

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

and

RE: British Columbia Hydro and Power Authority
2015 Rate Design Application

Vancouver, B.C.
August 17th, 2016

PROCEEDINGS

BEFORE:

D. Morton,	Panel Chair
K. Keilty,	Commissioner
D. Cote,	Commissioner

VOLUME 4

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KENNETH KEITH ANDERSON
GORDON DOYLE
RANDY REIMANN

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INFORMATION REQUESTS

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For Ms. Khan:

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ERRATA

Volume 3, August 16th, 2016

Zone 1, Zone 1B and Zone 2 should be "Zone I", Zone IB", and "Zone II"

Volume 4, August 17th, 2016

Page 622, line 4 to line 12 "MR. DOYLE" should be "MR. REIMANN"

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CAARS

VANCOUVER, B.C.

August 17th, 2016

(PROCEEDINGS RESUMED AT 8:59 A.M.)

THE CHAIRPERSON: Please be seated.

BC HYDRO PANEL 1 - POLICY PANEL:

KENNETH KEITH ANDERSON, Resumed:

GORDON DOYLE, Resumed:

RANDY REIMANN, Resumed:

THE CHAIRPERSON: I understand we have a couple of matters to take care of. And, Mr. Christian, do you have some undertakings?

MR. CHRISTIAN: Yes, thank you, Mr. Chairman. At the end of -- at the close of the proceedings yesterday, you asked BC Hydro to update the Commission with respect to the number of undertakings that it understood it had accepted yesterday, and the timing by which those would be delivered. I do have two undertakings to file, but I thought maybe I'd give a little explanation of where we are by reference to the transcript.

THE CHAIRPERSON: Sure.

MR. CHRISTIAN: And the transcript actually indicates Information Requests just at the very beginning there, and if people have a copy of that, that might be the most convenient way to address the undertakings we

1 have. It's a little bit necessary, because there was
2 a little bit of confusion on the record, I think, with
3 respect to the specific undertakings we took. And so
4 by reference to this page here in the transcript, I
5 think I can clarify things in terms of where BC Hydro
6 is at.

7 So, firstly, it indicates on the
8 Information Request page of yesterday's transcript,
9 Volume 3, that there was an undertaking for Mr.
10 Andrews at page 544. We checked that. We thought it
11 looked like, actually, a subject to check rather than
12 undertaking, and we confirmed with Mr. Andrews that
13 that was correct. And so that's not an undertaking
14 we'll be filing a response to.

15 Under the heading "For Ms. Dong" on that
16 same page, it indicates two undertakings on page
17 558/559, and a second one on page 559. On our review
18 of that transcript, it looks like there's a series of
19 closely related questions, and so we propose to file
20 one undertaking response to those -- what are
21 indicated as two undertakings here on the transcript.

22 And then similarly on 562, again under the
23 heading "For Ms. Dong", there's one indicated
24 Information Request in the transcript, but I think
25 there was in fairness a number of questions that again
26 were closely related, that ran over a series of pages

1 -- page 560 to 565. And we propose to answer those as
2 one undertaking response.

3 Then lastly Mr. Anderson, at page 569, made
4 -- in response to a question, said, "If I haven't
5 already undertaken to provide that information, I
6 will." He had, in fact. That reference goes back to
7 page 557.

8 So when you add it all up, what we have, in
9 my understanding, is 13 undertakings that we have
10 outstanding. Two, I'll file right now and that will
11 take us down to 11. And we hope to file those
12 remaining 11 undertakings, if not today, then by
13 tomorrow, is the plan.

14 THE CHAIRPERSON: All right.

15 MR. CHRISTIAN: The two undertakings would be Exhibits B-
16 39 and B-40. Undertaking No. 1 and No. 2,
17 respectively. The first one relates to the amount of
18 revenue that the deferral account rate rider collects
19 each year, and so we've provided a table that sets
20 that out.

21 THE CHAIRPERSON: Okay.

22 MR. CHRISTIAN: And the second question was, are there
23 any plans to eliminate the deferral account rate rider
24 and, if so, when? And the answer explains what BC
25 Hydro's expectations are in that regard.

26 **(BC HYDRO UNDERTAKING NO. 1, TRANSCRIPT VOLUME 3, PAGE**

1 **487, LINE 25 TO PAGE 488, LINE 1 MARKED EXHIBIT B-39)**
2 **(BC HYDRO UNDERTAKING NO. 2, TRANSCRIPT VOLUME 3, PAGE**
3 **488, LINES 19 TO 22 MARKED EXHIBIT B-40)**

4 THE CHAIRPERSON: Okay, great. Thank you, Mr. Christian.

5 Mr. Keen, I understand you have --

6 MR. CHRISTIAN: I've got two other matters.

7 THE CHAIRPERSON: Oh, sorry.

8 MR. CHRISTIAN: Mr. Chairman, if I could, please.

9 Firstly, this is a minor point. Yesterday at
10 transcript 546, Mr. Chairman, you asked some questions
11 about the LRMC numbers that BC Hydro has put into
12 evidence in this proceeding, in particular whether or
13 not those were subject to government approval or
14 otherwise part of the IRP. And the answer, I think,
15 had no issues about it, but I just thought I should
16 alert the Commission to the fact that BC Hydro filed
17 two Information Request responses on that very topic
18 in this proceeding, and they may be of interest to the
19 Commission Panel. Those are both found at Exhibit B-
20 23, and the first one is an Information Request from
21 the BCUC. It's 2.184.2.1. That's 2.184.2.1. And
22 that's from the British Columbia Utilities Commission.

23 And the second one was from the Commercial
24 Energy Consumers Association, and that's 2.109.6, and
25 I'll repeat that, 2.109.6. Those are both part of
26 Exhibit B-23, and those both go to your questions, Mr.

1 Chairman. And I suggest that if those -- between the
2 testimony you got yesterday and those Information
3 Request responses, don't fully answer your question,
4 then if you could let BC Hydro know, or me know,
5 through counsel perhaps, and we'd be happy to
6 undertake to address the question in argument, because
7 I think it largely is a legal question.

8 THE CHAIRPERSON: Okay. Thank you, Mr. Christian.

9 MR. CHRISTIAN: The last thing I have, Mr. Chairman, is
10 that we have reviewed the transcript. There is a
11 number of small typographical errors that we'll be
12 consolidating and providing to the Hearing Officer
13 some time over the course of the day. But at one
14 point, there was one issue that wasn't really a
15 transcript error, but it may be -- it might have left
16 a misleading impression.

17 And that is at page 424 of the transcript.
18 Mr. Weafer was asking about the next rate design
19 application, that is, the one following the Module 2
20 application.

21 **Proceeding Time 9:04 a.m. T2**

22 And the question was, "And the company may
23 have a rate design application 2019," and then Mr.
24 Doyle gave an answer to that question, and he would
25 like an opportunity to clarify that to avoid the
26 possibility that people misunderstood what in fact is

1 happening timing wise with respect to that subsequent
2 application. And I could either have him speak to
3 that right now, or perhaps after Mr. Keen has his
4 opening comments, whatever you prefer. Although, I
5 think it should go probably before Ms. Dong resumes
6 her cross-examination.

7 THE CHAIRPERSON: If you want, go ahead.

8 MR. CHRISTIAN: Mr. Doyle, do you want to speak to that
9 question please?

10 MR. DOYLE: A: Thank you. Yes, so Mr. Weafer was
11 asking, as Mr. Christian said, about the next rate
12 design, and that is really with respect to the pricing
13 principles for the residential inclining block, and
14 the transmission service rate beyond the fiscal 2019
15 period which we are applying for in this application.
16 So, when we would be bringing forward that application
17 would be in calendar 2018, and that would have us to
18 allow time to have it -- the rates in place beginning
19 April 1st, 2019, which will be the beginning of fiscal
20 2020. So, calendar 2018 is when we would be bringing
21 forward that application.

22 THE CHAIRPERSON: Thank you, Mr. Doyle.

23 MR. CHRISTIAN: And that is all I have, Mr. Chairman.

24 THE CHAIRPERSON: Thank you, Mr. Christian. Mr. Keen?

25 MR. KEEN: Good morning, Mr. Chairman, Commissioners.

26 THE CHAIRPERSON: Good morning.

1 MR. KEEN: Having gone through the transcript last night,
2 there are a few corrections that we'll leave to the
3 errata, but there is one that I wanted to address
4 directly, because unfortunately I think the transcript
5 risks reversing the polarity of what I intended to
6 say. So, pardon the pun.

7 On page 404, I stuttered on the word
8 "ought" and the second "ought" was recorded as "not".
9 So, to be very clear, it should read, "AMPC will be
10 arguing that the commission ought to approve these
11 rate designs as applied for."

12 THE CHAIRPERSON: Okay.

13 MR. KEEN: I wanted to avoid that confusion, thank you.

14 THE CHAIRPERSON: All right, so we have our polarity
15 clarified now, thank you.

16 Ms. Dong?

17 MS. DONG: I'm okay.

18 THE CHAIRPERSON: Are you ready to go?

19 MS. DONG: Ready to go?

20 THE CHAIRPERSON: And Ms. Dong, before you begin, please
21 stand. The Panel just -- we have a brief comment that
22 a lot of your questioning yesterday seemed to revolve
23 around DSM. And I just would like to remind you that
24 DSM is not explicitly within the scope of this
25 hearing. It is more properly within the scope of the
26 RRA, which has an application for approval of DSM

1 expenditures.

2 However, I appreciate that you may have a
3 particular reason for this line of questioning, and
4 there may in fact be some linkage to the rate design
5 issues. So, if we could ask you just to please try to
6 make it clear what that linkage is through your
7 questioning, that would be helpful to the panel.

8 Thank you.

9 MS. DONG: Thank you. Mr. Chairman, panels, just to
10 reply to your point, energy affordability and low-
11 income rates are part of the RDA, and DSM is an
12 important part of bill affordability, as one of the
13 questions that we did ask earlier, and I don't have
14 the reference in the transcript, when we asked, would
15 you agree that -- when we asked to BC Hydro would you
16 agree that DSM is an important measure to reduce
17 electricity bills and improved electricity
18 affordability for Kwadacha Nation in Fort Ware, and
19 which BC Hydro agreed in the affirmative. And that is
20 where our connection is.

