q: With that, I'll proceed with my
5 cross-examination of Panel 4. Good morning.

6 MS. HEMMINGSEN: A: Good morning.

7 MR. WEISBERG: Q: When the findings and recommendations
8 of the QEC were presented to B.C. Hydro senior
9 management, were they also advised of all of the
10 tenders that were submitted on August 13th, including
11 the disqualified tender?

12 MS. HEMMINGSEN: A: That's my recollection. We
13 provided a summary to them of the tenders that we
14 received, and what the tender status was within the
15 QEM evaluation.

16 **Proceeding Time 10:01 a.m. T20**

17 MR. WEISBERG: Q: You're confident in that
18 recollection? I'll give you the opportunity to check
19 it if you want, but other -- we can leave the answer
20 as it's --

21 MS. HEMMINGSEN: A: I'm fairly confident, yes.

22 MR. WEISBERG: Q: Thank you.

23 MS. HEMMINGSEN: A: And one point to add there, it was
24 on the no names basis that it was provided, because
25 the process was blinded throughout.

26 MR. WEISBERG: Q: Right. Was there an explanation or

1 explanations provided to senior management as to why a
2 specific project was disqualified?

3 MS. HEMMINGSEN: A: Yes, there was.

4 MR. WEISBERG: Q: And are you able to say anything now
5 about the nature of that explanation? Are you able
6 to --

7 MS. HEMMINGSEN: A: Well, there was three tenders that
8 were received that were disqualified, and we outlined
9 the reasons for the disqualification in each case to
10 the Executive Committee.

11 MR. WEISBERG: Q: And in the case of one it was the
12 deemed non-compliance, is that correct?

13 MS. HEMMINGSEN: A: Non-compliant bid, yes.

14 MR. WEISBERG: Q: And senior management understood, did
15 they, that the determination of material non-
16 conformity was a discretionary judgment by B.C. Hydro?

17 MS. HEMMINGSEN: A: They understood the process by
18 which we made that determination, and perhaps it's
19 worthwhile going through that process. There was a
20 separate committee that opened all of the bids and
21 reviewed them for conformity. If there was a material
22 non-conformity, that was raised to the PMO office, and
23 the rationale for that non-conformity was examined.
24 At that point we had expert legal advice to confirm
25 that that non-conformity was in fact material.

26 And in each of those groups, one being the

1 conformity review team and the other being the PMO,
2 the independent reviewer was present. And the result
3 of all of those actions was a non-qualified report by
4 the independent reviewer of the process for conformity
5 review, and population of QEM model.

6 MR. WEISBERG: Q: Thank you. I'd like you to turn now
7 to -- I believe it's Addendum 10, which I believe is
8 part of Exhibit B-1, the CFT Addendum 10. I hope I
9 have that reference correct. Appendix G? Thank you
10 for your help, sir.

11 And the specific document, as I've
12 indicated, is Addendum 10 to the CFT. It's dated
13 March 5th, 2004.

14 MS. HEMMINGSEN: A: Right.

15 MR. WEISBERG: Q: And I'm interested in looking at page
16 4.

17 MS. HEMMINGSEN: A: Okay.

18 MR. WEISBERG: Q: Section 11 of the Addendum introduces
19 an amendment of section 17 of the CFT, including a new
20 section, 17.3, and I'd like to just read that in.

21 **Proceeding Time 10:05 a.m. T21**

22 THE CHAIRMAN: Before you do that, Mr. Weisberg --

23 MR. WEISBERG: Yes.

24 THE CHAIRMAN: -- why are you pursuing this issue with
25 this panel?

26 MR. WEISBERG: Because I believe that the -- this panel

1 did a cost-effectiveness analysis. And I'd submit
2 that under 17.3, to decide whether to invoke the
3 discretion under that section, there needed to be a
4 determination of cost-effectiveness. And so there is
5 a link.

6 MR. SANDERSON: Mr. Chairman, I believe the testimony we
7 heard from Panel 2 and yesterday was that there were
8 -- it was a two-step process. There was, pursuant, as
9 I understood the testimony, pursuant to 17.3, within
10 the CFT process, and within the PMO, a determination
11 as to whether or not there was a reason to move to the
12 steps that are contemplated there. The evidence as I
13 understood it was that there were decision-making
14 criteria which were explored with the independent
15 reviewer, to determine how that would be done. And
16 there was, from Mr. Weisberg in particular,
17 considerable exploration of that process, and the
18 rules for it, et cetera.

19 As I understood the testimony of the
20 independent reviewer, their process pursuant to that
21 was complete once the PMO accepted the Tier 1 bid,
22 which the evidence is it did.

23 The cost-effective analysis that went on
24 thereafter was something undertaken by management
25 independent from, or beyond, if you want, the CFT
26 process. And that's what this panel is here to speak

1 about is that last step which is really beyond
2 anything that was part of the formal CFT process.

3 MR. WEISBERG: Mr. Chair, I'd -- my submissions will be
4 brief on this point, but what B.C. Hydro did in the
5 cost-effectiveness analysis, and what they perhaps
6 should have done, is a live issue. How I tie it back
7 to 17.3 is the part of 17.3 that states --

8 THE CHAIRMAN: That's okay, Mr. Weisberg, you do not need
9 to read it, you need to move on.

10 MR. WEISBERG: Q: As stated in the CFT report a number
11 of times, can you just confirm that the objective of
12 the CFT was to determine the most cost-effective
13 solution for providing up to 300 megawatts of
14 dependable capacity on Vancouver Island, comprising
15 new on-Island generation, using proven technology and
16 capable of being in operation by May, 2007?

17 THE CHAIRMAN: Again, why are you asking that question of
18 this panel?

19 MR. WEISBERG: Because I want to explore with them what
20 they addressed in their cost-effectiveness analysis.
21 And what inputs, perhaps, should have been made into
22 that analysis.

23 THE CHAIRMAN: So we're now talking about the cost-
24 effective analysis that was done and is set out in
25 Appendix J. And you want to explore the parameters of
26 the QEM, which is -- which was 150 megawatts to 300

1 megawatts. Do I understand you correctly?

2 MR. WEISBERG: Where I'm getting to is, if evaluation of
3 Green Island's project and other projects under the
4 QEM would have complemented the cost-effectiveness
5 analysis.

6 THE CHAIRMAN: Well, there were two independent analyses.
7 You've had plenty of opportunity to cross-examine on
8 the QEM methodology, the parameters of the QEM, the
9 parameters of the CFT criteria and the CFT. This is a
10 different matter.

11 MR. WEISBERG: Are you saying, Mr. Chairman, anything
12 related to the QEM model or the results of it, is out
13 of bounds for this panel?

14 **Proceeding Time 10:10 a.m. T22**

15 THE CHAIRPERSON: No, there are QEM inputs into the cost-
16 effective analysis that are in the scope of this
17 panel. But that's the only connection to the QEM
18 methodology in the CFT.

19 MR. WEISBERG: Q: Can you confirm that the cost-
20 effectiveness analysis evaluated the difference in
21 alternatives in terms of acquiring a 25-year block of
22 energy of 1800 gigawatts?

23 MS. HEMMINGSEN: A: One of the inclusions in the cost-
24 effectiveness analysis was a backfill of energy to
25 equalize the various options.

26 MR. WEISBERG: Q: The frequently stated objective of

1 the CFT was to acquire 150 to 300 megawatts of
2 capacity. The QEM model, would you agree that the QEM
3 model gives projects credit for energy that they
4 generate over a 25-year project life, and then
5 subtracts that credit from the capacity costs of the
6 project?

7 THE CHAIRPERSON: Again, why are you asking that question
8 of this panel?

9 MR. WEISBERG: That question is to lay the foundation for
10 my next question, which is, shouldn't the cost-
11 effectiveness study have been based on the cost of
12 adding capacity to Vancouver Island and not energy?

13 THE CHAIRPERSON: Proceed.

14 MR. WEISBERG: But like some of my other questions, sir,
15 I need to establish a foundation and I don't submit --

16 THE CHAIRPERSON: You've had three panels to do that.

17 The second of your questions is relevant to this
18 panel. The first question, proceed with because of
19 the second question.

20 MR. WEISBERG: I only needed to ask it to put the second
21 in a context that could be understood.

22 THE CHAIRPERSON: All right.

23 MR. WEISBERG: Q: Panel, for your benefit I'll repeat
24 my question.

25 MS. HEMMINGSEN: A: Thank you.

26 MR. WEISBERG: Q: Shouldn't the cost-effectiveness

1 study, or analysis, have been based on the cost of
2 adding capacity to Vancouver Island rather than adding
3 energy?

4 MS. HEMMINGSEN: A: Well, the cost-effectiveness
5 analysis was a broader look at the implications of the
6 CFT outcome, and it included considerations for what
7 B.C. Hydro's portfolio required to meet supply and
8 demand, and that was an energy requirement.

9 MR. WEISBERG: Q: If you turn to the cost-effectiveness
10 analysis itself, which is Appendix J to the CFT
11 report. And on page 3, about halfway down the page
12 there is a discussion of non-quantitative
13 considerations, and there are three bullet points
14 titled "Permitting Risks, Cost Certainty and
15 Competitive Tendering".

16 My question here regarding the first one on
17 permitting risk is that you say, or the evidence
18 states, that the Tier 2 and especially the no award
19 scenarios rely more on the availability of temporary
20 generators than Tier 1. Was there not a Tier 2
21 portfolio that could have been assembled had the
22 privative clause been invoked, a 122 megawatt
23 portfolio that would not require temporary generators?

24 MS. HEMMINGSEN: A: The Tier 2 portfolio that was
25 assembled was based on the bids that we received in
26 the CFT, complemented with the Norske load management

1 proposal, which was the most cost-effective resource
2 to bridge, and then followed by temporary generators.

3 MR. WEISBERG: Q: I understand, but my point is, and
4 comment on it if you like, but under the privative
5 clause B.C. Hydro had the option -- they chose not to
6 exercise that option, but could have assembled a
7 portfolio of Green Island's project in the Ladysmith
8 peaker, which in combination would be 122 megawatts.
9 Could --

10 MS. HEMMINGSEN: A: And that's what we did. There was
11 a peaker and the Green Island project. That was the
12 122 megawatts that was included in Tier 2.

13 **Proceeding Time 10:15 a.m. T23**

14 MR. WEISBERG: Q: Right.

15 MS. HEMMINGSEN: A: And if you included additional
16 peakers, Tier 2's costs would have increased relative
17 to including the Norske load management proposal,
18 because as I've just said, that was the more cost-
19 effective resource.

20 MR. WEISBERG: Q: But the permitting risks that you
21 identify there relate only to those temporary
22 generators and not to the 122 megawatt portfolio
23 itself.

24 MS. HEMMINGSEN: A: This particular bullet point --

25 MR. WEISBERG: Q: Yeah.

26 MS. HEMMINGSEN: A: -- relates to the temporary

1 generators, which are included in the Tier 2 portfolio
2 to meet the load requirement in 2010.

3 MR. WEISBERG: Q: I understand that that's how you
4 construe it. We'll leave that to argument.

5 Does the same consideration, though, apply
6 to cost certainty, that that again assumes that
7 temporary generators and the demand management
8 proposal is necessarily part of a portfolio, beyond
9 the 122 megawatts?

10 MS. HEMMINGSEN: A: Well, the cost certainty relates to
11 the fact that we have a binding bid from the Duke
12 Point project. And the resource options that are
13 included in Tier 2 and in the no award, are not
14 binding.

15 MR. WEISBERG: Q: The bids for the two projects that
16 would make up 122 megawatt portfolio were firm and
17 legally binding. They are no longer.

18 MS. HEMMINGSEN: A: They are no longer so, is the
19 advice of our lawyer.

20 MR. WEISBERG: Q: But at the time the bids were
21 considered, they were certainly still firm and legally
22 binding, were they not?

23 MR. SANDERSON: I'm not going to have the witness answer
24 that. I mean, Mr. Weisberg can make whatever
25 arguments he wants about that, but that's pure law.

26 MR. WEISBERG: Mr. Sanderson, I'm going to ask Ms.

1 Hemmingsen or provide Ms. Hemmingsen an opportunity to
2 address an inconsistency on the record regarding her
3 evidence and that of Mr. Sorensen. Mr. Chair, may I
4 proceed with that, or is it your position that it's
5 not appropriate to take it up with this panel?

6 MR. SANDERSON: Mr. Chairman, I have no objection to
7 that.

8 THE CHAIRPERSON: Please proceed.

9 MR. WEISBERG: Q: Ms. Hemmingsen, do you recall an
10 exchange with me on January 17th regarding the
11 circumstances of the disqualification of the Campbell
12 River bid?

13 MS. HEMMINGSEN: A: I do.

14 MR. SANDERSON: Just to make this clear for the record
15 and also to make sure we're absolutely on the same
16 page, perhaps Mr. Weisberg could give us the
17 references he's going to be making reference to.

18 MR. WEISBERG: Certainly.

19 MR. WEISBERG: Q: Specifically, Ms. Hemmingsen, you can
20 turn up Volume 6, transcript page 1229. And I think
21 there is a discussion in the pages preceding and
22 following that, but I think the essence of it is
23 captured in lines 4 through 10 on page 1229. And you
24 stated as follows:

25 " The reason that they were disqualified is
26 because they had submitted a non-compliant

1 bid. And we reviewed this issue with our
2 [sic] independent reviewer, who affirmed
3 that under the terms of CFT we had no other
4 choice without receiving a qualified
5 independent review report and being subject
6 to legal exposures from other bidders."

7 And I'll just note for the record that in line 6 there
8 is the word "out", which I have read as the word "our
9 and unless there are objections to that, I'd suggest
10 that correction stand.

11 MS. HEMMINGSEN: A: I would agree with that. It should
12 be an "r" instead of a "t".

13 MR. WEISBERG: Q: Yesterday I discussed the evidence
14 I've just quoted with Mr. Sorensen, and that exchange
15 is found in Volume 8, pages 1812 through 1817.
16 Specifically, I think, where their response is boiled
17 down to its essence is on page 1815, lines 5 through
18 19, and I'll read that into the record:

19 "MR. WEISBERG: Q: I accept the
20 qualification that Mr. Sanderson makes, and
21 if I can help the witness, my question is:
22 The independent reviewer, whatever member of
23 the team you want to identify as being the
24 one that Ms. Hemmingsen referred to, did
25 that person or persons affirm to B.C. Hydro
26 that it had no other choice without

1 receiving qualified independent review
2 report and being subject to legal exposures
3 from other bidders?

4 MR. SORENSEN: A: No.

5 MR. WEISBERG: Q: You did not he..."

6 I believe that's "the"

7 You did not -- he independent reviewer, the
8 group of people represented by that term did
9 not so affirm?

10 MR. SORENSEN: A: Did not affirm, did not
11 -- ours was a position of silence..."

12 MS. HEMMINGSEN: A: Right, and --

13 **Proceeding Time 10:20 a.m. T24**

14 MR. WEISBERG: Q: So as the record stands, of course,
15 there's a contradiction. Do you reaffirm your
16 evidence as found at volume 6, page 1229, lines 4 to
17 10, or do you suggest that Mr. Sorensen was wrong?

18 MS. HEMMINGSEN: A: In terms of my definition of
19 "affirm," it was affirmed by us receiving an
20 unqualified independent reviewer report. There was no
21 mention of that issue, and as I believe was made clear
22 to this group when the independent reviewers
23 testified, that was the outcome. Had there been any
24 issues that were not addressed appropriately, they
25 would have been raised in the final report. We all
26 knew that going into the process, and that was the

1 basis upon which we conducted ourselves.

2 The independent reviewer was -- oversaw
3 both the independent group that performed the
4 compliance review, then they oversaw what happened
5 when that result was presented to the PMO, and then
6 finally they oversaw the result when it was presented
7 to the executive steering committee as well. And I do
8 believe that the record goes on to Mr. Hodgson, who
9 said that "I understood the question hypothetically.
10 If the bid was not rejected, we would have qualified
11 the report."

12 MR. WEISBERG: Q: And the transcript reference for that
13 is 1816, lines 21 through 23.

14 So are you saying, then, if I understand
15 your evidence now, it is that you took the silence,
16 and I'm using Mr. Sorensen's term there, you took the
17 silence of the independent reviewer to suggest an
18 affirmation of your understanding as stated.

19 MS. HEMMINGSEN: A: The silence and the ultimate
20 unqualified report.

21 MR. WEISBERG: Q: So because there was no mention of it
22 in any subsequent report, you --

23 MS. HEMMINGSEN: A: And I believe that Mr. Hodgson, in
24 his subsequent testimony, concurred with that, is my
25 assessment.

26 MR. WEISBERG: Q: So I need to back up a step with you,

1 because for the silence to constitute an affirmation,
2 I guess it has to be clear that the independent
3 reviewer knew what that silence would affirm. So the
4 question of whether a qualified independent review
5 report was required, or the prospect of legal exposure
6 from other bidders, that was drawn to the independent
7 reviewer's attention by you?

8 MS. HEMMINGSEN: A: The prospect of legal exposure to
9 other bidders was identified by B.C. Hydro and the
10 independent reviewer observed that process, because
11 when the results were presented to me and the PMO, I
12 questioned that. And I was advised by our legal
13 counsel about the legal consequences of accepting that
14 bid. Once again, the independent reviewer oversaw
15 that discussion.

16 MR. WEISBERG: Q: But didn't say anything. They took a
17 position of silence.

18 MS. HEMMINGSEN: A: They took a position of silence,
19 yes. And that resulted in an unqualified report in
20 the end.

21 MR. WEISBERG: Q: Did you find that a position of
22 silence was helpful to your understanding of the
23 independent reviewer's opinion on the matter?

24 MS. HEMMINGSEN: A: I was absolutely clear on what
25 would result in a qualified or an unqualified report.
26 That was made absolutely clear to us, that we had to

1 follow the rules that were pre-prescribed for
2 evaluating the tenders. Those have been provided to
3 this hearing, and we followed them, and we knew if we
4 didn't follow them, we'd get an unquali -- we'd get a
5 qualified report.

6 MR. WEISBERG: Q: And is there any written record that
7 demonstrates that the independent reviewer was aware
8 of B.C. Hydro's view in this respect? And from which
9 the inference could be drawn that silence was
10 affirmation? Perhaps there were meeting minutes that
11 reflected that.

12 **Proceeding Time 10:25 a.m. T25**

13 MR. SANDERSON: Mr. Chairman, we'll take that one under
14 advisement. I will surface a concern, just having
15 listened to the answer. We're on, for the lawyers,
16 delicate ground because Ms. Hemmingsen has already
17 been referred -- has already referred to external
18 legal advice. And so the one thing I do want to look
19 at is if there are minutes, I want to think about the
20 privilege issue associated with them. But with that
21 caveat, we'll certainly look and see if there's any
22 minutes that go to Mr. Weisberg's point.

23 MR. WEISBERG: I think if it assists the process, it
24 would be acceptable to produce those minutes with the
25 minimum amount of material redacted. What I want to
26 see is that the independent reviewer was present when

1 Now, does B.C. Hydro take the Commission's
2 comments in the VIGP decision to mean an order that it
3 obtain on-Island generation, or was it just a guidance
4 suggestion or was it compelling for you -- was that
5 the basis -- was that the only basis for doing it?
6 MS. HEMMINGSEN: A: I'd want to reference the VIGP
7 decision, but I believe it stated that it was the
8 Commission's determination that on-Island resource was
9 the next appropriate resource. And they encouraged us
10 to proceed with the CFT in much the same form as we
11 had outlined in Schedule A. And they further provided
12 guidance on how to treat load shedding, load
13 curtailment, and other demand management
14 opportunities.
15 MR. BOIS: Q: So would you consider the Commission's
16 comments in that regard then, more of guidance as
17 opposed to any kind of direct specific instruction for
18 B.C. Hydro to go and get on-Island generation?
19 MS. HEMMINGSEN: A: We took the determination of the
20 next appropriate resource being on-Island generation
21 as a direction. The balance we took as
22 recommendations to incorporate that we should consider
23 seriously in terms of how we structured the CFT. And
24 as I stated before, one of our objectives was to
25 minimize potential regulatory issues with the process.
26 So we took that as a definition of what the Commission

1 expected us to do.

2 MR. BOIS: Q: Thank you. Now, I'm going to direct your
3 attention to another comment that the Commission made
4 in the VIGP decision as well with respect to the idea
5 of demand-side management and load curtailment. It's
6 on page 22 of that decision. And we've talked about
7 this when you were on Panel 2, so it's not going to
8 come as a big surprise.

9 MS. HEMMINGSEN: A: I'd just like to have the decision.

10 MR. BOIS: Q: Sure. No, that's fine.

11 MS. HEMMINGSEN: A: So what page are you on?

12 MR. BOIS: Q: Page 22 and it's in the third -- or I
13 guess the second full paragraph starting with "The
14 Commission Panel agrees..."

15 MS. HEMMINGSEN: A: Right.

16 **Proceeding Time 10:30 a.m. T26**

17 MR. BOIS: Q: Would you agree that, later on in that
18 paragraph, it reads that

19 "The Commission panel concludes that no
20 contracted demand reduction should be added
21 to dependable supply for the purposes of the
22 application."

23 And that being the VIGP application.

24 "Nevertheless, arrangements with Norske
25 Canada for short-term load curtailments are
26 an attractive option in the event that B.C.

1 Hydro needs to bridge a period until a
2 resource like the 230 kV line, or other on-
3 Island generation, or even VIGP, can be
4 completed."

5 MS. HEMMINGSEN: A: That's correct.

6 MR. BOIS: Q: Okay.

7 MS. HEMMINGSEN: A: And that's what we represented in
8 the cost-effectiveness analysis, was Norske as a
9 bridging resource.

10 MR. BOIS: Q: I appreciate that, thank you.

11 Now, would you also consider that to be a
12 direction by the Commission for B.C. Hydro to consider
13 exploring demand-side management options?

14 MS. HEMMINGSEN: A: As a subsidiary activity to
15 pursuing the on-Island generation resource through the
16 CFT.

17 MR. BOIS: Q: So you would consider it to be a
18 direction to do that. Was that a "yes"?

19 MS. HEMMINGSEN: A: It would -- it was a recommendation
20 to look at that in the event that we could not secure
21 on-Island generation through the CFT.

22 MR. BOIS: Q: Okay. Now, I'm also going to refer to
23 the B.C. -- to the Commission's decision in the BCTC
24 capital transmission plan, and I have just excerpts of
25 that, and I have it here for convenience if you'd like
26 to look at it. I'm just only going to refer to a few

1 pages, so I don't have the whole decision here. Just
2 the pages I'm going to refer to.

3 If it helps the panel, Mr. Commissioner, I
4 have -- Mr. Commissioner, I have them here.

5 THE CHAIRMAN: Please.

6 MR. BOIS: Q: Now, I'd like to draw your attention to
7 page 33 and 34.

8 Do you have it, Mr. Chair?

9 THE CHAIRMAN: No.

10 MR. BOIS: I only have one extra copy here, Mr. Chair.
11 Oh, thank you. Thank you, Mr. Fulton.

12 THE CHAIRMAN: Thank you.

13 MR. BOIS: Q: I wasn't really going to file it as an
14 exhibit, since it's a Commission decision, but if it
15 -- if it's the panel's option, it can be filed as an
16 exhibit.

17 THE CHAIRMAN: I don't think it needs to be.

18 MR. BOIS: Thank you, Mr. Chair.

19 MR. BOIS: Q: Now, would you -- down on the paragraph
20 beginning under the heading "Commission findings", it
21 reads that:

22 "The Commission previously commented on the
23 Norske demand management proposal in the
24 VIGP decision..."

25 And it refers to the paragraph that I just read out.

26 And then it goes on to say,

1 "As noted in the resource planning
2 guidelines, the Commission requires
3 consideration of all known resources for
4 meeting the demand for a utility's product,
5 including those that focus on conservation
6 of energy and DSM (where the latter is
7 defined as a deliberate effort to decrease,
8 shift or increase energy demand). The
9 Commission panel notes that Norske
10 anticipates only a very modest curtailment
11 requirement over the course of a normal
12 winter..."

13 And then it refers to an exhibit. And I'm going to go
14 on to page -- or the next paragraph, I'm sorry.

15 "As noted at the VIGP hearings, BCTC stated
16 that a load-shifting DSM option was not
17 reliable enough for consideration as a firm
18 long-term planning option. However, during
19 that same proceeding, the Commission heard
20 that B.C. Hydro considers it possible to
21 design a load curtailment contract that
22 could be used to meet its planning and
23 operating criteria. Such a contract would
24 require the customer to reduce loads during
25 when the system is exposed to a violation of
26 a single contingency criteria."

1 And then there's a reference to VIGP decision page
2 six. Do you see all that?

3 MS. HEMMINGSEN: A: Where are you -- I'm not sure where
4 you were reading the last from.

5 MR. BOIS: Q: It's from page 33 and 34 of the extract
6 that I gave you.

7 MS. HEMMINGSEN: A: So not reliable enough, however --
8 the Commission heard --

9 MR. BOIS: Q: And then it goes on to say --

10 MS. HEMMINGSEN: A: -- the Commission heard B.C. Hydro
11 considers it possible to design a load curtailment
12 contract.

13 Okay.

14 MR. BOIS: Q: And then in the extract that I've given,
15 there's a note on the side of the page which is just
16 my note to indicate that we were still anticipating
17 the timing of the BCTC evaluation report of the Norske
18 evaluation -- Norske NCD DMP proposal. And then the
19 next paragraph, on page 34:

20 "The Commission directs BCTC, in conjunction
21 with B.C. Hydro, if necessary, to fully
22 evaluate the proposal and to submit a report
23 to the Commission within 30 days of the
24 release of the reasons for decision."

25 And that would be the decision in the Capital Plan.

26 "If BCTC finds the Norske proposal

1 Norske proposal that would need to be tested and
2 further evaluated before a determination could be made
3 that that option would meet the N minus 1 criteria.
4 And in particular they outlined a plan to pilot 25
5 megawatts of that load shifting proposal. There was
6 identified some concerns with the proposal in terms of
7 its availability during the year, and how that would
8 impact the N minus 1 planning criteria, which requires
9 resources to be available throughout the year as a
10 standard.

11 MR. BOIS: Q: Well, that's a good encapsulation of the
12 BCTC report, but all of those concerns were raised
13 from a transmission perspective. I didn't see
14 anything from a generation or supply perspective in
15 the BCTC report. So I'm wondering if you can tell me
16 if there's any written papers or documents that B.C.
17 Hydro provided to BCTC with respect to comments on the
18 NCDMP proposal?

19 MS. HEMMINGSEN: A: Well, B.C. Hydro would have the
20 same issues in terms of meeting the N minus 1
21 criteria, so we have common issues. We also have some
22 additional issues which relate to the firmness in
23 terms of contractual certainty of that proposal vis-à-
24 vis the binding bid that we've got from DPP.

25 MR. BOIS: Q: Okay, I appreciate all of that and I
26 thank you for that. I'm still not sure if you've

1 answered that there's any written documentation of
2 B.C. Hydro's comments to BCTC, or notes of a meeting
3 or anything.

4 MS. HEMMINGSEN: A: Not that I'm aware of.

5 MR. BOIS: Q: Could you endeavour to find out if there
6 is any letters back and forth, or e-mails or -- with
7 respect only to the Norske proposal and the evaluation
8 report. I'm not asking for a whole in-depth analysis
9 here.

10 MR. SANDERSON: So just to make sure we understand the
11 request, it is one -- or is there any written record
12 of Hydro's submissions or communications with BCTC
13 with respect to the report that BCTC produced?

14 MR. BOIS: And comments that B.C. Hydro would have asked
15 to be included in that report.

16 MR. SANDERSON: We can look to see if there's any such
17 thing.

18 MR. BOIS: Thank you.

19 **Information Request**

20 MR. BOIS: Q: Now, are you familiar with a report
21 entitled "Exploring Vancouver Island's Energy Future"?
22 It was a workshop done by B.C. Hydro in June of --
23 July of 2003 with the Rocky Mountain Institute.

24 MS. HEMMINGSEN: A: I'm aware of that report, yes.

25 MR. BOIS: Q: And did you attend that workshop?

26 MS. HEMMINGSEN: A: I did.

1 MR. BOIS: Q: Okay. And did you see this report and
2 read it when it came out?

3 MS. HEMMINGSEN: A: I probably read it but I read a lot
4 of things.

5 MR. BOIS: Mr. Chair, this is a report that I'd ask this
6 be marked as an exhibit. It was provided -- we just
7 learned of its existence this morning, and it has some
8 interesting comments with respect to demand-side
9 management and also load curtailment from the point of
10 view of planning purposes. What's interesting of this
11 is that the list of workshops is approximately --
12 there's at least 50 or 60 people from B.C. Hydro at
13 this workshop and they're discussing options and
14 alternatives in July of 2003, which include proposals
15 just like the Norske proposal.

16 So I think it's indicative that B.C. Hydro
17 was at least planning and considering demand-side
18 options as a resource and I'd like it to be entered as
19 an exhibit.

20 MR. SANDERSON: Mr. Chairman, Mr. Bois has given me the
21 benefit of his argument that he's going to make, I
22 suppose, fro this document. I've never seen it. I'm
23 now having it handed to me. It looks thick. I don't
24 know whether there's copies for others. I don't know
25 whether he had --

26 MR. BOIS: Oh yes, I've made copies.

1 MR. SANDERSON: I don't know whether he has questions for
2 these witnesses. If he has questions for the
3 witnesses and if Ms. Hemmingsen has familiarity with
4 it, then I'm sure he can proceed assuming he can
5 establish its relevance somehow. But he doesn't need
6 to make his argument based on it, although I suppose
7 if he wants to tell us what that is he can.

8 MS. HEMMINGSEN: A: I don't have familiarity with the
9 report because I haven't seen it and it looks awfully
10 thick, and I read a lot of things. I do certainly
11 recall the work shop and I can speak to some of the
12 objectives of that work shop, which was a brain
13 storming, planning exercise oriented towards future
14 supply options after the CFT was complete. And it was
15 clearly articulated as such, and that was one of B.C.
16 Hydro's basis of participation in that session.

17 **Proceeding Time 10:40 a.m. T28**

18 MR. BOIS: Q: Well, I'm sorry, I have a little bit of
19 confusion understanding that, because as I understand
20 this, this report was done in July, 2003. I didn't
21 see anywhere that it was set up to be after the CFT
22 option. This is discussing options for Vancouver
23 Island.

24 MS. HEMMINGSEN: A: In July of 2003 we were in front of
25 the Commission presenting out plans for the CFT. So
26 at that point B.C. Hydro was committed to that.

1 MR. BOIS: Q: Well, again, I'm still -- well, we can
2 argue the merits and the time of the report. I think
3 that the in itself and some of the points that I want
4 to get to indicates quite clearly that B.C. Hydro was
5 not necessarily contemplating the results of the CFT
6 because there references in here to load curtailing
7 and shutting down the pulp mills and paying the pulp
8 mills to get 300 megawatts of power.

9 So if you had already done the CFT and you
10 knew you were going to get some firm capacity, why
11 would you be brainstorming ideas to get 300 megawatts
12 of power?

13 MS. HEMMINGSEN: A: Because that was the purpose of
14 that session, to have a broad discussion of potential
15 long-term options to Vancouver Island's supply needs.

16 MR. BOIS: Q: Would it be fair to say that this report
17 was then also done in the context and with the full
18 knowledge that you had the privative clause to not
19 make an award under the CFT?

20 MS. HEMMINGSEN: A: I don't recall what stage the
21 privative clause and how well developed it was in
22 July.

23 MR. BOIS: Those are my submissions with respect, and
24 comments from the panel that would support having this
25 report introduced as an exhibit.

26 MR. SANDERSON: Mr. Chairman, I guess the one thing I'd

1 ask of Mr. Bois before we conclude on that question is
2 just how and if this relates to the cost effectiveness
3 study. In his submissions so far he's focused on
4 Norske's unique perspective with respect to DSM and
5 pulp and paper mills, but maybe he could just help me
6 with how this relates to the testimony of this
7 particular panel.

8 MR. BOIS: Well, we've heard that the cost effectiveness
9 analysis was a high level analysis done for the
10 benefit of senior management for a number of reasons
11 and one of the reasons, I submit, is so that senior
12 management could make a decision whether or not to
13 exercise its right to not make an award under the CFT.
14 Included in the analysis we've heard that the panel
15 has made assumptions about Norske's proposal and
16 demand side management options and other contingency
17 plans. Specifically referenced in this report is a
18 number of discretionary items with respect to those
19 plans, which I think I'm entitled to explore from
20 Norske's perspective generally as a large user and
21 specifically with respect to the Norske proposal.

22 THE CHAIRPERSON: I'm going to, unless I hear from you
23 further, Mr. Sanderson, I'm going to allow the
24 admission of the document.

25 MR. SANDERSON: No, I have no further submissions at this
26 point, Mr. Chairman.

1 MR. BOIS: Thank you, Mr. Chairman. I think it's marked
2 as Exhibit C2-13.

3 ("EXPLORING VANCOUVER ISLAND'S ENERGY FUTURE...FINAL
4 REPORT SEPTEMBER 29, 2003...", MARKED AS EXHIBIT C2-13)

5 MR. BOIS: Mr. Chair, we had 40 copies made. That was
6 the logistical problem for my not appearing in the
7 first part.

8 MR. BOIS: Q: Now Ms. Hemmingsen, I just want to turn
9 to page 7 of this report and just highlight for the
10 record that some of the members that have -- of B.C.
11 Hydro that have appeared on panels in this proceeding
12 were also at this workshop, and would you agree that
13 Ms. Van Ruyven, yourself and Mr. Soulsby were
14 attendant in this workshop?

15 MS. HEMMINGSEN: A: I recall that Ms. Van Ruyven was.
16 I don't recall that Mr. Soulsby was but if I now see
17 his name here on this page I assume he was.

18 MR. BOIS: Q: Okay, thank you. Now I'd like to look at
19 page 5 just for a brief moment, and before we get
20 there, as I understand this report, and you can help
21 me -- and maybe one of the things that you can do is
22 just give us a sense, a brief sense of what this whole
23 workshop was about rather than me belabouring the
24 point?

25 **Proceeding Time 10:45 a.m. T29**

26 MS. HEMMINGSEN: A: Well, my recollection, and it's a

1 bit murky because I believe it was 18 months ago, is
2 that this was a brainstorming workshop to look at
3 options to meet Vancouver Island's future requirements
4 in recognition of some of the dynamics of their load
5 shape. And it was a broad brainstorming, consider any
6 and all types of options, whether they're reliable or
7 not. And then consider distilling them down to some
8 reliable based options. And really, what we took from
9 this is that proposals such as Norske could be
10 considered as some contingency options in the event
11 that bridging was needed, and they could be construed
12 as being some of the more reliable types of options
13 that we had, amongst those contingency options. So on
14 a comparative basis, they might be more reliable than
15 others.

16 In terms of developing the bridging options
17 for the cost-effectiveness analysis, we considered a
18 broad range of options and selected amongst them the
19 most relatively reliable ones.

20 MR. BOIS: Q: Okay. That's fine, I appreciate that,
21 and now I'm going to look at the page five, and the
22 second-to-last bullet paragraph. And it reads:

23 "No single measure is a magic bullet, but
24 B.C. Hydro can build a *combination of DSM*
25 *and supply technologies, programs, and*
26 *prices* into a successful portfolio. A

1 portfolio firm capacity can be assembled
2 from resources whose productions (or
3 savings) profiles balance each other, even
4 if each individual resource is not firm.
5 This approach allows certain intermittent
6 renewable resources to be harnessed for
7 their capacity, energy, and emission and
8 reduction value."

9 And then I would like to refer to page 22 -- actually,
10 it starts -- the heading starts on page 21 and is
11 called "Peak load management". And on page 22, I'm
12 just going to read the last few sentences of the first
13 paragraph.

14 "In a capacity-limited system such as on
15 [Vancouver Island], savings in peak demand,
16 [megawatts] may be valuable and important to
17 ensure reliable service. Thus, demand
18 savings from peak load management, direct
19 load control, and demand response programs
20 would be a major addition to the demand-side
21 resource potential identified for [Vancouver
22 Island] in the CPR."

23 Do you know what the reference -- I think the CPR is a
24 report -- a further study that was done.

25 MS. HEMMINGSEN: A: It's the Conservation Potential
26 Review, which I believe we filed in the revenue

1 requirement hearing.

2 MR. BOIS: Q: Okay, I'll take your word for that.

3 Thank you.

4 And then further on in that page, it says:

5 "The challenge is to install load management
6 measures that can shift both the morning and
7 evening peak cost effectively."

8 And presumably, that's cost effectively to both you
9 and your ratepayers, and your customers, is that
10 correct?

11 MS. HEMMINGSEN: A: Well, I didn't write this report,
12 so I don't presume to imagine what they meant by that.

13 MR. BOIS: Q: But you were there. Would you agree with
14 that characterization?

15 MS. HEMMINGSEN: A: Well, I wasn't there to write this
16 report. This is prepared by the Rocky Mountain
17 Institute.

18 MR. BOIS: Q: But you were part of that discussion.

19 MS. HEMMINGSEN: A: There was various panels, they
20 broke out into different groups, and I was not privy
21 to all the discussions of the groups.

22 MR. BOIS: Q: Okay. Then, on page 23, it describes --
23 it reads as follows:

24 "Peak load management should be viewed by
25 B.C. Hydro as a complement, not a substitute
26 for Power Smart's focus on reducing energy

1 consumption. Efficiency will still be the
2 most cost effective method for managing
3 overall energy demand on [the Island]."

4 And I'm paraphrasing, there.

5 "Moreover, Power Smart efficiency programs
6 can augment load management efforts on
7 [Vancouver Island] to the extent they reduce
8 energy use in end-uses that coincide with
9 the peak demand periods."

10 Now, the Power Smart we've talked about is
11 essentially designed to eliminate load, and either by
12 customer-based generation, which is supported by Power
13 Smart programs, through displacement, or whatever.
14 It's not intended to be a load-shifting or a load-
15 balancing program, is it?

16 **Proceeding Time 10:50 a.m. T30**

17 MS. HEMMINGSEN: A: That's my understanding of the
18 current version of Power Smart.

19 MR. BOIS: Q: Okay. And then later on under the
20 heading on that same page, "Benefits of Creating a
21 Demand Response", the report reads:

22 "Demand response is a necessary prerequisite
23 to fully functioning electricity systems and
24 an important tool for maintaining
25 reliability at reasonable costs. Demand
26 response on Vancouver Island could provide

1 the critical reserve needed to maintain
2 reliability in case of a first contingency
3 failure of a power supply resource..."

4 Now before I go further, in the Norske
5 proposal which was submitted through, I guess, in part
6 in response to the CFT but not as part of the CFT,
7 would you consider that the Norske proposal as
8 drafted, and I understand you've read it, can meet
9 that first contingency failure?

10 MS. HEMMINGSEN: A: No, I think that's what BCTC is
11 going to evaluate. I don't think that determination
12 has been made yet.

13 MR. BOIS: Q: Okay, and do you know what B.C. Hydro's
14 -- whether B.C. Hydro is going to participate in that
15 evaluation?

16 MS. HEMMINGSEN: A: I suspect we will, yes.

17 MR. BOIS: Q: You suspect or you know?

18 MS. HEMMINGSEN: A: I have no plans at this point to
19 participate in that unless we are required to access
20 that resource.

21 MR. BOIS: Q: Okay, so you don't have any plans. Does
22 anybody in B.C. Hydro that you know of have any plans?

23 MS. HEMMINGSEN: A: I don't -- I don't have any plans.
24 I can't speak to what others' plans are.

25 MR. BOIS: Q: Well, I think my question was do you know
26 of anyone else's plans to participate?

1 MS. HEMMINGSEN: A: And I said I can't speak to that.

2 MR. BOIS: Q: You can't speak to whether you know?

3 MS. HEMMINGSEN: A: I don't know --

4 MR. BOIS: Q: Thank you.

5 MS. HEMMINGSEN: A: -- of anyone else's plans.

6 MR. BOIS: Q: Thank you.

7 Now on page 25 of that report, it also
8 talks about "Lessons Learned in Industrial Load
9 Management" heading. It talks about:

10 "First, industrial customers have greater
11 price elasticity and manufacturing
12 flexibility than most utilities recognized..."

13 MS. HEMMINGSEN: A: Sorry, I've lost where you are in
14 this long report.

15 MR. BOIS: Q: Oh, page 25.

16 MS. HEMMINGSEN: A: Okay. I thought we were on page
17 23.

18 MR. BOIS: Q: Oh, I moved on.

19 MS. HEMMINGSEN: A: Well, you didn't tell me that.

20 MR. BOIS: Q: Oh, I'm sorry, I thought I did. I
21 apologize if I didn't. Page 25. Do you have it?

22 MS. HEMMINGSEN: A: I'm there now, yes.

23 MR. BOIS: Q: Okay, thank you. Under the heading
24 "Lessons Learned in Industrial Load Management". Are
25 we there?

26 MS. HEMMINGSEN: A: I've got that.

1 MR. BOIS: Q: Okay, thank you. There's a second
2 sentence says:

3 "First, industrial customers have greater
4 price elasticity and manufacturing
5 flexibility than most utilities recognized."

6 I'm just going to stop there. Do you know what kind
7 of flexibility Norske has on the Island?

8 MS. HEMMINGSEN: A: That's something that our Power
9 Smart group looks at, and they make the determinations
10 for what are the best estimates to include for demand-
11 side management activities in B.C. Hydro's demand
12 balance. And we have a considerable volume of Power
13 Smart activities already reflected in the
14 determination of the deficit on Vancouver Island.

15 And I'd also like to point out when the
16 study was done, the expectation of the deficit on
17 Vancouver Island was half of what we're currently
18 facing now, and that speaks to some of the
19 capabilities of these types of brainstorming types of
20 activities to meet a real, imminent deficit.

21 MR. BOIS: Q: And you're saying that imminent deficit
22 is 262 megawatts.

23 MS. HEMMINGSEN: A: It's actually about 280 megawatts
24 with the filing of the updated load forecast.

25 MR. BOIS: Q: Okay, and we've already addressed that
26 your Power Smart is --

1 MS. HEMMINGSEN: A: And that's assuming that the cables
2 are on time.

3 MR. BOIS: Q: Okay. And we've already addressed that
4 the Power Smart program is designed to obtain
5 permanent load reduction. So it wouldn't really be
6 looking at a load shifting program or anything else,
7 the way Power Smart is currently formulated, right?

8 MS. HEMMINGSEN: A: That's right.

9 MR. BOIS: Q: Thank you.

10 Now on page 29 of this report, one of the
11 brainstorming ideas that came out was apparently the
12 temporary curtailment of the pulp and paper mills.
13 And I'd like to draw your attention to the second
14 paragraph. Actually, I'll start on the first
15 paragraph. It says:

16 "This initiative would free up capacity on
17 [Vancouver Island] during critical periods
18 by encouraging the large...plants...to
19 temporarily curtail their load at load times
20 (e.g. winter) of high demand for 2 weeks or
21 more."

22 And then there's a lot of discussion about cost and
23 things like that. And then in the third paragraph, I
24 guess part of the brainstorming idea was:

25 "B.C. Hydro could pay a mill to shut down
26 parts of its plant on short notice. Also

1 B.C. Hydro could offer incentives to keep
2 extra paper products in storage at a cost
3 that would cover the mill's capital costs,
4 which are currently approximately \$/kW.
5 Given that their curtailment potential is
6 probably around 300 [megawatts] the total
7 cost of this idea would be about \$6
8 million."

9 Now, granted it's 2003 dollars and granted
10 it's a crystal ball kind of gaze. But it seems to me
11 that that 300 megawatts covers your problem of 280
12 megawatts. And whether or not you can get it for
13 about \$6 million we can leave for debate. But that's
14 a far cry from the cost of a Duke Point plant.

15 **Proceeding Time 10:55 a.m. T31**

16 MS. HEMMINGSEN: A: Right, and what that brainstorming
17 activity also didn't consider is that we rely on some
18 of that ability with short-term operational
19 contingencies. So if our load forecast is above -- or
20 our actual load is above what we've forecast, we need
21 to rely on operational contingencies and start load-
22 shedding activities.

23 MR. BOIS: Q: Oh, you have the right to do that under
24 your tariff, there's no question about that.

25 MS. HEMMINGSEN: A: That's right.

26 MR. BOIS: Q: Under an operational consideration.

1 MS. HEMMINGSEN: A: So if we rely on these types of
2 options, that impacts our ability to rely on them as
3 operational measures as well. So this doesn't give
4 any consideration to the impact of that. As well as,
5 there's some system stability issues that need to be
6 considered, and those are all the types of issues that
7 BCTC and B.C. Hydro would need to consider in
8 determining whether the Norske proposal, or temporary
9 curtailment of pulp and paper mills, are appropriate
10 resources to rely on to meet N minus 1 criteria for
11 the long term.

12 MR. BOIS: Q: Okay, now this brainstorming session
13 happened a year and a half ago, or a year ago. And
14 B.C. Hydro's quite familiar with the sensitivities and
15 the objections of its stakeholders or ratepayers to
16 this particular idea, not necessarily the Duke Point
17 Power project, but just the concept of a generation
18 plant in Nanaimo.

19 What initiatives can you tell me B.C. Hydro's
20 taken to discuss any of this with Norske? Whether or
21 not it's in the context of its proposal, or -- which
22 was submitted a year after this, by the way --

23 MS. HEMMINGSEN: A: As I think I outlined a couple of
24 days ago, I personally was -- and my group was limited
25 in our contact with Norske, because they were a bidder
26 in the CFT process, and until late August, we couldn't

1 contact them directly to discuss any proposals.

2 So my understanding is this was filed in
3 the BCTC process, and BCTC responded with a report,
4 pointed to some concerns that they had with this type
5 of proposal, and it will be evaluated going forth.
6 B.C. Hydro is also committed to evaluating these types
7 of proposals, and that will be an element of our 2005
8 Integrated Electricity Plan.

9 MR. BOIS: Q: I understand all of that, but I'm
10 confused, though, because this study and brainstorming
11 session was done a year before Norske submitted its
12 proposal. And I'm just wondering whether B.C. Hydro
13 has --

14 MS. HEMMINGSEN: A: No, actually, it wasn't. The CFT
15 was released in October of 2003 and Norske became a
16 registered bidder in mid-November.

17 MR. BOIS: Q: No, I understand that, but Norske's
18 proposal wasn't submitted to BCTC or in the Capital
19 Plan until July of 2004.

20 MR. SANDERSON: No, but Ms. Hemmingsen's evidence was
21 that from the time the CFT process began and Norske
22 chose, of its own volition, to put in a bid, a cone of
23 silence came down. She's just testified that that was
24 in November of 2003. It's quite misleading to suggest
25 that that didn't happen till well into 2004.

26 MR. BOIS: I wasn't trying to mislead anyone.

1 MR. SANDERSON: Well --

2 MR. BOIS: I'm just trying to figure out the timeline
3 here.

4 MR. BOIS: Q: This is July. So this is a great
5 solution, potentially a great solution, of
6 brainstorming ideas. Did anyone at B.C. Hydro --

7 MS. HEMMINGSEN: A: Actually, I think the workshop was
8 in July. The report says it was published on
9 September 29th.

10 MR. BOIS: Q: Right.

11 MS. HEMMINGSEN: A: By which point B.C. Hydro had
12 already committed to the CFT process.

13 MR. BOIS: Q: Okay. But in July, when you had all
14 these great brainstorming ideas, did anyone at B.C.
15 Hydro talk to anyone at Norske about these ideas and
16 see whether they were even feasible?

17 MS. HEMMINGSEN: A: I don't know.

18 MR. BOIS: Q: Thank you. Now, the rate schedule that
19 Norske currently uses and sheds load under Rate
20 Schedule 1852, that's been fairly successful for both
21 Norske and yourselves, hasn't it?

22 MS. HEMMINGSEN: A: As I think I testified to earlier
23 in the week, I'm not familiar with Rate Schedule 1852.

24 MR. BOIS: Q: Okay. Now, you've also indicated in your
25 testimony this morning that there are uncertainties
26 with respect to the Norske proposal, and I think you

1 responded -- or B.C. Hydro responded to this in Ms.
2 McClennan's IR, 1.10.2, when she asked:

3 "Given the specifics contained in the NCDMP,
4 what uncertainty remains with regard to that
5 proposal?"

6 And I believe the response was:

7 "There are uncertainties regarding timing,
8 costs and contractual arrangements."

9 And I was wondering if you had evaluated
10 any of those uncertainties.

11 MS. HEMMINGSEN: A: Well, we have evaluated some of the
12 reliability of Norske's proposal, and what it provides
13 for us in terms of equivalent reliability to a Duke
14 Point type of project. I believe we filed evidence to
15 that effect.

16 MR. BOIS: Q: You did.

17 MS. HEMMINGSEN: A: And looked at the various options.
18 We also continue to be concerned about the limited
19 duration of Norske's proposal, and how that would
20 manifest in a reliable solution. It offers only seven
21 peak load curtailments, for a total of 26 days, and
22 with the N minus 1 criterion we need resources that
23 are accessible throughout the year. So that
24 significantly compromises its ability to meet that
25 reliability requirement.

26 We don't have a binding offer for Norske to

1 supply that, nor a committed amount that we can rely
2 on to the same extent that we can rely on the Duke
3 Point capacity.

4 **Proceeding Time 11:00 a.m. T32**

5 MR. BOIS: Q: So let me just explore something here.
6 In the cost effectiveness analysis you had the Norske
7 proposal, B.C. Hydro's management has told you, "Don't
8 make an award under the CFT process, we want to do
9 this analysis outside of the CFT process" that no one
10 knows about and isn't really revealed until we get the
11 IR responses that it was done. Why not talk to Norske
12 at that point?

13 MS. HEMMINGSEN: Q: I don't think that's true.

14 MR. SANDERSON: That's not so, Mr. Chairman. It was
15 filed as Appendix J in the CFT report November 19th,
16 2004.

17 MR. BOIS: Well, except that no one on the bidders' list
18 knew -- no one in the bidders knew that that was done
19 until the response to the IR was done.

20 MR. SANDERSON: I'm sorry, the cost effectiveness study
21 was filed as Appendix J in Exhibit B-1.

22 MR. BOIS: Which is after the CFT report and after the
23 award was --

24 MS. HEMMINGSEN: A: No.

25 MR. BOIS: -- after the CFT.

26 MR. SANDERSON: No. It's after the CFT but what you just

1 said was nobody knew about it until the IR responses,
2 that is the implication is until there was cross-
3 examination on the topic. That's not true. It was
4 part of the fundamental application that rests at the
5 heart of this process.

6 MR. BOIS: All right, I take your point. Thank you, Mr.
7 Sanderson. I apologize.

8 MR. BOIS: Q In terms of that sort of window of time
9 when you're doing -- you're holding the CFT results
10 and you're doing this cost effectiveness analysis and
11 you've already said you made a number of assumptions
12 regarding the Norske proposal, given that you're
13 outside the CFT and you're making assumptions, why not
14 talk to Norske about that, about your assumptions?

15 MS. HEMMINGSEN: A: Because the cost effectiveness
16 analysis was a high level evaluation to check whether
17 the results of the CFT were appropriate. We had the
18 information from what was filed with the BCTC capital
19 plan which was enough of a basis to represent the main
20 elements. We also had BCTC's report on their
21 assessment which pointed to some deficiencies in the
22 proposal vis a vis the N-minus-one criteria. Those
23 elements were reflected in our assessment in the cost
24 effectiveness analysis.

25 MR. BOIS: Q: All right, and --

26 MS. HEMMINGSEN: Q: And they remain outstanding today.

1 MR. BOIS: Q: And as I understand it then you sort --
2 but you rely on that proposal and the capacity
3 available in that proposal in your contingency
4 planning. If this CFT doesn't happen or if the
5 Commission denies the EPA you said in your application
6 one of the first elements is the 140 megawatts from
7 Norske.

8 MS. HEMMINGSEN: A: That we would have to firm up.

9 MR. BOIS: Q: So if it's good enough in a crisis to
10 assume it's available, why not assume it's good enough
11 in a non-crisis? Like the contingency being the
12 crisis situation. You now know to have your capacity
13 that you're seeking to do with the Duke Point Plant,
14 you planned that it's a backfill. You're saying it's
15 acceptable for contingency planning purposes if the
16 Commission says no?

17 MS. HEMMINGSEN: A: No, we're saying it's a possible
18 resource to consider if we need to bridge to a cable
19 and we've outlined that we would be concerned about
20 the reliability of the system were we required to rely
21 on that type of resource. Amongst the contingency
22 options it's the more reliable resource than some of
23 the other options we have, but we would have to look
24 fully at each of those and we would be concerned about
25 the reliability for Vancouver Island, and especially
26 in light of the recent load information.

1 MR. BOIS: Q: I'm sorry, and especially in light of the
2 which?

3 MS. HEMMINGSEN: A: Load information.

4 MR. BOIS: Q: Right, and we just --

5 MS. HEMMINGSEN: A: That confirms that the deficit is
6 at or beyond what our forecast is.

7 MR. BOIS: Q: And that was the information that was
8 filed this morning, correct, this Exhibit B-68?

9 MS. HEMMINGSEN: A: That's correct.

10 MR. BOIS: Q: The Vancouver Island Daily Peak. Would
11 that be the -- is that what you're referring to?

12 MS. HEMMINGSEN: A: That's right.

13 MR. SANDERSON: We'd advised of it previously, but that
14 most recent document is the fullest explanation on the
15 record of what's happened this year.

16 MR. BOIS: Okay.

17 MR. BOIS: Q: Now I'll just draw your attention to that
18 document then at this point, it seems rather timely,
19 and the table that's attached to that.

20 On January 6th, Norske had a machine go
21 down, is that correct?

22 **Proceeding Time 11:05 a.m. T33**

23 MS. HEMMINGSEN: A: That's our --

24 MR. BOIS: Q: At least I think that's one of your
25 footnotes.

26 MS. HEMMINGSEN: A: That's our understanding.

1 MR. BOIS: Q: And that demonstrates that the capacity
2 requirement falls significantly, doesn't it, in your
3 table?

4 MS. HEMMINGSEN: A: In that case it did, yes.

5 MR. BOIS: Q: So if you were to have a firm deal with
6 Norske for this proposal to shed, and that was only
7 100 megawatts, and you're talking about 140 or maybe
8 even another 30.

9 MR. SANDERSON: I thought Mr. Tiedemann said 200
10 megawatts. Maybe I'm wrong.

11 MR. TIEDEMANN: A: What I said was that when we looked
12 at the load profile, it appeared that there was a drop
13 of up to 200 megawatts. But we didn't have the
14 opportunity to compare that load profile with the
15 normalized profile, so we believe it's in excess of
16 100 megawatts.

17 MR. BOIS: Q: Well, okay, I'm just reading your
18 footnote and basing it on your comment on the
19 footnote, which says 100 megawatts. But even if it's
20 over 100 megawatts --

21 MR. SANDERSON: It says "over 100 megawatts".

22 MR. BOIS: Q: Even if it's over 100 megawatts, you'd
23 agree that if Norske made that capacity available
24 through a demand-side proposal, it would meet -- this
25 is indicative of the benefit of that and the
26 implication of that in your capacity requirements.

1 MS. HEMMINGSEN: A: Potentially on that day, but if the
2 weather was colder and we had to rely on load shedding
3 or some other regime, or there was some other system
4 disturbance, then that would impact the reliability on
5 Vancouver Island.

6 MR. BOIS: Q: But if you're making all these
7 assumptions about Norske's proposal, why wouldn't you
8 assume that Norske would cooperate with you in your
9 requirements?

10 MS. HEMMINGSEN: A: I'm not sure that they can
11 cooperate in terms of what they're providing to meet
12 an N minus 1 planning criteria.

13 MR. BOIS: Q: And that's because you haven't really
14 talked to them.

15 MS. HEMMINGSEN: A: No, that's not the case.

16 MR. BOIS: Q: Okay. I just have a couple more
17 questions, Mr. Chairman.

18 I'm not going to get into the cost of
19 generators, but would you agree that an equally valid
20 assumption would be that Norske might have the
21 flexibility to increase its capacity available, so
22 that you could avoid the cost of a generator?

23 MS. HEMMINGSEN: A: In terms of bridging the entire
24 deficit?

25 MR. BOIS: Q: Sure. I mean, the whole contingency plan
26 is a bridging plan as I understand your evidence,

1 so --

2 MS. HEMMINGSEN: A: They may have it available. We may
3 have some concerns about the reliability of that
4 amount of load shedding or shifting for Vancouver
5 Island.

6 MR. BOIS: Q: Okay. Now if Norske entered into an
7 agreement with B.C. Hydro for load shedding, does B.C.
8 Hydro have any reason to believe that Norske wouldn't
9 be able to do that?

10 MS. HEMMINGSEN: A: We have some concerns that it would
11 not meet the same standard of reliability as an on-
12 Island generation resource.

13 MR. BOIS: Q: Actually that wasn't my question. My
14 question was, if you entered into an agreement.

15 MS. HEMMINGSEN: A: Well, it impacts your questions.

16 MR. BOIS: Q: No.

17 MS. HEMMINGSEN: A: We entered into an agreement with
18 Norske to provide the equivalent amount of capacity as
19 Duke Point? We would have concerns that that would
20 not reliably meet Vancouver Island's requirements.

21 MR. BOIS: Q: If you would have concerns, why would you
22 enter into an agreement? I asked you, if you entered
23 into an agreement, do you believe that Norske wouldn't
24 be able to perform?

25 MR. SANDERSON: That was a lawyer's trick that even went
26 over my head. If --

1 MR. BOIS: I resent that characterization.

2 MR. SANDERSON: Well, Mr. Bois, if what you're trying to
3 do is say that the concerns have gone away by
4 definition of the fact that the agreement was signed,
5 that is what went over my head. I think you posed a
6 hypothetical. I think the witness is entitled to say,
7 "Well, fine, if we'd done that, I would still have
8 some concerns," and you can't take away those concerns
9 by saying, "Well, why did you sign the agreement?"

10 The reason she accepted the agreement was
11 signed is because you asked her to put that in the
12 assumption of the question.

13 MR. BOIS: No, and Mr. Chairman, my question was, if
14 Norske and B.C. Hydro entered into an agreement, did
15 B.C. Hydro have any reason to believe that Norske
16 wouldn't be able to perform? It had nothing to do
17 with the system capacity or anything else, or the
18 ongoing reliance -- reliability of capacity. It had
19 solely to do with the question of whether B.C. Hydro
20 believed Norske wouldn't be able to perform. That's
21 all it was directed to. Nothing else. No lawyer's
22 tricks. That was a simple question. Maybe it was
23 misframed, misworded, but it was a simple question.

24 THE CHAIRPERSON: It's a simple question but the word
25 "performed" is loaded.

26 MR. BOIS: Q: Well, okay, then I'll rephrase the --

1 I'll change the word "perform" and I'll say, if B.C.
2 Hydro entered into an agreement with Norske for its
3 proposal or along the lines of its proposal, does B.C.
4 Hydro have any reason to believe that Norske could not
5 fulfill its obligations?

6 MS. HEMMINGSEN: A: Norske may be able to reduce the
7 capacity by the amount that they have committed to.
8 B.C. Hydro has a concern about what that means for the
9 reliability of Vancouver Island in terms of the N
10 minus 1 criteria.

11 **Proceeding Time 11:10 a.m. T34**

12 MR. BOIS: Q: Now, in the cost effective analysis, did
13 -- sorry.

14 MR. FULTON: Mr. Chairman, I wonder if we could take a
15 break at the moment. I know Mr. Bois has said he's
16 going to be brief, but I think it would be helpful to
17 me to have a break at this point.

18 THE CHAIRMAN: That's fine. I was planning on taking a
19 break at 11:30, which split up the morning, but I'm --
20 for the remaining time, but I'm happy to do that.

21 MR. FULTON: Thank you.

22 THE CHAIRMAN: We'll take 15 minutes.

23 **(PROCEEDINGS ADJOURNED AT 11:11 A.M.)**

24 **(PROCEEDINGS RESUMED AT 11:25 A.M.)**

T35

25 THE CHAIRMAN: Please be seated.

26 MR. WEISBERG: Mr. Chairman, I think we've lost a

1 witness.

2 MR. SANDERSON: Yes. I'm going to suggest we proceed
3 unless your next line of questioning was going to go
4 to Mr. Tiedemann, but in any event, I do have a
5 procedural matter, so I should -- I've got a filing I
6 can take up a minute with.

7 THE CHAIRMAN: Okay.

8 MR. SANDERSON: And that is at transcript -- yesterday,
9 page 1881, during the cross-examination of Mr.
10 Andrews, this is in volume 8, at -- beginning at line
11 12, there's a lengthy question, concluding at line 21
12 with:

13 "Can you identify within this document where
14 the criteria are by which Hydro would make a
15 decision to exercise its discretion under
16 Section 18.17?"

17 And there's some back-and-forth, and we agreed we'd
18 produce my weak efforts at finding the document in the
19 filed material. Having been unsuccessful, we agreed
20 to look.

21 There is a document which may be of
22 assistance to Mr. Andrews, and I suggest we file that
23 as the next exhibit.

24 THE HEARING OFFICER: B-69, sorry.

25 ("VI CFT TENDER PHASE COMPLETENESS AND CONFORMITY
26 PROCEDURE", DATED AUGUST 12, 2004, MARKED AS EXHIBIT

1 B-69)

2 MR. SANDERSON: And with that, I see Mr. Tiedemann is
3 arriving, so go ahead, Mr. Bois.

4 MR. BOIS: Thank you, Mr. Sanderson.

5 MR. BOIS: Q: Ms. Hemmingsen, earlier you mentioned
6 that there were reliability factors included in the
7 cost-effectiveness analysis that were assigned by B.C.
8 Hydro, and in that analysis you did a Tier 1, Tier 2
9 and no award analysis. And I'm wondering, in the Tier
10 2 and the no award analysis can you show me or direct
11 me to the factors with respect to -- that you assigned
12 with respect to the Norske proposal?

13 MS. HEMMINGSEN: A: The factors that were considered
14 with respect to the Norske proposal?

15 MR. BOIS: Q: Yes.

16 MS. HEMMINGSEN: A: I believe what's outlined in the
17 cost-effectiveness analysis is there was both
18 quantitative and qualitative considerations made.

19 MR. BOIS: Q: Right.

20 MS. HEMMINGSEN: A: And a number of the issues with the
21 Norske proposal were qualitative.

22 MR. BOIS: Q: I understand that, but in terms of
23 reliability factors, and I don't have the reference,
24 but I think there was a comparison of reliability
25 factors between Tier 1, Tier 2 and no award. And the
26 criteria -- a ranking criteria that you gave between 1

1 and 10?

2 MS. HEMMINGSEN: A: I believe we filed some evidence,
3 or actually it was an IR, in response to a BCUC
4 request.

5 MR. SANDERSON: It was actually -- it was an update --
6 it's found as Exhibit B-54.

7 MR. BOIS: Q: Yes. No, I'm just wondering because in
8 that exhibit, as I recall it, there's no specific
9 identification of the factors assigned to Norske, of
10 the -- the classification or the categorization of
11 Norske's proposal. It seems to me that it's a
12 collection of the proposals that you evaluated under
13 Tier 2.

14 So it's kind of pro-rated within that
15 ranking structure. And I'm wondering if you can
16 identify the actual ranking of the Norske proposal.

17 MS. HEMMINGSEN: A: What I'm looking at, and maybe it's
18 instructive to look at the table --

19 MR. BOIS: Q: Okay.

20 MS. HEMMINGSEN: A: -- so it's table 1, "Resource
21 comparison."

22 MR. BOIS: Q: I'm sorry, I don't have that reference.
23 But go ahead. Go ahead. I'll look it up.

24 MS. HEMMINGSEN: A: CFT resource reliability analysis,
25 and there's various risk factors to reliability
26 identified, among them forced outage, contract

1 certainty, accessibility, operating considerations and
2 other considerations. And there is a ranking provided
3 for the VICFT qualified generating plants, temporary
4 generators and NCDMP, which refers to the Norske
5 proposal.

6 MR. BOIS: Q: Yes.

7 MS. HEMMINGSEN: A: And those are allocated to each of
8 those options, and then they're compared in the
9 portfolio in terms of a weighted average of the
10 relative contributions of each of those options in
11 that particular portfolio.

12 MR. BOIS: Q: And as I recall --

13 MS. HEMMINGSEN: A: And that's provided in table 2.

14 MR. BOIS: Q: Okay, I'm sorry, I didn't mean to
15 interrupt you. As I recall, though, there was a
16 number of other ranking criterias considered under the
17 "other" category. And the no award proposal and the
18 Norske proposal had a "5", and the Duke Point proposal
19 had an "8". And I'm just wondering whether you could
20 clarify and illuminate us on what those other
21 categories might be, and why, if they're so
22 miscellaneous, why there'd be a higher ranking for one
23 over the other.

24 MS. HEMMINGSEN: A: Well, I think another operating
25 consideration is to the extent that you use
26 contingency measures that may already be relied on to

1 meet short-term or operating requirements, that that
2 isn't available, so you no longer have a full suite or
3 slate of operating contingencies. So that's certainly
4 a consideration for the Norske proposal, under the
5 operating considerations.