21 THE CHAIRPERSON: Okay.

22 MS. DONG: Okay?

23 **CROSS-EXAMINATION BY MS. DONG (CONTINUED):**

24 MS. DONG: Q: So, before we start, I just wanted to
25 thank BC Hydro for their cooperation in answering the
26 Zone II questions that we asked yesterday and their

1 follow-up on the various undertakings. As I
2 mentioned, DSM is an important issue for Kwadacha
3 Nation and remote communities, and we appreciate all
4 of BC Hydro's efforts in helping us to answer those
5 questions. Thank you.

6 **Proceeding Time 9:09 a.m. T03**

7 I just want to bring us back to something
8 that -- from yesterday's cross-examination. I wanted
9 to clarify a response related to Exhibit B-23, Zone II
10 IR 2.26.3, which is PDF page 949 of 951, where BC
11 Hydro states that the eligibility criteria for
12 measures include existing low levels of insulation,
13 sufficient access, no significant existing health and
14 safety issues that would prevent further work.

15 Are there are other eligibility criteria
16 that are not mentioned in this response, such as
17 housing deficiencies like broken windows and missing
18 siding, for example, that would also make these homes
19 ineligible for ECAP events?

20 MR. DOYLE: A: I don't have any information beyond
21 what's in the IR response.

22 MS. DONG: Q: Thank you. Okay. Would BC Hydro provide
23 funding to upgrade these homes to realize the
24 resulting energy savings from the upgrades, and then
25 allowable ECAP energy efficiency improvements -- oh, I
26 think I have to say this over again, sorry.

1 Would BC Hydro provide funding to upgrade
2 these homes to realize the resulting energy savings
3 from the upgrades, and then the allowable ECAP energy
4 efficient improvements and -- can be implemented.
5 MR. DOYLE: A: We're not aware of any funding provided
6 for the upgrades of the homes beyond the measures
7 within the ECAP program.
8 MS. DONG: Q: Would BC Hydro be willing to consider
9 that?
10 MR. DOYLE: A: Again, I think that's -- the program
11 design is probably a question best asked in the
12 revenue requirements application rather than here.
13 MS. DONG: Q: Thank you. I want to turn you to BC
14 Hydro's response to Exhibit B-5, BCOAPO's IR
15 1.135.5.1, which is PDF page 1033 of 2139.
16 COMMISSIONER KEILTY: Could you please repeat that?
17 MS. DONG: Okay. It's Exhibit 5, BCOAPO IR 1.135.5.1.
18 Q: It talks about the development of the First
19 Nations Power Smart program, and BC Hydro indicates
20 that it's developing a pilot offer for First Nations.
21 And I just wanted to ask BC Hydro if they could
22 provide further details of the pilot beyond that that
23 is described in the response to BCOAPO -- oh, sorry.
24 Can provide further details of the pilot beyond that
25 described in its response to Exhibit B-23, Zone II IR
26 2.25.1.

Proceeding Time 9:04 a.m. T4

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MR. DOYLE: A: Sorry, you'll have to give me a minute.

So, beyond the points that are listed in BC Hydro's response to B.C. Old Age Pensioners IR 1.135.5.1, and BC Hydro's response to Zone II Ratepayers Group 2.25.1, we don't have any further details. It seems to be quite a comprehensive discussion there.

MS. DONG: Q: Okay. Do you have any knowledge about how BC Hydro selected the communities to participate in the pilot?

MR. DOYLE: A: We do not.

MS. DONG: Q: Okay, so if you keep that other reference open, I'm going to refer to the Exhibit B-23, Zone II IR 2.25.1, where BC Hydro talks about unique market barriers that expecting to address for First Nations and remote communities part of the pilot. Are you aware if there are any remote communities -- oh, sorry. Can you discuss what unique market barriers BC Hydro is expecting to address for First Nations and remote communities as part of the pilot?

MR. DOYLE: A: Yes, we can. So, with respect to, if I turn your attention to the following IR, BC Hydro's response to Zone II Ratepayers Group 2.25.2, we outline what the market barriers are on designing conservation programs as a whole. Availability,

1 accessibility, awareness, affordability, acceptance.
2 So, of those barriers, we see the greatest impact on
3 First Nations in remote communities being
4 accessibility given the remoteness, and size of the
5 communities, it can be difficult to get the programs
6 delivered in those areas, as well as acceptance, where
7 there is potentially lack of trust between the
8 communities and BC Hydro. So, those are barriers as I
9 understand it we'll be looking at addressing through
10 the pilot program.

11 MS. DONG: Q: Thank you. So, are these communities,
12 are they remote communities in Zone IB or Zone II?

13 MR. DOYLE: A: I'm not aware which communities they
14 are.

15 MS. DONG: Q: Then are you aware of what regions they
16 are located in?

17 MR. DOYLE: A: I am not.

18 MS. DONG: Q: Just going on to another topic. Do you
19 know what the funding sources for DSM are at BC Hydro?

20 MR. DOYLE: A: So we achieve funding through our
21 revenue requirements application for the funding of
22 DSM programs as I understand it.

23 MS. DONG: Q: I was referring to what particular maybe
24 department budgets?

25 MR. DOYLE: A: Sorry, can you be more --

26 MS. DONG: Q: Sorry, I was referring to what specific

1 BC Hydro department budgets.

2 MR. DOYLE: A: Yeah, I imagine a large portion would be
3 through the conservation/energy management group at BC
4 Hydro, but --

5 MS. DONG: Q: Okay, thanks. Do you know if there are
6 any additional funding sources available for remote
7 communities or First Nations communities?

8 MR. DOYLE: A: No, we're not aware.

9 MS. DONG: Q: Okay, with the high cost of travel and
10 administration, would BC Hydro consider providing
11 program funding for the band to administer the funds
12 and report to BC Hydro within predetermined
13 guidelines?

14 MR. DOYLE: A: So, again, I think that that's starting
15 to get to a program design issue that's probably best
16 dealt with in the revenue requirements application
17 that was filed in July.

18 **Proceeding Time 9:18 a.m. T05**

19 MS. DONG: Q: Okay. So, turning to Exhibit 36-17, that
20 we filed yesterday.

21 MR. DOYLE: A: C36-17?

22 MS. DONG: Q: Oh, sorry. C36.7. It was the handout.
23 Yes, oh, 7? Okay, 17, sorry.

24 MR. DOYLE: A: Seventeen.

25 MS. DONG: Q: And it's listed as "Transmission project
26 incentives". And that was taken from the BC Hydro

1 website. Okay.

2 COMMISSIONER COTE: Is that at the end or --

3 MR. DOYLE: A: Yeah, it's the last couple of --

4 MS. DONG: Q: It's the last one, yes.

5 MR. DOYLE: A: Yeah.

6 MS. DONG: Q: The picture of the guy in the hardhat.

7 Okay. So do you know what -- what is the purpose of
8 this BC Hydro program, and can you explain who might
9 be eligible for this?

10 MR. DOYLE: A: So, I'm not familiar with the program
11 itself, but just reading it, it appears as though the
12 intent of the program would be to encourage energy
13 efficiency upgrades to some of the large transmission
14 service plants. And with respect to the eligibility,
15 I think that is generally listed out in the "This is
16 for you, if ...". So if you're a transmission service
17 rate customer, your project or group of projects will
18 save at least 300 megawatt hours per year. If you use
19 more than one gigawatt hour of electricity per year.
20 And then there's some other ones there. But the
21 eligibility appears to be listed out, at least at a
22 high level, in the "This is for you" piece.

23 *[cell phone ring tones]*

24 MS. DONG: Q: Okay. Are you aware if any of these
25 programs specify that they're multi-year?

26 MR. CHRISTIAN: Mr. Chairman, you know, this question, I

1 think, and a number of the ones that have preceded it,
2 clearly go to the nature of the specific programs.
3 I've heard Ms. Dong's comments at the outset about the
4 relationship between DSM and low income rates and
5 affordability. I appreciate that that is kind of a
6 line that her client may want to argue.

7 We've been pretty forthcoming -- BC Hydro
8 has been pretty forthcoming in answering questions
9 with respect to DSM, but this question and a numbers
10 that have preceded it are clearly going to program
11 design and details about it. This one in particular
12 is about, I think -- at least the last page we looked
13 at, transmission project incentives.

14 So I would suggest that maybe this line of
15 cross-examination could be curtailed, insofar as it
16 doesn't go to the higher-level issues that Ms. Dong
17 spoke of earlier.

18 MS. DONG: Okay. All right. We acknowledge that, and
19 we'll just move to -- okay. And we'll just finish
20 that off with just one final.

21 Q: Could this -- in the -- as part of the -- in the
22 website, it talks about a type of incentive
23 calculation based on lifespan electricity savings.
24 Would this type of incentive calculation for
25 transmission rate customers also apply for a remote
26 community like Fort Ware?

1 MR. DOYLE: A: So, I think again, I'm not aware, but I
2 think that goes to the individual program design with
3 respect to how the calculations take place, so.

4 MS. DONG: Q: Okay. Just turning to the last -- very
5 last question category. Are you aware that -- is
6 electricity consumption forecast to increase,
7 decrease, or stay the same in the zone IB and II?

8 MR. REIMANN: A: I don't recall the details of Zone IB
9 or II.

10 MS. DONG: Q: So you're not aware of any growth plans
11 in Fort Ware to install a series of greenhouses, fuel
12 stops, biomass, and give them family housing that will
13 increase electricity consumption in the community?

14 **Proceeding Time 9:23 a.m. T6**

15 MR. REIMANN: A: Yeah, I mean generally speaking the
16 NIA, non-integrated areas is dealt with I think in our
17 transmission and distribution group, and I don't
18 typically see that level of detail, so I have no idea
19 of what -- the company would be aware, the non-
20 integrated areas group would be.