6 In terms of other considerations, there's
7 some issues that we'd be concerned about, in terms of
8 synchronous motors, and providing inertia and voltage
9 control, and potential system stability issues, that
10 need to be explored. And as well, some of the loads
11 that are included in the Norske's proposal may already
12 be utilized in remedial action schemes. And those
13 would have to be checked out.

14 **Proceeding Time 11:30 a.m. T36**

15 MR. BOIS: Q: And by remedial action schemes do you
16 mean operational orders?

17 MS. HEMMINGSEN: A: Yes.

18 MR. BOIS: Q: Okay, thank you. Thank you, Mr.
19 Sanderson.

20 In terms of the forecasts that were used
21 for Norske, or in terms of the forecast for demand on
22 Norske or on the Island, could you tell me how you
23 factored in Norske's -- or the component for Norske,
24 and what kind of analysis you did?

25 MR. TIEDEMANN: A: The transmission forecast is done on
26 a customer by customer basis. We look at ten years of

1 energy and of peak for each of those transmission
2 customers. We then run simple econometric models to
3 get a sense of where the load will likely move over
4 the next ten years. We then adjust those by looking
5 back at the history of the load and looking for
6 anomalous events such as strikes or changes in market
7 conditions. All of this is informed by detailed
8 consulting studies that we have done for the mining
9 and the pulp and paper sectors. Those studies are
10 used to understand the nature of the cycles of
11 critical products over the course of time, and we get
12 independent estimates from contractors of the likely
13 effect of pulp and paper price cycles, for example, on
14 loads of key customer such as Norske.

15 So we use a variety of information to get
16 together a consensus estimate for the peak and for the
17 demand -- for the consumption and for the peak for
18 each of those big customers.

19 MR. BOIS: Q: That sounds like a lot of effort, and I
20 appreciate that and I think everybody does. One of
21 the things that I didn't hear you say was that you
22 talked to Norske about what their plans were, or with
23 respect to shutdowns or operational criterias or
24 anything like that.

25 MR. TIEDEMANN: A: Each of the major customers has a
26 key account manager. Those key account managers are

1 in constant conversation and dialogue with our major
2 customers, and I talk with them. So I meet with them
3 several times a year and they provide me with current
4 information on their understanding of how loads are
5 evolving. And we also met as a group, before the
6 transmission forecast was prepared, to ensure that I
7 was aware of critical factors affecting each of those
8 individual customer loads.

9 MR. BOIS: Q: So if I was to ask you if you could pull
10 out of your forecast the forecast for Norske, would
11 you be able to do that?

12 MR. TIEDEMANN: A: It's in a spreadsheet.

13 MR. BOIS: Q: Does that mean yes?

14 MS. HEMMINGSEN: A: I think we raised this issue in the
15 VIGP hearing, and we're not at liberty to release any
16 individual customer information unless they release us
17 from that confidentiality obligation.

18 MR. BOIS: Q: So if I obtain an authorization from
19 Norske to make that request, would you be prepared to
20 release that information?

21 MS. HEMMINGSEN: A: That was how it was done in the
22 VIGP hearing.

23 MR. SANDERSON: I believe we also had this debate in the
24 revenue requirement hearing, and to similar effect.
25 If we have a written or on-the-record acknowledgement
26 from Norske that they want us to release their

1 information, then we're prepared to do it, but not
2 otherwise.

3 MR. BOIS: Q: So if I produce a written request, can I
4 have that as an undertaking that you'll produce that
5 evidence? It's only if I produce the letter
6 requesting the information.

7 THE CHAIRPERSON: I don't even think the threshold is
8 that high, Mr. Bois. If you simply tell me on the
9 record that Norske is releasing that, are willing to
10 have that information released, then that will be
11 satisfactory.

12 MR. BOIS: Okay, I'll get back to you with that after the
13 break then, Mr. Chairman. Thank you.

14 MR. BOIS: Q: Now I just want to talk about a couple of
15 sensitivity things that were done in the cost-
16 effectiveness analysis. Was there a sensitivity
17 analysis done with respect to the 230 kV line not
18 being delayed?

19 MS. HEMMINGSEN: A: The earliest in-service for the 230
20 kV line is October 2008, so that is shown in the cost-
21 effectiveness analysis.

22 MR. BOIS: Q: I thought the analysis showed that it was
23 a one-year delay.

24 MS. HEMMINGSEN: A: Our base case assumes a one-year
25 delay, but the cost-effectiveness analysis shows a
26 range of in-service dates.

1 MR. BOIS: Q: Okay, thank you. Was there a sensitivity
2 done with respect to your assumptions regarding the
3 level of demand-side management that Norske could
4 provide, in terms of increasing that capacity as
5 opposed to going to generation, portable generation?

6 **Proceeding Time 11:35 a.m. T37**

7 MS. HEMMINGSEN: A: No there wasn't.

8 MR. BOIS: Q: Did B.C. -- was there a sensitivity --
9 oh, I think this was already --

10 MS. HEMMINGSEN: A: Mr. Lin, do you want to comment on
11 why that sensitivity wasn't done?

12 MR. LIN: A: The assumptions on the Norske proposal was
13 based on the September 2nd letter, and based on a
14 reading of the letter, the proposal for which the 210
15 megawatts could be simultaneously curtailed was not
16 developed at that time. And therefore we only assume
17 140 megawatts of load curtailment.

18 MR. BOIS: Q: But you'd agree that they have a much
19 larger megawatt demand than what's outlined in the
20 proposal?

21 MS. HEMMINGSEN: A: They may or may not, and once
22 again, it may or may not be considered reliable for
23 B.C. Hydro to meet Vancouver Island's requirements.

24 MR. BOIS: Q: Oh, no, I appreciate that. I'm just
25 asking if you did a sensitivity analysis on an
26 additional capacity, and I think you've said no,

1 have gas transportation in place by 2007, and we have
2 various alternatives to pursue in the event that we
3 can't reach accommodation with Terasen Gas, including
4 going through the Commission and pursuing other
5 measures.

6 MR. BOIS: Q: Oh, I appreciate that, and I wasn't
7 trying to bring up what you've already said, I'm just
8 asking if you did any sensitivity. Did you do --

9 MS. HEMMINGSEN: A: And it relates back to what this
10 cost-effectiveness analysis was. It was a high-level
11 check to test whether the outcome was supportable over
12 a reasonable set of circumstances that B.C. Hydro
13 considered likely. It wasn't to canvass the ground
14 and do sensitivities for every potential different
15 outcome.

16 MR. BOIS: Q: Well, given that you don't have a long-
17 term gas transportation agreement, and given that the
18 issue of reliability of contractual agreements, or the
19 lack of a contractual agreement affects your decisions
20 and assumptions regarding reliability, I would have
21 thought that that would be a sensitivity.

22 MS. HEMMINGSEN: A: Well, it's a factor that manifests
23 in some of the other options that we have, as well.
24 As you heard testimony yesterday or the day before,
25 the same standards for development risk were applied
26 to all projects, whether it was gas transportation, or

1 whether it was transportation of biomass material.

2 MR. BOIS: Q: Okay. Now, I think -- my last point is
3 this, and I think that we can both agree on this, that
4 Norske's situated on the Island and is affected by the
5 reliability of service, just like any other ratepayer,
6 correct?

7 MS. HEMMINGSEN: A: Yes.

8 MR. BOIS: Q: And would you agree that the
9 rationalization for Norske putting the proposal
10 forward was to provide a bridging mechanism to assist
11 B.C. Hydro and ratepayers, including itself, to
12 facilitate an option?

13 MS. HEMMINGSEN: A: And that's how we've reflected it.

14 MR. BOIS: Q: Okay, thank you. Those are my questions.

15 MS. HEMMINGSEN: A: When this document was thrust in
16 front of me, Mr. Bois took me to certain pages, and
17 I've subsequently had a chance to identify some
18 additional sections that are relevant to some of the
19 exchanges that we've had. And one, importantly, is
20 the introduction and summary, which outlines how this
21 report was conceived and relates to my
22 characterization of this report being a brainstorming
23 activity that was meant to look at contingency options
24 in the event that a generation solution was delayed.
25 And for the long-term Vancouver Island requirements.
26 So there's two parts on the introduction and summary

1 which speak to that. The middle of the first
2 paragraph:

3 "Although B.C. Hydro has a proposal for a
4 new combined cycle plant and gas
5 transportation pipeline, regulatory hurdles
6 could delay or halt construction.

7 Therefore, a comprehensive contingency plan
8 is required."

9 And that was the basis on which these options were
10 considered --

11 MR. BOIS: Q: Excuse me.

12 MS. HEMMINGSEN: A: -- and then in the third paragraph,
13 it said:

14 "If VIGP/GSX is delayed, the alternatives we
15 have discussed as longer-term solutions
16 become important contingency options,
17 because they buy time."

18 And that was my recollection of what was the tenant of
19 this study and, furthermore, on page 29, where you
20 took me to the temporary curtailment of pulp and paper
21 mills, the additional questions point to some of the
22 concerns that B.C. Hydro has with these type of
23 options. And in particular, the second bullet point
24 on page 29 says:

25 "Previous studies found it worth about one-
26 fifth of the generating system of the same

1 size, though this assumes only a one-time
2 occurrence per year."

3 MR. BOIS: Q: Thanks for those clarifications. I guess
4 that's the benefit of a tag-team approach. Thank you.
5 Mr. Chairman, those are my questions.

6 MR. SANDERSON: [inaudible] document that's thrust in
7 front of them.

8 MR. BOIS: I would too, because I didn't have the
9 opportunity to read it quite as extensively as that
10 either. Thank you.

11 THE CHAIRMAN: Mr. Bois, I have a question for you that I
12 will say at the outset is unusual, and maybe one that
13 you prefer not to answer. But I'm not sure what your
14 client's position is, with respect to its proposal.

15 **Proceeding Time 11:40 a.m. T38**

16 Is your client's position that it's dependable
17 capacity for the purposes of N-minus-one criteria or
18 is it your client's position that it's a good bridging
19 option?

20 MR. BOIS: Mr. Chairman, I'd seek instructions and I
21 would qualify my answer to this with that -- with this
22 caveat, that I would like to just discuss that
23 question with my client for a moment. But I have a
24 response. I just want to confirm that that's the
25 appropriate response. So should I step down for a
26 couple minutes and seek that or would you rather I

1 come back later?

2 THE CHAIRPERSON: Why don't you come back later.

3 MR. BOIS: Thank you, Mr. Chairman.

4 MR. FULTON: Village of Gold River.

5 MR. LEWIS: Good morning, Mr. Chairman, Madam Chair,
6 Commissioner. I went to sleep last night with the
7 objective of having five questions today and I
8 obviously slept too well because I think I have nine.
9 So hopefully I can get this through as quickly as
10 possible.

11 THE CHAIRPERSON: Thank you, Mr. Lewis.

12 MR. LEWIS: Before I proceed I'd just like a bit of
13 clarification. I respect the determination you made
14 earlier this morning with regard to Mr. Weisberg, but
15 it also caused me some confusion in preparing. If I
16 could -- I don't have an exhibit number because it
17 came up so quickly, but it's the CFT report by B.C.
18 Hydro and there's a statement in it that links back
19 directly to Section 17, that if I could just seek some
20 clarification or we could clarify the record with
21 regard to that it might help the proceedings go
22 forward.

23 It would be page 14 of the CFT report by
24 Hydro, line 9 to 11, but the context of it is 4 to 11.
25 Exhibit B-1.

26 THE CHAIRPERSON: And you took us to page --

1 MR. LEWIS: Fourteen.

2 THE CHAIRPERSON: Thank you.

3 MR. LEWIS: And it would be the paragraph lines 4 to 11.

4 THE CHAIRPERSON: Right. And the document that you
5 referred to that you didn't have an opportunity to get
6 the exhibit number for was the document Mr. Sanderson
7 filed in response to the questions that Mr. Andrews
8 raised?

9 MR. LEWIS: No, sorry. I just -- I didn't have the
10 exhibit number for this.

11 THE CHAIRPERSON: Oh, all right.

12 MR. LEWIS: These lines. So I couldn't refer to it.

13 THE CHAIRPERSON: Okay.

14 MR. LEWIS: I was just apologizing because it came up so
15 quickly but -- and once again I don't disagree with
16 your determination and I'm not going to go back there,
17 but for clarification it does say on line 9 that this
18 request was also made in regard to Section 17 of the
19 CFT.

20 THE CHAIRPERSON: Yes.

21 MR. LEWIS: And that probably caused some of the
22 confusion for Mr. Weisberg going back along those
23 lines to this panel and given that questions were
24 pushed to this panel that I had felt too that, "Oh,
25 well then we'll deal with that, questions of those --
26 of that nature at this time."

1 So do we need to clarify this record, that
2 in fact the cost effectiveness analysis was not a
3 result of a reference to Section 17?

4 THE CHAIRPERSON: There is a good answer to this
5 question. I don't think the record is confusing in
6 this regard.

7 MR. LEWIS: Okay.

8 THE CHAIRPERSON: Section 17, I hesitate to comment on
9 Section 17 other than to say that my ruling with
10 respect to Mr. Weisberg related to confining him to
11 the matters that are before this panel and Section 17
12 of the CFT is a matter that he could have raised with
13 Panel 2 and he did raise with both Panels 2 and 3.

14 So I'd encourage you as well to confine
15 your comments to Appendix J and the load forecast.

16 MR. LEWIS: Yes, I'll do that for sure.

17 **CROSS-EXAMINATION BY MR. LEWIS:**

18 MR. LEWIS: Q: As I stated, I'm not interested in
19 going back there to Section 17 other than just dealing
20 with the broad cost effectiveness analysis and, you
21 know, I think it comes down to a large matter of
22 interpretation and I think that B.C. Hydro is entirely
23 entitled to develop a process it desires outside of
24 the scope of the independent review to produce a
25 result that it deems as a complete, accurate and
26 comprehensive evaluation. That is their prerogative.

1 **Proceeding Time 11:45 a.m. T39**

2 I also recognize the Commission Panel's
3 unfettered ability to review the EPA regardless of any
4 direction or interpretation of a direction given in
5 previous correspondence. And after a few questions
6 I'm going to return to this issue of interpretation to
7 finish.

8 So with regard to the CFT, we've heard that
9 certain price and non-price factors such as, among
10 other, environmental offsets and deferral account
11 financing charges, were not incorporated into the CFT
12 evaluation. And given that the cost-effectiveness
13 analysis used some updated information such as load
14 forecasting to drive the development of the cost-
15 effectiveness analysis, can you say today for the
16 record that all price and non-price factors that
17 affect the cost-effectiveness of a comparison of the
18 different tiers were incorporated into your cost-
19 effective analysis?

20 MS. HEMMINGSEN: A: No, I can't say that, but why I
21 can't say it relates to the nature of the cost-
22 effectiveness analysis, it was a high-level check on
23 the CFT results that covered some key uncertainties
24 that B.C. Hydro was concerned about with the various
25 options, and also related back to the Commission's
26 criteria around reliability, timing and location.

1 MR. LEWIS: Q: Thank you. Once again, though, those
2 were B.C. Hydro interpreted key uncertainties, and
3 this was your interpretation of the Commission's
4 direction. But that is unfettered with regard to this
5 review.

6 MS. HEMMINGSEN: A: Right, and that relates to the
7 elements of Section 17 because it was management's
8 discretion to apply that cost-effectiveness test, and
9 that's what they determined were the relevant factors
10 to incorporate there.

11 MR. LEWIS: Q: Without a doubt, and I don't disagree
12 with you but I just want to confirm that this was a
13 B.C. Hydro interpretation, and there were cost
14 factors, price and non-price factors, that weren't
15 used in the CEA.

16 MS. HEMMINGSEN: A: As well as additional value
17 elements --

18 MR. LEWIS: Q: Sure.

19 MS. HEMMINGSEN: A: -- that probably were excluded as
20 well.

21 MR. LEWIS: Q: Thank you. Are there any industrial
22 users other than Norske that could offer demand-side
23 management capacity?

24 MS. HEMMINGSEN: A: Potentially there are, yes.

25 MR. LEWIS: Q: Okay, thank you. So we haven't
26 determined that there are no other backfill options?

1 MS. HEMMINGSEN: A: No, what we had outlined is we took
2 the best information that we had for the level of
3 analysis that was contemplated, and represented them
4 in the two scenarios; so some with the on-Island
5 generation afforded through Tier 2, backfilled with
6 some other sources, and then in the no award just
7 contingency measures.

8 MR. LEWIS: Q: Thank you, and once again I'm aware of
9 your interpretation and what you did. But there are
10 other alternatives that weren't used?

11 MS. HEMMINGSEN: A: There are many alternatives. Once
12 again it was --

13 MR. LEWIS: Q: Thank you.

14 MS. HEMMINGSEN: A: -- analysis that was done over five
15 years, with the factors that B.C. Hydro considered to
16 be key.

17 MR. LEWIS: Q: Thank you. Given that the Green Island
18 energy proposal was a 75 megawatt proposal, and the
19 Ladysmith proposal by Epcor proposed a 45 megawatt
20 project, how did you specifically arrive at the
21 generation amount of 600 gigawatt hours?

22 MS. HEMMINGSEN: A: I think we have to refer to the
23 proposal as a 47 megawatt proposal, and we can't
24 attribute names.

25 MR. LEWIS: Q: Oh, I'm sorry, I apologize. That's a
26 bit late now. I'm full aware of that.

1 MR. LEWIS: Q: Correct, but when you go to turn to how
2 much did this project within that portfolio or that
3 project within the portfolio provide in terms of
4 generation, which is the number you used, you would
5 look at which project was least cost under net present
6 value and say, "We're going to use that much
7 generation permit first."

8 MS. HEMMINGSEN: A: We looked at which project was
9 least cost over both capacity and energy values.

10 MR. LEWIS: Q: So it's fair to say that the number that
11 you used in the Tier 2 analysis, for the 47 megawatt
12 project, that generation or energy value came from the
13 QEM analysis when it was combined with the 252
14 megawatt project.

15 MS. HEMMINGSEN: A: Yeah, for the 47 megawatt peaker,
16 it was a peaker, so as I said, it typically wouldn't
17 be dispatched, so its cost would basically be the
18 fixed cost associated with that bid.

19 MR. LEWIS: Q: My nine questions are rapidly increasing
20 here. Would it be fair to say -- and this is part of
21 the problem, I think, when you start combining a
22 capacity evaluation with a generation or an energy
23 evaluation, that you can either state, "We're going to
24 pay the fixed cost, because we need it for capacity,
25 and then we're going to operate it as long as the
26 variable costs are below the forecasted electricity

1 price."

2 MS. HEMMINGSEN: A: Well, the way that we set up the
3 quantitative evaluation methodology and, in fact, the
4 CFT, was we were looking for capacity. To the extent
5 energy came with it, we valued it in the model.

6 MR. LEWIS: Q: So when you were determining the energy
7 that came from the 47 megawatt peaker, did you analyze
8 how often the variable costs for that peaker were
9 below the electricity price forecast, and dispatch it
10 appropriately?

11 MS. HEMMINGSEN: A: A peaker, by its very nature, has
12 very high variable costs to operate. So it's
13 typically not dispatched.

14 MR. LEWIS: Q: Okay, but I'm asking if that's how you
15 did it. Did you independently run it through the QEM
16 and say, "This is how often" --

17 MS. HEMMINGSEN: A: Yes.

18 MR. LEWIS: Q: Okay, thank you. So what I'm to
19 understand, then, is you've attributed costs for the
20 47 megawatt peaker, but it's contributed very little
21 generation to this analysis.

22 MS. HEMMINGSEN: A: By its nature.

23 MR. LEWIS: Q: And if you continually seek resource
24 additions that require capital cost inputs, but fail
25 to attribute any generation, you're inevitably going
26 to make them cost-ineffective, correct?

1 MS. HEMMINGSEN: A: No, not inevitably. There's some
2 capacity resources that are very cost-effective that
3 don't provide any energy, but they do cost-effectively
4 meet the capacity requirements. An example would be
5 our Revelstoke project, very little energy but very
6 cost-effective capacity.

7 MR. LEWIS: Q: Okay. I'm going to move on.

8 In Exhibit B-1, the cost-effectiveness
9 analysis, the backgrounder that proceeds Appendix J,
10 it states on page 1 that:

11 "The general approach is to examine the NPV
12 of each CFT outcome..."

13 And then it further goes on to talk about -- the
14 remainder of the sentence deals with incorporating
15 subsequent resource additions to that.

16 I believe that -- I guess I should ask you,
17 in your testimony while on Panel 2, did you indicate
18 that the QEM was applied to the 122 megawatt portfolio
19 in the cost-effectiveness analysis, but not the CFT?

20 MS. HEMMINGSEN: A: The QEM was applied to generate the
21 dispatch for the purposes of the cost-effectiveness
22 analysis. So it took the results from the bids, and
23 carried them forward to the cost-effectiveness
24 analysis.

25 MR. LEWIS: Q: So I guess my question is, has the NPV,
26 as determined by the QEM application for the 122

1 megawatt portfolio, been made available to the
2 Commission?

3 MS. HEMMINGSEN: A: That information has been made
4 available in confidence to the Commission. And some
5 elements of it have been summarized, and that was the
6 IR that I believe I referenced this morning.

7 MR. LEWIS: Q: Right.

8 THE CHAIRMAN: 1.6.6, I think.

9 MR. LEWIS: Q: Now, with regard to confidence on that,
10 if I were to undertake that I'd be provided with a
11 comparison of that 122 megawatt portfolio on a net
12 present value, with the Tier 1 decision returned from
13 the CFT as a comparative value or a percentage, that
14 would maintain the confidentiality, would it not?

15 MS. HEMMINGSEN: A: Well, I think you've actually got
16 quite a bit of information, more than you're asking
17 for with that request, in BCUC IR 2.46.6.

18 **Proceeding Time 11:55 a.m. T41**

19 It has the components of the net present value broken
20 down for each of the three alternatives.

21 MR. LEWIS: Q: So it would be very easy for me to
22 determine that value then, the 122 megawatt portfolio
23 run through the QEM independently, compared to --

24 MS. HEMMINGSEN: A: It has the CFT costs for the 122
25 megawatts as a net present value.

26 MR. LEWIS: Q: Thank you. So I guess to complete my

1 questions to you, it comes back to this, I guess,
2 consideration of interpretation. And B.C. Hydro has
3 made their interpretation and they've provided that in
4 a cost-effectiveness analysis. But if the panel's
5 interpretation of the situation was in fact, or is in
6 fact, we're willing to accept less capacity now if it
7 is shown to be significantly more cost-effective on an
8 NPV basis and we're further willing to fulfill any
9 shortfall through other resource options or CFTs, that
10 number might be very valuable.

11 MS. HEMMINGSEN: A: Which number?

12 MR. LEWIS: Q: The comparative value of the 122
13 megawatt NPV to the Tier 1 CFT NPV.

14 THE CHAIRPERSON: Mr. Lewis, can you repeat the question
15 for me, please?

16 MR. LEWIS: Q: Okay. If the panel's interpretation or
17 their willingness is to say, "We're willing to accept
18 less capacity now, if it is shown to be significantly
19 more cost-effective based on an NPV basis, and to
20 further fulfill any shortfall through other resource
21 options or CFTs," it follows to me that the comparison
22 of the NPV value for 122 megawatt portfolio to the NPV
23 value for the Tier 1, the CFT outcome, would be a very
24 valuable number.

25 MS. HEMMINGSEN: A: I think you'd get that number out
26 of that IR.

1 MR. LEWIS: Q: Thank you. That's all my questions.
2 MR. FULTON: Commercial Energy Consumers.
3 THE CHAIRPERSON: I might add while Mr. Craig is coming
4 forward -- Mr. Lewis?
5 MR. LEWIS: I've been provided with some information, and
6 I believe -- I'd just like to have a quick look at it
7 and reserve the right to come back if I have any
8 further questions based on a quick analysis of that.
9 Just to make the information's there. If it's there,
10 no more questions.
11 THE CHAIRPERSON: Well, your question is whether or not
12 BCUC 2.46.6 meets your requirements.
13 MR. LEWIS: Exactly, if it contains that information I've
14 asked for.
15 THE CHAIRPERSON: Yes.
16 MR. LEWIS: Thank you.
17 THE CHAIRPERSON: I'll add that it was very helpful for
18 you to identify that IR, and --
19 MR. LEWIS: Yes.
20 THE CHAIRPERSON: -- both for you, Mr. Lewis, and for me,
21 I regret that when I was asking the questions earlier
22 in the context of Mr. Wallace's cross, that I didn't
23 refer to that IR instead of the IR that I did. And it
24 might be useful for you to provide the response to my
25 question in the context of BCUC 2.46.6 instead of
26 14.2.

1 MR. LEWIS: Once again I appreciate my lack of procedural
2 competency and I appreciate your help. Thank you.

3 MR. CRAIG: Good morning, Mr. Chairman and Panel, almost
4 good afternoon, and good morning, panel.

5 Mr. Chairman, I'm going to be mindful of
6 our discussion yesterday and do my best to completely
7 avoid areas of cross-examination that you've advised
8 that I should stay away from. I'm going to stick
9 strictly to Appendix J and cover five short questions.

10 THE CHAIRPERSON: Thank you.

11 MR. CRAIG: Thank you, Mr. Chairman.

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

13 MR. CRAIG: Q: In assembling the no award option, can
14 you help clarify for me what the -- whether or not the
15 temporary generators, or how long you have temporary
16 generators? Is other capacity brought in at some
17 point in time?

18 MS. HEMMINGSEN: A: Mr. Lin can speak to that
19 assumption.

20 **Proceeding Time 12:00 p.m. T42**

21 MR. LIN: A: Under the no award scenario temporary
22 generators are installed starting in fiscal 2008 and
23 will be there until the cable is in service.

24 MR. CRAIG: Q: Okay. And then after that presumable
25 capacity from Revelstoke and Mica would be applicable
26 in the future as part of system capacity that would

1 come through the cable?

2 MS. HEMMINGSEN: A: It would and that's common to all
3 the scenarios, so you don't see those values
4 represented. However what's instructive is that, as I
5 mentioned yesterday, our system requires energy in
6 2010 and to the extent it doesn't get that energy from
7 the CFT we need to add that. So that is what is shown
8 as the backfill.

9 MR. CRAIG: Q: Okay, great. That's helpful. I have a
10 couple of questions on how you've dealt with risk
11 adjustment. In Appendix J you're setting out a
12 sensitivity case of a 10 percent lower price forecast
13 for generation in the Mainland?

14 MS. HEMMINGSEN: A: That's correct.

15 MR. CRAIG: Q: Can you give me some idea of what the
16 probabilities would be that you considered in terms of
17 the risk that that might occur, the probability that
18 that case might occur, or presumably there's a
19 distribution of probabilities and this is only
20 representative of something in the middle?

21 MS. HEMMINGSEN: A: Well, I wish I could give that much
22 precision to it. That wasn't the intent of this
23 analysis. The intent was to represent some scenarios
24 and their impact without according, other than the
25 base case, any probabilities to it. We felt it was
26 important to represent and understand what would be

1 the impact in the event that we could acquire for less
2 than the price signals that we have seen through these
3 past calls, so that's what we did.

4 MR. CRAIG: Q: Right.

5 MS. HEMMINGSEN: A: And 10 percent represented a
6 significant reduction in that price assumption so it
7 was to some sense a stress test.

8 MR. CRAIG: Q: Right. I understand that you've chosen
9 a discrete case in order to test what the results
10 might look like under that case. What I'm trying to
11 understand is what your judgments of the risks are
12 that might be there and one would express those in
13 terms of probabilities or -- and I'm really looking as
14 to whether or not when you were dealing with the risk
15 adjustment whether or not you considered what the
16 probabilities might be.

17 MS. HEMMINGSEN: A: Yeah, we can -- we can --

18 MR. CRAIG: Q: And I accept that they're not precise.
19 They're simply reflective of --

20 MS. HEMMINGSEN: A: We --

21 MR. CRAIG: Q: -- a judgment.

22 MS. HEMMINGSEN: A: We considered applying
23 probabilities but we determined that it would be
24 arbitrary to do so, so we didn't end up representing
25 them.

26 MR. CRAIG: And you have no judgment with respect to what

1 those might be so you --

2 MS. HEMMINGSEN: A: No judgment other than our base
3 case is that the cost of new supply for a similar
4 product is around \$64.00 and that we need to allow for
5 the cable being delayed from October 2008 because
6 immediately in November, if it's one month delayed, we
7 have a peak to serve.

8 MR. CRAIG: Q: That's fine. I just wanted to
9 understand how you'd dealt with the risk adjustment.

10 The other major risk that you're talking
11 about is the delay of the in-service date for the
12 cable?

13 MR. HEMMINGSEN: A: Right.

14 MR. CRAIG: Q: And would you have approached that the
15 same way, that you've not looked at the probability?

16 MS. HEMMINGSEN: A: No, we haven't looked at the
17 probabilities. What we did look at is the
18 uncertainties in terms of the stage of the project
19 development and the regulatory approvals and the
20 permitting activities and that suggested to us that
21 there was considerable uncertainty in that date, and
22 given the earliest in-service date being so close to
23 our peak, one month prior, seemed that just in time,
24 just enough, wasn't an appropriate assumption.

25 MR. CRAIG: Q: Right. I would have thought, had we
26 been looking at probabilities they might have

1 decreased or increased significantly in terms of being
2 able to do it as time moved on. So I was really
3 wanting to ascertain, when you're looking at risk
4 adjusting, whether or not you assessed probabilities
5 and you've made it clear that you didn't. So it's
6 purely qualitative examination.

7 Can I ask, when you're considering the cost
8 effectiveness here presumably you are looking at the
9 question as to whether or not Tier 2 or no award might
10 be preferable from a cost effectiveness point of view,
11 as --

12 MS. HEMMINGSEN: A: Right.

13 MR. CRAIG: Q: -- an overall view? You've stated that.
14 And I was wondering at what level of premium B.C.
15 Hydro would have preferred other options?

16 MS. HEMMINGSEN: A: Well, when we initiated the CFT
17 process -- we always acknowledge that potentially
18 there could be a premium for capacity on Vancouver
19 Island. When we proceeded with the process -- and
20 what this analysis reveals is there is not, except if
21 you look at certain risk scenarios, and generally we
22 were comfortable if the premium was less than \$100
23 million within a reasonable set of circumstances and
24 that's what you see here.

25 **Proceeding Time 12:05 p.m. T43**

26 MR. CRAIG: Q: So from B.C. Hydro's consideration point

1 of view, had it got to 100 million of difference, then
2 B.C. Hydro would have looked to choose the other
3 options?

4 MS. HEMMINGSEN: A: No, I think B.C. Hydro would have
5 looked at undertaking a more comprehensive analysis,
6 perhaps assigning a probability, and doing a more
7 sophisticated review of those issues, but since that
8 wasn't the situation, we were confident to proceed
9 with the outcome of the CFT award.

10 MR. CRAIG: Q: And had those more in-depth analyses
11 then confirmed something in the order of 100 million
12 dollar difference, then B.C. Hydro would have selected
13 to exercise its privative options and --

14 MS. HEMMINGSEN: A: I can't speak to what the senior
15 executive would have done -- that situation didn't
16 exist.

17 MR. CRAIG: Q: Fair enough. Then would have at least
18 considered doing that. Because you were giving
19 recommendations, you would have recommended that they
20 should look at doing that.

21 MS. HEMMINGSEN: A: I might have been concerned myself,
22 had the expected scenarios produced an outcome where
23 there was a premium well over a million dollars. But
24 I can't speak to what the executive would --

25 MR. CRAIG: Q: No, and I wouldn't ask that. You're in
26 a position of recommending to the executive, and so I

1 was looking for your view.

2 MR. SANDERSON: She's given it to you.

3 MR. CRAIG: Q: Yes, thank you.

4 Mr. Chairman, that's all my questions,
5 thank you very much.

6 THE CHAIRMAN: Thank you.

7 MR. SANDERSON: Mr. Chairman, I wonder if we could take a
8 ten-minute break before the last session of today, if
9 that suits?

10 THE CHAIRMAN: Would you like to do that now?

11 MR. SANDERSON: Yes, I think so, Mr. Chair.

12 THE CHAIRMAN: Okay. We'll take ten minutes.

13 **(PROCEEDINGS ADJOURNED AT 12:08 P.M.)**

14 **(PROCEEDINGS RESUMED AT 12:20 P.M.)** **T44**

15 THE CHAIRPERSON: Please be seated.

16 Mr. Sanderson.

17 MR. SANDERSON: Mr. Chairman, just one update. The
18 filing this morning of the December forecast, I think
19 I indicated, I was certainly intending to indicate,
20 may affect some IRs. There's one, it may assist
21 people, if I filed now because we've got Mr. Tiedemann
22 here. So that is Green Island 1.1.2, and so I've had
23 that one redone and reduced -- put the information in
24 a more simplistic way.

25 No, I'm sorry, it should apparently be
26 1.11.2. The reference is to 11.0 and then the sub

1 under it is -- I think it's supposed to 1.11.2. So if
2 I could file that as the next exhibit, it's -- I think
3 we should take a -- discard the old one and replace it
4 with this, I think is the best bet.

5 MR. FULTON: B-70.

6 THE HEARING OFFICER: Marked Exhibit B-70.

7 (GREEN ISLAND ENERGY LTD. "11.0 REFERENCE: NONE",
8 MARKED AS EXHIBIT B-70)

9 MR. SANDERSON: And then I do have one more, and this is
10 GSX CCC 1.28.1, and this one asks for an update to
11 Table 1.2(b) showing Vancouver Island actual and
12 forecast peaks, et cetera. That was done in a table,
13 and that table has now been updated.

14 THE HEARING OFFICER: Marked Exhibit B-71.

15 ("11.0 REFERENCE: B.C. HYDRO'S RESPONSE TO GSX CC CIR
16 1.1.2 DATED MAY 7 2003. VIGP HEARING", MARKED AS
17 EXHIBIT B-71)

18 THE CHAIRPERSON: Please proceed.

19 MR. QUAIL: Mr. Chairman, I don't expect to be
20 particularly long with this panel.

21 **CROSS-EXAMINATION BY MR. QUAIL:**

22 MR. QUAIL: Q: Was there a revision to the load
23 forecast to take into account the approved rate
24 increase that the Commission dealt with in the fall?

25 MR. TIEDEMANN: A: Yes, there was.

26 MR. QUAIL: Q: Okay, could you just quickly tell me

1 where to look, so I've got that on the record and I
2 can avoid asking questions about it?

3 MR. SANDERSON: That was the exhibit filed this morning,
4 Mr. Chairman.

5 MR. QUAIL: Thank you.

6 MR. QUAIL: Q: Now, in the -- skip that one.

7 The IR responses suggest that one of the
8 reasons for increasing the supply/demand deficit on
9 the Island is a reduction in the forecast Power Smart
10 savings for fiscal 2008. Is that correct?

11 MR. TIEDEMANN: A: Would you please refer to the IR
12 number, the exhibit?

13 MR. QUAIL: Q: Yes, I've got BCUC 1.4.1., Tables
14 1.4.1(a) and (b).

15 MR. TIEDEMANN: A: Okay, would you be so kind as to
16 repeat your question?

17 MR. QUAIL: Q: The response suggests one of the reasons
18 for increasing the supply/demand deficit on the Island
19 is a reduction in the forecast Power Smart savings for
20 fiscal 2008 between the 2003/2004 forecast and again
21 2003/2004.

22 MR. TIEDEMANN: A: That's correct.

23 MR. QUAIL: Q: Is the overall contribution of Power
24 Smart programs declining with each new load forecast?

25 MR. TIEDEMANN: A: The overall Power Smart savings are
26 as consistent with the 10-year Power Smart plan but

1 MS. HEMMINGSEN: A: The primary driver for the change
2 in the forecast is the actuals that we have seen in
3 cold weather, which have allowed us to recalibrate our
4 models and reflect that in the forecast. And that's
5 reflected both in the bottom-up and the top-down
6 forecast.

7 MR. QUAIL: Q: You've anticipated my next few
8 questions, and we can truck along here. I think that
9 this issue may have been established in the previous
10 cross-examination by Mr. Craig, but dealing with the
11 temporary generators in the no award option, as I
12 understand your evidence, if the in-service date that
13 is projected for the cables is met, the temporary
14 generators are only needed for 2007/2008 in the no
15 award option, is that right?

16 MS. HEMMINGSEN: A: That's my understanding.

17 MR. TIEDEMANN: A: That's correct.

18 MR. QUAIL: In performing the cost-effectiveness
19 analysis, B.C. Hydro assumes that any additional
20 energy required under Tier 2 or the no award option
21 will be provided from new Mainland generation, is that
22 right?

23 MS. HEMMINGSEN: A: That's the assumption, yes.

24 **Proceeding Time 12:27 p.m. T46**

25 MR. QUAIL: Q: And this would be at the same cost as
26 Tier 1 CFT cost, is that right? Less firm gas tolls.

1 MS. HEMMINGSEN: A: Right. Which is consistent with
2 the prices we've received from past calls as well.

3 MR. QUAIL: Q: But I put it to you that a Mainland
4 station operating to meet the energy requirements of
5 both the Island and the Mainland would be expected to
6 have a higher capacity factor than a station located
7 on the Island. Would you agree with that?

8 MS. HEMMINGSEN: A: Not necessarily.

9 MR. QUAIL: Q: Well, it would have a greater range of
10 opportunity for opportunistic dispatch, isn't that
11 right?

12 MS. HEMMINGSEN: A: The dispatchable product that we've
13 got under the CFT has more opportunity for dispatch
14 than what we've assumed on the Mainland, yes.

15 MR. QUAIL: Q: That is the CFT of Vancouver Island,
16 you're saying, would have more opportunity for
17 opportunistic dispatch than a Mainland resource --

18 MS. HEMMINGSEN: A: Non-dispatchable resource, yes. By
19 definition.

20 MR. QUAIL: Those are all my questions.

21 MR. FULTON: GSX CCC and the B.C. Sustainable Energy
22 Association, and the Society Promoting Environmental
23 Conservation.

24 MR. ANDREWS: The volume of paper is inversely
25 proportional to my memory.

26 **Proceeding Time 12:30 p.m. T47**

1 **CROSS-EXAMINATION BY MR. ANDREWS:**

2 MR. ANDREWS: Q: I'm going to begin, Panel, by working
3 my way through the table that was attached to Exhibit
4 B-57. That is Lawson Lundell's January 17th letter to
5 me. The whole table itself is not in evidence, but
6 the letter is. I'm using that to identify it. I'm
7 trying to avoid questions that have been answered
8 already at this point.

9 This question, for your reference, is on
10 page 6, question 2.8.2. The question is:

11 "At what assumed percentage of Mainland
12 generation price to Tier 1 generation price
13 would the net present value of Tier 1 and no
14 award be equal?"

15 MS. HEMMINGSEN: A: And I believe the answer says:
16 "The break-even Mainland generation price
17 would depend on scenarios and assumptions.
18 However, the rule of thumb that for every 10
19 percent decrease would result in \$100
20 million saving under the no award could be
21 used. On that basis the break-even
22 percentage is approximately 95 percent."

23 MR. ANDREWS: Q: And that is where the scenario is that
24 the load is 261 megawatts?

25 MS. HEMMINGSEN: A: Correct. And we've just
26 established that our load forecast for the capacity

1 deficit is 280, so it's above that 261 megawatts.

2 MR. ANDREWS: Q: That question relates to the scenario
3 at 261 megawatts.

4 MS. HEMMINGSEN: A: It does.

5 MR. ANDREWS: Q: Yes, thank you. Is there anything
6 that you want to add or change to that answer?

7 MS. HEMMINGSEN: A: No.

8 MR. ANDREWS: Q: Thank you. I'll come back to that
9 letter in the context of the load forecasting
10 questions later.

11 I'd like to refer you to IR 2.46.6. This
12 would be Exhibit B-16. This information provided by
13 Hydro provides three tables headed "Tier 1", "Tier 2"
14 and "Tier 3". And first of all, can we confirm that
15 Tier 3 in this context refers to no award?

16 MS. HEMMINGSEN: A: Yes, it does.

17 MR. ANDREWS: Q: The question asks for tables assuming
18 a fiscal 2009 cable in-service date and a 261 megawatt
19 peak load requirement. So that we're all clear, is
20 that correct?

21 **Proceeding Time 12:35 p.m. T48**

22 MS. HEMMINGSEN: A: That's what the tables outline.

23 MR. ANDREWS: Q: Can you explain these tables with a
24 view in mind to identifying what these items are and
25 how they're supposed to be added or subtracted from
26 each other to explain what was referred to as a total

1 at the bottom, which is not even close to an
2 arithmetic total of the numbers above it?

3 MR. LIN: A: The total NPV of each scenario, it's the
4 sum of the following component but with one caveat.
5 The avoided losses should be a subtract instead of
6 addition. So if you add -- let's take Tier 1 table,
7 for example, you add the \$2 million from the CFT to --
8 sorry, if you add \$2 million from Norske to the CFT
9 NPV and then you add 132 minus 41, like it's plus
10 negative 22, and then minus 849, hopefully that would
11 give you 336 -- 366.

12 MR. PETERSON: A: But the sign should be a minus sign
13 for the avoided losses.

14 MR. ANDREWS: Q: Yes.

15 MR. PETERSON: A: And also the value of energy should
16 have a minus sign. That might help.

17 MR. ANDREWS: Q: And does the same apply to Tier 2?

18 MR. LIN: A: Yes.

19 MR. PETERSON: A: Yes.

20 MR. ANDREWS: Q: Looking at what's described as Tier 3
21 or the no award table on page 2 of that IR response,
22 can we just go through these numbers to make it clear
23 sort of in the bigger picture what we're talking about
24 here. This is the calculation that Hydro went through
25 to determine a number in net present value terms that
26 could be assigned to the no award scenario and

1 compared to a corresponding number for the Tier 1 and
2 Tier 2 portfolios, is that the correct --

3 MS. HEMMINGSEN: A: It's --

4 MR. ANDREWS: Q: Are we on the right chapter?

5 MS. HEMMINGSEN: A: It's an NPV analysis of those three
6 options.

7 MR. ANDREWS: Q: Thank you. So line by line, the first
8 item is saying that the cost of the Norske component
9 of the no award portfolio is \$9 million net present
10 value?

11 MR. PETERSON: A: Correct.

12 MR. ANDREWS: Q: And then it's saying that the cost of
13 the temporary generation is \$56 million?

14 MR. PETERSON: A: Correct.

15 MR. ANDREWS: Q: And that refers to the 23 megawatt
16 barges?

17 MR. PETERSON: A: Correct.

18 MR. LIN: A: They are truck mounted, not barge.

19 MR. ANDREWS: Q: Truck mounted?

20 MR. LIN: A: Yes.

21 MR. ANDREWS: Q: Twenty-three megawatt units. And then
22 there's a subtraction of \$12 million net present value
23 related to CFT. Can you explain what that is?

24 MR. LIN: A: That would be the salvage value of the
25 VIGP asset, net present value.

26 MR. ANDREWS: Q: We heard earlier that it was 14 and in

1 some of the materials it was 13.

2 MS. HEMMINGSEN: A: It's \$14 million in actual dollars.

3 It's 12 million in NPV.

4 MR. LIN: A: This analysis was discounted back to

5 January 2003 so there would be a difference of

6 approximately \$2 million in NPV term.

7 MR. ANDREWS: Q: Thank you. Does that 2003 apply to

8 all of the tables? It says that it's in 2003 dollars

9 and --

10 MR. LIN: A: The cost --

11 MR. ANDREWS: Q: -- NPV 2003?

12 MR. LIN: A: All the cost effectiveness analysis

13 figures are expressed in January 2003 dollars. I

14 think in other places --

15 MR. ANDREWS: Q: And NPV to January 2003?

16 MR. LIN: A: That's correct.

17 MR. ANDREWS: Q: So tell me again what is the minus \$12

18 million CFT?

19 MS. HEMMINGSEN: A: It's the cash flow --

20 MR. ANDREWS: Q: That was the for salvage costs, I'm

21 sorry.

22 MS. HEMMINGSEN: A: -- that we're going to get --

23 MR. ANDREWS: Q: I skipped the --

24 MS. HEMMINGSEN: A: -- for selling the assets.

25 MR. ANDREWS: Q: AC cable phase 1, 132, that's the same

26 as was assigned to the other two portfolios and

1 starting in 2010 fiscal.

2 MR. ANDREWS: Q: Now, the value of the energy, in the
3 next line, \$802 million, can you explain why -- what
4 the economic sense would be in spending \$997 million
5 to produce \$802 million worth of energy?

6 MR. LIN: A: We're assuming they're must-run
7 facilities. Therefore, they had to be generating
8 regardless of market conditions. The \$802 million
9 represents our price forecast, struck -- the present
10 value of the prices that B.C. Hydro currently
11 forecasts, starting to fiscal 2010.

12 MR. ANDREWS: Q: Thank you. Referring you now to
13 Exhibit B-1, CFT report, and it's J, the cost-
14 effectiveness analysis, attachment A, the results
15 summary. The tables -- or the table, singular, for
16 the high gas/low electricity price scenario was
17 replaced by Table 1.25.3 in the response to GSX CCC,
18 is that correct?

19 MR. LIN: A: Yes.

20 MR. ANDREWS: Q: GSX -- it's called Table 1.25.3. The
21 IR number is 1.25.3, and the table number is 1.25.3.

22 In the description of the rationale for
23 producing this revised table, this is on page 1 of the
24 IR response, it said that there was a calculation
25 error that resulted in the Tier 1 costs being
26 underestimated by approximately 45 million dollars.

1 Is that correct?

2 MR. PETERSON: A: It's correct.

3 MR. ANDREWS: Q: Does that mean that at the time that
4 Hydro management was examining the cost-effectiveness
5 analysis results, they were looking at what's now the
6 appendix to -- or the attachment A to Appendix J, the
7 uncorrected --

8 MS. HEMMINGSEN: A: That's correct.

9 MR. ANDREWS: Q: So they had -- what they were looking
10 at, in a high gas/low electricity price scenario
11 favoured Tier 1 by 45 million dollars, by pure
12 arithmetic mistake.

13 MS. HEMMINGSEN: A: In that high stress test, yes.

14 MR. ANDREWS: Q: Did you go back to Hydro management
15 when you discovered this error, and --

16 MS. HEMMINGSEN: A: As soon as we discovered the error,
17 we raised it with the executive, and we introduced the
18 revised numbers, and they reviewed them and affirmed
19 their decision and commitment to Tier 1.

20 **Proceeding Time 12:45 p.m. 02A**

21 MR. ANDREWS: Q: On the next page, just where we have
22 the tables, just so that we can make some sense of the
23 tables in a more narrative sense, the meaning of the
24 first item here, in the first table, is that under the
25 assumption of a 261 megawatt capacity gap, and the
26 first line being the assumption that the 230 kV is in

1 service October, 2008, and on the assumption of a high
2 gas/low electricity price scenario, the no award
3 scenario is 123 million less expensive than the Duke
4 Point project, is that right?

5 MS. HEMMINGSEN: A: That's correct.

6 MR. ANDREWS: Q: And in the same conditions, the Tier 2
7 portfolio is 83 million less expensive than the Tier
8 1.

9 MS. HEMMINGSEN: A: As outlined in that table.

10 MR. ANDREWS: Q: So when you went to the management and
11 talked about the results of this, were you -- I mean,
12 what did you make of the sensitivity of your model
13 when, by changing your assumptions about the spark
14 spread, it made a difference between Tier 1 in your
15 normal -- your base case, as you put it, and an
16 outcome in which it would appear that no award is
17 substantially preferable to DPP?

18 MS. HEMMINGSEN: A: As I believe I've stated before,
19 that scenario represented a stress test, when gas
20 prices were very high, and electricity prices were
21 correspondingly very low, which B.C. Hydro considers
22 to be a very unlikely scenario. So it was presented
23 in the context of stress testing gas and electricity
24 prices, and understanding what the implications were
25 to the various rankings. So in that very unlikely
26 scenario, the executive was satisfied that it was

1 reasonable to pay a small premium for a Tier 1
2 outcome.

3 MR. ANDREWS: Q: Well, when you say "stress test", what
4 makes it a test?

5 MS. HEMMINGSEN: A: The evaluation of that scenario
6 makes it a test.

7 MR. ANDREWS: Q: Well, let me put it another way. How
8 would it -- what would it look like if something
9 failed a stress test? Or is the "test" something to
10 do with -- they simply say, "Well, 123 million dollars
11 compared to the likelihood of this scenario is not
12 very much money," and so it passes the stress test?

13 MS. HEMMINGSEN: A: Decision-making, in my experience,
14 is about looking at a reasonable range of scenarios
15 and understanding the implications of the decisions.
16 It's also looking at extreme scenarios and
17 understanding whether you can live with or tolerate
18 those results, if circumstances pan out beyond your
19 expectations. Hence, that's the stress test.

20 So in circumstances that B.C. Hydro does
21 not consider to be likely, there is a premium for a
22 Tier 1 reliable outcome.

23 MR. ANDREWS: Q: Let me ask you this. That it's
24 described as a test -- a stress test for the model.
25 Would you agree that there's a big distinction between
26 stress-testing the model and providing information for

1 management to make decisions on?

2 MS. HEMMINGSEN: A: I'm not sure where you're quoting
3 it's stress-testing the model. Perhaps you could
4 provide me a reference.

5 MR. ANDREWS: Q: Well, that phrase has been used over
6 and over. If that's not correct, then --

7 MS. HEMMINGSEN: A: Can you provide me a reference,
8 please? I'm not sure that I've used that phrase.

9 MR. ANDREWS: Q: Well, let me just ask you. Is -- when
10 you say "stress test", what I'm -- what I don't have a
11 handle on is the -- is whether there's supposed to be
12 anything objective that would allow someone to
13 determine that the stress test has passed or failed.

14 MS. HEMMINGSEN: A: As I outlined, this was a high
15 level test to look at circumstances that B.C. Hydro
16 thought were important to consider in the
17 determination of cost-effectiveness of Tier 1. One of
18 the unlikely scenarios that B.C. Hydro wanted to
19 consider was the situation when there would be
20 prevailing high gas prices for the entire duration of
21 the CFT, and correspondingly low electricity prices.

22 When that scenario produced a result that
23 was within the range of 100 million dollars and B.C.
24 Hydro viewed that scenario as highly unlikely, they
25 were satisfied that the Tier 1 outcome was an
26 appropriate solution.

1 **Proceeding Time 12:50 p.m. T3A**

2 MR. ANDREWS: Q: And so whether the -- we just don't
3 know whether, if the number there were \$200 million,
4 management might have said that's beyond the pale, or
5 if it was 500 million they might have still said,
6 "That's okay with us."

7 MS. HEMMINGSEN: A: Because --

8 MR. ANDREWS: Q: There's no objective basis for it.

9 MS. HEMMINGSEN: A: -- what they did say when they saw
10 that it was 123 million, in both the unlikely case
11 that there was high gas and correspondingly low
12 electricity prices, and the cable was in service in
13 fiscal 2009, that they were satisfied with that
14 result.

15 MR. ANDREWS: Q: As you've testified before. I'm going
16 to turn to -- well, just let me get organized here.

17 Yes, I will turn now to the load
18 forecasting questions. I have -- this may raise an
19 issue regarding how we handle the paperwork. I'd like
20 to introduce an exhibit from the VIGP hearing that was
21 among the exhibits which I asked to be admitted as
22 evidence in this hearing, in my letter of December 28,
23 which is C-20-12. The one I have in mind is the VIEC
24 response to BCUC Staff Information Request 2.26.6
25 dated 2 May 2003. In the VIGP hearing it was Exhibit
26 4-K, and --

1 THE HEARING OFFICER: Marked Exhibit C20-33.

2 (VIEC RESPONSE TO BCUC STAFF INFORMATION REQUEST

3 2.26.6 DATED 2 MAY 2003, MARKED AS EXHIBIT C20-33)

4 MR. ANDREWS: Q: It's been commented that if this looks
5 like Greek to you, it is. I'll get -- if you have the
6 exhibit then, I'll get to it shortly.

7 **Proceeding Time 12:55 p.m. T4A**

8 Now, there are a number of questions which
9 I'm not going to read the full question and the full
10 answer. I will ask counsel to file the IR -- file
11 these questions and answers as IR responses. But it
12 would probably help both me and the panel if I were to
13 go through these in order. We're at page 6 or I'm at
14 page 6 of the table to the proto-responses to GSX CCC
15 IR 2, and 2.10.1. These are questions about the ALM.
16 Can you for the record state what ALM stands for?

17 MR. TIEDEMANN: A: So it refers to the area load model.

18 MR. ANDREWS: Q: Thank you, and the acronym SAS is used
19 there. That stands for statistical analysis system,
20 is that right?

21 MR. TIEDEMANN: A: I don't actually know what the SAS
22 acronym stands for. I've never heard anyone actually
23 spell it out, but it's a major supplier of
24 statistical, analytical and econometric software.

25 MR. ANDREWS: Q: Turning the page to 2.10.2, the
26 question has to do with the individual metered

1 locations.

2 MS. HEMMINGSEN: A: Is that a question or what's your
3 question?

4 MR. ANDREWS: Q: The witness is --

5 MR. TIEDEMANN: A: Please continue with your question.

6 MR. ANDREWS: Q: Yes, all right. The answer that I'm
7 expecting is that there are 98 residential locations
8 in Vancouver Island region which are tested for load
9 as part of the ALM. Is that correct?

10 MR. TIEDEMANN: A: That's correct.

11 MR. ANDREWS: Q: And there are four segments within the
12 load that are analyzed -- that is, single family
13 dwelling, multiple -- sorry, single family dwelling
14 heating, single family dwelling non-electric heat,
15 multi-family dwelling electric heat, and multi-family
16 dwelling non-electric heat for the residential
17 component of the distribution load.

18 MR. TIEDEMANN: A: That's correct.

19 MR. ANDREWS: Q: And now referring to Exhibit C20-33,
20 it states:

21 "For the distribution peak forecast, the
22 functional form and coefficients in the
23 model are:..."

24 and then it lists PK_{IT} equals, and then five equations.
25 Are we on the same page?

26 MR. TIEDEMANN: A: I believe there's one equation with

1 a number of terms in it.

2 MR. ANDREWS: Q: Fair enough. There are five terms
3 within the overall equation.

4 MR. TIEDEMANN: A: I think I see ten, sir.

5 MR. ANDREWS: Q: Well, it depends on how you -- fair
6 enough, we're on the same table then. You can count
7 them as ten terms and there are five variables, or six
8 variables I suppose.

9 MR. TIEDEMANN: A: This is a calibration equation. For
10 forecasting purposes we use essentially this equation,
11 but the second set of terms, those starting with alpha
12 2 and then the taus, those are recalibration factors.
13 And so when there's recalibration, those temperature
14 differentials represented by the taus are set to zero
15 because the model is calibrated to the design
16 temperature. So for forecasting purposes, they all
17 drop out.

18 So if you look at the load forecast, you'll
19 see essentially this equation, but it will have only
20 six terms in it on the right-hand side, the first four
21 referring to residential dwellings and the two at the
22 bottom referring to the general rate class load.
23 Those aren't calibrated for temperature because we
24 haven't determined there's a significant amount of
25 weather sensitivity of the general loads to
26 temperature changes.

1 **Proceeding Time 1:00 p.m. 05A**

2 MR. ANDREWS: Q: So these four categories regarding
3 residential are used to -- for the calibration of your
4 -- one part of your load forecasting procedure.

5 MR. TIEDEMANN: A: That's right. They're used to
6 calculate the coefficients that are used in the
7 forecasting, for the distribution load.

8 MR. ANDREWS: Q: And this model is applied to, -- is it
9 three planning regions within Vancouver Island?

10 MR. TIEDEMANN: A: That's correct. Vancouver Island
11 has been divided into three planning regions now.

12 MR. ANDREWS: Q: So the data that's derived from the 98
13 observation points is distributed among three planning
14 regions and four variables, correct?

15 MR. TIEDEMANN: A: That's correct.

16 MR. ANDREWS: Q: So, in other words, of the 98
17 locations, if they were equally distributed among the
18 variables and the three planning regions, you would
19 have at most eight data points per variable. On
20 average. You may have -- if you -- in your best case,
21 most even distribution.

22 MR. TIEDEMANN: A: So this equation is pulling together
23 data from across Vancouver Island. We don't
24 separately calculate appropriate equations at the
25 level of either the cells by housing type or cells by
26 region. So, although you're formally correct that the

1 number of cells is as you've suggested, in fact all of
2 the information for the Island is used in calculating
3 this equation.

4 MR. ANDREWS: Q: On the second page of Exhibit C20-33,
5 there are electric intensity variables set out in
6 rather small print at the bottom of the page. How do
7 you derive separate electric intensity per housing
8 unit by dwelling type and heating type?

9 MR. TIEDEMANN: A: So the information is pooled. In
10 effect, we have a cross-section of time series data,
11 so it forms a panel, which is a very powerful
12 econometric device. So we have lots and lots of
13 observations, we have 365 observations -- well, in
14 fact we have hourly data, we have 8760 observations
15 for each dwelling. For each day, we take the peak
16 load hour load and the temperature. So for each
17 dwelling, we have 365 observations multiplied by the
18 number of sample sites that we have on the Island. So
19 we have a rich database.

20 MR. ANDREWS: Q: So you're -- if I understood your
21 answer correctly, previously, although Vancouver
22 Island's divided into three planning sub-regions,
23 these coefficients are calculated for Vancouver Island
24 as a whole?

25 MR. TIEDEMANN: A: They're calculated by region, but
26 using the richness of the panel structure.

1 MR. ANDREWS: Q: I think I'll -- how much of the 365
2 days of the year information that you get from the 98
3 data points is relevant to the winter peak?

4 MR. TIEDEMANN: A: The model is calibrating the
5 relationship between the key drivers, including
6 temperature, and the peak load. So although
7 information in the vicinity of the lowest or design
8 temperature is obviously the most valuable, all the
9 information is being used in the calibration.

10 MR. ANDREWS: Q: Turning the page, page eight, and as
11 I've indicated I'll ask for some of the other
12 questions to be provided in writing, but ten -- 2.10.7
13 asks for the sample of residential metered sites, what
14 are the 95 percent confidence intervals on the load
15 shapes by class and region. Can you provide an answer
16 to that?

17 **Proceeding Time 1:05 p.m. T6A**

18 MR. TIEDEMANN: A: So the residential sample was
19 designed to provide 10 percent relative provision --
20 relative precision at the 90 percent confidence level.
21 This is the standard adopted by most utilities under
22 the U.S. PERPA Act of 1978.

23 MR. ANDREWS: Q: Can you confirm that that's 10 percent
24 relative precision at 90 percent confidence level on
25 the B.C. wide basis?

26 MR. TIEDEMANN: A: This is relative for Vancouver

1 Island.

2 MR. ANDREWS: Q: Well, you said -- maybe we didn't get
3 this in the record, but I -- one of your previous
4 answers in writing indicated that there were 326 --
5 okay, let me go back. We might as well put this on
6 the record now then.

7 In 2.10.2 --

8 MR. TIEDEMANN: A: Mm-hmm.

9 MR. ANDREWS: Q: -- is it correct that the number of
10 interval metered residential locations used for the
11 ALM model for the 2002/03 financial year modeling was
12 299?

13 MR. TIEDEMANN: A: That's correct.

14 MR. ANDREWS: Q: And that the number for Vancouver
15 Island region was 98?

16 MR. TIEDEMANN: A: That's also correct.

17 MR. ANDREWS: Q: So then the answer of a 10 percent
18 relative precision at 90 percent confidence level, I'm
19 asking you does that apply to the province-wide based
20 on 299 observation points or Vancouver island based on
21 98?

22 MR. TIEDEMANN: A: I should check into this, please.

23 MR. ANDREWS: Q: Well, fine, if you would undertake to
24 --

25 MR. TIEDEMANN: A: Mm-hmm.

26 MR. ANDREWS: Q: -- respond.

1 MR. SANDERSON: We'll provide an answer on the record
2 after lunch.

3 **Information Request**

4 MR. ANDREWS: Thank you.

5 MR. SANDERSON: Okay.

6 MR. TIEDEMANN: A: We'll have to go back and check on
7 the original design criteria. The reason for my
8 slight hesitation is that typically if you have a
9 sample of 400 observations, that provides you with
10 plus or minus 5 percent at the 95 percent confidence
11 level. If you have 100 that increases to 10 percent.
12 But it depends of course upon the particular variable
13 which the original study was designed to provide
14 precision on and I don't have that information.

15 MR. ANDREWS: Q: And that is what you will provide?

16 MR. TIEDEMANN: A: That's what I will -- that's what I
17 will seek.

18 MR. ANDREWS: Q: I'm turning the page now to 2.11.2.
19 It's correct, is it not, that the load forecast
20 indicates that the distribution peak model
21 incorporates a housing starts and housing stock
22 forecast?

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

24 MR. ANDREWS: Q: And housing starts and housing stock
25 forecasts are used as drivers for the growth in the
26 total accounts of that category for Vancouver Island?

1 MR. TIEDEMANN: A: We start with the existing number of
2 accounts and then look at the increments to that stock
3 by using a forecast of new housing so that over time
4 the addition in each year is added to the stock to
5 increase the stock over time.

6 MR. ANDREWS: Q: And do you also rely on a forecast of
7 future housing starts provided by R.A. Malatest and
8 Associates?

9 MR. TIEDEMANN: A: That's correct.

10 MR. ANDREWS: Q: Do they use a standard econometric
11 model in making that forecast?

12 MR. TIEDEMANN: A: I believe they use projections more
13 than they use an econometric model.

14 MR. ANDREWS: Q: A projection would be an estimate
15 based on personal or professional knowledge as opposed
16 to a statistical calculation?

17 MR. TIEDEMANN: A: Based on an analysis of key drivers.

18 MR. ANDREWS: Q: A quantitative analysis of peak
19 drivers?

20 MR. TIEDEMANN: A: That's correct.

21 MR. ANDREWS: Q: Is that analysis in writing and is
22 that what's provided to you, the full analysis, or do
23 you just get the number at the end of the day?

24 MR. TIEDEMANN: A: Okay. We get a detailed hundred
25 page report which provides information on a number of
26 variables by planning area, but we don't receive the

1 results of the calculations of the underlying
2 equations as part of that report, to the best of my
3 knowledge.

4 **Proceeding Time 1:10 p.m. 07A**

5 MR. ANDREWS: Q: What I'm trying to get at now, then,
6 is whether that means that the merit of the forecast
7 depends on the -- sort of on a one-to-one basis with
8 the professional merit or intuition of the forecaster,
9 or whether there is a quantitative basis that you can
10 go back and follow through to apply your own
11 professional judgment to.

12 MR. TIEDEMANN: A: I believe that Mr. Malatest also
13 looks at other sources of information such as CMHC
14 projections of housing starts, he was formerly an
15 economist with CMHC, and so that's why we have a lot
16 of confidence in his professional judgment with
17 respect to the housing area.

18 MR. ANDREWS: Q: Can that report that's provided to
19 Hydro be made available in the future occasions on
20 which the load forecasting is itself made publicly
21 available?

22 MR. SANDERSON: Mr. Chairman, this is really not a
23 question for this proceeding, if I understand the
24 request. It more has to do with the level of
25 reporting that Hydro provides with respect to its load
26 forecasting. You know, the -- I really don't want to

1 establish the precedent of burdening the Commission --
2 or burdening Hydro, with the obligation to provide all
3 the back-up material for something as complicated as
4 the load forecast. And I think that -- I just think
5 it would be inappropriate to sort of make that
6 determination in the context of this proceeding.

7 THE CHAIRMAN: Mr. Andrews, I think Mr. Sanderson's
8 correct.

9 MR. ANDREWS: Q: Well, different question, then. Can
10 that analysis be -- can the analysis that was provided
11 to B.C. Hydro that was used in the -- either October
12 or December, now, 2004 load forecast be provided to
13 this hearing?

14 MR. SANDERSON: So now move it into this hearing, and ask
15 what relevance it has to anything that's in issue in
16 this proceeding.

17 MR. ANDREWS: I'm glad I was -- for the opportunity to
18 address that. The -- would you -- and may I ask this
19 of this witness.

20 MR. ANDREWS: Q: Would you agree that the estimation of
21 the intensity coefficients is a critically-important
22 part -- not the whole thing, but an important part --
23 of the derivation of Hydro's ultimate load forecast?

24 MR. TIEDEMANN: A: Yes, it is.

25 MR. ANDREWS: Q: Okay. And so the accuracy of Hydro's
26 ultimate load forecast depends, in part, on the

1 accuracy of the calculation of the intensity
2 coefficients.

3 MR. TIEDEMANN: A: That's correct.

4 MR. ANDREWS: Q: My submission, with respect, is that
5 this material goes to the accuracy of the load
6 forecast.

7 MS. HEMMINGSEN: A: One issue is potentially that
8 report is provided to us on a confidential basis,
9 because it's a paid for report that's used by other
10 clients and customers, so we'd have to check on what
11 basis we could release that.