21 MS. DONG: Q: Okay. How about this one, what type of
22 electricity generation exists within Zone IB and II?

23 MR. REIMANN: A: To my knowledge, largely diesel fired
24 generation, and there is some hydro generation.

25 MS. DONG: Q: Thank you.

26 MR. DOYLE: A: Yeah, Zone B would be largely hydro.

1 MS. DONG: Q: So, how would BC Hydro plan to meet this
2 load growth in remote communities?

3 MR. DOYLE: A: I'm not aware of their plans.

4 MS. DONG: Q: So, if it is more if they currently have
5 hydro and diesel, do you think that will be just
6 indicate more diesel? Or IPP or through DSM?

7 MR. REIMANN: A: So, I don't know the specifics, I
8 think the hydro capability in Zone I believe, there is
9 a fair bit there, and so I think the consumption is
10 generally supplied by hydro. In other areas where we
11 have got diesel fired generation, we would need to
12 make sure that there is sufficient diesel capacity to
13 be able to run for the peak of the community. I do
14 know that they have been contemplating clean renewable
15 resources to be located in those jurisdictions. I
16 don't know the exact nature of how they are
17 approaching those acquisitions, or initiatives.

18 MS. DONG: Q: So, would BC Hydro use the avoided costs
19 of serving remote communities in Zone IB and II in the
20 economics of designing and funding its DSM programs
21 for remote communities?

22 MR. DOYLE: A: Again, we are not sure on the specifics
23 of the programs and how they are funded.

24 MS. DONG: Q: Okay, that concludes our cross-
25 examination of the BC Hydro panel, and we thank you
26 for your responses.

1 MR. DOYLE: A: Thank you.

2 THE CHAIRPERSON: Thank you, Ms. Dong. Mr. Weisberg, are
3 you read?

4 MR. WEISBERG: Yes.

5 THE CHAIRPERSON: Yes, thank you.

6 **Proceeding Time 9:26 a.m. T07**

7 MR. WEISBERG: Good morning. Mr. Chair, yesterday you
8 were gracious enough, in light of the temperature in
9 the room, to allow us to remove our jackets. I left
10 my jacket here at the end of the day yesterday, and I
11 wore my grey suit yesterday. I'm going to mix it up
12 today; choose from a vast array of colours available
13 to gentlemen. And I've chosen blue today. And I will
14 just step out -- so you may guess that I left my blue
15 jacket hanging in my closet, and in the dark I grabbed
16 my grey. I'm going to explain it as a nod of the head
17 to my 12-year-old son who likes to wear mismatched
18 socks. I believe it's very stylish, so --

19 THE CHAIRPERSON: Very good.

20 MR. WEISBERG: I apologize for my appearance. I could
21 have left my jacket behind, but then I wouldn't have
22 had this little bit to do, so --

23 THE CHAIRPERSON: Very good.

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

25 MR. WEISBERG: Q: Turning to the witness panel, as I've
26 said, I'm thoroughly humiliated by my sartorial

1 disaster, so you have me at a disadvantage, and I'll
2 be very brief. Not only because of that, but partly
3 because of that.

4 Let's turn to Exhibit B-38, please, which
5 is the opening statement and direct testimonies. And
6 within that, Mr. Anderson, you have an opening
7 statement, which was at PDF 4, I believe. Could you
8 turn to page 1 of your own opening statement within B-
9 38?

10 MR. ANDERSON: A: Yes, I have it.

11 MR. WEISBERG: Q: Thank you. At the bottom of that
12 page there is a brief discussion of the residential
13 inclining block, and it states there that BC Hydro
14 proposes to retain the *status quo* inclining block
15 structure that's been in place since 2008. You can
16 confirm, Mr. Anderson, that zone IB, or Bella Bella,
17 is exempt from the residential inclining block?

18 MR. DOYLE: A: Yes, I can confirm that.

19 MR. WEISBERG: Q: Thank you, Mr. Doyle. And briefly,
20 what is the reason for that?

21 MR. DOYLE: A: My understanding is that came out of the
22 2000 -- I believe the 2008 RIB proceeding. I'm not
23 sure of the specific reason for that. I believe it
24 has -- it's in relation to the generation that serves
25 Zone IB or Bella Bella.

26 MR. WEISBERG: Q: Okay. And may I suggest, for your

1 agreement or not, that Zone IB is served almost
2 entirely, or for most practical purposes, entirely by
3 hydro generation sourced at Ocean Falls?

4 MR. DOYLE: A: That's consistent with my understanding,
5 yes.

6 MR. WEISBERG: Q: Thank you. Zone II, however, is not
7 exempt from the RIB, is that right?

8 MR. DOYLE: A: That's -- Zone II is not -- Zone II has
9 different rates than the RIB, so a non-integrated
10 area. So they don't have the RIB per se.

11 MR. WEISBERG: Q: So that hasn't been applied, at least
12 not in the same structure.

13 MR. DOYLE: A: That's correct. They have -- Zone IB,
14 Zone II, being -- and the rest of the groups have --
15 all three have different rates.

16 MR. WEISBERG: Q: Okay. And Zone II, for at least --
17 as a general proposition, I think, as Mr. Reimann has
18 already noted, is served almost exclusively by diesel
19 generation, although there is some micro-hydro, I
20 believe. Is that right?

21 MR. DOYLE: A: Again, consistent with my general
22 understanding of the --

23 MR. WEISBERG: Q: Okay, thank you. Let's just move
24 over to page 2 of Mr. Anderson's statement. Under the
25 heading, about a third of the way down, "Medium
26 General Service". It states there that in talking to

1 apply to both zones generally.

2 MR. WEISBERG: Q: Okay. Mr. Doyle, can you confirm,
3 though, that the Zone IB rate, with some exceptions
4 that you've noted already, generally tend to follow
5 the Zone I rates, or are at least based on those as
6 the starting point?

7 MR. DOYLE: A: I think generally that is correct,
8 subject to check.

9 MR. WEISBERG: Q: Okay, thank you. Panel, could you
10 agree that there are perhaps other factors at play in
11 Zone IB or Zone II that may have an effect on the
12 extent of conservation by MDS customers?

13 MR. DOYLE: A: Yes, there may be different
14 circumstances, and those would be something that we'd
15 be looking at in our application and engagement for
16 the module 2 rate design and how those unique
17 situations may result in different rates.

18 MR. WEISBERG: Q: Okay, thank you. As we sit here
19 today, and your answer was fair and I don't mean to
20 press you on that, are you able to identify today at a
21 high level what some of those different factors may
22 be?

23 MR. DOYLE: A: Yeah, again, we haven't analyzed it. I
24 guess the one factor I would say is they are remote
25 communities that are not connected to the BC Hydro
26 system as a whole. So that's one of the larger

1 circumstances, and the others, you know, we haven't
2 put our minds to that as we -- because we haven't
3 entered that module 2 discussion yet.

4 MR. WEISBERG: Q: Okay, thank you. Just moving through
5 this document B-38 to Page 3. Near the bottom of that
6 page is a section regarding update of standard
7 charges. I believe the answer was inferred by
8 something you said a moment ago, Mr. Doyle, but did BC
9 Hydro look specifically at the update of standard
10 charges in the context of Zone IB or Zone II?

11 MR. DOYLE: A: Not specifically, no, but they would
12 apply to Zone IB and Zone II.

13 MR. WEISBERG: Q: Okay, thank you. In terms of what
14 you've just said, they would apply to Zone IB and Zone
15 II, is that something that you expect the Commission
16 to decide out of this module? Or would it be a
17 decision deferred to, to module 2.

18 MR. DOYLE: A: Just a second. No, when we're applying
19 for our electric terms and conditions, those are the
20 terms and conditions that apply for service across
21 those zones, so we are seeking approval of our terms
22 and conditions. We haven't made any proposals that
23 differentiate between Zone IB, Zone II, and Zone I
24 with respect to the electric tariff.

25 MR. WEISBERG: Q: Okay, would BC Hydro confirm today
26 that in the course of the engagement leading up to

1 module 2, and the module 2 process, if it became
2 apparent that there were reasons for deviation from
3 standard charges approved in module 1, with respect to
4 Zone IB or Zone II, would BC Hydro be willing to
5 support such changes or exemptions, I suppose?

6 **Proceeding Time 9:35 a.m. T09**

7 MR. CHRISTIAN: I think the answer is -- or the question,
8 as I understand it, is asking for BC Hydro to say now
9 what its position would be when it files its Module 2
10 application, in advance of having -- doing the
11 consultation with respect to Zone II issues in Module
12 2, that has been referred to by Mr. Doyle. So, I
13 think it's on its face unfair to ask the witnesses to
14 comment on what their position will be in light of the
15 process that is yet to happen that we know must
16 precede that decision.

17 THE CHAIRPERSON: Mr. Weisberg?

18 MR. WEISBERG: I understand my friend's concern, but
19 here's the dilemma that we face, as Zone IB and Zone
20 II customers. The evidence that you've just heard is
21 that the standard charges, any changes to them, that
22 are made coming out of Module 1 would apply to Zone IB
23 and Zone II. Where we're at, though, is at a point
24 where BC Hydro has also said they haven't looked into
25 yet -- I'm not taking issue with that, but they
26 haven't looked into whether there are factors that

1 might justify some modification of those standard
2 charges for Zone IB or Zone II.

3 I'm not wanting to tie BC Hydro's hands
4 today. I would simply like a confirmation, though,
5 that BC Hydro would at least consider modification of
6 those standard charges in Module 2 as they apply to
7 Zone IB and Zone II.

8 THE CHAIRPERSON: If I could ask BC Hydro to clarify,
9 then. As I understand it, you're saying that the
10 standard charges will be determined in module 1, and
11 those standard charges will apply to the non-
12 integrated areas and the integrated areas, and will
13 not be revisited in Module 2?

14 MR. DOYLE: A: So, maybe I can try this. So, the
15 standard charges currently apply to all of the zones.
16 So that's not a change that we're proposing. We did
17 engage obviously on the standard charges and the
18 electric terms and conditions throughout the
19 engagement process. We had representatives from
20 groups representing, obviously, the non-integrated
21 areas, Zone IB, as part of those. We didn't hear any
22 -- there was no concerns raised with respect to the
23 need for differentiating terms.

24 That being said, if, through the engagement
25 process, it was clear that there potentially was a
26 good reason for a change somewhere, I think as we

1 would for, you know, through any engagement, we would
2 look at it, and if we determined it was appropriate,
3 we may bring that forward.

4 But as it stands today, we haven't heard
5 anything through the better part of two years that we
6 engaged with customers, including those customers
7 representing non-integrated areas, for a need to
8 deviate from the current practice, where the standard
9 charges apply to all the zones.

10 THE CHAIRPERSON: So will the standard -- will the terms
11 and conditions be in scope for Module 2?

12 MR. DOYLE: A: We weren't contemplating the terms and
13 conditions being in scope for Module 2.

14 THE CHAIRPERSON: Mr. Weisberg, you were saying that you
15 would like them to be in scope for Module 2?

16 MR. WEISBERG: I certainly would, yes. And I think -- I
17 don't know that I can pursue that further in cross,
18 and I don't want to purport to give any evidence now.
19 I think I would deal with that point in argument.

20 THE CHAIRPERSON: So you would like them in scope for
21 Module 1 and Module 2. For the non-integrated areas.

22 MR. WEISBERG: For the non-integrated areas.

23 THE CHAIRPERSON: Yes.

24 MR. WEISBERG: And it's not my preference necessarily
25 that they be in scope for Zone IB and Zone II in
26 Module 1.

1 THE CHAIRPERSON: Right.

2 MR. WEISBERG: Okay? And that goes back to the higher-
3 level sort of view of this, that at least for NIARG,
4 and I expect for Zone II Ratepayers Group as well, the
5 understanding has been that the decisions that come
6 out of Module 1 will inform the engagement process
7 leading up to Module 2, help shape what that
8 application looks like, and help set the scope of the
9 Module 2 hearing process. So, I believe that with
10 respect to Zone IB and Zone II, that the final say on
11 standard charges belongs there, when there is the most
12 information before this Commission.

13 THE CHAIRPERSON: Mr. Christian?

14 MR. CHRISTIAN: I was just going to say, it is BC Hydro's
15 position that the possibility of some deviation from
16 the standard charges, and terms and conditions more
17 generally, and their applicability in Zone II is
18 something that BC Hydro will consult on in Module 2,
19 and it may result in a proposal in the Module 2
20 application. So I think we're actually on the same
21 page here.

22 THE CHAIRPERSON: Oh.

23 MR. CHRISTIAN: And the confusion may just arise from the
24 terminology. So, just to be clear, in this proceeding
25 right now, in Module 1, BC Hydro is making proposals
26 to change certain elements of its terms and

1 conditions. Those would apply to all zones. In
2 Module 2 consultation, it will consider looking at the
3 applicability of terms and conditions including
4 standard charges to Zone II and consider whether
5 there's a basis to differentiate between Zone II --
6 Zone IB, and Zone I. And ultimately that will lead to
7 an application, a Module 2 application, which at which
8 time BC Hydro will set forth its proposals on that
9 point.

10 THE CHAIRPERSON: Mr. Weisberg?

11 MR. WEISBERG: I'm content with that, and I thank my
12 friend. I thought that was a helpful summary of where
13 we're at, so -- thank you.

14 THE CHAIRPERSON: Okay.

15 **Proceeding Time 9:41 a.m. T10**

16 MR. WEISBERG: Q: Witness panel, still on the update of
17 standard charges, if we look to the second bullet that
18 says in respect of the standard charges, they also
19 need to be adjusted to reflect the different realities
20 of how we now deliver some services. In light of the
21 discussion we've just had, would you agree that that
22 statement may have particular relevance to Zone IB or
23 Zone II in respect of factors that don't arise in Zone
24 I?

25 MR. ANDERSON: A: I think that's fair. Again this is a
26 high level bullet containing a lot of things that

1 underlie that --

2 MR. WEISBERG: Q: Absolutely.

3 MR. ANDERSON: A: But I think as we've indicated, there
4 was consultation on this throughout, but certainly to
5 the extent that through looking at Module 2 and Zone
6 II in particular, Zone IB, that if there are
7 differences then we would want to look at how those
8 would be reflected.

9 MR. WEISBERG: Q: Okay, appreciate that. Thank you.

10 Mr. Anderson, just staying with that bullet, the
11 example provided discusses the concept of Smart Meters
12 now providing the ability to disconnect or reconnect
13 remotely rather than having to dispatch a crew to the
14 site. Would the frequency, for example, of BC Hydro
15 crew dispatched to a customer site generally be more
16 infrequent in the remote Zone IB and Zone II than in
17 Zone I?

18 MR. ANDERSON: A: I'm not -- I mean I think on the
19 surface of it your premise sounds reasonable, right?
20 It's more remote. So does that mean that it's
21 potentially more difficult for crews to get there?
22 But I just don't know the individual circumstances of
23 where our crews line up against individual remote
24 communities, which remote communities have Smart
25 Meters and which don't, and so I'd have to go into
26 more detail looking at each community. But certainly

1 there's the potential that with remoteness it could be
2 longer for crews to be there.

3 MR. WEISBERG: Q: Okay. I think that's a fair answer.
4 I won't pursue it further than that.

5 Let's turn over to page 4 in the same
6 document. A very brief discussion there of proposed
7 changes to application of security deposits. I
8 believe I know the answer, but I need to ask, has BC
9 Hydro tried to identify any unique circumstances in
10 Zone IB or Zone II that may have an impact on either
11 when security deposits are applied, or how much of the
12 deposit is required?

13 MR. DOYLE: A: That's probably a question that we could
14 take on Panel 3 with Mr. Sanders.

15 MR. WEISBERG: Q: Thank you, Mr. Doyle. Turning to
16 page 5, same document, B-38. There's a list here of
17 customer service operations changes that have been
18 implemented. There's a list there 1 through 7 that
19 this panel had some discussion with Ms. Khan earlier
20 in this proceeding. And in particular I'm looking at
21 item number 2 about the opening of in-person customer
22 service desks.

23 Has BC Hydro looked into the possibility of
24 providing occasional in-person service desks within
25 Zone IB or Zone II? And before you answer let me just
26 give an example. I'm saying, for example a pilot

1 MR. WEISBERG: Q: Okay, thank you. Mr. Anderson, if
2 you are able to locate the IR response later, I don't
3 think we need to take up time in the room now. But,
4 if you could have that entered on the record later if
5 you would, please?

6 MR. ANDERSON: A: Yeah, I'll see -- maybe I'm mistaken,
7 but I'll see if I can find it, for sure.

8 **Information Request**

9 MR. WEISBERG: Q: That's fine. Thank you. We may have
10 gone as far as we can with that, Mr. Anderson, but let
11 me probe to find out. Do you expect that Zone IB and
12 Zone II would be a subset then of a newly established
13 low-income advisory group? Or do you expect it might
14 be more efficient to include low-income issues as part
15 of a Zone IB and Zone II advisory group? And to be
16 fair, I don't think you've suggested that there would
17 be a Zone IB and Zone II advisory group, but I would
18 put it out there for your consideration and comment.

19 MR. ANDERSON: A: I appreciate that. I think at this
20 point it's best to say what we've offered is a low-
21 income advisory group. We haven't confirmed yet again
22 the participants of that, or the structure and the
23 frequency of meetings or anything to that effect.
24 But, we are absolutely looking to engage with people
25 and would have no problem with Zone IB or Zone II
26 representation I would expect as part of that, as I

1 indicated.

2 MR. WEISBERG: Q: Okay, thanks. Turn over the page to
3 page 6 of B-38. Mr. Anderson, the top of the page
4 here at least discusses a winter moratorium which
5 would preclude winter disconnections for the 2016-2017
6 winter. You discussed that with Ms. Khan under cross-
7 examination by her. I didn't hear you mention Zone IB
8 or Zone II in that context, and I would ask you if you
9 can advise whether BC Hydro intends to include Zone IB
10 or Zone II in the winter moratorium pilot?

11 MR. ANDERSON: A: Absolutely I think is the response.
12 I haven't -- we didn't exclude it on purpose --

13 MR. WEISBERG: Q: I didn't expect you to make -- yeah.

14 MR. ANDERSON: A: Yeah.

15 MR. WEISBERG: Q: And I appreciate your answer, thank
16 you. In bullet 2 of that discussion of the winter
17 moratorium, BC Hydro acknowledges, "that being without
18 electricity in the colder areas of our province during
19 the winter is a significant hardship."

20 **Proceeding Time 9:51 a.m. T12**

21 Does BC Hydro acknowledge that being in a
22 remote area such as Zone IB or Zone II communities,
23 which have no or very limited opportunities for fuel
24 switching, would generally exacerbate the hardship of
25 living in a colder area?

26 MR. ANDERSON: A: I guess I'm a bit uncertain of that.

1 I get your point, certainly.

2 MR. WEISBERG: Q: Yes.

3 MR. ANDERSON: A: But I spent some time living in
4 southern Saskatchewan, and that was really cold, and I
5 got used to it. But fair enough, I think, if you're
6 in a rural setting that's potential that it's without
7 capabilities for fuel switching, or other sources,
8 then, you know, that could potentially be a greater
9 hardship than just being in a cold climate generally,
10 where there is greater access to other means.

11 MR. WEISBERG: Q: Thank you, Mr. Anderson. And I
12 really must interject that I spent a good part of my
13 life in northern Saskatchewan. We used to laugh at
14 the southern Saskatchewan, not being able to handle
15 cold weather.