12 MR. SANDERSON: But, Mr. Chairman, before we do that, the
13 mere fact that the underlying report is relevant to
14 the load forecast strikes me as not enough to make it
15 relevant to this proceeding. I don't understand from
16 the evidence that's been filed, by the GSX CCC or
17 anybody else, that there is contradictory information
18 to the Malatest information filed on this record, or
19 going to be filed on this record. And if I'm wrong on
20 that, then I'm sure Mr. Andrews will correct me.

21 Assuming I'm correct, it's my submission
22 that filing all the back-up material, when the
23 conclusions that are drawn from that back-up material
24 aren't directly put in issue, is not a useful
25 precedent, and isn't going to advance this record. I
26 just don't see that there's anything at that next

1 layer of the onion that is going to help test, if you
2 want, what's already been put forward by this panel.

3 And unless Mr. Andrews can make it clear
4 how that's going to be accomplished, I submit we
5 shouldn't have to burden the record with that
6 additional material.

7 MR. ANDREWS: Q: I have two points in response. First,
8 the issue of transparency is one that is always before
9 the Commission, and the Commission does have the
10 authority to make directions in its ultimate decision,
11 whatever it decides, regarding other aspects of the
12 EPA. And in the VIGP decision, the Commission
13 specifically commented on the transparency with -- not
14 with relation to load forecasting but with relation to
15 the portfolio analysis models. So there's an
16 immediate recent precedent for the Commission
17 commenting on the importance of transparency of
18 models.

19 And secondly, to the extent that counsel
20 indicates that the relevance and materiality, I
21 presume he's referring to, of the evidence is based on
22 whether evidence has been filed by GSX CCC or somebody
23 else, that contradicts the Malatest report, my
24 submission is, of course we haven't filed evidence
25 that contradicts it because we don't know what it
26 says, and that if we are allowed to -- if it's

1 produced to the Commission, we may be in a position to
2 offer evidence that contradicts it. And until we see
3 it, we can't know.

4 **Proceeding Time 12:15 p.m. T8A**

5 And this is a fundamental, underlying
6 building block of Hydro's load forecast. So to the
7 extent that the load forecast is relevant, and I don't
8 have to, I think, repeat why that is here, the
9 transparency of the load forecast allows the parties
10 to examine one of the key parameters in the issues
11 before the Commission.

12 THE CHAIRPERSON: Was it filed in the VIGP proceeding?

13 MR. ANDREWS: No, it was not.

14 THE CHAIRPERSON: That's my recollection as well. And at
15 the time you challenged the numbers in that report
16 without the benefit of the report. Unless -- I think
17 we'll adjourn now, but let me -- both to find out on
18 the confidence issue, but also I need more from you as
19 to what you will do with the report, particularly
20 given that you've tested the load forecast in the
21 previous proceeding without the benefit of it. It's
22 not something you've asked for before. And I really
23 do hesitate to burden the record at this stage with
24 this report.

25 So let's adjourn now until 3:15 and we can
26 return to this issue. Thank you.

1 MR. ANDREWS: Thank you.

2 (PROCEEDINGS ADJOURNED AT 1:17 P.M.)

3 (PROCEEDINGS RESUMED AT 3:15 P.M.) T09A

4 THE CHAIRMAN: Please be seated.

5 MR. SANDERSON: I do have a bunch of procedural matters
6 while Mr. Andrews is getting settled again. And also
7 some follow-up to this morning that probably it would
8 be helpful if we did before -- while Mr. Andrews is
9 still at the podium. And we also have the Malatest,
10 or whatever it's called, issue to complete.

11 So, maybe I should just do the filings
12 first. There's an undertaking in response to a
13 question that appears at Volume 7, pages 1621 and 22,
14 I guess it was Mr. Andrews cross-examining at the
15 time. He asked to confirm the discounted cost of the
16 bid capacity changes \$308 million and change, at a
17 discount rate of 8 percent, and the answer to that is
18 confirmed.

19 MR. FULTON: B-72.

20 THE HEARING OFFICER: B-72.

21 (RESPONSE TO UNDERTAKING FROM VOLUME 7, PAGES 1621 AND
22 1622, MARKED AS EXHIBIT B-72)

23 MR. SANDERSON: Next is, I had indicated on the record
24 earlier that Hydro and Duke had reached an agreement
25 in principle that the provision in the EPA governing
26 termination rights should be amended to provide for

1 those rights not arising until February the 18th, as
2 distinct from the February 14th as they presently did.
3 That has now been done. I'll file this in a moment.
4 It's a formal amending agreement number one, dated
5 January 20th, 2005. I'll refer parties, when they get
6 it, to section 2, and in particular the revisions to
7 section 3.1, which change the 90-day provision to a
8 94-day provision.

9 So if that could be the next exhibit.

10 THE HEARING OFFICER: B-73.

11 (FORMAL AMENDING AGREEMENT NO. 1, BETWEEN DUKE POINT
12 POWER LIMITED PARTNERSHIP AND B.C. HYDRO AND POWER
13 AUTHORITY, DATED JANUARY 20TH, 2005, MARKED AS EXHIBIT
14 B-73)

15 MR. SANDERSON: And then I have a couple of questions for
16 the panel that I think it would just be efficient to
17 get on the record now.

18 The first is for Ms. Hemmingsen, and I had
19 promised Mayor Lewis that, with reference to BCUC IR
20 2.46.6, it was possible, I understood, to determine
21 the net present value of the Tier 2 projects
22 comprising the 122 megawatts.

23 **Proceeding Time 3:16 p.m. T10A**

24 But when I tried to talk to Mayor Lewis at the break,
25 I was incapable of providing him with as much guidance
26 as he quite properly was hoping to get.

1 So rather than my trying to do it, I
2 thought I'd let Ms. Hemmingsen explain to Mayor Lewis
3 how you can do that.

4 MS. HEMMINGSEN: A: So it would be helpful to have a
5 copy of 246(6) in front of you. Do you have that?

6 **CROSS-EXAMINATION BY MR. LEWIS (Continued):**

7 MR. LEWIS: Q: If I could, I've looked at that set of
8 tables, and as precise as they may be, for my lack of
9 an analytical mind, let's say, it would be very
10 helpful if I could just get the numbers if --

11 MS. HEMMINGSEN: A: Well, I'm going to tell you how
12 you --

13 MR. LEWIS: Q: -- they're going to flow out of there.

14 MS. HEMMINGSEN: A: I'm going to tell you how you can
15 -- I'm going to tell you exactly how you can get the
16 numbers.

17 MR. LEWIS: Q: You don't need to explain it. If you
18 can just simply tell me on an NPV basis, which is how
19 the CFT was reported in a cost per megawatt per month,
20 that would be all I'm looking for.

21 MR. SANDERSON: Mr. Chairman --

22 MS. HEMMINGSEN: A: No, the CFT was reported in a
23 dollar NPV basis.

24 MR. LEWIS: Q: Okay, that's -- if there was confusion,
25 that was the number I was looking for, is a dollar per
26 megawatt per month. But if you'd like to do it simply

1 as a net cost or a total cost, that's fine.

2 MS. HEMMINGSEN: A: Do you have a copy of it?

3 MR. LEWIS: Q: I don't have one in front of me.

4 MS. HEMMINGSEN: A: I have an extra one if you want.

5 MR. LEWIS: Q: Thank you.

6 MS. HEMMINGSEN: A: So if you took the costs in Tier 1
7 under the CFT costs, so that's \$1.1 billion, and you
8 deduct the value of energy of 849 million, you would
9 get the net present value of the CFT outcome for Tier
10 1.

11 Similarly, if you took the -- under Tier 2,
12 the CFT result of \$470 million, and you took one-third
13 of the value of energy, so just multiply the 833
14 million by one-third, and subtract that from the 470,
15 you will get the NPV of the Tier 2 portfolio.

16 So if you multiply 833 times a third --

17 MR. LEWIS: Q: Yeah, it's about 276.

18 MS. HEMMINGSEN: A: -- it's 278, yeah.

19 MR. LEWIS: Q: Okay, thanks.

20 MS. HEMMINGSEN: A: And you'll end up with 192 million
21 NPV.

22 MR. LEWIS: May I take a few minutes to go back and go
23 through this and maybe come back later and make sure
24 that I'm clear on it?

25 THE CHAIRPERSON: It's best, Mr. Lewis, if you do it
26 during a break.

1 MR. LEWIS: Sure.

2 THE CHAIRPERSON: I'd rather you do that than return.

3 MR. LEWIS: Okay, thank you.

4 MR. SANDERSON: Mr. Chairman, that's the only filings
5 I've got. I do have a little bit more to say about
6 the Malatest Report. I'm not sure whether -- how you
7 want to handle that, but I don't have any more
8 filings.

9 MR. ANDREWS: If I may, Mr. Chairman, on the Malatest
10 Report, the Malatest Report estimates both housing
11 stock and employment. And I have some questions about
12 the employment forecasting by Malatest, and I would
13 prefer to put those out first and then revisit the
14 issue of provision of the Malatest Report.

15 THE CHAIRPERSON: On that basis, please proceed.

16 MR. ANDREWS: Thank you.

17 **Proceeding Time 3:22 p.m. T11A**

18 **CROSS-EXAMINATION BY MR. ANDREWS (Continued):**

19 MR. ANDREWS: Q: So just for your reference, I'm
20 looking at page 9 of the table of proto-IR responses,
21 it's not in a filed exhibit.

22 MS. HEMMINGSEN: A: Sorry, I couldn't hear you.

23 MR. ANDREWS: Q: Page 9 of the -- the cover letter is
24 B-57, but the attachment is not an exhibit. And on
25 page 9, 2.11.2.

26 MS. HEMMINGSEN: A: Thank you.

1 MR. ANDREWS: Q: Okay. So just to recap, Malatest
2 provides housing stock forecasts for use in
3 calculating intensity coefficients. Correct? That's
4 what we were talking about before the break. You can
5 correct my terminology if that's --

6 MR. TIEDEMANN: A: Yes. He calculates -- or he
7 provides us with forecasts of housing stock and
8 employment, by our forecast areas, they're used as
9 drivers. So those drivers are multiplied, then, by
10 the intensity coefficients, and added together to
11 provide the estimate of the peak.

12 MR. ANDREWS: Q: Thank you. Now, the employment -- I
13 have a number of questions about the employment --

14 MR. TIEDEMANN: A: Mm-hmm.

15 MR. ANDREWS: Q: -- forecast, and how it's integrated.
16 And so I'll ask you to take a look at Exhibit C20-33,
17 this is the two-page exhibit that came from the VIGP
18 hearing with the equation for peak load on the first
19 page.

20 MR. TIEDEMANN: A: Okay.

21 MR. ANDREWS: Q: The equation for peak load is shown
22 with five lines of terms, the last line has the
23 variable "U35E", are you with me?

24 MR. TIEDEMANN: A: Yes. Mm-hmm.

25 MR. ANDREWS: Q: The definition of "U35E" is annual
26 energy consumption of all general over 35 kilowatt

1 customers in area I during year T. That's correct?

2 MR. TIEDEMANN: A: I didn't quite hear you. The "U"
3 refers to the under 35 kilowatts and the "O" to the
4 over 35 kilowatts, if that's what you said, sir.

5 MR. ANDREWS: Q: I may have said that incorrectly but
6 -- sorry, you're right.

7 MR. TIEDEMANN: A: Mm-hmm.

8 MR. ANDREWS: Q: I stand corrected, then. U35E is for
9 the under 35 kilowatt --

10 MR. TIEDEMANN: A: That's right.

11 MR. ANDREWS: Q: -- and O35E is over 35 kilowatt. And
12 just so that we're clear, here, we're talking
13 distribution level customers, not what's called
14 transmission level customers.

15 MR. TIEDEMANN: A: That's correct.

16 MR. ANDREWS: Q: So these would typically be large
17 commercial outfits like big-box stores, or high-rise
18 buildings, that kind of thing.

19 MR. TIEDEMANN: A: Some will be small and some will be
20 large.

21 **Proceeding Time 3:25 p.m. T12A**

22 MR. ANDREWS: Q: Okay. But obviously depending on
23 whether they're over or under. And the employment
24 forecast that's produced by Malatest is then converted
25 into the numbers that are filled in in the equation
26 here, under these U35 and O35 variables.

1 MR. TIEDEMANN: A: No. The employments figures are
2 used to estimate the energy consumption by class for
3 the general rate customers. And then the energy is
4 actually what goes into the equations.

5 MR. ANDREWS: Q: Can you explain --

6 MR. TIEDEMANN: A: So it's a two-step process.

7 MR. ANDREWS: Q: Can you explain in more detail, then,
8 how you go from the Malatest employment forecast to
9 the values for U35E and O35E?

10 MR. TIEDEMANN: A: We have information on employment
11 and on energy consumption in the base year, and we
12 essentially grow the consumption by the employment, by
13 class.

14 MR. ANDREWS: Q: How do you link, then, the energy to
15 the peak?

16 MR. TIEDEMANN: A: In effect, what happens for the
17 terms for the general rate class customers is we have
18 a coefficient which is a relationship between peak and
19 consumption, multiplied by consumption, divided then
20 by consumption and multiplied by employment. So in
21 our recent discussions we've determined there's
22 probably a way to simplify that arithmetic and reduce
23 the confusion in the future.

24 MR. ANDREWS: Q: Those recent discussions are not ones
25 that are on the record?

26 MR. TIEDEMANN: A: That's correct.

1 MR. ANDREWS: Q: So did -- this is something that's
2 going to change, then, and when it changes will it be
3 documented? You know, in a way --

4 MR. TIEDEMANN: A: Okay. We appreciate the fact that
5 there's a mix on the surface of kilowatts and kilowatt
6 hours, and that leads to a lack of transparency, which
7 we intend to improve.

8 MR. ANDREWS: Q: Thank you. Now, I would ask you to
9 turn to Exhibit --

10 MR. TIEDEMANN: A: I should add, it won't change the
11 values involved, it will just simplify the arithmetic.

12 MR. ANDREWS: Q: But it will also add a description of
13 the process that you go through, so that it's
14 transparent?

15 MR. TIEDEMANN: A: I believe the process is already
16 described.

17 MR. ANDREWS: Q: Where?

18 MR. TIEDEMANN: A: In the load forecast document.

19 MR. ANDREWS: Q: Do you have a location in the load
20 forecast document?

21 MR. TIEDEMANN: A: So first there's the -- on page 7,
22 equation 3-10, which is essentially the equation we've
23 been discussing. And that provides the general
24 context in which the forecast is done, and provides a
25 relevant equation. And then section 11, pages 50 to--

26 MR. ANDREWS: Q: Could I just ask whether you're

1 looking at the October or the December --

2 MR. TIEDEMANN: A: The December. Pages 50 to 67 deal
3 with the details. And there's a chart of the overall
4 process at Figure 11.1.

5 MR. SANDERSON: That's at page 52.

6 MR. ANDREWS: Q: I'm not talking about the process at
7 the level of the chart at Figure 11.1, I'm talking
8 about the distribution peak forecast, and how you go
9 from the employment forecast to the energy presumed
10 corresponding forecast, and from there to the peak.

11 **Proceeding Time 3:30 p.m. T13A**

12 MR. TIEDEMANN: A: We will provide those equations as
13 an undertaking.

14 MR. ANDREWS: Q: Thank you.

15 **Information Request**

16 MR. ANDREWS: Q: I would ask you to turn to Exhibit
17 C20-21, the evidence of Steve Miller & Associates.

18 MR. TIEDEMANN: A: I'm sorry, would you please repeat
19 that?

20 MR. ANDREWS: Q: It's Exhibit C20-21 and it's a report
21 titled "The Need for DPP".

22 MR. TIEDEMANN: A: Thank you.

23 MR. ANDREWS: Q: And I would ask you to turn, and my
24 copy doesn't have page numbers on it, so I'm going to
25 ask you to turn to -- five pages from the end there's
26 a table called "Historical and Forecast Employment,

1 B.C. Hydro Versus Linear Trend". I said a table but I
2 mean a chart.

3 MR. SANDERSON: It's page 17 in my version.

4 MR. TIEDEMANN: A: Thank you. Thank you, I was looking
5 for a table.

6 MR. ANDREWS: Q: The chart shows historical data on the
7 left, and then of course beyond 2004-05 is forecast
8 data. Does that -- can you confirm that or were you
9 looking at the same chart?

10 MR. TIEDEMANN: A: We're looking at the same chart.

11 MR. ANDREWS: Q: Well, I'll suggest to you that the
12 line labelled "Hydro Forecast" is the Malatest
13 employment forecast rising at the relatively steep
14 rate, compared to the line labelled "Linear Trend".

15 MR. TIEDEMANN: A: The line with the red diamonds is
16 steeper than the blue line, that's correct.

17 MR. ANDREWS: Q: So do you -- if this were the -- if
18 this could be confirmed as being a representation of
19 the Malatest employment data, does it cause you any
20 concern that it appears to be extremely optimistic
21 compared to the recent historical past?

22 MR. TIEDEMANN: A: The linear trend suggests that
23 employment will be flat in British Columbia over a
24 period of 14 years. I don't think that's realistic,
25 sir.

26 MR. ANDREWS: Q: No, and I'm not asking about whether

1 the linear trend is realistic.

2 MR. TIEDEMANN: A: Mm-hmm.

3 MR. ANDREWS: Q: But is the steep line in the Malatest
4 forecast realistic?

5 MR. TIEDEMANN: A: We use population growth rates as
6 general checks, although they don't enter into the
7 forecast per se. And I believe that the employment
8 forecast trends are consistent with the population
9 trends in general terms.

10 MS. HEMMINGSEN: A: In fact, the employment trends are
11 outlined in Table 4.2 in the growth assumptions, and
12 you'll see except for the years around the Olympics,
13 that they're fairly modest. And furthermore, at the
14 front of B.C. Hydro's load forecast, it establishes
15 the highlights, and of particular note is the economic
16 outlook. And all forecasts that we've accessed point
17 to strong economic growth, strong employment growth in
18 British Columbia for the next ten-year period. And
19 that's what this forecast reflects, and it's on the
20 basis of third party information.

21 MR. ANDREWS: Q: For the record, what document or
22 exhibit are you referring to?

23 MS. HEMMINGSEN: A: This is the load forecast --

24 MR. ANDREWS: Q: Yes, so --

25 MS. HEMMINGSEN: A: -- and it's on the first page.

26 MR. ANDREWS: Q: The December 2004?

1 MS. HEMMINGSEN: A: Highlights. Yes. Page --
2 Executive Summary page vii, and if you read through
3 this load forecast or the October load forecast, you
4 would note that throughout it it points to stronger
5 economic prospects on all fronts for the B.C. economy,
6 which is necessarily reflected in our forecast.

7 MR. ANDREWS: Q: At this point let me return then to
8 the Malatest Report. I think what we've -- my
9 submission is that what we've established is the
10 importance of the employment forecast to an eventual
11 load forecast outcome. And the assertion is that
12 strong economic growth, and in this case, employment
13 forecast growing steadily is reasonable, but the
14 Malatest study itself, which comes to that conclusion,
15 is not in evidence. And my submission is that it
16 would assist our ability to test the rigour of Hydro's
17 load forecasting, if that document were produced.

18 **Proceeding Time 3:35 p.m. T14A**

19 MR. SANDERSON: There are a number of things, Mr.
20 Chairman. First, and the record may prove me wrong,
21 but I'm not sure that Mr. Tiedemann has accepted that
22 Mr. Miller's forecast line accurately reflects
23 anything received from Malatest, or anywhere else.
24 I'm not sure that he was able to do that. But -- so,
25 first of all --

26 MR. ANDREWS: He was not asked to confirm.

1 MR. SANDERSON: All right. So --

2 MR. ANDREWS: Sure.

3 MR. SANDERSON: So I take Mr. Andrews' submission not to
4 rest on that connection directly.

5 With respect to the Malatest information
6 generally, a significant amount of Malatest
7 information has been incorporated -- I'm sorry for my
8 hesitation, but there's too many books around here;
9 has been incorporated into this record already. If
10 you look to Mr. Andrews' letter of December 28th, in
11 which he asked that a significant amount of
12 information from the VIGP proceeding be incorporated
13 into this record, that includes -- I'll get you the
14 exhibit number for that in a moment, Mr. Chairman.
15 But that includes information relating to the R.A.
16 Malatest and Associates' Vancouver Island Employment
17 Forecast comparison. And so it's already part of this
18 record. And there's two pages of tables that appear
19 there. They were Exhibit 4-J in the last proceeding.

20 To the extent that that extract relates to
21 the employment issue that Mr. Andrews now seeks to
22 pursue, I guess my submission is, he's already got
23 that data, and that doesn't serve as an adequate
24 basis, I don't think, to get him the rest.

25 I mean, what it seems to me we're dealing
26 with here is a situation that's rather akin to

1 questioning the metering data. There's no question
2 that one has to accept that the forecast information
3 of actual loads presented by this panel is based on
4 regional office reports as to what their meters read
5 and then, ultimately, on the diaries of individual
6 meter readers, in terms of what they read on the
7 meters. And if you really want to go back into all of
8 that, we could be here for a very long time. But
9 normally, I think it's accepted, that Hydro in the
10 normal course of its business is going to accurately
11 set out that information. And that -- indeed, that's
12 what it's done. And I don't think the Malatest data
13 in its entirety, that Mr. Andrews is requesting, is
14 anything more than that.

15 It's simply back-up numbers which serve to
16 corroborate the accuracy of the addition that lies
17 behind the forecast that B.C. Hydro has filed. I
18 don't think it's constructive to go back into all
19 those, and I think we haven't yet heard a case for
20 making an exception here.

21 So those are my submissions. The exhibit
22 I'm referring to is Exhibit C20-12, that's the
23 information which Mr. Andrews has sought to
24 incorporate from the VIGP proceeding.

25 MR. ANDREWS: If I may briefly reply, the Malatest
26 information has nothing to do with meter reading.

1 report and they are filed in response to the
2 undertaking, then I will accept that, but not the
3 report in its entirety.

4 MR. ANDREWS: My request then would be for an updated
5 version of Exhibit 4J from the VIGP hearing,
6 corresponding to the most recent information provided
7 by Malatest.

8 MR. SANDERSON: We'll provide that.

9 THE CHAIRPERSON: Thank you.

10 **Information Request**

11 MR. ANDREWS: Q: Mr. Tiedemann, a general question
12 here. When B.C. Hydro produces and presents its load
13 forecast for B.C. as a whole, I understand that there
14 is a confidence interval specified for the forecast,
15 is that correct?

16 MR. TIEDEMANN: A: That's correct.

17 MR. ANDREWS: Q: And just so people understand, this is
18 -- what in describing opinion polls is the plus or
19 minus a certain number, 3 or 4 percent confidence of
20 say 95 percent.

21 MR. TIEDEMANN: A: That's correct. We use a Monte
22 Carlo study to generate air bands. We look at a
23 number of factors that drive the variability of the
24 forecast and undertake a set of 10,000 simulations,
25 and that's used to produce the error bands around both
26 the energy and the peak forecasts.

1 MR. ANDREWS: Q: The Vancouver Island forecast,
2 however, does not -- is not presented with a
3 confidence interval, is that correct?

4 MR. TIEDEMANN: A: That's correct.

5 MR. ANDREWS: Q: Why is that?

6 MR. TIEDEMANN: A: We focus upon energy and peak at a
7 relatively high level of aggregation. So we are
8 concerned with customer groups and with rate classes,
9 and we don't provide detailed information on the
10 disaggregation of those customer groups and rate
11 classes by region in all cases. We provide some
12 regional information but it's not complete.

13 MR. ANDREWS: Q: Thank you.

14 I refer you to Exhibit B-20, Hydro's
15 responses to intervenor information requests, GSX CCC
16 IR 1.31.6 please.

17 THE CHAIRPERSON: Can you give the IR reference again
18 please?

19 MR. ANDREWS: Q: IR 1.31.6 GSX CCC.

20 MR. TIEDEMANN: A: So you're referring, sir, to the
21 table with the distribution peak forecasts by region
22 at the bottom?

23 MR. ANDREWS: Q: No. Mine is -- the question begins:
24 "Does the use of an anchor point imply that
25 the equation given in B.C. Hydro's response
26 to BCUC Staff IR 5.3 in the VIGP hearing for

1 forecast, and that serves as our initial base. So in
2 other words, the distribution planners provide us with
3 both, first, a weather-normalized peak for the
4 previous year, and a first-year forecast. Based on
5 that we then do our work with our models, which we've
6 been discussing, and those are used to produce a
7 guideline for the distribution planners.

8 So I believe what you're asking for is the
9 information that we get from the distribution
10 planners, is that correct?

11 MR. ANDREWS: Q: No. I think the -- when you -- the
12 concept of using an anchor point is that you create
13 your forecast, but then you don't just use those
14 numbers, you adjust it, figuratively speaking, up or
15 down, the entire shape up or down by a certain amount,
16 and the amount is in relation to the last year's
17 actual --

18 MR. TIEDEMANN: A: Mm-hmm.

19 MR. ANDREWS: Q: -- weather-adjusted peak, and the
20 question is, by how much did you adjust it for the
21 October, 2004 forecast? Which we presume is the Year
22 0 forecast to the Year 1 forecast. That amount of
23 growth, applied to the Year 0 actual peak.

24 MR. TIEDEMANN: A: Okay. So I started to talk about
25 the process, and got into certain of the steps. Okay.
26 So we provide guidelines by area to the distribution

1 planners, who undertake further analysis and come back
2 with their growth rate estimates, which are
3 constrained to be at the end of the period of the
4 forecast within one year's of growth of our
5 guidelines. We then compare two sets of numbers.
6 First of all, the first year forecast peak from the
7 distribution planners with our estimate of a global
8 weather-normalized distribution peak for Vancouver
9 Island, so there's those two sets of numbers. And we
10 compare two other sets of numbers, which are the
11 growth rates coming out of our guidelines, and the
12 growth rates coming out of the distribution planners'
13 analysis.

14 We then have a blend of the two anchor
15 points, and a blend of the two growth rates. And
16 those blends are used to drive the forecast from the
17 anchor. So it's a relatively complicated procedure.

18 MR. ANDREWS: Q: Can you provide the Year 0 number from
19 the distribution peak model?

20 MR. TIEDEMANN: A: I'm not entirely certain what you
21 mean by the Year 0. Are you talking about the --

22 MR. ANDREWS: Q: Well, the distribution -- are we --

23 MR. TIEDEMANN: A: Yeah.

24 MR. ANDREWS: Q: Do you understand when I refer to the
25 Year 1 value?

26 MR. TIEDEMANN: A: I believe you're talking about the

1 first year of the forecast period. Are you asking
2 what the peak is?

3 MR. ANDREWS: Q: Well, let's identify -- that's the --
4 let's call that the Year 1 number.

5 MR. TIEDEMANN: A: Okay. So let's say Year 0 is fiscal
6 nineteen-ninety -- 2004. Year 1 is fiscal 2005. Is
7 that what your --

8 MR. ANDREWS: Q: That's correct.

9 MR. TIEDEMANN: A: -- metric is?

10 MR. ANDREWS: Q: Yes.

11 MR. TIEDEMANN: A: And what precisely is it that you're
12 asking for? The growth rate between 2004 and 2005?

13 **Proceeding Time 3:50 p.m. T17A**

14 MR. ANDREWS: Q: Exactly.

15 MR. TIEDEMANN: A: Okay.

16 MR. ANDREWS: Q: And then the number for 2004 and the
17 number for 2005, not just a percentage such as 2.7.

18 MR. TIEDEMANN: A: Mm-hmm. So we can start off with
19 two anchor points because we have two different
20 calibrations, but if we use the current one, just to
21 keep it simpler, the weather normalized -- let me
22 start with the actual.

23 The actual peak for 2003-4 for Vancouver
24 Island, before losses, was 2143 megawatts, okay. We
25 then add to that 90 megawatts for losses on the
26 Island, 21 megawatts for losses for energy shipped to

1 the Island, and that produces an actual with losses
2 for fiscal '04 of 2253 megawatts. If we then weather
3 normalize it to the design temperature that we're now
4 using of minus 3.6 degrees, that produces an
5 adjustment before losses of minus 43 megawatts, for a
6 total of 2210 megawatts on a weather-adjusted basis.

7 Okay, so that is our forecast of weather-
8 adjusted with transmission losses for last fiscal
9 year, okay?

10 MR. ANDREWS: Q: Wait a sec. Did you just say that's
11 your forecast?

12 MR. TIEDEMANN: A: I'm sorry, I misspoke. That's our
13 weather-adjusted actual for fiscal 2003-4.

14 MR. ANDREWS: Q: Yes, and --

15 MR. TIEDEMANN: A: With losses.

16 MR. ANDREWS: Q: And used as an anchor point in
17 combination with the load forecast, correct?

18 MR. TIEDEMANN: A: In effect, the anchor point is
19 really the first year forecast, the forecast for 2005,
20 which grows from the 2210 number that I mentioned to
21 2269. So that's why I attempted to provide the detail
22 of the process we go through to get the first year
23 forecast from the distribution planners, or the first
24 year preliminary forecast from the distribution
25 planners.

26 MR. ANDREWS: Q: When you calculate the distribution

1 peak using the equation set out in the exhibit from
2 VIGP, and you get a number for the first forecast
3 year, can you provide the number for one year previous
4 to that, using that equation? It's not going to be
5 the same as the anchor point.

6 THE CHAIRPERSON: Mr. Andrews, I find it useful because
7 I've grown accustomed to looking at it, the
8 information request that you've requested, GSX CCC
9 1.28.1 that has the numbers as Mr. Tiedemann just
10 described. So they're already before you in an
11 information request that you asked for.

12 MR. ANDREWS: I'm advised that those are not the numbers
13 that we're asking for.

14 THE CHAIRPERSON: No, they're the numbers that you just
15 received.

16 MR. ANDREWS: Orally.

17 THE CHAIRPERSON: Yes.

18 MR. ANDREWS: Q: Yes, that's -- I'm not sure how else I
19 can describe it. If we take the equation for peak at
20 IT in Exhibit C20-33, --

21 MR. TIEDEMANN: A: That provides just the distribution
22 peak.

23 MR. ANDREWS: Q: That's the distribution peak. Can you
24 give me a number for Year 0 -- the Year 1 year before
25 the first forecasted peak, using this model? The
26 distribution peak forecast.

1 MR. TIEDEMANN: A: For the first year of the model?
2 For the first year run of the model?

3 MR. ANDREWS: Q: Let's say, okay, let's use that as a
4 handle. Yes, for the first year of the model, and
5 then for one year previous, so that we can see the
6 growth in this model --

7 MR. TIEDEMANN: A: Okay.

8 MR. ANDREWS: Q: -- between Year 0 and the first year.

9 MR. TIEDEMANN: A: Okay. So I don't have the model
10 results per se before me. What I do have is the non-
11 coincidence peak for Vancouver Island for
12 distribution, and the first year forecast for the
13 actual. For 2003-4 it's 1849 megawatts. On a
14 weather-adjusted basis it's 1803 megawatts. And the
15 weather-adjusted forecast is 1834 megawatts. That
16 means that between the actual and the first year
17 forecast falls by 15 megawatts.

18 **Proceeding Time 3:55 p.m. T18A**

19 MR. ANDREWS: Q: Can you --

20 MR. TIEDEMANN: A: On a weather-adjusted basis it
21 increases by 31 megawatts?

22 MR. ANDREWS: Q: Do you agree that when we have a model
23 that predicts from coefficients into the future the
24 model itself can easily produce a number for year
25 zero? You may not have it in front of you and I'm not
26 suggesting you do, but I'm asking can you get a number

1 for the current year rather than the first forecast
2 year using this equation?

3 MR. TIEDEMANN: A: Yes, we can.

4 MR. ANDREWS: Q: And you would undertake to do that?

5 MR. TIEDEMANN: A: Yes, we will.

6 **Information Request**

7 MR. ANDREWS: Thank you very much. Those are my
8 questions.

9 MR. FULTON: Mr. Chairman, I hadn't called Sea Breeze
10 Power Corp previously. They hadn't been involved in
11 any of the other panels. I do understand that they
12 have a few questions of this panel.

13 **CROSS-EXAMINATION BY MR. PEREZ:**

14 MR. PEREZ: Q: My first question is in regard to the
15 sensitivity analysis that you ran.

16 THE CHAIRPERSON: Can you provide your name, please?

17 MR. PEREZ: Oh, sorry. Enrique Perez from Sea Breeze
18 Power Corp. or actually Sea Breeze Regional -- Sea
19 Breeze Pacific Regional Transmission System
20 Corporation.