16 MR. ANDERSON: A: I was from Vancouver Island, so --

17 MR. WEISBERG: Q: I think it was still a great example
18 for the coastal people here.

19 In that third bullet, regarding the winter
20 moratorium, there is mention of a report to the
21 Commission on the results of the winter moratorium
22 pilot. Given what you've just said, Mr. Anderson, I
23 would assume, then, that Zone IB and Zone II pilot
24 results would be included in that report.

25 MR. ANDERSON: A: Yes, absolutely.

26 MR. WEISBERG: Q: Thank you. Do you know, or would you

1 consider the idea of breaking out separately Zone IB
2 and Zone II pilot results for purposes of the report?

3 MR. ANDERSON: A: I think we would have no problem in
4 considering that, and if there is any challenges in
5 doing so along the way, we would talk with you guys
6 about that.

7 MR. WEISBERG: Q: Thank you. Finally, there is, at the
8 bottom of that same page, page 6 of B-38, a brief note
9 about Module 2. BC Hydro would confirm, I take it,
10 that it intends to hold direct consultations with Zone
11 IB and Zone II to identify specific concerns and
12 circumstances that should be reflected in the Module 2
13 rate design application.

14 MR. DOYLE: A: Right.

15 MR. WEISBERG: Q: I believe that's the gist of evidence
16 you gave already, Mr. Doyle.

17 MR. DOYLE: A: Yes, definitely, we'll be engaging Zone
18 IB and Zone II with respect to the proposals for the
19 non-integrated areas, and anything else that would
20 impact. Yeah.

21 MR. WEISBERG: Okay. Thank you, panel, for your frank
22 and helpful answers, and for not averting your eyes
23 too obviously from the horrible mess before you, and I
24 will slink back to my seat.

25 Thank you, Mr. Chair.

26 **Proceeding Time 9:55 a.m. T13**

1

2 THE CHAIRPERSON: Thank you, Mr. Weisberg.

3 Good morning, Mr. Austin.

4 MR. AUSTIN: Good morning.

5 **CROSS-EXAMINATION BY MR. AUSTIN:**

6 MR. AUSTIN: Q: Good morning, BC Hydro panel. Panel,
7 I'd like to refer you to Volume 3 of the transcript,
8 and that was yesterday's transcript. Do you have that
9 handy?

10 MR. DOYLE: A: We do.

11 MR. AUSTIN: Q: You have it handy?

12 MR. DOYLE: A: We do.

13 MR. AUSTIN: Q: Okay. At page 533 of this transcript,
14 line 13, Mr. Reimann, you said,

15 "So, greenfield IPP resources on an expected
16 basis we don't expect to be required until
17 fiscal 34 and beyond. The price of those
18 greenfield resources, as we know it today,
19 has dropped from the 135 to 125, to now 100,
20 in our more recent resource options report.

21 ..."

22 Is that recent resource options report part of this
23 hearing record?

24 MR. REIMANN: A: Yeah, actually I should have clarified
25 when I said resource options report, it's resource
26 options analysis that we've undertaken, and subject to

1 check, I think that those results you can find on our
2 website. We haven't actually published an additional
3 report as such, where all of the elements are
4 summarized.

5 MR. AUSTIN: Q: But you have no objections, or your
6 counsel has no objections to any references to that in
7 final argument or making it part of the record in this
8 proceeding?

9 MR. REIMANN: A: No, that would be fine.

10 MR. AUSTIN: Q: In the line that says it's 135 to 125,
11 to now 100, does the drop from -- I'm assuming that is
12 \$125 a megawatt hour to \$100 a megawatt hour. Does
13 the drop from 125 to \$100 a megawatt hour fully
14 reflect the decline in the cost of renewable
15 generation and in particular wind generation?

16 MR. REIMANN: A: Yeah, the range of prices have dropped
17 a fair bit. The 135 was the results that we saw for
18 the clean power call that was launched in 2009, and I
19 think the contracts were largely awarded in 2010.
20 When we did the IRP we realized that it appeared that
21 wind was dropping, having a bit of a tough time
22 reconciling back to the acquisition prices, but when
23 we did this most currently, through a fair bit of
24 consultation with the IPPs in the province, it seemed
25 to be reasonable that those prices are now in the \$100
26 a megawatt hour range. That is what we would

1 anticipate if we were to run an acquisition today.

2 MR. AUSTIN: Q: Was that on a basis of the cost of the
3 wind turbine, the tower and the generation, and the
4 balance of plant costs?

5 MR. REIMANN: A: That was intended to be a full-in cost
6 delivered to the Lower Mainland.

7 MR. AUSTIN: Q: And just to be clear, the reduction in
8 cost for wind turbines, towers, is reflective of
9 today's market prices for those components?

10 MR. REIMANN: A: That's -- yeah, to the best of our
11 knowledge, that's correct, and again, we did a fair
12 bit of consultation with developers in the province
13 that were looking at projects and giving us an
14 indication of what they felt they could acquire,
15 deliver and install and finance, and it was based on
16 new wind projects.

17 MR. AUSTIN: Q: So, there was no adjustment for
18 increasing balance of costs -- increasing costs for
19 balance of plant versus the actual reduction in prices
20 for wind turbines, generators and towers?

21 MR. REIMANN: A: There is nothing in there like that
22 that I am aware of.

23 **Proceeding Time 9:59 a.m. T14**

24 MR. AUSTIN: Q: Thank you. I'd like to refer you to
25 page 538 of the transcript, line 7. And Mr. Reimann,
26 I think this question will go to you. You talked

1 about the \$85 -- and I'm assuming that's per megawatt
2 hour price -- and then you go on to say:

3 "...so, I think what we've said is it wasn't
4 an easily visible supply curve. It is very
5 difficult to plot out a DSM supply curve,
6 and then chop it off at a certain point."

7 And I'm assuming that for purposes of the DSM and
8 long-run marginal cost, and short run, you're
9 comfortable with an \$85 a megawatt hour figure?

10 MR. REIMANN: A: Yes, we've put forward that we think
11 the appropriate price signal for a long-run marginal
12 cost between now and fiscal '33 is \$85 per megawatt
13 hour.

14 MR. AUSTIN: Q: I'd like to refer you to Exhibit B-23,
15 which is the second round of Information Requests.
16 And BC Hydro's response to CEBC IR 2.5.2, attachment
17 1. And attachment 1 is a table.

18 THE CHAIRPERSON: Mr. Austin, I'm sorry. That was 2.1.2?

19 MR. AUSTIN: 2.5.2, attachment 1.

20 THE CHAIRPERSON: Thank you.

21 MR. AUSTIN: Q: And if you look over in the far right-
22 hand column headed "Net levelized costs" it has the
23 total resource cost for a number of DSM programs. And
24 if you look at the very bottom of the column, it says,
25 total programs, total resource cost, \$43 a megawatt
26 hour, and utility costs, \$25 a megawatt hour. Could

1 you please explain to me the difference between these
2 prices and the \$85 a megawatt hour price that we just
3 discussed?

4 MR. REIMANN: A: Sure. The total resource costs or
5 utility costs of each of these programs is an average
6 of the acquisitions that we would do within each of
7 those programs. And the approach we took when we
8 created the \$85 -- originally, \$85 to \$100 price
9 signal was in designing those DSM programs as the
10 marginal resource, how much would people be prepared
11 to pay for that. And so we give them that guideline
12 of what the maximum is. Within the program then
13 there's a range of costs of the different savings that
14 we'd acquire, and these become the average for each of
15 those programs.

16 MR. AUSTIN: Q: So why aren't those numbers being used
17 as the price signal, as opposed to \$85 a megawatt
18 hour?

19 MR. REIMANN: A: Because we wanted to look at what the
20 marginal cost was.

21 MR. AUSTIN: Q: And the marginal cost is not reflected
22 in that table?

23 MR. REIMANN: A: These are average costs of savings
24 that you would acquire in each of those programs.

25 MR. AUSTIN: Q: So what's the difference between the
26 marginal cost and the average cost?

1 MR. REIMANN: A: As I look at these total programs, the
2 total resource costs, the average cost of what's in
3 those programs would be \$43, the marginal cost was
4 \$85.

5 MR. AUSTIN: Q: So why -- how did we get from 43 to 85?

6 MR. REIMANN: A: Eighty-five is a marginal price signal
7 of the maximum as they design these programs, that
8 they would acquire savings at for each of the
9 programs. Of all the savings that you acquire in
10 here, this is what they are estimating as the average
11 cost of those savings.

12 MR. AUSTIN: Q: In terms of the expected energy savings
13 using your marginal cost of \$85 a megawatt hour, how
14 many megawatt hours does BC Hydro expect to save
15 between now and 2024/2025, which is the in-service
16 date for Site C?

17 MR. REIMANN: A: Could you repeat the question, please?

18 MR. AUSTIN: Q: The question is, how much DSM savings
19 in gigawatt hours does BC Hydro expect to save between
20 now and 2024/2025, which is the in-service date, using
21 a marginal cost price signal of \$85 a megawatt hour?

22 **Proceeding Time 10:05 a.m. T15**

23 MR. REIMANN: A: So, part of that answer I'll take you
24 to the evidentiary update Exhibit B-37. And in
25 Exhibit B-37, page 4 of 11, table 3-8, and I believe
26 the question was, by fiscal '25 it would go down to

1 planned demand-side management measures. We have it
2 broken out there between the savings from fiscal '17
3 to '19, and the savings from fiscal '20 beyond, and so
4 by fiscal '25 it would be some of the 1917 plus 2637.
5 So, that's about 36, 3700 gigawatt hours.

6 MR. AUSTIN: Q: And would it make any difference if the
7 price signal was \$45 a megawatt hour?

8 MR. REIMANN: A: Right, so the second part of your
9 question was is at that marginal price, how much would
10 we acquire. And so this really, I think starts to get
11 into the design of the DSM program that is going to be
12 canvassed in the revenue requirement application. But
13 part of the exercise of determining the amount of DSM
14 that we're going to acquire over the next 10 years
15 needed to consider the 10 year rates plan, and so
16 while we designed the DSM programs with that \$85
17 marginal price signal, and it is still the price
18 signal to guide the design of the programs, we have
19 reduced volume of the DSM programs to come within the
20 10 year rates plan, and to meet load resource balance
21 requirements.

22 And so we have cut back on those volumes in
23 order to maintain a broad DSM program, or a broad
24 offering, not necessarily reducing all this DSM costs
25 strictly by price. So, the impact to that is, is that
26 the DSM -- the marginal price that impact of those

1 hasn't changed. We are moderating DSM acquired
2 volumes based on other factors.

3 MR. AUSTIN: Q: And are those new figures reflected in
4 the table that you just referred me to?

5 MR. REIMANN: A: Yes.

6 MR. AUSTIN: Q: I'd like to move on to another area,
7 and anybody on the panel can answer this question. Do
8 you think BC Hydro's residential customers would
9 understand how BC Hydro calculates its long run
10 marginal cost?

11 MR. DOYLE: A: So, I'm not generally aware of whether
12 there is -- what the awareness of how BC Hydro
13 calculates -- whether residential customers are aware
14 of how BC Hydro calculates its long run marginal cost.
15 I venture to say it's probably unlikely, but that
16 being said, I think what's important is that the
17 signal -- I think what customers can understand is
18 that higher tier represents BC Hydro's cost of
19 acquiring incremental resources, and I think that's
20 the important part, of rather than how it's actually
21 determined. So I think they understand why the signal
22 is there, whether they understand the calculations
23 behind it? I'm not sure.

24 MR. AUSTIN: Q: Do you think BC Hydro's medium or large
25 general service customers would understand how BC
26 Hydro calculates its long run marginal cost?

1 MR. DOYLE: A: Again, probably a similar answer there.
2 There is probably some large general service customers
3 that have some -- potentially some medium general
4 service that have some understanding of how BC Hydro
5 calculates its long run marginal cost, just through
6 participation in various workshops and other
7 activities. But, as a whole, I think they understand
8 what the marginal cost is intended to do.

9 **Proceeding Time 10:09 a.m. T16**

10 MR. AUSTIN: Q: Do you think BC Hydro's residential
11 customers would expect their bills to increase when
12 Site C may come into operation in fiscal 2024-2025?

13 MR. DOYLE: A: I'm not sure whether customer have a
14 direct link -- think of it as a direct link if Site C
15 comes in and their bills increase. They see it
16 through the revenue requirements application and the
17 increases are applied there.

18 MR. AUSTIN: Q: You wouldn't think residential
19 customers would expect their bills to increase when an
20 \$8.8 billion project comes into operation and the cost
21 of that has to be recovered from customers?

22 MR. DOYLE: A: I'm not sure. I mean some customers may
23 expect that, you know, that some of the costs of Site
24 C would be reflected in their rates. Obviously all
25 those costs don't come in in one shot. They're
26 amortized over the period. You know, what customers

1 expect I'm not sure there.

2 MR. AUSTIN: Q: But would you agree with me that
3 generally residential customers would think their bill
4 is going to increase when Site C comes into operation?

5 MR. ANDERSON: A: Again, as Mr. Doyle just spoke to,
6 I'm not sure we can comment any further on that. You
7 know, what generally the population or residential
8 customers think with respect to Site C is not
9 something I have direct knowledge on, and how they
10 would tie that or not to a rate increase I'm not sure.
11 There certainly is more dialogue recently with our
12 revenue requirement application about rate increases
13 and so I expect that they're more generally aware of
14 that. But I don't know if there's any causal linkage
15 in their minds to Site C or not.

16 MR. AUSTIN: Q: If a BC Hydro customer thinks their
17 bill is going to increase, is that a price signal to
18 use electricity as efficiently as possible?

19 MR. DOYLE: A: I think that's a question that's
20 probably best for Panel 2 with respect to how people
21 react to price signals.

22 MR. AUSTIN: Q: I'd like to refer you to Exhibit B-5,
23 BCUC IR 1.9.1. And in the response it says:

24 "At the time of the 2013 IRP, while Site C
25 was not considered a margin resource, the
26 Site C UEC was \$83 a megawatt hour."

1 Do you see that?

2 MR. DOYLE: A: I do. I think Mr. Reimann has just --

3 MR. REIMANN: A: I've got the IR.

4 MR. DOYLE: A: What was the question please?

5 MR. AUSTIN: Q: The question is, where does the \$83 per
6 megawatt hour figure come from?

7 MR. DOYLE: A: \$83 was the -- in our economic analysis,
8 it was the unit energy cost that we used in the 2013
9 IRB.

10 MR. AUSTIN: Q: Was that unit energy cost to the point
11 of interconnection or delivery to the Lower Mainland?

12 MR. DOYLE: A: Subject to check, I think it's the Lower
13 Mainland.

14 **Proceeding Time 10:14 a.m. T17**

15 MR. AUSTIN: Q: Mr. Reimann, I can help you out with
16 your check. And I believe, according to Appendix 3B
17 information sheet, Site C Clean Energy Project, and
18 I'm not going to put this in evidence, you can check
19 it. According to this Integrated Resource Plan,
20 Appendix 3B information sheet it says,

21 "At a cost of \$83 per megawatt hour at the
22 point of interconnection, Site C will be
23 among the most cost effective resource
24 options to meet long-term electricity needs
25 in B.C."

26 Is that correct?

1 MR. REIMANN: A: Subject to check, I'd have to go back
2 and look at the Appendix. Things evolved a bit
3 between when we did the Integrated Resource Plan, and
4 ultimately when the Site C project was approved, and
5 with the changes that the government had announced in
6 the 10 year rates plan, and the way they're going to
7 modify dividend payments, the costs of Site C
8 ultimately were calculated using debt costs. And
9 that, if I recall right, the number was more down
10 around the \$64 range.

11 But I think -- and that figure I'd have to
12 check too as well, but I think the point of the IR
13 here is that Site C was a committed resource. It
14 wasn't one that you could build a little bit more, a
15 little bit less of. It was committed, and that then
16 put DSM programs and IPP renewals as being the
17 marginal resource. So regardless of the price, it's
18 not an indicative number for the LRMC.

19 MR. AUSTIN: Q: So your view is it's not an indicative
20 number for the LRMC because it's a committed resource?

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

22 MR. AUSTIN: Q: Why isn't a committed resource a price
23 signal?

24 MR. REIMANN: A: Because you can't build a little bit
25 more, a little bit less of it.

26 MR. AUSTIN: Q: Well, your evidence seemed to be that a

1 residential customer probably doesn't understand what
2 long-run marginal cost is, but understands that their
3 bills are going up. If they understand their bills
4 are going to go up and that's a signal to conserve
5 energy or make different terms of investment, why does
6 it make any difference whether it's a committed
7 resource or not?

8 MR. DOYLE: A: Sorry, I'm not sure we agreed with the
9 premise that because their bills are going up. I
10 believe we said we would deal with that on the second
11 panel. So with the premise of just because they can
12 see Site C coming that that would be reacting to that
13 signal.

14 MR. AUSTIN: Q: Assuming that cost of Site C energy at
15 the point of interconnection is \$83 a megawatt hour,
16 do you have any idea what it might be if that price
17 was adjusted for delivery to the Lower Mainland?

18 MR. REIMANN: A: So, again, subject to check, it's been
19 a while since I looked at those numbers so my
20 recollection is not 100 percent here, but as you
21 deliver to the Lower Mainland you have the cost of
22 incremental firm transmission and losses, and it's
23 offset then by a reduction for the capacity value it
24 adds to the system. And my recollection is that that
25 in the end results in about a \$10 increase to the cost
26 of the resource delivered to the Lower Mainland.

Proceeding Time 10:19 a.m. T18

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MR. AUSTIN: Q: Thank you. I'd like to refer you to Exhibit B-5. I'll just make sure I get the right IR here.

BCUC IR 1.60.5. So that's BCUC IR 1.60.5.

MR. REIMANN: A: I have that.

MR. AUSTIN: Q: And it says:

"In periods when BC Hydro had energy supply needs that exceeded DSM and IPP renewals, the long-run marginal cost for energy was based upon the energy cost of greenfield clean or renewable IPP resources."

Do you see that?

MR. REIMANN: A: I do.

MR. AUSTIN: Q: What does BC Hydro consider to be an IPP?

MR. REIMANN: A: BC Hydro considers any generation project that it acquires from a third party to deliver us energy or capacity to be an independent power producer.

MR. AUSTIN: Q: So it's any third party, and it could include industrial companies such as Alcan, forest products companies, or Crown corporations like Columbia Power, Columbia Basin Trust?

MR. REIMANN: A: Generally speaking, yes.

MR. AUSTIN: Q: Now, previously the long-run marginal

1 cost was estimated based upon either the last open
2 clean call, e.g., the F2006 open call for tenders, and
3 the question that I have is, how long was the F2006
4 open call for tender price used by BC Hydro as a long-
5 run marginal cost?

6 MR. REIMANN: A: Yeah, the 2006 open call for tenders
7 awarded prices delivered to the Lower Mainland was in
8 the order of \$88 a megawatt hour at that point. My
9 recollection is that by the time we got to the 2008
10 long-term acquisition plan that was in front of the
11 Commission, in the course of doing that, we had
12 started to run into the recession of 2008 and 2009,
13 and I believe during the course of that proceeding
14 that -- sorry, that was before the recession, and we
15 became aware of the commodity price run-up that was
16 going on.

17 And so I think at that point we'd done an
18 updated resource options assessment and actually
19 predicted a price of \$120 a megawatt hour. So, I
20 think that was in the course of that proceeding, so I
21 would say we used it for three years.

22 MR. AUSTIN: Q: During that period, were IPP products
23 from the 2006 call under construction?

24 MR. REIMANN: A: I believe so, yes.

25 MR. AUSTIN: Q: Would they have received all their
26 permits, licenses and approvals before they went into

1 construction?

2 MR. REIMANN: A: I imagine that would be the case.

3 MR. AUSTIN: Q: Did the 2006 call projects receive BCUC
4 approval?

5 **Proceeding Time 10:23 a.m. T19**

6 MR. REIMANN: A: Any contracts we would have signed
7 EPAs with, whatever, I believe would have received
8 Commission approval.