21 THE CHAIRPERSON: And can you spell your last name for
22 me, please.

23 MR. PEREZ: P-E-R-E-Z.

24 THE CHAIRPERSON: Okay, thank you.

25 MR. PEREZ: Q: Our corporation is developing a 550
26 megawatt HVDC line from Victoria to Port Angeles and

1 this will completely eliminate the alleged shortfall
2 on the Island and there is a high probability that
3 this line will be implemented before November 2007.
4 So we're wondering if that chance was put into the
5 sensitivity analysis?

6 MS. HEMMINGSEN: A: No.

7 MR. PEREZ: Q: Is there any reason why not?

8 MS. HEMMINGSEN: A: We have no basis to assume that
9 that line can be in service at that time or accessible
10 to B.C. Hydro.

11 MR. PEREZ: Q: Okay. Well, the line would be
12 accessible to B.C. Hydro. It would be ran by BCTC on
13 the Canadian side and it -- I mean it would be useless
14 without being accessible to B.C. Hydro. So that part
15 it would be.

16 Yes, Mr. Sanderson?

17 MR. SANDERSON: Mr. Chairman, I don't know whether Sea
18 Breeze is providing evidence in this proceeding. I'm
19 a little concerned about putting hypotheticals to the
20 panel in the form of statements of fact unless Sea
21 Breeze is in fact calling evidence to that effect. If
22 they are and I've missed, it which is quite possible.

23 MR. PEREZ: No -- well, we have said that this line is
24 coming and we've said that it's coming soon. I
25 believe this is the first time we've said it's coming
26 before November 2007.

1 MR. SANDERSON: What I'm suggesting, Mr. Chairman, is
2 that if Sea Breeze is prepared to come forward and
3 give testimony about what their plans are then that's
4 one thing, and questions which will later be backed up
5 with testimony are fair ones to put to this panel, but
6 it's simply not fair to put allegations to this panel
7 which aren't going to be backed up by later testimony.
8 So I just want an assurance from Mr. Perez that in
9 fact there will be a witness testifying to what he is
10 saying or to find a way to pose the questions
11 differently.

12 THE CHAIRPERSON: In any case I would rule that out of
13 scope. The panel has already made a decision with
14 respect to whether or not we will consider alternative
15 transmission options in this proceeding and has
16 determined that we will not. So you have that as the
17 most significant hurdle I think to exploring this with
18 this panel.

19 MR. PEREZ: Okay. I was just wondering if it was used in
20 the sensitivity test, but apparently it wasn't and so
21 -- well that's just the way it is. It would be good
22 if there was a way, a procedure to enter it into that
23 test or to somehow make its probability like material
24 and if there is I would like to know.

25 THE CHAIRPERSON: Well, the matter is not before this
26 proceeding.

1 **Proceeding Time 4:00 p.m. T19A**

2 MR. PEREZ: Okay.

3 THE CHAIRMAN: So, I'm sorry --

4 MR. PEREZ: There's no way.

5 MR. PEREZ: Q: And so my second question is, according
6 to page 40 of the B.C. Hydro and Rocky Mountain
7 Institute report, this was exploring Vancouver
8 Island's energy future, the conversion of the existing
9 230 kV Dunsmuir-Sahtlam line to 500 kV would provide
10 100 to 300 megawatts in additional transmission
11 capacity, and would eliminate 20 megawatts in losses
12 at peak time. This line would cost 40 -- well, in the
13 report it's 40 to 50 million dollars. Elsewhere BCTC
14 said that that value would be 42 million dollars. And
15 the investment would be repaid by the energy savings
16 from the line, because it's saving 20 megawatt peak,
17 and 10 megawatts on average. In other words, the
18 conversion would actually give money to B.C.
19 ratepayers. It would be cheaper than free.

20 And the current schedule for this
21 conversion is 2008, I believe. The conversion has no
22 known permitting issues, and could be accomplished in
23 less than two years, because it is a simple upgrade to
24 the voltage of the line. Has B.C. Hydro asked BCTC to
25 move the in-service date of this conversion to before
26 November 2007? Or to try to?

1 MS. HEMMINGSEN: A: I'm not aware of what the status of
2 this is. I'm aware that this opportunity exists, and
3 I'm also aware that locating the facility in Nanaimo
4 creates some transmission loss savings, which have
5 been reflected in the analysis of the Duke Point
6 project.

7 MR. PEREZ: Q: Okay, so I assume that this analysis --
8 that this savings has been considered from the years
9 2008 onwards? If it was supposed to be in service
10 2008?

11 MS. HEMMINGSEN: A: I'm not aware of when this is in
12 service.

13 MR. PEREZ: Q: Okay. Mm-hmm. Okay, so I'm just
14 wondering, since it was -- this would be a cost-free
15 method of reducing the supply -- the supply shortage
16 on the Island, is it a -- would it be prudent to
17 recommend that it would be advanced if possible?

18 MS. HEMMINGSEN: A: As I said, I'm not sure what the
19 status of this line is --

20 MR. PEREZ: Q: Okay.

21 MS. HEMMINGSEN: A: -- so I really can't speak to it.

22 MR. PEREZ: Q: Okay, thanks. And I have two more
23 questions.

24 When calculating the expected energy not
25 served, basically its slightly unreliable generators
26 can still reduce the expected energy not served, which

1 is another fancy way of saying the expected blackouts.
2 And so there has been questions with the Norske
3 proposal and with the temporary generators, that
4 basically since these are unreliable generators, they
5 wouldn't be very useful, or they would have a -- they
6 wouldn't be quality forms of increasing the
7 reliability on the Island. However, with the -- by
8 doing the modeling for the expected energy not served,
9 you can find that you can simply add more unreliable
10 generators, and at some point they will reduce the
11 expected blackouts to an arbitrary level or,
12 basically, you could say on one hand we have the Duke
13 Point plant, it produces the expected energy not
14 served to a certain level, and we just keep adding
15 temporary truck-mounted generators until the expected
16 energy not served is the same or lower.

17 And so I'm saying that this would be useful
18 as a way of comparing apples and apples. Instead of
19 saying these generators are not as reliable or so on,
20 simply run the model, add as many generators as you
21 need to make it the same reliability, and then you can
22 compare the net present value of both scenarios and
23 have an objective way of saying which is the most
24 cost-effective way of increasing reliability on the
25 Island.

26 MS. HEMMINGSEN: A: That would be great if we could run

1 that model, but that issue was brought forward and it
2 was determined that we didn't need to do that model.
3 MR. PEREZ: Q: Okay. I'm just saying that without that
4 model you can't make an objective determination that
5 Duke Point plant is the most reliable method. I mean,
6 you can certainly make good subjective judgments, but
7 it's not objective, in my opinion. And it is possible
8 to at least -- for instance, you can run the model,
9 simply just add one temporary generator, see how much
10 that would reduce it, and extrapolate from there.
11 Because you've already done the model for the 230 kV
12 line and the old Duke Point plant. So I'm saying it
13 wouldn't be that onerous and it should be attempted.
14 But if not, well, that's the way it is.

15 And my last question, I'd like to put this
16 in evidence, if possible, or maybe give one to B.C.
17 Hydro, please? I'd like to give one to you, if that's
18 possible.

19 MR. FULTON: Mr. Perez, just a moment until Mr. Sanderson
20 has a chance to look at it.

21 MR. SANDERSON: I have no objection to the panel being --
22 have this put in front of them, but I will object to
23 it being filed in evidence unless they can indicate
24 some familiarity with it or some ability to make some
25 use of it. So why don't we provide a copy to Ms.
26 Hemmingsen and her colleagues on the panel and then --

1 MR. PEREZ: Q: They can decide to enter it?

2 MR. SANDERSON: -- we can see -- well, we can see what
3 question you've got, and whether or not there's any
4 benefit to them -- whether there's any benefit to the
5 exhibit being in.

6 MR. PEREZ: Q: To summarize the fact sheet, it
7 basically --

8 **Proceeding Time 4:05 p.m. T20A**

9 MR. SANDERSON: Mr. Perez, maybe I can provide one more
10 bit of assistance. The approach here, in my
11 respectful submission, should be that you should
12 familiarize through the witness -- familiarize the
13 witness with the document, see if the witness knows
14 the document at all or can provide you with any
15 assistance. What you ought not to do is read it in or
16 otherwise give evidence yourself. It's for this panel
17 to give the evidence, and if they have evidence to
18 give about this, then they should do that. If they
19 don't, then I'm afraid this document ought not to be
20 entered.

21 MS. HEMMINGSEN: A: Yeah. And I'm not familiar with
22 the Union of Concerned Scientists fact sheet about
23 renewable energy.

24 MR. PEREZ: No, I apologize for entering in this way.
25 I'm unfamiliar with this procedure, and so I would
26 have preferred to put it in as an intervenor response,

1 but it seems to be too late for that.

2 MR. SANDERSON: I'm not sure what you ought to have done.

3 I just know that we can't assist you through this
4 witness panel.

5 MR. PEREZ: Q: Okay. Well, I'll just say in general
6 that it's been found that the greater the demand for
7 natural gas in an area, the higher the price goes in
8 that area. Not just for the generator that's using
9 the natural gas, but all for generators and consumers
10 in the area. And that basically this quantifies that
11 relationship. The relationship is not a simple one,
12 but basically it can be said that the greater the
13 demand for natural gas, the higher the supply in the
14 reason.

15 And Duke Point would use about 14,000
16 terajoules of natural gas per year, which is a
17 considerable quantity, enough to increase the price of
18 natural gas in the region for all consumers, if this
19 is correct, that the demand for natural gas is
20 elastic.

21 And so I'm wondering if that was entered
22 into the cost sensitivity analysis because it would
23 increase the price of natural gas for all consumers,
24 including B.C. Hydro with for instance their Island
25 Cogeneration Plant?

26 MS. HEMMINGSEN: A: No, it was not.

1 MR. PEREZ: Q: Okay. So I just suggest that it would
2 be -- I apologize for the short notice of giving this
3 evidence, but I'd suggest that it'd be useful for B.C.
4 Hydro to at least try to determine how much, if any,
5 the price of natural gas in the Pacific Northwest, or
6 at least on Vancouver Island, will increase if the
7 extra demand from Duke Point is brought on line. That
8 is all. Okay.

9 These are all my questions and that is all.

10 THE CHAIRPERSON: Thank you.

11 MR. PEREZ: Thank you.

12 THE CHAIRPERSON: Mr. Hague.

13 **CROSS-EXAMINATION BY MR. HAGUE:**

14 MR. HAGUE: Q: I hope you enjoyed your weekend in
15 Nanaimo. Sparks did fly over there. I don't think
16 the panel is familiar with who I am. If you are, I
17 won't bother introducing myself. You don't know who I
18 am.

19 MS. HEMMINGSEN: A: I think it's worthwhile introducing
20 yourself.

21 MR. HAGUE: Q: Okay. No, that's fair enough, you know.
22 You should know the motivation of those that ask you
23 questions. I own property on Vancouver -- on
24 Gabriola. I have a history of heart disease, and any
25 insults to my respiratory system, cardiac system, are
26 not welcome. We hope to retire there, and hopefully

1 the air will be as good as it was.

2 Apart from that, I'm currently involved
3 with the Green Party of B.C. and involved in the
4 creation of a green energy policy for this province,
5 sustainable energy policy. My background is some 30
6 years in the energy sector, first with Lougheed
7 Petroleum Services and then some 22 years with the
8 Commission Staff. I was there, witness to and party
9 to the creation of integrated resource planning and
10 the launch of Power Smart. Those were, I guess, very
11 important milestones as far as I'm concerned in energy
12 planning in this province. So that's who I am.

13 **Proceeding Time 4:10 p.m. T21A**

14 I want to thank Mr. Fulton for clarifying
15 what is allowed in cross and what isn't, and I found
16 nothing to dissuade me from asking my questions.
17 That's my interpretation, at least.

18 So, let's get on with it. Mr. Lin,
19 according to the transcript, you are the supply
20 investment specialist.

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

22 MR. HAGUE: Q: The supply investment specialist.

23 MR. SANDERSON: Well, I think I corrected the transcript,
24 actually. I said "the" and replaced it with "a".

25 MR. HAGUE: Q: "A". Okay. Okay. Well, I just want to
26 be clear. Fair enough. Now --

1 MS. HEMMINGSEN: A: Although we don't have anyone quite
2 like Frank, he still is "a" --

3 MR. HAGUE: Q: So he is the unique supply investment
4 specialist. Good. Okay. Well, he's the right guy to
5 be chatting with.

6 Now, there's still some mystery, certainly
7 in my mind, because I've been chasing the logic of
8 this thing for some time, and it just gets away from
9 me all the time, you know? So, Mr. Lin, would you
10 agree that the problem that we're all here to help
11 solve is a short-run, short-term shortfall in the
12 electricity peak load capacity of B.C. Hydro to supply
13 Vancouver Island? Is that the problem?

14 MS. HEMMINGSEN: A: I'll take that question.

15 MR. HAGUE: Q: Oh, okay.

16 MS. HEMMINGSEN: A: As you may have noted from Mr.
17 Lin's direct evidence, he looks at resource options
18 and evaluates them, but prior to that determination,
19 B.C. Hydro develops a supply/demand balance, and
20 determines the resource requirements that it has, and
21 defines a product.

22 MR. HAGUE: Q: Mm-hmm. Okay.

23 MS. HEMMINGSEN: A: And earlier in the week, we had
24 outlined what our requirements are, and that's for
25 long-term dependable capacity on Vancouver Island.

26 MR. HAGUE: Q: Okay.

1 MS. HEMMINGSEN: A: So that determination is made, and
2 then Mr. Lin seeks to structure supply acquisitions
3 that meet those requirements.

4 MR. HAGUE: Q: But in the physical world, -- in the
5 physical world that we live in, is not the problem to
6 be solved the probable shortfall in capacity for
7 perhaps three or four years, pending the installation
8 of the 230 kV line? It's not a long-term problem,
9 it's a three- or four-year problem. And it's not a
10 generation problem, either, is it?

11 MS. HEMMINGSEN: A: Well, it depends, really, on your
12 time horizon. So it's potentially a short-term
13 problem if you just look till 2008, and then in 2010
14 it becomes a long-term problem. And the way that B.C.
15 Hydro plans is on the basis of the long-term basis,
16 and it looks at its system requirements, and the
17 values and costs, and tries to make resource decisions
18 that are most cost-effective on that basis.

19 MR. HAGUE: Q: Yeah.

20 MS. HEMMINGSEN: A: And that's really what our cost-
21 effectiveness analysis establishes, that it's most
22 cost-effective to acquire a long-term resource and
23 have that resource contribute to the system's
24 requirements.

25 MR. HAGUE: Q: Okay. Well, that's certainly a point of
26 view. It's not, in my view, the way a practical

1 businessperson would approach a problem like that. A
2 temporary problem deserves to be matched with a
3 temporary fix. The long-term fix, obviously, is the
4 refurbishment or replacement of the submarine cables.
5 That we knew since we put them in the ground.

6 MR. SANDERSON: Mr. Hague, I think you have been involved
7 in this process for a long time. You may not be
8 counsel, but you've watched these hearings. You know
9 the difference between cross-examination and argument.

10 MR. HAGUE: Mm-hmm.

11 MR. SANDERSON: You're arguing. I'm suggesting that you
12 know quite well that's what you're doing, and I think
13 the proceeding would benefit from your limiting
14 yourself to asking questions of the panel.

15 MR. HAGUE: Mm-hmm.

16 THE CHAIRMAN: I agree, Mr. Hague.

17 MR. HAGUE: Yes. You'll definitely hear argument, no
18 question about that.

19 THE CHAIRMAN: At the time that --

20 MR. HAGUE: Yeah. Yeah.

21 THE CHAIRMAN: At the time that we're ready for argument,
22 Mr. Hague.

23 MR. HAGUE: Q: So do I. Excuse me?

24 THE CHAIRMAN: When we're ready for argument.

25 MR. HAGUE: Yes, I understand that.

26 MR. HAGUE: Q: Now, if we were talking about an energy-

1 producing asset being the subject to this discussion,
2 an energy-producing asset is primarily invested upon
3 to meet base load.

4 MS. HEMMINGSEN: A: Sorry, I didn't quite hear you.

5 MR. HAGUE: Q: Base load, base load demand --

6 MS. HEMMINGSEN: A: Invested upon to meet base load?

7 MR. HAGUE: Q: Yeah. If you were going to produce --
8 if you wanted to build an asset that was a generator,
9 you'd do it to meet a base load.

10 MS. HEMMINGSEN: A: Not necessarily.

11 MR. HAGUE: Q: Why else would you do it?

12 MS. HEMMINGSEN: A: Well, you might do it to meet a
13 peak load.

14 MR. HAGUE: Q: You might do it to the peak load. And
15 that's what Duke Point is all about.

16 **Proceeding Time 4:15 p.m. T22A**

17 MS. HEMMINGSEN: A: Well, Duke Point is to meet some
18 immediate peak requirements on Vancouver Island and
19 then contribute to our system both capacity and
20 energy.

21 MR. HAGUE: Q: Okay. Mr. Peterson, in a similar way to
22 the previous answer, if you were looking for an asset
23 to specifically meet demand at peak, and in this case
24 is the energy that's associated with that asset kind
25 of incidental, a by-product if you like?

26 MR. PETERSON: A: The energy associated with the

1 peaking capacity?

2 MR. HAGUE: Q: Mm-hmm, yeah, right.

3 MR. PETERSON: A: It might have some value.

4 MR. HAGUE: Q: Yeah. So basically we've got a plant
5 built to meet peak that -- they always give you some
6 energy, and that energy is incidental.

7 MR. PETERSON: A: It depends on what the heat rate of
8 that plant would be.

9 MR. HAGUE: Q: Okay, fair enough. Now if you're doing
10 a benefit/cost analysis of alternative peak load
11 capacity assets, those alternatives, you'd do that
12 analysis entirely on the basis of capacity. And the
13 energy then a case [sic] would be a cost offset?

14 MR. PETERSON: A: I'm sorry, are you referring to
15 Appendix J?

16 MR. HAGUE: Q: -- the energy by-product is just a cost
17 offset.

18 MR. PETERSON: A: The energy contribution from each of
19 the three outcomes is valued at the same electricity
20 price forecasts.

21 MR. HAGUE: Q: Okay, thank you.

22 Now this is where I'm really having a
23 problem, I mean really having done business plans and
24 financial analysis for a long portion of my career, I
25 just can't get the word "relevance" out of my mind,
26 and I have a real problem with relevance of the style

1 of benefit/cost analysis that's been done upon this
2 project.

3 Now as a practical businessperson, and if I
4 were doing a benefit/cost analysis to solve a short-
5 run need for additional capacity or anything, I would
6 do that analysis for my boss or for my client or for
7 myself in the relevant timeframe, during which that
8 problem, that instigating, exists. That's the way you
9 do it. And if you don't do that, you really do risk
10 getting into the problems inherent in discounting,
11 especially when you have a commodity-dependent
12 project.

13 So why isn't the relevant analysis three to
14 four years?

15 MS. HEMMINGSEN: A: Well, because B.C. Hydro doesn't
16 believe that's the relevant time period to evaluate
17 these types of decisions. And if we did take the
18 approach and always look at short-term solutions, we
19 wouldn't have the kind of electricity system that
20 provides reliable service to the province.

21 MR. HAGUE: Q: Yeah, I recall the Site C hearings quite
22 well about that.

23 MS. HEMMINGSEN: A: So I guess I disagree with your
24 interpretation of a relevant time period and B.C.
25 Hydro's interpretation.

26 MR. HAGUE: Q: Yeah, yeah, so it's not a reason, it's

1 not something you'd find support for in the academic
2 world or a text on management cost accounting or
3 anything. It's just Hydro's preference to do it that
4 way.

5 MS. HEMMINGSEN: A: No, I think it reflects the nature
6 of the industry with long-lived assets, long lead
7 times, and the need to reflect that in decision
8 making.

9 MR. HAGUE: Q: Okay. I don't think there's any need to
10 belabour what's already in the evidence. This is a
11 so-called gap of some three to four years.

12 THE CHAIRPERSON: Is there a question, Mr. Hague?

13 MR. HAGUE: No, I'm just making a comment that the
14 evidence is clear on that.

15 THE CHAIRPERSON: You can save that for argument, Mr.
16 Hague.

17 MR. HAGUE: Well, fair enough.

18 MR. HAGUE: Q: Mr. Lin, I suppose that the energy
19 planning textbooks today would deal with how to
20 address such a problem as this one that we are facing
21 here. And if there is such a view, what would be the
22 view in the electrical engineer school at UBC?

23 MS. HEMMINGSEN: A: Mr. Lin is not an energy planner,
24 so I don't think that's an appropriate question to ask
25 him.

26 MR. HAGUE: Q: Okay. Is there a qualified person on

1 the panel to answer the question?

2 MS. HEMMINGSEN: A: Well, I'm responsible for the
3 Energy Planning Group.

4 MR. HAGUE: Q: Okay.

5 MS. HEMMINGSEN: A: Mr. Lin and Mr. Peterson are
6 responsible for the acquisition supply within that
7 group.

8 MR. HAGUE: Q: I'm just looking for some -- what
9 guidance do you seek when you need to solve a problem
10 as complex as this? Is there any body --

11 **Proceeding Time 4:20 p.m. T23A**

12 MR. HEMMINGSEN: A: We look to industry standards, we
13 look to our peers. We match our decision timeframe
14 with the lives of the assets that we're looking at.

15 MR. HAGUE: Q: Okay. Mr. Tiedemann, you've been
16 sitting there waiting your turn.

17 MS. HEMMINGSEN: A: He's not a planner either, so.

18 MR. HAGUE: Q: Well, that's fine. But this is not
19 necessarily a planning planner question. It's more a
20 commonsense, just general knowledge of the regulatory
21 process question. And I'll start this by saying that
22 this is not -- this question is not a hypothesis. It
23 relates to history, okay?

24 So if B.C. Hydro concluded that a specific
25 direction given to it by the BCUC was not technically,
26 economically, environmentally or socially sound, what

1 actions do you understand in your own view of the
2 policies and so forth, are contained in the *Utilities*
3 *Commission Act* and other venues for Hydro to redress
4 that issue?

5 MR. SANDERSON: Mr. Hague will have a chance to make an
6 argument. That has nothing to do with this panel. It
7 has nothing to do with really a question you ought to
8 properly address to any panel, I don't think, of
9 witnesses.

10 MR. HAGUE: Well, that may -- that's certainly your view
11 of the question.

12 THE CHAIRPERSON: It's also my view of the question, Mr.
13 Hague.

14 MR. HAGUE: Pardon me?

15 THE CHAIRPERSON: It's also my view of the question, Mr.
16 Hague.

17 MR. HAGUE: Well, that's fine too and I acknowledge that,
18 but the reason for the question --

19 THE CHAIRPERSON: You need to move on to a different
20 question, Mr. Hague.

21 MR. HAGUE: I think I want to tie this to a statement
22 that's on the record.

23 THE CHAIRPERSON: Can you give me your transcript
24 reference?

25 MR. HAGUE: Sure. Page 107 -- 1076, Volume 6, lines --
26 well, I guess you need a little introduction here, so

1 say lines 1 through 10. Okay.

2 Now this discussion on the record -- oh,
3 who is leading this off? Well, it doesn't really make
4 that much difference, but the point --

5 MR. SANDERSON: I think it was me, to be honest.

6 MR. HAGUE: Oh, okay, sorry for not recognizing that.

7 MR. SANDERSON: Again I suspect it's because -- well,
8 we'll see what you have to say.

9 MR. HAGUE: It's some distance back in the -- good, thank
10 you. So Mr. Sanderson was explaining that Mr.
11 Tiedemann is on the panel, this panel or a later
12 panel, as the testimony will make clear.

13 "...as the testimony will make clear, the load
14 forecast was not employed as an input or as
15 a material influencer in the CFT process
16 itself. That is, in the QEM methodology the
17 load forecast was not an input. Rather, the
18 needs were determined not by the load
19 forecast but rather by the Commission's
20 previous determination of what the minimum
21 amount of capacity required on the Island
22 was. And that drove the QEM."

23 Now with respect, Mr. Chairman, I'd suggest
24 in the light of that information, that evidence, it's
25 fair to ask B.C. Hydro that if they disagreed with
26 that suggestion of the Commission what would they do

1 about it?

2 MS. HEMMINGSEN: A: Well, we --

3 MR. SANDERSON: Again, Mr. Chair -- no, again, Mr.
4 Chairman, this is not a question for Panel 4. If Mr.
5 Hague wants to raise that question in argument he's
6 free to do it. We've made clear the premise upon
7 which material filed in this proceeding were based and
8 where the load forecast was and wasn't used, and to
9 the extent Mr. Hague thinks he can make an issue of
10 that he's free to do that.

11 He's got clear acknowledgment from me as
12 counsel on behalf of Hydro that that's the way it was
13 used and he's got clear testimony since that, in fact,
14 I think, Panel 2's testimony makes clear that was so.
15 That's all he needs to make his points in argument and
16 he certainly -- it's not fair to burden this panel
17 with questions about what Hydro's policy on this
18 hypothetical might be.

19 MR. HAGUE: No, no. It's not policy. It's just an

20 **Proceeding Time 4:25 p.m. T24A**

21 MR. HAGUE: No, no. It's not policy. It's just t an
22 obvious common-sense question. If you disagree with
23 your regulator, what do you do about it?

24 THE CHAIRMAN: Mister -- Mr. Hague -- when I speak, you
25 need to stop speaking.

26 Move on. Move on to a different question.

1 MR. HAGUE: Q: Okay.

2 MR. HAGUE: Q: To anyone who's able to answer the
3 question. To your knowledge, has B.C. Hydro ever
4 disagreed strongly enough with a BCU direction that it
5 pursued such remedies?

6 MR. SANDERSON: Same objection.

7 MR. HAGUE: Q: And the answer is a part of the public
8 record, isn't it?

9 THE CHAIRMAN: Mr. Hague, move on. You need to move on
10 to a different topic.

11 MR. HAGUE: Q: Well, I'm going to close with one
12 question, which gets to the heart of the matter.

13 Please consider an outcome of a B.C. Court
14 of Appeals proceeding where B.C. Hydro would disagree
15 with BCUC, notwithstanding the fact that the BCUC
16 direction was consistent with the government's stated
17 energy policy. I don't expect an answer to that
18 question.

19 THE CHAIRMAN: No, nor should the panel answer the
20 question.

21 MR. HAGUE: Pardon me?

22 THE CHAIRMAN: I said, nor should the panel answer the
23 question.

24 MR. HAGUE: Well, somebody ought to, because that's the
25 question that must be answered in this proceeding.

26 Thank you.

1 MR. FULTON: Mr. Hill?

2 MR. HILL: Mr. Chairman.

3 **CROSS-EXAMINATION BY MR. HILL:**

4 MR. HILL: Q: I don't know who to address this to, so
5 take your choice. In your evaluations of the Tier 2
6 option, were the temporary generators that you
7 utilized for backfill operated regardless of their
8 cost relative to the electricity price forecasting, to
9 fill need as the last-resort option?

10 MS. HEMMINGSEN: A: Mr. Lin will answer that question.

11 MR. LIN: A: We only assume that the temporary
12 generators will be utilized at 240 hours in a given
13 year.

14 MR. HILL: Q: I missed that, could you say that once
15 more?

16 MR. LIN: A: The temporary generators will be utilized
17 at 240 hours in a year.

18 MR. HILL: Q: 240 hours a year for the temporary
19 generators.

20 MR. LIN: A: That's correct.

21 MR. HILL: Q: In your evaluations of the Tier 2 option,
22 is it possible that even though the variable costs of
23 the 47 megawatt peaker exceeded the electricity price
24 forecast that they could have been cheaper to operate
25 than the temporary generators?

26 MR. LIN: A: We have assumed that the peaker will be

1 operated at a minimum level for the purpose of the
2 testing that's required in the EPA. Regardless of
3 market conditions.

4 MR. HILL: Q: So we don't know if they're cheaper or
5 not, to operate.

6 MR. LIN: A: I'd have to check, but they're -- subject
7 to confirmation, but I believe there's a 3 percent of
8 operation for the peaker in a given year, regardless
9 of market conditions.

10 MR. HILL: Q: What percentage was that?

11 MR. LIN: A: Three percent.

12 MR. HILL: Q: Three percent. If that is possible, then
13 your evaluation was the 47 megawatt peaker operated
14 instead of the temporary generators, when that
15 situation arose?

16 MR. LIN: A: The temporary generators will be operated
17 on top of the peaker. The peaker, in of itself, is
18 not sufficient to meet the load. So the peaker, the
19 temporary generators are assumed that they will be
20 operated in addition to the 122 megawatt portfolio in
21 the CFT.

22 MR. HILL: Q: Okay. So the peaker would come first,
23 and then come the temporary generators.

24 MR. LIN: A: The peaker would -- the 122 megawatt
25 portfolio would come first. The next would be Norske
26 solution. To the extent that's still enough

1 sufficient to meet a load, then temporary generators
2 are assumed to operate at 240 hours.

3 MR. HILL: Q: Okay. Now, B.C. Hydro identifies in the
4 CFT document, in their narrative around the electrical
5 use and forecast drivers, the shift within the
6 commercial sector of energy use from the industrial
7 users to the service industries.

8 MS. HEMMINGSEN: A: Sorry. Is your reference the
9 electricity load forecast?

10 MR. HILL: Q: It's in the -- yeah. In the CeFiT [ph
11 sp] document.

12 MS. HEMMINGSEN: A: Sorry, CeFiT [ph sp]?

13 MR. HILL: Q: In the Call For Tenders document, there's
14 a --

15 MR. TIEDEMANN: A: Could we have that reference,
16 please?

17 MR. SANDERSON: Yeah, that's Exhibit B-1, tab B --

18 MR. HILL: I'm relying on my learned counsel.

19 MR. FULTON: Well, Mr. Hill, on this particular occasion
20 I'm not your learned counsel, but that's all right.
21 Tab B to Exhibit B-1, which is the main filing. And
22 was there a particular portion in here, Mr. Hill?

23 MR. HILL: Q: It's -- there's a discussion in there
24 around -- in the forecasting section concerning the
25 industrial users. Well, actually, it's in an area
26 where there is a table, 10-4. It's about -- it's in

1 that section that's discussing that --

2 MS. HEMMINGSEN: A: No, there's some discussion on page

3 16 that says the current peak load forecast for

4 Vancouver Island is substantially higher as compared

5 to 2002 and 2003, because of higher actual forecast

6 economic growth assumptions relative to prior

7 projections. And then it talks about the recalibrated

8 peak loads due to actual peak demand.

9 MR. HILL: Q: Well, I can go back and find it, I guess.

10 But it's a discussion of the forecast drivers, and the

11 electrical use, in an industrial section.

12 MS. HEMMINGSEN: A: I can't see it in this document.

13 MR. HILL: Q: Okay, well, in there -- you discuss that

14 shift of industrial users to service industries.

15 MR. TIEDEMANN: A: Is it possible you're referring to

16 the load forecast document?

17 MR. HILL: Q: It's quite possible.

18 MR. TIEDEMANN: A: Okay.

19 MR. HILL: Q: It's -- it all comes as a big bag in

20 there, and I have a hell of a time sorting it out.

21 MR. TIEDEMANN: A: Okay. So on page 11 of the October

22 electricity load forecast --

23 MR. SANDERSON: Which is Appendix I to Exhibit B-1.

24 MR. TIEDEMANN: A: Appendix I. Near the middle of that

25 page there's a -- followed by the word "drivers".

26 That may be the reference.

1 **Proceeding Time 4:31 p.m. T25A**

2 MR. HILL: Q: Oh, this is the residential area. The
3 industrial bunch? Is there some section that --

4 MS. HEMMINGSEN: A: Page 11 is industrial.

5 MR. HILL: Q: Drivers, okay. That's close enough
6 probably.

7 THE CHAIRPERSON: Mr. Hill, if you get enough people
8 helping you, sooner or later we find a solution.

9 MR. HILL: I hope so, sir.

10 MR. HILL: Q: In any case, you tie it to the gross
11 domestic product. And I know there's a lot of
12 discussion in European circles about the energy
13 intensity when you're using a GDP figure. I'm
14 wondering what accommodations you've made in the
15 forecasting around your use of the gross domestic
16 product as a driver in that?

17 MR. TIEDEMANN: A: So at a high level, both for the
18 distribution industrial forecast and the transmission
19 industrial forecast, we use models which, as was
20 suggested, use GDP as a driver. But the relationship
21 is such that the incremental effect of a one percent
22 change in GDP results in a less than one percent
23 change in either the distribution or the industrial --
24 the distribution or the transmission industrial load.

25 So the equations that we're estimating are
26 accommodating that reduction in energy intensity of

1 the industrial sector.