9 MR. AUSTIN: Q: So, what's the difference between the
10 IPPs, which were under construction, had received all
11 the permits, licences and approvals, and Site C, why
12 is there a difference between what an IPP committed
13 resource is and a Site C committed resource?

14 MR. REIMANN: A: So, when we -- our belief was that if
15 we had run an open acquisition process, and it was
16 truly competitive and people could bid in and we could
17 select the best of the contracts, that that awarded
18 price was indicative of if we were to run another
19 acquisition process, that we would again see that same
20 result. That's the belief. But what we found as we
21 went through is that the commodity prices were
22 increasing so quickly that we ended up modifying it
23 based on resource options assessments. So, it varies
24 over time. We do a combination of open acquisition
25 processes and if we believe they are current
26 indicative of what the market would produce, we use

1 that. If we think it becomes stale dated as we are
2 now, we no longer believe that the calls that we got
3 -- or the EPAs we awarded in the 2009 clean power
4 call, we no longer believe that that \$135 price is
5 what we would see as bid-in today. We think that's
6 dropped a fair bit.

7 MR. AUSTIN: Q: For its price signal, why wouldn't BC
8 Hydro use the cost of, say, for example,
9 rehabilitating the Campbell River system to signal to
10 its customers that the price of electricity is going
11 to go up?

12 MR. REIMANN: A: Well, I'll start this answer, and I'll
13 pass it over to Mr. Doyle.

14 MR. AUSTIN: Q: Mr. Doyle seems to have a look of grave
15 concern on his face at this point in time, so I
16 suggest you be careful here.

17 MR. REIMANN: A: Thank you, Mr. Austin. The approach
18 we have chosen to take is, and I think we've worked
19 with the Commission on this for a number of years, is
20 that we're using as a price signal the long-run
21 marginal cost, or what the marginal resource is, not
22 resources that we've committed to and are currently
23 being constructed.

24 MR. DOYLE: A: No, I didn't have anything to add. I
25 guess the one going to Mr. Austin's question about the
26 2006 call and the use of its incremental and what the

1 difference is with Site C, I think as Mr. Reimann was
2 saying, the thought with the call was, if we needed to
3 acquire more energy, we could acquire it at that call
4 price. There was additional IPP projects.

5 The difference with Site C is there is one
6 Site C. Once you build it, there is not another Site
7 C that you can do. So it can't be a marginal
8 resource. Once it's committed and under construction,
9 it's in place. There is not another one you can
10 build. So, I think that the difference between the --
11 what we're looking at, you know, when a call being a
12 marginal resource and you could acquire from another
13 producer as opposed to Site C there is just one of
14 them.

15 MR. AUSTIN: I think this would be a convenient time to
16 take a morning break. I am just going off to another
17 area very shortly.

18 THE CHAIRPERSON: Okay. Thank you, Mr. Austin. So,
19 we'll come back at quarter to.

20 **(PROCEEDINGS ADJOURNED AT 10:27 A.M.)**

21 (PROCEEDINGS RESUMED AT 10:45 A.M.) T20

22 THE CHAIRPERSON: Please be seated, thank you.

23 Mr. Christian?

24 MR. CHRISTIAN: Yes, Mr. Chairman, early this morning
25 Mr. Anderson was giving testimony in response to
26 questions from Mr. Weisberg. He mentioned that he

1 thought an IR addressed to some extent at least a
2 question about the participation or membership in the
3 low income advisory group, and so we found that IR
4 reference and it is Exhibit B-23. It's in response to
5 Zone II Ratepayers Group IR 2.11.6.

6 THE CHAIRPERSON: Great, thank you, Mr. Christian.

7 MR. AUSTIN: Q: BC Hydro panel, I'd like to refer you
8 to Exhibit B-5, Clean Energy B.C. Information Request
9 1.3.1. That's Exhibit B-5, CEBC IR 1.3.1.

10 MR. ANDERSON: A: Sorry, repeat that one more time.

11 MR. AUSTIN: Q: CEBC IR 1.3.1. If we were in the
12 modern technology age we'd have something like you do
13 when you're at bakery when you get a number, so we
14 just have a screen, we could put the number up.

15 THE CHAIRPERSON: We'll see what we can do, Mr. Austin.

16 MR. AUSTIN: Technology, we'd only be about 25 years
17 behind the time, but it would be an improvement.

18 THE CHAIRPERSON: Anything to make your life easier, Mr.
19 Austin.

20 MR. AUSTIN: Thank you very much. Jackets, now bakery
21 numbers. The horizons are unlimited.

22 Q: You found it? At the very bottom of the page it
23 says,

24 "On average BC Hydro's opportunity costs are
25 estimated to be approximately \$95 per
26 megawatt hour for bioenergy EPA renewals and

1 approximately \$70 per megawatt hour for run
2 of river EPA renewals in F2016 dollars.
3 These values are consistent with a firm
4 energy long run marginal cost of \$85 per
5 megawatt hour F2013 between F2017 and to
6 about F2003 [*sic*] adjusted for non-firm
7 energy and dependable capacity. These
8 values are point in time estimates of BC
9 Hydro's average opportunity costs as opposed
10 to average prices expected to be paid to EPA
11 renewals."

12 The first question I have for you -- and I
13 appreciate that there has been some adjustments to
14 this answer as a result of filing of updates. The
15 first question that I have is, how many gigawatt hours
16 of electricity is BC Hydro going to re-contract for
17 between F2017, meaning today, and to the date that
18 Site C comes into commercial operation? Meaning
19 F2024/F2025.

20 MR. REIMANN: A: I think we can find that number in the
21 load resource balance table in evidentiary update B-
22 37. Go back to B-37, page 4 of 11. Table 3-8.

23 MR. AUSTIN: Q: Could you tell me what that number is,
24 or are you looking for it?

25 MR. REIMANN: A: Just waiting for people to catch up
26 with the binders.

1 the period between now and the Site C in-service date
2 come from generating facilities that received
3 financial assistance from one or more of BC Hydro's
4 Power Smart programs or equivalent programs?

5 MR. REIMANN: A: Again, subject to check, but I would
6 anticipate that a lot of our industrial forest
7 companies participate in our DSM programs, and we have
8 a number of biomass contracts with them. So I would
9 anticipate there would be some overlap, yes.

10 MR. AUSTIN: Q: I'd like to move on to another area.
11 It's Exhibit B-37, page 11 of 11.

12 MR. REIMANN: A: I have that.

13 MR. AUSTIN: Q: It says:

14 "In BC Hydro's most recent resource options
15 updates, the unit capacity costs of a simple
16 cycle gas turbine generator at point of
17 interconnection has dropped to \$79 a
18 kilowatt hour per year, fiscal 2015 dollars.
19 To make the unit capacity cost comparable to
20 the adjusted unit energy costs with delivery
21 to Lower Mainland, and to adjust for energy
22 impacts, these unit capacity costs are
23 adjusted to be \$57 per kilowatt hour per
24 year, fiscal 2015, for Revelstoke Unit 6,
25 and \$115 per kilowatt hour per year, fiscal
26 2015 dollars, for a simple cycle gas

1 turbine."

2 And the question that I have is, why is it so
3 expensive relative to Revelstoke to deliver simple
4 cycle gas turbine capacity to the Lower Mainland?

5 MR. REIMANN: A: So, when we -- we do the opposite on
6 capacity resources that we do on energy resources. If
7 we're trying to characterize a resource as an energy
8 resource, we do an adjustment for the capacity
9 contribution. If we flip it over the other way and we
10 say this is capacity resource, what is the value on
11 the energy side?

12 And so when we look at thermal resources,
13 the most efficient way to produce electricity from
14 gas-fired generation is to use a combined cycle gas
15 turbine. If you use a simple cycle gas turbine, your
16 efficiency is lower, but that's okay, because you've
17 got lower capital, you expect to run it less.

18 So when we do an adjustment of a point of
19 interconnection delivered to the Lower Mainland, the
20 energy it delivers is deemed to be a cost, because it
21 costs more to produce that energy than using a simple
22 cycle gas turbine. And so, effectively, it's a less
23 efficient way of producing energy, but you get
24 capacity with it.

25 **Proceeding Time 10:55 a.m. T22**

26 MR. AUSTIN: Q: Couple of final questions. What do the

1 Bonbright principles say about GHG reductions? GHG
2 meaning greenhouse gas reductions?

3 MR. DOYLE: A: So, we haven't used any greenhouse gas
4 reduction reference in our Bonbright, in the Bonbright
5 criteria.

6 MR. AUSTIN: Q: Yeah, I appreciate that, but I am just
7 asking you right now, what -- how do greenhouse gas
8 reductions and the need for greenhouse gas reductions
9 fit into the Bonbright principles?

10 MR. DOYLE: A: So, I'm not sure -- and I don't think
11 they fit in very clearly with the Bonbright principles
12 as we've outlined them, and described them within
13 tables 2-7 of Exhibit B-1 of our application, where
14 we've laid out the Bonbright principles and how
15 they're applied. There is not a consideration of the
16 greenhouse gasses.

17 MR. AUSTIN: Q: Thank you. My final question is, why
18 is BC Hydro proposing to use a long run marginal cost
19 of \$100 per megawatt hour for greenfield IPPs for the
20 period starting in 2034 when the price of renewables
21 that forms the basis of this \$100 per megawatt hour
22 price continues to drop?

23 MR. REIMANN: A: Generally speaking, I mean we've
24 contemplated with resources options trying to predict
25 out into the future how prices of resources might
26 drop, but that's, yeah, a difficult assessment to

1 MR. KEEN: Q: I expect to be brief. Most of this is
2 going to be by way of clarifying some stuff that's
3 already on the record. If I could turn you first to
4 page 7-10 of the application, Exhibit B-1, and
5 specifically Table 7-3. And for those working in
6 digital, it's PDF page 367. 367.