2 MS. HEMMINGSEN: A: And that relationship is outlined
3 in one of the appendices to the load forecast report.

4 MR. HILL: A: So there is some accommodation for a
5 change in the intensity in the gross domestic product.

6 MR. TIEDEMANN: A: So if you refer in particular to
7 Appendix 5 or Appendix 6, which have two different
8 versions of the econometric high-level modelling, they
9 show the relationship that I just talked about.

10 So for example, at Table A5.1, if you look
11 at the third column referring to the industrial
12 sector, there's the coefficient of .068 and that's the
13 relationship between --

14 MS. HEMMINGSEN: A: It's page 1 of 5.

15 MR. HILL: Q: Okay, I see a relationship there. That's
16 the one that's used permanently, or is it flexible
17 depending on how the economy goes?

18 MR. TIEDEMANN: A: That's the one that was used in this
19 vintage of the forecast. These are updated every
20 year.

21 MR. HILL: A: All right. Okay, just a comment that
22 came up in the last little discussion. The shift of
23 employment, you rely on employment figures a lot.
24 That shift of employment when it goes from full time
25 to part time or some other -- or service industry
26 situation, the amount of energy that's associated with

1 going to be in the types of employment, and relate
2 that to the energy use?

3 MR. TIEDEMANN: A: We don't have analysis done for us
4 at that level of resolution.

5 MR. HILL: Q: I've quoted a table here, 10-4, but now
6 I'm in trouble, I don't know if I'm going to be able
7 to take it up for you. But regarding the industrial
8 sector and table 10-4, in -- it's probably the load
9 forecast, I noticed that quite correctly, you have
10 shown that in -- shown and earlier in the narrative,
11 explained that the mining industry's energy use has
12 been falling for the last five years. And the first
13 five years of the forecast period, you've credited
14 them with an amazing expansion by 6 percent, with
15 little evidence other than they have lost ground to
16 recover.

17 I'd just like you to expand on that a
18 little bit.

19 MR. TIEDEMANN: A: So, there's actually a two-step
20 process involved for the -- we're talking about the
21 transmission voltage industrial customers. So, in the
22 first instance there's a forecast done on an account-
23 by-account basis. And that account-by-account basis
24 is heavily influenced by information that I get from
25 the key account managers and other sources of economic
26 intelligence on openings of new facilities, in

1 particular including new mines. So that the forecast
2 includes that information at the level of individual
3 customers.

4 Then at a top-down level, there's an
5 econometric model that examines the relationship, as
6 was mentioned, between forecast consumption and
7 forecast GDP. Those two don't match entirely, so what
8 we use is a reconciliation of the individual customer
9 data so that the totals are forced to fit the top-down
10 approach. So that results in some changes to the
11 actual levels of the forecast at the individual
12 segment level.

13 So what we're basically doing is having a
14 forecast that's primarily driven in the first instance
15 by the econometric forecasts, which are then
16 reconciled to the top -- to the bottom-up information
17 that we're doing at the level of individual customers.

18 **Proceeding Time 4:40 p.m. T27A**

19 So it's information that we have on
20 potential new mine openings that's driving in part
21 that increase that's been referred to.

22 MR. HILL: Q: Well, I'm sure the mine managers would be
23 pleased to hear that, because they all left.

24 MR. TIEDEMANN: A: Well, I believe they're the sources
25 of the information.

26 MR. HILL: Q: They all left for Argentina, I hear. I'm

1 just -- in your preamble you go to quite considerable
2 lengths to explain that there's not much prospecting
3 being done here, there's no new mines, there's no
4 potential for new mines. And to go from a 4 percent
5 reduction over a five-year period to a 5 percent, 5 to
6 6 percent increase, I find hard to accept. But other
7 than the -- I'm just curious about the evidence that
8 you would supposedly produce that figure on.

9 MS. HEMMINGSEN: A: I think what Mr. Tiedemann has
10 outlined is that we rely on consultant reports that
11 point to the growth in that sector, and we've checked
12 that with actual --

13 MR. HILL: Q: So there's a consultant report.

14 MS. HEMMINGSEN: A: Yes, on all the major sectors.
15 He's testified to that earlier this morning.

16 MR. HILL: Q: Okay. Those are my questions. Thank
17 you.

18 THE CHAIRPERSON: Thank you.

19 MR. FULTON: Mr. Steeves.

20 MR. STEEVES: Good afternoon, Mr. Chairman. I guess we
21 must be right near the end because we have the dummies
22 now.

23 MR. FULTON: Well, I'm going to take exception to that
24 remark.

25 THE CHAIRPERSON: I saw a lot of nodding heads in the
26 room, Mr. Steeves, but not on your account.

1 MR. STEEVES: Okay, if I may move on.

2 THE CHAIRPERSON: You'd best remember there's someone
3 that follows Mr. Fulton too.

4 MR. STEEEVE: There's always somebody else, isn't there,
5 yes.

6 **CROSS-EXAMINATION BY MR. STEEVES:**

7 MR. STEEVES: Q: I have this document, B.C. Hydro
8 document, Revised Electric Load Forecast 2004-2005 to
9 2024-2025. And big brute here, and I just picked this
10 up today, haven't had much of a chance to look at it,
11 sort of thumbing through, and I guess this has taken
12 quite a long time to prepare.

13 Now, on any type of forecasting thing, I
14 usually sort of go back and look at the numbers at the
15 end of the tables and that type of thing and see what
16 type of numbers there are, and you've got a couple of
17 pages back here, at least a half dozen or so. And I
18 look at the numbers here, you've got, you know, from
19 the actual numbers from -- well, let's see. This is
20 on Table -- let's take one on here. It doesn't really
21 matter. It seems like they're, you know, you see one
22 you see them all type of thing when you see the
23 numbers there.

24 Just take Table A8.1 and this is page 97,
25 and you have the actual values there, first five
26 years, then you have the forecast 2004 down to 2025,

1 and you see all these values. And then I look at the
2 growth rates down here at the bottom, 5-year periods,
3 11-year periods, 21-year periods, and the percentage
4 values just in the first column for residential, 1.8
5 percent for the 5-year period, 11-year period is 1.9
6 percent, 21-year period is 1.8 percent. And I'm
7 saying, "Okay, five years averaged."

8 So, well how do you come up with these
9 values? 1.8, 1.9, 1.8? How do you get these values
10 on average over these three-year -- or three-group
11 periods 5, 11 and 21? And I'm saying, well, gee, you
12 know, that sounds a little bit not real, you know.
13 Are these real world values averaged and over this
14 time period?

15 Now, I grant you a public utility is not a
16 major, like, growth industry, or it's not like a
17 retail type sector business. A public utility, they
18 have their customer base, like the population base.
19 It's in place, growth rate is, you know, very slow,
20 and the changes that you have are very slow. But
21 still, you know, these rates, they're very, shall we
22 say, stable. And yet on a forecast, would you really
23 expect these rates to be stable over that time period?

24 So I started getting into it a little bit
25 further and I started looking at, -- I think it's page
26 9 here, yeah, to look at -- let's see, where is it

1 here? Here it is. The forecast drivers, data,
2 sources and assumptions.

3 **Proceeding Time 4:45 p.m. T28A**

4 And you have table 4.1, unusable description there and
5 then we get into table 4.2, growth assumptions, page
6 11. Then you start seeing all these percentage
7 values. You know, they're all sort of constant
8 throughout, you know. You take the employment rate
9 for about 2011 down to 2024, it's 1.7. It's not --
10 you know, is that real? In a real world do these
11 values stay that constant?

12 Now I'm thinking that, well, there's
13 something fishy here. Shouldn't there be a lot more
14 variation. If we take a back-cast, if you take your
15 values for these figures on table 4.2 and go back over
16 the past 20 or 30 years would you see the same type of
17 figures or would they vary from year to year on a much
18 larger basis? Comment please.

19 MR. TIEDEMANN: A: I'm not sure what your question is,
20 sir.

21 MR. STEEVES: Q: Well, the question is I'm saying this
22 model might be flawed because the growth rates, these
23 percentage rates are not real. In a real world there
24 should be a lot more changes and if you flip down
25 further to page 28 we have on table 7.1, Monte Carlo
26 Analysis, and again you have those growth rates for

1 low scenario; five year period 1.3, eleven year period
2 1.2, 21 year 1.2.

3 So you take these average years and you're
4 giving these values here and I'm saying this just
5 isn't real. There should be a lot more variation.

6 Now Mr. Bill Andrews, he was questioning
7 earlier on about the Monte Carlo Analysis and I think
8 it was Mr. Tiedemann, you were saying that -- Bill was
9 saying that he was saying this model does not allow
10 for variation and your response was that, "Oh, yes,
11 that's true but what we're doing here is we're looking
12 at various categories and we're focusing on that
13 instead."

14 And yet what you're looking at is, on a --
15 on this analysis, is like a yearly basis, you're
16 looking at the data points on one particular year.
17 Whereas I'm saying over this series of years, 25
18 years, you should be having a lot more variation and
19 for this reason this model is in a sense defective.

20 Comment, please.

21 MR. TIEDEMANN: A: At the most basis level the forecast
22 for each of the sectors is primarily the product of an
23 intensity variable and a stop variable. For the
24 residential and for the commercial sectors we use
25 commercially available software called REAPS and
26 Command which have a wide variety of inputs used to

1 produce the use rate. For the drivers we rely upon
2 information sourced by external consultants, and that
3 information is -- the sources of those pieces of
4 information are in table 4.1.

5 MR. STEEVES: Q: That's page 8, page 9?

6 MR. TIEDEMANN: A: Page 10, yeah.

7 MR. STEEVES: Q: Ten.

8 MS. HEMMINGSEN: A: Ten.

9 MR. TIEDEMANN: A: So the key drivers which in effect
10 are significantly responsible for the growth rates
11 that are shown, as well as for the energy consumption
12 levels that were previously referred to in the
13 Appendix table, are substantially driven by the most
14 appropriate information that we can source from
15 outside of our company to try to maintain its
16 credibility and transparency.

17 MR. STEEVES: Q: And if you don't have sufficient
18 information you basically have to put it in some sort
19 of an average value?

20 MR. TIEDEMANN: A: I'm not sure that I understand your
21 question.

22 MR. STEEVES: Q: If you're going to each of these --
23 say on table 4.1 you're going to each of these
24 categories and looking or trying to obtain the
25 appropriate information to come up with the data that
26 you have for your model, and what you're saying -- at

1 least my interpretation is that if you don't have the
2 data you then have to use your best judgment or the
3 best values that you have which may be just a general
4 average number?

5 MR. TIEDEMANN: A: As I stated the growth rates, for
6 example, for GDP are externally sourced by experts
7 within the area. So if it's their consensus that
8 these are the appropriate values, they're the values
9 that we use.

10 MR. STEEVES: Q: Okay. Well, if that's the case then
11 the values that we have, these values say on 28, page
12 28, these are the values that you're agreeing with and
13 the tables at the back, the slow growth rates, et
14 cetera, these are the -- these are real numbers.
15 They're not sort of averaged or artificial in a sense?

16 **Proceeding Time 4:50 p.m. T29A**

17 MR. TIEDEMANN: A: They're the numbers that come out of
18 our modeling, and they're subject to a variety of
19 checks.

20 MR. STEEVES: Q: Okay. So I -- you're saying, then, I
21 cannot claim that the real world does not have wild
22 variations, because the numbers that you are giving
23 are very flat, they're just marginal type --

24 MR. TIEDEMANN: A: So what we're presenting in the
25 appendix tables is the central forecast around which,
26 of course, there will be considerable variation over

1 time.

2 MR. STEEVES: Q: You say there is considerable
3 variation over time.

4 MR. TIEDEMANN: A: Well, I'm saying that the forecast
5 is providing the central estimates of the values by
6 sector for consumption at peak.

7 MS. HEMMINGSEN: A: An important input to the forecast
8 is the fact that it's done on a weather-normalized
9 basis. So a lot of the variations that you see in the
10 load forecast are driven by weather patterns. So we
11 can't forecast on a year-to-year basis what the
12 weather patterns will be. What we have to take is a
13 normalized year, or a design year --

14 MR. STEEVES: Q: A normalized year.

15 MS. HEMMINGSEN: A: -- and forecast on that basis.

16 MR. STEEVES: Q: Okay. Normalized in the sense that
17 you've got a certain range there that you're operating
18 on, and the ranges that you're presenting here are not
19 that major.

20 MS. HEMMINGSEN: A: Well, what I'm saying is, that's
21 why you see a lot of variation is because the weather
22 is either hotter or colder than the normalized weather
23 that we're forecasting to.

24 MR. STEEVES: Q: Well, again, the values that I'm
25 seeing here, they're not that great, they're sort of
26 flat. Just -- no major wild swings that are being

1 presented in this model. And yet, when you go to the
2 document that we have today, this is the Vancouver
3 Island Daily Peak of January 1st through January 15th,
4 the values that we have here, they say, they claim,
5 are quite -- they're larger. And hence, what this is,
6 it's an anomaly.

7 What you have is data here which has no
8 wild swings, and yet you're presenting information
9 which has basically above your standard norm. And
10 hence this is an anomaly, and I would submit to you
11 that this is not justification for your plant.

12 MR. TIEDEMANN: A: So our requirement is to meet the
13 loads, so whether or not the load in a particular week
14 is unusually high, it still has to be met.

15 MR. STEEVES: Q: Well, in a sense, yes. If I may go
16 back to Panel 2 on Tuesday, we got into -- I gave two
17 questions, with regards to that natural gas-fired
18 turbine plant. And we got up to the issue of the
19 plant -- the turbine, its -- well, I have to go in,
20 but Mr. Fulton doesn't advise me to go into previous
21 panel information. So --

22 MR. FULTON: I'm not advising Mr. Steeves, Mr. Chairman.
23 I suggested to him that his questions for Panel 2 had
24 been asked and answered, to the extent that they were,
25 and he couldn't therefore be asking this panel Panel 2
26 questions.

1 THE CHAIRPERSON: You often get very good advice, Mr.
2 Steeves, when you consult with Mr. Fulton.

3 MR. STEEVES: Q: Okay. Now, let's see, where are we.
4 You want the information saying that the data is
5 correct, is that correct?

6 MR. TIEDEMANN: A: Which data are you referring to?
7 There's a lot of it in this document.

8 MR. STEEVES: Q: The peak period of January 1st through
9 to the 15th.

10 **Proceeding Time 4:55 p.m. T30A**

11 MR. TIEDEMANN: A: As I explained, those are estimates
12 in the sense that we have measured information for
13 Vancouver Island, we don't have that information for
14 the Gulf Islands, so that 60 megawatts is an estimate.
15 And then there's a further weather adjustment, looking
16 at the difference between the design temperature and
17 the actual temperature, which we adjusted the rate of
18 40 megawatts per degree.

19 MR. STEEVES: Q: Okay.

20 MR. TIEDEMANN: A: I should point out too, of course,
21 that that's daily information, and the forecast is
22 providing annual information.

23 MR. STEEVES: Q: All right. I'll leave it at that, and
24 call it a day. But thank you very much.

25 THE CHAIRMAN: Thank you, Mr. Steeves.

26 MR. FULTON: Mr. Chairman, we should probably take the

1 afternoon break now. Where we're at in terms of
2 order, is that we have Mr. Bois and Mr. Lewis coming
3 back, and then we're to my cross.

4 MR. SANDERSON: And Mr. Chairman, it would be helpful if
5 we had some sense of what your intentions were this
6 evening, in light of that. I know we have to be
7 finished by noon tomorrow, so I'm not sure what --
8 quite how long Mr. Fulton intends to be, and then how
9 long, of course, the panel intends to be, or what sort
10 of sense of timing you have in mind.

11 MR. FULTON: I would probably be about an hour, and a
12 bit, Mr. Chairman. I have provided my friend with a
13 series of confidential questions that he's going to
14 get back to me on, and it probably would be helpful
15 once he and I have agreed to whether or not I can ask
16 those questions here, or should ask them in *in camera*
17 session.

18 MR. SANDERSON: Okay, I'm sorry, I haven't had a chance
19 to communicate this to Mr. Fulton, but I've looked at
20 the questions. We're quite comfortable with all those
21 questions being placed in the record and indeed, I
22 think all but one of the answers we will not claim
23 confidence in. So there's only one question, and that
24 one, I think, can be produced in writing, on a
25 confidential basis.

26 MR. FULTON: And that's helpful, Mr. Chairman, thank you.

1 So I'll need to speak to him about those at the break,
2 in any event.

3 THE CHAIRPERSON: Then in answer to your question, Mr.
4 Sanderson, you can have significant influence --

5 MR. SANDERSON: That's fair.

6 THE CHAIRPERSON: -- over my answer. We -- I would like
7 to finish with Mr. Lewis, and Mr. Bois today. We can
8 then adjourn for 15 minutes, and Mr. Fulton, I can get
9 started. Alternatively, we can finish with Mr. Lewis
10 and Mr. Bois and then adjourn for the day until
11 tomorrow morning.

12 MR. SANDERSON: If you'd give me a moment, Mr. Chairman,
13 with the panel.

14 MR. QUAIL: Mr. Chairman, I recommend we set up an
15 applause meter to evaluate the two options, but I'd be
16 prepared to bet which one of those two would probably
17 win.

18 THE CHAIRPERSON: I'll give Mr. Sanderson the call on
19 this one.

20 MR. SANDERSON: Mr. Chairman, I'm going to suggest that
21 we take a break now, for 15 minutes, and then go for
22 one more hour, till 6:15, and see where we are at that
23 point.

24 THE CHAIRPERSON: Thank you. We'll adjourn for 15
25 minutes.

26 **(PROCEEDINGS ADJOURNED AT 5:00 P.M.)**

1 offer evidence that we can rely on to reach the
2 conclusion that in fact it can be considered
3 dependable capacity?

4 MR. BOIS: Both of them, I believe, are quite qualified
5 to do that in terms of running the mill. They're both
6 engineers, and they're both very senior in Norske's
7 operations and have been very familiar with this
8 proposal.

9 THE CHAIRPERSON: But are they transmission engineers?

10 MR. BOIS: I don't know that answer. Excuse me, Mr.
11 Chair.

12 Mr. Chairman, they're not transmission
13 engineers, but they do characterize their capacity as
14 being reliable in the sense that when they're asked to
15 curtail or shift their load, they are reliably going
16 to do that. And that should bring the capacity that
17 already exists in the system available to BCTC or B.C.
18 Hydro by virtue of it being displaced -- by virtue of
19 it being not required by Norske. So there shouldn't
20 really be a transmission issue in the sense that the
21 transmission capacity already exists.

22 THE CHAIRPERSON: Yes. I'm not going to make any further
23 suggestions with respect to how you manage your case.
24 Thank you, Mr. Bois.

25 MR. BOIS: Thank you, Mr. Chairman.

26 MR. LEWIS: Thank you. Unfortunately from the table that

1 was provided in 2.46.6, I haven't been able to get the
2 values that I was seeking. So I've sought some
3 direction, and I think I can better qualify what it is
4 I'd like by asking the Commission first just to
5 confirm that they are in receipt of a total levelized
6 unit charge for both capital and variable costs, for
7 the Tier 1 and the 122 megawatt portfolio component of
8 the Tier 2 bid.

9 THE CHAIRPERSON: Yes.

10 MR. LEWIS: Okay. And as I understand it's in
11 confidence, would that be able to be supplied as a
12 comparative value? As a percentage of one to the
13 other, to maintain confidence, but still supply me
14 with that information?

15 **Proceeding Time 5:21 p.m. T32A**

16 THE CHAIRPERSON: Well, I'm going to need some assistance
17 here. You asked for it on a levelized unit cost basis
18 for --

19 MR. LEWIS: Sure. I'll give you a bit of background on
20 it to set you onto the track that I'm coming from.
21 Exhibit B-55 was a response from Hydro with some IRs
22 that were previously qualified as confidential.

23 THE CHAIRPERSON: You know it's going to be best for you
24 to ask this question of this panel. They can tell you
25 what they filed with this.

26 MR. LEWIS: Okay.

1 **CROSS-EXAMINATION BY MR. LEWIS (Continued):**

2 MR. LEWIS: Q: So regarding B-55, the IR is Gold River
3 IR 1.2.11. I'll give you time to get that. So what
4 we have is a tendered capital charge number which is
5 expressed, which I guess is the levelized component of
6 it, of \$12,029 and \$17.00 per megawatt per month.

7 MS. HEMMINGSEN: A: Unfortunately, I would consider
8 that to be bidder information of unsuccessful bidders
9 if it was provided on that basis.

10 MR. LEWIS: Q: Well, the IR was answered and this --

11 MS. HEMMINGSEN: A: But it was answered for the
12 successful bidder.

13 MR. LEWIS: Q: Okay, so I guess my question is were the
14 levelized unit charges for both capital and variable
15 costs of the Tier 1 and the 122 megawatt portfolio
16 component of the Tier 2 bid provided to the
17 Commission?

18 MS. HEMMINGSEN: A: The entire results of the QEM model
19 were provided to the Commission for both successful
20 bidders and unsuccessful bidders.

21 MR. LEWIS: Q: Okay. So the Commission, from the
22 information it has available to it, they can identify
23 what the levelized unit charge is for the 122 megawatt
24 portion of the Tier 2?

25 MS. HEMMINGSEN: A: Yes.

26 MR. LEWIS: Q: Thank you. Now I guess my next question

1 goes to the Commission.

2 Knowing that you have that and it's in
3 confidence, could I get that in a comparative value so
4 Tier 2 is 80 percent of Tier 1, Tier 2 is 120 percent
5 of Tier 1, but that way it would maintain
6 confidentiality and yet still give me the information
7 that I seek?

8 THE CHAIRPERSON: Again, you should pursue it through
9 this panel.

10 MR. LEWIS: Q: Okay. Would that be appropriate?

11 MS. HEMMINGSEN: A: I would have difficulty with that
12 because it relates to some information for
13 unsuccessful bidders that's not aggregated enough
14 to--

15 MR. SANDERSON: And certainly a straight percentage
16 allows someone to do the arithmetic and get the
17 precise numbers. So the percentage suggestion by
18 itself at least probably doesn't seem to me to provide
19 much of a confidentiality protection. I'm just trying
20 to think of whether there's a directional response
21 that can be given that meets Mayor Lewis' needs or
22 something like that as opposed to a harder number.

23 MR. LEWIS: Sure. Thank you. I guess my comment is that
24 because the levelized unit charge hasn't been
25 disclosed, it's in confidence with the Commission,
26 that getting a comparative value would be of no good

1 to me because I don't have access to those levelized
2 unit charges anyway. So there is no way through the
3 back door to find out any numbers, because without
4 knowing one and a comparative value you cannot know
5 the others.

6 MR. SANDERSON: I'm sorry. But you do have the Duke
7 Point number.

8 MR. LEWIS: No, that's simply a capital charge. What I'm
9 looking for is capital and variable costs, and that
10 hasn't been supplied and that's in confidence
11 according to Ms. Hemmingsen.

12 MR. SANDERSON: I see what you're after.

13 MR. LEWIS: And I think that takes care of the concern
14 Mr. Sanderson had, if I'm not correct.

15 **Proceeding Time 5:25 p.m. T33A**

16 THE CHAIRPERSON: In part the problem is for you, just so
17 I understand this, I'm not going to answer your
18 question for you, but so that I understand this. 2.4-
19 46.6 has got the variable costs aggregated.

20 MR. LEWIS: Well, I'll give you some of my concern over
21 that. When Ms. Hemmingsen pointed me to the value of
22 energy in the Tier 2 -- I'll let you pull that.

23 When Ms. Hemmingsen pointed me to the value
24 of energy, she simply stated, "Take one-third of that
25 833." Now, I'm guessing that because the Tier 2, 75
26 megawatt project was identified as 600 gigawatt hours,

1 and the total component was 1800, she was simply
2 directing me, "Well, that's one-third of that value,
3 therefore take it." I'm looking for very specific
4 information out of the QEM, which would be completely
5 different, I believe, unless that's a highly unlikely
6 coincidence that it worked out to be exactly one-third
7 of the energy margin. And the levelizing those unit
8 charges, which is just one step past what was supplied
9 in B-55, I'm willing to accept it's in confidence.
10 But because it is in confidence I believe a
11 comparative value can be released.

12 MR. LEWIS: Q: And I believe I've dealt with Mr.
13 Sanderson's concern, so can the panel tell me why it
14 wouldn't be?

15 MS. HEMMINGSEN: A: I'm still at a loss to determine
16 what you're looking for, because this is the net
17 present value dollars of the Tier 2 portfolio options.

18 MR. LEWIS: Q: In Exhibit B-55, Gold River IR --

19 MS. HEMMINGSEN: A: Is this two eleven?

20 MR. LEWIS: Q: 1.2.11.

21 MS. HEMMINGSEN: A: Right.

22 MR. LEWIS: Q: There was a --

23 MS. HEMMINGSEN: A: It says: "The tendered capital
24 charge is 12,000..."

25 MR. LEWIS: Q: Correct.

26 MS. HEMMINGSEN: A: "...per megawatt per month."

1 MR. LEWIS: Q: Capital charge. Now, what I'm looking
2 for, what I'd be interested in knowing is has the
3 total levelized unit cost, which would be capital as
4 well as variable, been filed with the Commission --

5 MS. HEMMINGSEN: A: Yes.

6 MR. LEWIS: Q: -- for not only the Tier 1 but also the
7 Tier 2 component, which is the 122 megawatt portfolio.

8 MS. HEMMINGSEN: A: It has.

9 MR. LEWIS: Q: So not with everything else combined.
10 And you've answered that previously, and I appreciate
11 that. So knowing that and knowing that that's in
12 confidence, I don't understand why I can't get a
13 comparative value of those two.

14 MS. HEMMINGSEN: A: Because that represents specific
15 bid information by unsuccessful bidders. And what
16 we've provided to you here is summary information that
17 doesn't violate the confidence of unsuccessful
18 bidders.

19 MR. LEWIS: Q: And I believe the confidence of the
20 unsuccessful bidder is in the number itself. It's not
21 in the percentage of it, and that's required to do
22 some sort of evaluation.

23 And, Mr. Chairman, what this goes directly
24 back to is what I stated earlier, that if in the
25 Commission's interpretation of their January 23rd
26 direction, it was we are willing to accept less

1 capacity now, and fulfill our future shortfalls
2 through other calls for generation or capacity, you
3 would need to have those levelized unit costs to
4 understand what is the value of taking the 122
5 megawatt portfolio now as opposed to taking the 252
6 Tier 1 bid.

7 Now, you have that information apparently
8 already to you. One step further past that is if I
9 could have that information in a comparative value,
10 just so I know what is that proportionality.

11 THE CHAIRPERSON: Ms. Hemmingsen I think has already
12 answered the question. It's going to disclose
13 confidential information about unsuccessful bidders.

14 MR. LEWIS: Ms. Hemmingsen has. Can I get a ruling from
15 you on that? Does that confidentiality extend to a
16 comparative value, although there is no way to
17 understand anything quantitative about it?

18 THE CHAIRPERSON: The difficulty I'm having, Mr. Lewis,
19 the comparative values that you already have for Tier
20 2, I would have thought would have provided you with
21 the analysis or the basis for which you I assume are
22 going to make an argument on, that Tier 2 is a better
23 alternative than Tier 1. You have the numbers for
24 that. You don't have the NPV broken out as you're
25 suggesting by capital charge and O&M, but you have the
26 aggregate number.

1 **Proceeding Time 5:30 p.m. T34A**
2 MR. LEWIS: Yes, and unless I can get it confirmed from
3 the panel that under the QEM the value of energy that
4 was contributed by the 122 megawatt component of that
5 Tier 2 analysis is exactly one-third of that number
6 that's there, I'm not getting the number I want. I
7 believe, as I said, they simply said "Take one-third,"
8 because that's the 600 to 1,800 gigawatt-hour
9 relationship.

10 MR. SANDERSON: Mr. Chairman, I don't know if this helps,
11 but that's -- first of all, that's so. So, Mr. Lewis
12 is quite right in determining how that calculation was
13 done, and how the one-third was arrived at. It was
14 the 600 over 1,800.

15 If I understand Mr. Lewis's concern, it may
16 simply be that Hydro in argument will say, "Well, what
17 does that number mean? I mean, you can't draw any
18 conclusions from that, because after all, the number
19 we gave you was close to misleading, or wrong, and
20 thus, Gold River, you can't place any reliance on
21 that, because it's not the number out of the QEM."
22 I'll need to get instructions, but I currently would
23 not contemplate doing that in argument. And I'll seek
24 instructions to confirm that I won't be doing that in
25 argument, but if that's the case, then as you've just
26 pointed out, I think the conclusion that Mr. Lewis

1 wants to draw, in terms of the relative value of Tier
2 1 and Tier 2 from those calculations and tables, is
3 available for him to draw.

4 MR. LEWIS: Thank you, and they are. But they're not the
5 ones I'm looking for from these tables. I would like
6 to know specifically what would be the value of energy
7 from that 122 megawatt component. And that hasn't
8 been broken out, and as I said, to me, in my argument,
9 it's critical to make that decision, or to make that
10 suggestion that it is cost-effective to accept less
11 capacity now, based on that proportional relationship.
12 And based on the options and the alternatives that
13 haven't been explored, and that have been put forward,
14 I would like to be able to see what that relationship
15 is, so I can say, "Maybe there is a good case for
16 accepting less now and seeking further alternatives in
17 the future." We cannot derive that from this table,
18 at least I can't. And if I'm being told all that
19 information is here, and it's simply a matter that I
20 can't derive it, whoever can, please give it to me.
21 That's all I'm asking.

22 I've been told that you've been given it.
23 So you should have that ability to do it, on a
24 levelized unit charge, which would give you that
25 comparison. And I don't -- if it's ruled in
26 confidence, that I can't have it, you know, I'm not

1 aware if the bidders have come forward that are
2 involved in this and said, "We're not afraid to open
3 up our costs or our bids." I'm not sure if that's
4 been done.

5 But in any event, you should be able to
6 clearly answer that you have that, and from what I
7 see, and what I'm being told on these tables, I don't
8 have that. And I appreciate Mr. Sanderson saying he
9 won't use that against me in an argument, but it still
10 doesn't give me what I'm looking for.

11 THE CHAIRPERSON: Doesn't your concern go to the
12 equalization, though? Your -- those -- if I
13 understand your logic, those numbers only become
14 important to you if you're successful in convincing
15 the panel that the equalization was inappropriate.

16 MR. LEWIS: I think that could be one argument, for sure.
17 But I think also what the equalization was limited to
18 was the scope to which Hydro looked at. I have
19 established in testimony earlier today that there are
20 other industrial users that weren't sought, so there
21 are other alternatives. I've established through
22 testimony earlier today that there were price and non-
23 price factors that weren't considered in this
24 analysis.

25 So there are extraneous values out there,
26 outside of this analysis, and if in the Commission's

1 wisdom they decide "We don't think that that level, or
2 that equalization was fair either," you need to have a
3 number to look at to say, "What is our alternative?"
4 Using the QEM, which is, you know, the very expensive,
5 very time-consuming method that they use to quantify,
6 for all the projects, that can be used against any
7 size tier that is not exclusive to one size or
8 another, to me that would be the true test of *per se*
9 equalizing.

10 **Proceeding Time 5:35 p.m. T35A**

11 THE CHAIRPERSON: Do I understand you correctly that what
12 you want to do is you want to take the numbers out of
13 2.46.6 without the energy that equalizes them to Tier
14 1, and rely on that? And instead you're suggesting
15 that it's necessary for you to have the unit cost --
16 and when you say "levelized unit cost" in this
17 context, you're talking about the two units that are
18 in Tier 2? Are you --

19 MR. LEWIS: No, a levelized unit cost would be the
20 capital charge and all the variable charges together
21 in a cost per megawatt per month.

22 THE CHAIRPERSON: All right.

23 MR. LEWIS: And what that does is, if we had put the Tier
24 2, 122 megawatt portfolio through the QEM and then
25 worked it back to a levelized unit charge, it would
26 have said over this term and using this much capacity,

1 here's what you're going to pay per month per
2 megawatt.

3 Now, to me, that's the simplest and most
4 straightforward way to assess the cost-effectiveness
5 of that 122 megawatt portfolio to the 252 megawatt
6 portfolio if we have some concerns regarding the
7 equalization that went on, which I do. Now, I've been
8 told that that's been filed with you, and it should be
9 fairly simplified for you to find, and I want to make
10 sure that number is there for you. And my next --
11 what I'm seeking is the comparative value. Now, you
12 may not give that to me. At this point I haven't been
13 explained why, but I want to make sure you have that
14 value, those two values in front of you.

15 THE CHAIRPERSON: Is the difference in the levelized unit
16 costs satisfactory for you? So you take the
17 equalization out of it, you calculate a levelized unit
18 cost for each of the plants I'll call them, in the
19 alternatives. Does that meet your needs?

20 MR. LEWIS: Yes, I believe so. If you ran the 75
21 megawatt and the 47 megawatt project together in the
22 QEM, a 122 megawatt portfolio, and worked that back to
23 a levelized unit cost and you ran the 252 megawatt
24 project, which is -- both of these have been done
25 apparently, but just levelized them, that would be
26 what I want to have in front of you.

1 THE CHAIRPERSON: Just the difference between the two.

2 MR. LEWIS: Well, it won't be a difference. It'll be a
3 cost per megawatt per month.

4 THE CHAIRPERSON: Right. We already have that, but
5 you're looking for more information than that. You
6 want disclosure of that levelized unit cost, and I'm
7 suggesting to you -- I'm asking you, does the
8 difference between those numbers help you?

9 MR. LEWIS: It would help but I think a comparative value
10 is much more relevant in determining cost-
11 effectiveness, because cost-effectiveness is a
12 comparative value. You simply can't take one number
13 because there's a scope that's involved.

14 THE CHAIRPERSON: Yes, but you're given some scope just
15 in the NPV numbers.

16 MR. LEWIS: But we've already been told by Mr. Sanderson
17 himself that these are not accurate to the terms of
18 what I'm looking for.

19 THE CHAIRPERSON: Well, they're not levelized unit cost
20 numbers.

21 MR. LEWIS: But even the manner in which they determine
22 the value of energy, that was arbitrary.

23 MS. HEMMINGSEN: A: It was arbitrary but directionally
24 correct.

25 MR. LEWIS: I'm not even going to ask to have that
26 explained. But what I would expect is, running

1 through the QEM there is an energy margin that's
2 derived. Now, I don't know what that is, but chances
3 are it's probably not one-third. Now I don't know if
4 of the 833 it's 533, if it's 588, if it's 688. That
5 hasn't been identified. What's been said is "Well,
6 just take a third," and that's not accurate. So I've
7 said, "Let's bypass all that and let's just go
8 straight to a levelized cost and then give me a
9 comparative value."

10 **Proceeding Time 5:40 p.m. T36A**

11 THE CHAIRPERSON: Does disclosure of the difference in
12 the levelized unit costs lead to concerns for you with
13 respect to confidentiality?

14 MS. HEMMINGSEN: A: I think it does because the two
15 projects are significantly different and as we
16 outlined, one has an energy value associated with it
17 and the other doesn't. So if you disclose that you *de*
18 *facto* end up knowing what the bids were.

19 MR. LEWIS: And I would argue that the manner in which
20 they've applied the analysis to value generation is
21 not consistent with a capacity call. It is not
22 established that it analyzed all of the alternatives
23 available and it did not assess all of the price and
24 non-price factors. We heard that in testimony today.
25 So that's why I don't rely on that levelization, or
26 equalization.

1 THE CHAIRPERSON: I appreciate your frustration, Mr.
2 Lewis. I think Mr. Sanderson made the point yesterday
3 that one should not be deceived by the fact that
4 you're not a lawyer.

5 MR. LEWIS: That doesn't do me much good right about now,
6 but thank you.

7 THE CHAIRPERSON: I will not disclose confidential
8 information with respect to the unsuccessful bidders
9 and I accept Ms. Hemmingsen's comment that if I was to
10 do what you're proposing, even at a differential
11 basis, that it *de facto* is going to disclose the
12 unsuccessful bids so I can't go there with you as much
13 as I'd like to be helpful.

14 MR. LEWIS: Okay, so you can't disclose it but you do
15 have that number available to you?

16 THE CHAIRPERSON: Yes, I actually have to confirm --

17 MR. LEWIS: I'd be happy with that.

18 THE CHAIRPERSON: -- that the levelized unit cost is
19 there for each of the units because the QEM model, as
20 you know, is an NPV model, and you're asking for
21 levelized unit costs for each of the facilities that's
22 in Tier 2 and is it -- I mean I'd have to rely on this
23 panel. They'd need to direct me to where it is and
24 then I'd be happy to confirm that for you if that was
25 helpful.

26 MR. LEWIS: Sure.

1 MS. HEMMINGSEN: A: You have the levelized unit cost on
2 a project basis so you'd have to aggregate those two,
3 but that can be done in the QEM.

4 THE CHAIRPERSON: So the QEM model gives me the levelized
5 unit? It does, all right. Okay, well then I can
6 confirm that for you.

7 MR. LEWIS: Thank you. And those values were attained
8 from having the QEM applied to the 47 megawatt project
9 and the 75 megawatt together in a portfolio?

10 MS. HEMMINGSEN: A: No. As I just outlined, they were
11 applied analyzing the projects separately, because as
12 we explained on Panel 2, only the tender sheets were
13 run for those two projects. But you can aggregate
14 them within the model.

15 THE CHAIRPERSON: So I'd go to the tender sheets, there's
16 a unit cost and the tender sheets, and aggregate them?

17 MS. HEMMINGSEN: A: That's right.

18 THE CHAIRPERSON: All right.

19 MR. LEWIS: And if that gets me what I'm getting to at
20 the end, which is just simply let's compare 122
21 megawatt portfolio to a 252 megawatt portfolio and
22 we're using values of them being run through the QEM
23 together I'm happy with that and I'm happy to have
24 that rest with you, but it sounds to me like what I'm
25 hearing is they were each done separately or with
26 another project and that may provide, or it well

1 definitely provide a different result, I believe, than
2 having them run together as 122 megawatt portfolio.

3 THE CHAIRPERSON: Well, that's an interesting issue. If
4 the -- Ms. Hemmingsen?

5 MS. HEMMINGSEN: A: They wouldn't change what's
6 represented in the cost effectiveness analysis, so --

7 MR. LEWIS: Q: Could I ask then that it be undertaken
8 that they be run together and provided just to make
9 sure that that is a check? If it wouldn't affect them
10 and they've each been done separately why are you
11 saying -- although it's not on the transcript, I saw
12 you shaking your head and saying no?

13 MS. HEMMINGSEN: A: Well, one thing you have to
14 understand which is the basis for my concern about
15 releasing the information is the peaker plant isn't
16 dispatched other than for a couple of hours so running
17 it with the Green Island project wouldn't change the
18 dispatch.

19 MR. LEWIS: Q: Well --

20 MS. HEMMINGSEN: A: The two are totally different
21 projects. One has energy associated with. The other
22 is just a peak capacity project. So running them
23 together doesn't change their values. It doesn't
24 change the energy margin associated with them. And
25 the results from the QEM with them run individually
26 have been aggregated in the cost effectiveness

1 analysis.

2 **Proceeding Time 5:45 p.m. T37A**

3 MR. LEWIS: Q: So why would you object to running them
4 together if it wouldn't change anything?

5 MR. SANDERSON: I didn't hear Ms. Hemmingsen objecting to
6 that, actually. I heard you to be objecting to that.
7 In other words, what I understand to be the case is,
8 the tender sheets have been run, they've looked at
9 each project individually, Ms. Hemmingsen has
10 testified in response to the Chairman's questions that
11 if you aggregate those two, which the information that
12 has been filed in confidence if the Commission
13 permits, you get the same result as if you put the two
14 together and run the portfolio analysis.

15 MR. LEWIS: Correct, and I heard that too. But what I'm
16 asking as a check is an undertaking, could we simply
17 have them both put together? And then I'd be
18 completely satisfied.

19 THE CHAIRPERSON: But because one is a peak -- I think
20 this is Ms. Hemmingsen's point. Because one of them's
21 a peaker, if we do that, we disclose the unsuccessful
22 bids.

23 MR. LEWIS: This is being held in confidence to you,
24 though. I'm not asking this to be released to me.

25 THE CHAIRPERSON: Oh. Well, I misunderstood.

26 MR. LEWIS: Although I'd love it, I didn't think you were

1 going there. I just wanted to make sure you had it in
2 front of you.

3 MR. SANDERSON: So if I'm understanding now, you want the
4 run -- Ms. Hemmingsen has said, if you do this you'll
5 get the same result, you want that confirmed and filed
6 in confidence with the Commission.

7 MR. LEWIS: The first step, definitely. Now, if I can
8 argue about getting it released, I mean -- one more
9 comment, I'd --

10 MR. SANDERSON: I certainly wasn't meaning to encourage
11 that, Mr. Lewis.

12 MS. HEMMINGSEN: A: Our technical experts are telling
13 me there's some challenges in doing that. So I --
14 before we commit to doing that, I'd like to just
15 confer with them, and one of the experts isn't on this
16 panel, so I'd have to ask him whether we can in fact
17 do that.

18 MR. SANDERSON: All right. Well, we'll do that
19 overnight, I guess, is ask whether that can be -- in
20 other words, this -- however this comes out, it's a
21 filing in confidence with the Commission after the
22 fact. So we will --

23 MR. LEWIS: At this point, yes.

24 MR. SANDERSON: We will address in the morning what we've
25 been able to determine overnight in terms of the
26 complexity or difficulty of doing that, whatever they

1 may be.

2 MR. LEWIS: Now, if the unsuccessful bidders have
3 approached the Commission, or approach the Commission
4 -- I'm not up to date on who's done what, I've just
5 heard some people have said they have waived their
6 confidentiality. If they were to approach the
7 Commission and say, "We're not interested in
8 confidentiality any more," would that then be
9 available to me?

10 MR. SANDERSON: There have been -- just so the record's
11 clear, there have been no unsuccessful bidders that
12 I'm aware of who have come forward and agreed to waive
13 anything. They've -- a number have volunteered to
14 file in confidence information, but none of them --
15 with the sole exception of Duke, who never
16 volunteered, but has been required to file non-
17 confidential information -- has come forward.

18 MR. LEWIS: Okay, thank you very much.

19 THE CHAIRPERSON: Thank you, Mr. Lewis.

20 MR. LEWIS: And I'm sorry to drag this on longer. I know
21 it was only supposed to be five minutes. Thank you,
22 Mr. Fulton.

23 THE CHAIRPERSON: Well, you've --

24 MR. FULTON: Mr. Chairman, I did provide my friend with a
25 series of questions in advance to determine whether or
26 not there were confidentiality issues. With the

1 exception of one, I don't think we have a
2 confidentiality issue. I'm not expecting all my
3 answers -- or all my questions to be answered tonight.
4 Some will necessarily require undertakings. And it
5 would be my proposal that we go to about 6:15.

6 THE CHAIRPERSON: Please proceed.

7 MR. FULTON: Thank you.

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

9 MR. FULTON: Q: Panel, I'd like to begin with Appendix
10 J, Attachment A, and the table IR 1.14.2.3 in Exhibit
11 B-10. That is a confidential table.

12 MS. HEMMINGSEN: A: What was the number again, Mr.
13 Fulton?

14 MR. FULTON: Q: Exhibit B-10, table IR 1.14.2.3. And
15 I'll have a series of questions that impact on that
16 table.

17 MS. HEMMINGSEN: A: We're just getting it.

18 MR. FULTON: Q: Thank you.

19 MS. HEMMINGSEN: A: Okay, we've got the table in front
20 of us.

21 MR. FULTON: Q: Thank you. Now, can you confirm for me
22 that Table IR 1.14.2.3 is the origin of the cost
23 differences among the alternatives that are summarized
24 in Attachment A, and here I'm speaking of the first
25 table, row 2, of Appendix J of the application?

26 MR. LIN: A: If I could maybe take a step back, I think

1 as Ms. Hemmingsen alluded to earlier, we had about
2 five days or so to do this analysis, and the approach
3 we took was, the overall cost-effectiveness analysis
4 is the aggregate of three different analyses. In
5 responding to the BCUC IR 1.14.2.3, which asked for
6 the annual cash flows, we then aggregated three
7 different spreadsheets into one. As a result, there
8 is some reconciliation that took place. One of them
9 is -- one of the analyses of the three was done using
10 fiscal year instead of calendar years.

11 **Proceeding Time 5:50 p.m. T38A**

12 So if you look at the results based on the
13 spreadsheet that we submitted, you will see a couple
14 of million dollar difference here and there, and that
15 reflects the reconciliation that I just talked about.

16 MR. FULTON: Q: Thank you. Are the avoided losses in
17 value of energy subtracted in calculating the total
18 cash flows associated with each alternative in the
19 table, Mr. Lin?

20 MR. LIN: A: Yes.

21 MR. FULTON: Q: Thank you.

22 Now I'd like to ask you to confirm for me
23 if you could, whether certain of the following costs
24 and benefits used in the cost-effective analysis are
25 based on the same methodology and inputs as the QEM,
26 and except for changing the base here, are consistent

1 with the general values produced in the QEM model;
2 that is, the tender sheets prepared for each tendered
3 project and/or portfolio evaluation summary prepared
4 for the Tier 1 projects. So that the costs and
5 benefits that I'm seeking confirmation for are first
6 of all the capital and OMC charges startup costs?
7 MR. LIN: A: Yes.
8 MR. FULTON: Q: Okay. Gas tolls?
9 MR. LIN: A: Yes.
10 MR. FULTON: Q: Network upgrade?
11 MR. LIN: A: Yes.
12 MR. FULTON: Q: And a VIGP credit.
13 MR. LIN: A: Yes.
14 MR. FULTON: Q: Okay.
15 MR. LIN: A: With one caveat on the VIGP credit.
16 MR. FULTON: Q: Yes.
17 MR. LIN: A: In the QEM, if I remember correctly, in a
18 portfolio result the VIGP credit is applied in the
19 year of 2006.
20 MR. PETERSON: A: That's correct.
21 MR. LIN: A: In the cost-effectiveness analysis, we
22 made adjustment on when that credit will be received,
23 and we have assumed that it will be received in
24 beginning 2005. So there may be a slight difference
25 there, but that's one of the differences.
26 MS. HEMMINGSEN: A: It would just be the time value of

1 money difference on the \$50 million.

2 MR. FULTON: Q: Thank you. Still with Appendix J, can
3 you confirm for me that the variable O&M and fuel
4 costs are based on the same basic methodology for
5 estimating dispatch and operating costs as used in the
6 QEM, but that the actual values used in the cost-
7 effective analysis are based on slightly different
8 price forecasts?

9 MR. LIN: A: No.

10 MR. FULTON: Q: Okay.

11 MR. LIN: A: The cost-effectiveness analysis took
12 inputs from the QEM results. Sorry, the outputs from
13 the QEM results.

14 MR. FULTON: Q: Right. So differences do exist then,
15 do they?

16 MR. LIN: A: I --

17 MS. HEMMINGSEN: A: No. What Mr. Lin is outlining is
18 that the cost-effectiveness analysis took the outputs
19 of the QEM model as they relate to energy values.

20 MR. FULTON: Q: I'd like to turn next to the
21 calculation and treatment of the energy production in
22 the cost-effectiveness evaluation. And would you
23 agree with me that in the QEM projects are provided
24 credit for their energy margin based on the amount of
25 energy produced by each project, and the difference
26 between its cost and market value?

1 MR. PETERSON: A: Correct.

2 **Proceeding Time 5:55 p.m. T39A**

3 MR. FULTON: Q: And in the cost effectiveness
4 evaluation the energy provided by each alternative is
5 normalized so that the Tier 2 and No Award provide the
6 same energy benefit in 2010 and beyond when a need for
7 energy has been identified?

8 MR. PETERSON: A: That's correct.

9 MR. FULTON: Q: In the confidential spreadsheet that
10 was provided in Exhibit B-10, IR 1.14.4, so IR 1.14.4,
11 it appears that the cost and value of energy
12 calculations for Tier 1, Tier 2 and No Award in the
13 spreadsheet supplied to the Commission do not vary
14 consistently when changing between the various price
15 scenarios. Do you agree with that?

16 MS. HEMMINGSEN: A: We're just finding the reference,
17 the IR.

18 MR. FULTON: Q: IR 1.14.4.

19 MS. HEMMINGSEN: A: It's got very small numbers on it.

20 MR. LIN: A: Perhaps you can give me an example of
21 that.

22 MR. FULTON: Q: Certainly. If you look at Tier 1 the
23 NPV of that alternative does not change between the
24 100 percent and the 90 percent price scenario.
25 However it appears that the dispatch of the plant does
26 vary under the high gas, low electricity scenario,

1 increasing the NPV of Tier 1.

2 MR.LIN: A: If I could take the first part of your
3 question first.

4 MR. FULTON: Q: Yes.

5 MR. LIN: A: The reason it does not change is because
6 in Tier 1 there is no backfill required and therefore
7 by changing the cost of Mainland generation, that
8 would not change the NPV, Tier 1 NPV. With respect to
9 your second -- the second part of your question,
10 changing the relationship between gas and electricity
11 actually changed dispatch and therefore the NPV would
12 change as a result.

13 MR. FULTON: Q: If the cost of the Mainland generation
14 were lower than expected would that not affect the
15 actual dispatch of the plant?

16 MR. LIN: A: All dispatch modeling is based on the
17 market price of electricity and not based on the
18 assumed backfill cost in the Mainland.

19 MR. FULTON: Q: All right, so then the answer is no?

20 MR. LIN: A: No.

21 MR. FULTON: Q: In the no award scenario the cost of
22 energy appears to vary across the three price
23 scenarios while the value of energy remains fixed,
24 would you agree with that?

25 MR. LIN: A: That's correct.

26 MR. FULTON: Q: Okay, can you tell us why that is the

1 case?

2 MR. LIN: A: We had two different cost scenarios on the
3 backfill, but again our cost to the Mainland backfill
4 is independent of the market forecast and therefore by
5 changing our backfill assumption the NPV of the market
6 value of energy remained the same.

7 MR. FULTON: Q: The cost of energy remains fixed under
8 all three price scenarios, agreed?

9 MR. LIN: A: No.

10 **Proceeding Time 6:00 p.m. T40A**

11 MR. FULTON: Q: No?

12 MR. LIN: A: The first case is the 100 percent
13 scenario.

14 MR. FULTON: Q: Yeah.

15 MR. LIN: A: The second case is the 90 percent
16 scenario. So the cost of generation should vary.

17 MR. FULTON: Q: Does the value of energy, however,
18 remain fixed under all three of the price scenarios?

19 MR. LIN: A: That's correct.

20 MR. FULTON: Q: And notwithstanding that the value of
21 energy remains fixed under all three price scenarios,
22 would you agree with me that in each price scenario,
23 you have assumed the value of Mainland energy is less
24 than the cost of energy?

25 And for example, in the no award
26 alternative under the VI 250 megawatt CCGT price

1 scenario, the present value cost of mainland
2 generation is \$997, while the value is \$802.

3 MR. LIN: A: I believe that's in millions of dollars.

4 MR. FULTON: Q: I'm sorry, yes.

5 MR. LIN: A: Should I continue?

6 MR. FULTON: Q: Yeah, I'm not sure whether it was my
7 question or your answer, that turned the lights off,
8 but --

9 MR. LIN: A: That is correct. I would like to point
10 out, though, that is not unique to a no award
11 scenario. That is also -- that also exists in the
12 Tier 1 scenario.

13 MR. FULTON: Q: Can you tell us, Mr. Lin, why the cost
14 of energy should be more than its value?

15 MS. HEMMINGSEN: A: The cost estimate is based on our
16 most recent Call For Tender for an equivalent product,
17 and that's compared against B.C. border forecast of
18 electricity prices. So the two could be different.

19 MR. FULTON: Q: All right. And, Ms. Hemmingsen, then,
20 probably this question is for you as well. Could you
21 also tell us why the cost and value of energy in the
22 no award scenarios does not change at all between the
23 VI 250 megawatt CCGT price scenario and the high cap,
24 high gas, low cost scenario?

25 MR. LIN: A: The reason is, the backfill, as we
26 indicated earlier, is assumed to be non-gas resources.

1 By changing the dispatch pattern in the QEM, would not
2 change the value and the cost under the no award
3 scenario.

4 MR. FULTON: Q: And did you use a comparable method, or
5 assumption, in calculating the cost of mainland
6 generation and the value of energy for the Tier 2
7 alternative?

8 MR. LIN: A: Yes we did.

9 MR. FULTON: Q: Okay. Are all these assumptions about
10 the cost and value of mainland generation really a
11 valid way of conceptualizing the no award alternative,
12 or Tier 2 alternatives, relative to Tier 1? And by
13 that I mean, shouldn't we assume that B.C. Hydro would
14 not add mainland resources that are that much in
15 excess of their market value? Or at least in excess
16 of that much of their market value and that the amount
17 of energy produced by Tier 1, and therefore needing to
18 be replaced by mainland generation, should actually
19 vary under each price scenario?

20 MS. HEMMINGSEN: A: Well, I guess there's about three
21 -- at least three questions there.

22 MR. FULTON: Q: Okay, well, do you want me to break
23 them down?

24 MS. HEMMINGSEN: A: Sure.

25 MR. FULTON: Q: Okay. Let's start, first of all, with
26 the question about the assumptions.

1 MS. HEMMINGSEN: A: Yeah.

2 MR. FULTON: Q: And --

3 MS. HEMMINGSEN: A: I guess our position is, it's a
4 valid way because we're comparing like resources for
5 like resources. So that's what we sought to do in a
6 simplified manner. So we sought to show a B.C.
7 located resource with a B.C.-located resource.

8 The next question shouldn't -- that is,
9 shouldn't we assume B.C. Hydro would not add mainland
10 resources that are much in excess of their market
11 value. B.C. Hydro has a number of constraints on
12 their system in terms of bringing imports in. And
13 that's something that we're evaluating in the
14 Integrated Electricity Plan, and at this point our
15 position is that we don't want to rely more on market,
16 so this represents our current preference, and our
17 current plans for resources. So that's what we've
18 reflected.

19 **Proceeding Time 6:05 p.m. T41A**

20 It does reflect the reality that having
21 B.C.-located resources relative to a forecast of
22 prices at the B.C. border exacts a slight premium.
23 But it exacts that premium across all the portfolios,
24 so we think that that's an appropriate way to
25 represent that. And then is the third -- maybe the
26 third question?

1 MR. FULTON: Q: Right. The third question is,
2 shouldn't the amount of energy produced by Tier 1 and
3 needed to be replaced by mainland generation actually
4 vary under each price scenario?

5 MS. HEMMINGSEN: A: Well, I think we've explained why
6 it doesn't, is because it's assumed to be a fixed
7 price, fixed volume resource. Which is what we have
8 acquired to date, and basically what the market in
9 B.C. needs.

10 MR. FULTON: Q: Thank you.

11 MS. HEMMINGSEN: A: To participate in the calls.

12 MR. FULTON: Q: If we could next turn to avoided
13 losses, and again, the confidential table, IR 1.14.23,
14 and the response to BCUC IR 1.15.3 and Table 1.15.3,
15 which is also confidential. You have those documents
16 before you?

17 MS. HEMMINGSEN: A: We do.

18 MR. FULTON: Q: Would you agree with me that all things
19 being equal, the credit for losses alone reduces the
20 cost of Tier 1 by almost 10 percent, and the cost of
21 Tier 2 by only 3 percent?

22 **Proceeding Time 6:08 p.m. T42A**

23 MS. HEMMINGSEN: A: I think they're trying to do math
24 in their head.

25 MR. LIN: A: That sounds about right, yes.

26 MR. FULTON: Q: Okay, well --

1 MR LIN: A: Without pulling my calculator out.
2 MR. FULTON: Q: We'll take it then subject to check.
3 MR. LIN: A: Okay.
4 MR. FULTON: Q: Now in terms of the losses, can you
5 tell me why B.C. Hydro uses a different price forecast
6 to calculate the cost of Mainland generation and the
7 credit for reduced losses, given that the losses must
8 be replaced by excess generation in the period in
9 which they occur?
10 MR. LIN: A: In our analysis, the loss is value at
11 market and not the cost of Mainland generation.
12 MR. FULTON: Q: Would you agree with --
13 MS. HEMMINGSEN: A: I'd just like to point out that
14 that's made on the basis of being a conservative
15 assumption because that represents a lower value for
16 the losses.
17 MR. FULTON: Q: Next the deferral credit for the second
18 230 kV AC line, again the confidential response
19 1.14.2.3. Would you agree with me that in the cost-
20 effectiveness evaluation, no credit is provided for
21 possible deferral of the first 230 kV line, although
22 the relative costs of delay are reflected in the
23 sensitivity analysis performed on each alternative?
24 MR. LIN: A: Yes.
25 MR. FULTON: Q: And for the purposes of the cost-
26 effectiveness evaluation, B.C. Hydro does however

1 include a credit for the deferral of the second AC
2 line, does it not?

3 MR. LIN: A: Yes, it does.

4 MR. FULTON: Q: Can you tell us what the assumptions
5 are for the calculation of this credit?

6 MR. LIN: A: The deferral credit is based on the
7 difference on PVs of the second cable capital cost,
8 depending on the amount of capacity that we acquire in
9 Vancouver Island. To the extent that we acquire more
10 capacity on the Island, it would be able to defer the
11 timing requirement of the second cable, and that's to
12 form the rationale.

13 **Proceeding Time 6:11 p.m. T43A**

14 MR. FULTON: Q: And does B.C. Hydro receive the capital
15 costs from BCTC?

16 MR. LIN: A: Yes, we have.

17 MR. FULTON: Q: Next item is the cost of backup
18 generators, and here I'm referring to IR 1.15.5 in
19 Exhibit B-10, also a confidential --

20 MS. HEMMINGSEN: A: We determined that the question is
21 fine but the answer is confidential.

22 MR. FULTON: Q: All right, so why don't I ask the
23 questions on the record, and then you can undertake to
24 provide the answer in writing on a confidential basis.
25 Is that acceptable?

26 MS. HEMMINGSEN: A: Sure.

1 MR. FULTON: Q: Now, you'll agree with me that
2 assumptions about the cost of temporary generators are
3 based on an estimate provided by GE Canada.

4 MS. HEMMINGSEN: A: That's correct. I believe that's
5 stated in our information that we filed.

6 MR. FULTON: Q: Can you tell us why GE Canada was
7 selected? That's --

8 MS. HEMMINGSEN: A: I suggest that we just read these
9 in, and then we'll answer the ones the we don't think
10 are confidential.

11 MR. FULTON: Q: Okay, thank you. Why was GE Canada
12 selected? Were any other vendors or service providers
13 consulted? What fuel assumptions are used for the
14 temporary generators? What are some of the places
15 these generators could be sited? Has B.C. Hydro
16 considered alternative siting options such as barges?
17 Has B.C. Hydro explored reliance on existing customer
18 backup generators to provide this service?

19 MS. HEMMINGSEN: A: Okay, we can answer that one.

20 MR. FULTON: Q: Thank you.

21 MR. LIN: A: No, we have not.

22 MS. HEMMINGSEN: A: No. No was the answer.

23 MR. FULTON: Q: Thank you. Would you also agree with
24 me that for the first unit, B.C. Hydro assumes the
25 one-time capital cost for site preparation,
26 engineering and other infrastructure?

1 MS. HEMMINGSEN: A: Yes. Yes, we have, and the next
2 question we can't answer. It's confidential.

3 MR. FULTON: Q: Okay, so I'll ask the question on the
4 record. Can B.C. Hydro provide more

5 **Proceeding Time 6:14 a.m. T44A**

6 MR. FULTON: Q: Okay, so I'll ask the question on the
7 record. Can B.C. Hydro provide more support for the
8 estimate?

9 MS. HEMMINGSEN: A: Yes, we can, but we need to do it
10 on a confidential basis.

11 MR. FULTON: Q: Thank you. And is B.C. Hydro aware of
12 other utilities that have relied on temporary
13 generators to bridge capacity shortfalls?

14 MR. LIN: A: Our understanding is Ontario and
15 California have implemented a similar type of plan in
16 the past, but we're not aware how successful they are.

17 MR. FULTON: Q: You have no knowledge of how successful
18 they were?

19 MR. LIN: A: No.

20 MR. FULTON: Q: You're agreeing with me?

21 MR. LIN: A: Yes. Yes.

22 MR. FULTON: Q: Thank you.

23 And Mr. chairman, I have one last series of
24 questions in this series, and it might be appropriate
25 to take the evening recess.

26 THE CHAIRPERSON: Is that satisfactory, Mr. Sanderson?

1 Is that your preference?

2 MR. SANDERSON: Yes, Mr. Chairman. Mr. Fulton will be
3 another five minutes?

4 MR. FULTON: Yes.

5 MR. SANDERSON: Yes.

6 MR. FULTON: Q: Again, having regard to the response to
7 IR 1.14.2.3, Exhibit B-10, the confidential IR, there
8 B.C. Hydro refers to three qualitative factors in
9 assessing Tier 1 versus Tier 2 versus the no award
10 options, and those are permitting risks, cost
11 certainty, and competitive tendering, correct?

12 MS. HEMMINGSEN: A: That's what's included and
13 referenced in Appendix J, yes.

14 MR. FULTON: Q: Yes. And with respect to permitting
15 risks, B.C. Hydro states at page 3 of Appendix J in
16 the first bullet under paragraph 4 that there may be
17 significant permitting risks associated with -- and
18 I'm going to add temporary generators, and that is
19 operating restrictions and in-service length.
20 Correct?

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

22 MR. FULTON: Q: Could you confirm that generators would
23 only be required for 2007-2008 until the in-service
24 date of the next 230 kV line?

25 MR. LIN: A: Yes.

26 MR. FULTON: Q: Okay. Can you tell us what the unique

1 not be allowed to run if the air quality exceeds
2 certain limit, and so we think that those two are
3 possible permit restrictions.

4 One other one is, there may be even
5 restriction on the length of time for which these
6 units can be in service.

7 MR. FULTON: Q: Thank you. Returning to Appendix J,
8 the second bullet on page three of Appendix J states
9 that:

10 "Tier 1 as a whole has the highest degree of
11 cost certainty among the three CFT outcomes
12 being considered."

13 MS. HEMMINGSEN: A: That's correct.

14 MR. FULTON: Q: Okay. And we can agree that the
15 primary purpose of the CFT was to provide capacity for
16 the Island.

17 MS. HEMMINGSEN: A: Right.

18 MR. FULTON: Q: Okay. And given that was the primary
19 purpose of the CFT, can you explain the statement that
20 appears in Appendix J, in the context of the large
21 capital cost of Tier 1 relative to the smaller, less
22 certain capital costs of the no award option?

23 MS. HEMMINGSEN: A: Sorry, what's the question?

24 MR. FULTON: Q: Can you explain the statement that
25 appears in Appendix J at the second bullet on page
26 three, having regard to the fact that the CFT was to

1 provide capacity for the Island, and given that there
2 are large, albeit fixed, capital costs of the Tier 1
3 relative to the smaller, less certain capital costs of
4 the no award option.

5 **Proceeding Time 6:20 p.m. T46A**

6 MS. HEMMINGSEN: A: That statement is made on the basis
7 of the binding fixed costs we have for capacity under
8 the Tier 1 award and reflects the fact that for the
9 other capacity options we don't have that level of
10 certainty associated with the costs and that some of
11 the timing uncertainties and the stage of development
12 introduce additional cost certainties associated with
13 the non-Tier 1 outcomes such as the cables. I mean
14 we've used a cost estimate that's \$209 million and we
15 have no basis to believe that that estimate wouldn't
16 escalate in terms of capital costs and also escalate
17 in terms of the scope of the reviews and requirements
18 that unfold as the project matures.

19 In terms of the second part of the
20 question, the cost hinging on the long-term value of
21 energy which is very uncertain, we attempted to band
22 that and present a conservative estimate of that by
23 weighting by 50 percent a 25 percent return on capital
24 for the CCGT forecast. So we think that we have
25 addressed a large measure of that uncertainty in terms
26 of how we value that energy margin.

1 MR. FULTON: Thank you. This would be an appropriate
2 time to recess, Mr. Chairman.

3 THE CHAIRPERSON: We'll break until 8:30 tomorrow
4 morning. Once again, Mr. Keough.

5 MR. KEOUGH: (inaudible)

6 THE CHAIRPERSON: Mr. Bemister, can we stay on line?
7 MR. Keough.

8 MR. KEOUGH: Mr. Chairman, I'll try to be fast. I just
9 wanted to confirm that you are still expecting the
10 Duke Point Panel for the afternoon and not for any
11 time earlier than that or if you are, I would just
12 like to know so I could advise them.

13 THE CHAIRPERSON: You should advise them that we can
14 expect, very easily expect to see them no later than
15 coffee tomorrow morning, and really they should be
16 available just in case we move quickly tomorrow,
17 earlier than that, 9:30 or something.

18 MR. KEOUGH: I'll have them here, Mr. Chairman. I just
19 wanted to know because I think they would have stayed
20 and studied their homework had they not been needed.
21 But they will be here.

22 THE CHAIRPERSON: Thank you. Is there anything else?
23 We are adjourned until 8:30 tomorrow
24 morning.

25 **(PROCEEDINGS ADJOURNED AT 6:22 P.M.)**

26