7 I'm hoping everybody is looking at Table 7-
8 3. And what I want to do is get a clear sense of the
9 way that Option 2 works relative to Option 1 of the RS
10 1823 pricing principles.

11 And so if you could look -- and I expect,
12 Mr. Doyle, this is for you. If you could look at the
13 tier 2 price increases for each year, under option 2.
14 If you're with me.

15 MR. DOYLE: A: Yes.

16 MR. ANDERSON: A: Yes, we are.

17 MR. DOYLE: A: Yes, I am.

18 MR. KEEN: Q: And can you confirm the tier 2 rate
19 increases increase each year by 2 percent?

20 MR. DOYLE: A: I'd have to do the math, but that's my
21 understanding on it, do the math up.

22 MR. KEEN: Q: All right.

23 MR. DOYLE: A: Yes.

24 MR. KEEN: Q: Come back and tell me if that's wrong.
25 And because the 2 percent tier 2 increases in option 2
26 are less than the rate increases in each year under

1 the RRA, the tier 1 rates in option 2 increase more
2 than the RRA increases, correct?

3 MR. DOYLE: A: That's correct.

4 MR. KEEN: Q: So there's a concentration in tier 1 for
5 option 2, correct?

6 MR. DOYLE: A: That's correct.

7 MR. KEEN: Q: All right. And if I can turn you now to
8 Exhibit B-5 -- or I'm sorry, B-23, and that's your
9 response to BCUC IR 170.1. And it's towards the very
10 end of that IR. So, for folks navigating, perhaps
11 look for 170.2 and flip backwards a page.

12 MR. DOYLE: A: Sorry, would you mind repeating the IR
13 reference, Mr. Keen?

14 MR. KEEN: Q: 2.170.1.

15 MR. DOYLE: A: Yes, I have it in front of me.

16 MR. KEEN: Q: That's PDF page 172.

17 And so I'm interested in Table F, if you
18 see that. And to confirm, the entire IR response is a
19 discussion of the application of Bonbright criteria,
20 and BC Hydro's preferred options relative to other
21 options suggested by Commission Staff, correct?

22 MR. DOYLE: A: Correct.

23 MR. KEEN: Q: And Table F is sort of the outlier there,
24 in that there is no relative comparison being made,
25 correct?

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

1 MR. KEEN: Q: Strictly an application of the Bonbright
2 criteria to option 1 in and of itself. And so what I
3 would like is to have you go through these criteria
4 and repeat Table F, but explicitly comparing option 1
5 to option 2, and option 1 to option 3.

6 I thought about having you do that on the
7 fly, but it strikes me that an undertaking might be
8 more expeditious.

9 **Proceeding Time 11:03 a.m. T24**

10 MR. DOYLE: A: That might be helpful for us.

11 MR. KEEN: Q: All right. So if you'll undertake to do
12 that.

13 MR. DOYLE: A: Thank you.

14 **Information Request**

15 MR. KEEN: Q: That would be great. That said, keep
16 your finger on the page. And if I could turn your eye
17 to -- I guess over the page to Criterion 8 of Rate
18 Stability. Actually -- sorry, we'll come back to
19 this.

20 I'm going to take you back now to Exhibit
21 B-1, and now page 7-11. You with me?

22 MR. DOYLE: A: I am.

23 MR. KEEN: Q: And the very bottom of the page, the very
24 last line, you can see the line that begins:

25 "AMPC commented that individual customers
26 who have --"

1 and then over the page,
2 "-- who have made conservation investments
3 experience higher than average rate
4 increases when under Option 2 all of the
5 rate increase is applied to Tier 1 rate (by
6 the calculated higher rate increase)."

7 You see that?

8 MR. DOYLE: A: I do.

9 MR. KEEN: Q: And I just want to be clear, that's a
10 fair comment by AMPC in your view, yes?

11 MR. DOYLE: A: Yes, it is.

12 MR. KEEN: Q: All right. So bearing in mind that 8th
13 criterion of rate stability that I mentioned, can I
14 turn you now in the same exhibit to table 2-7, and
15 it's page 2-58. Sorry, when I said the same exhibit I
16 meant Exhibit B-1.

17 MR. DOYLE: A: So we're in B-1 again?

18 MR. KEEN: Q: Yes. We're looking for table 2-7 on page
19 2-58 of Exhibit B-1, which is the main application
20 document.

21 THE CHAIRPERSON: We're at page 2 dash?

22 MR. KEEN: Q: Page 2-58.

23 THE CHAIRPERSON: 58, okay.

24 MR. KEEN: Q: You're with me? So on page 2-58 you see
25 the last box of table 2-7, the 8th criterion "Rate
26 Stability", you see that?

1 MR. DOYLE: A: Yes.

2 MR. KEEN: Q: And then if you go to the far column on
3 the right-hand side there's a mention of "Design
4 pricing and transition certainty." I want to focus of
5 pricing certainty. And so going back to Option 2,
6 that narrows the price differential between Tier 2 and
7 Tier 1, correct?

8 MR. DOYLE: A: It does.

9 MR. KEEN: Q: And I'll do that progressively over time,
10 that differential will shrink over time, right?

11 MR. DOYLE: A: Yes, because a greater proportion in the
12 increases are applied to Tier 1 rather than 2.

13 MR. KEEN: Q: And so it's fair to say that change in
14 the Tier 2 price signal is an example of price
15 instability?

16 MR. DOYLE: A: Yeah, relative to Option 1, yes.

17 MR. KEEN: Q: And relative to the status quo?

18 MR. DOYLE: A: Relative to the status quo, yes.

19 MR. KEEN: Q: And so the hazard from that is a customer
20 saying, "I can't plan a project around that price
21 signal," correct?

22 MR. DOYLE: A: Yes. When setting rates we want to
23 insure that we're sending long-term stable signals
24 where possible and -- yes, that's correct.

25 MR. KEEN: Q: So the other side of that coin is a
26 customer who is already invested in a project feeling

1 face to face workshops across the province about TSR
2 matters, correct?

3 MR. DOYLE: A: Yes, that is correct.

4 MR. KEEN: Q: All right, and looks like we are all on
5 the same page, literally and figuratively. If I can
6 turn you to the bottom of the page, I'm going to focus
7 on the last verbal comment that is collected and
8 presented in that table, table 5B. It says,

9 "Uniform rate increases provide simplicity
10 and predictability and maintains a
11 conservation differential between Tier 1 and
12 2, and therefore there is value in that it
13 offers uniformity and clarity."

14 And if you skip up the page to the fourth from the
15 bottom, second half of that comment is,

16 "It doesn't seem fair that the benefit of
17 that conservation is eroded, where tier 2 is
18 fixed, and only tier 1 goes up, so I am
19 penalized. The uniform increase will solve
20 that."

21 And if we skip up again to the fourth from the top,
22 there is a comment,

23 "Speaking as an energy manager, a higher
24 tier 2 rate provides a quicker payback and
25 makes my investment in conservation projects
26 more attractive."

1 MR. KEEN: Q: And that's all for the equivalent of the
2 LGS rate class? I'm sorry, I mis-spoke. For the TSR
3 rate class.

4 MR. DOYLE: A: I guess for comparable customers. The
5 classes may be structured slightly different, but yes.

6 MR. KEEN: Q: Thank you. And the TSR recovery
7 currently is 65 percent, correct?

8 MR. DOYLE: A: That's correct.

9 MR. KEEN: Q: And the LGS is 50 percent, correct?

10 MR. DOYLE: A: That's correct.

11 MR. KEEN: Q: And you propose to take the LGS recovery
12 to 65 percent?

13 MR. DOYLE: A: We did.

14 MR. KEEN: Q: You would agree that, all else being
15 equal, demand charges should recover demand-related
16 costs?

17 MR. DOYLE: A: It's one of the considerations when
18 we're looking at the fair apportionment of costs.
19 There's obviously other considerations we need to take
20 into account, such as bill impacts and other things.

21 MR. KEEN: Q: So, I recognize there's other
22 considerations. But all else being equal, demand
23 charges should recover demand-related costs.

24 MR. DOYLE: A: Yes. I think it's fair.

25 MR. KEEN: Q: That flows out of the cost causation
26 principle?

1 MR. DOYLE: A: Yes. Supported by the cost causation
2 principle, yes.

3 MR. KEEN: Q: And that's an important rate design
4 principle?

5 MR. DOYLE: A: Yes. All of the rate design criteria
6 principles are important. It's the trade-offs that
7 you make between them that get the tier design.

8 MR. KEEN: Q: But cost causation is an important rate
9 design principle.

10 MR. DOYLE: A: It is. It's one of our prioritized
11 criteria.

12 MR. KEEN: Q: And you agree that where you have some
13 demand-related costs, recovered by energy charges,
14 there is some degree of inter-class subsidization
15 taking place?

16 MR. DOYLE: A: Could you repeat the question?

17 MR. KEEN: Q: In the circumstance where you have
18 demand-related costs recovered by energy charges,
19 there is some degree of inter-class subsidization
20 taking place, correct?

21 MR. DOYLE: A: There would be other considerations,
22 such as the shape of the load and things like that.
23 And one that's relative to the coincident peak that
24 could impact that analysis.

25 MR. KEEN: Q: So your answer is yes, there is some
26 degree of subsidization taking place, but there are

1 also other things going on?
2 MR. DOYLE: A: Yes. There is many factors at play. So
3 it's difficult to say whether there is actually
4 subsidization, depending on where customers --
5 specific customers' load profiles look like and where
6 their peaks are.
7 MR. KEEN: Q: Can I turn you, then, to the response to
8 BCUC 1.82.3, and that's PDF page 328.
9 MR. DOYLE: A: Yes, I'm there.
10 MR. KEEN: Q: Are you there? And if you look at the
11 end of BC Hydro's response, the last two sentences
12 say:
13 "Because the residual demand related costs
14 are collected by uniform energy charges, the
15 higher load factor customers will generally
16 pay more than they would have if the demand
17 related costs were collected wholly through
18 demand charges. This means that for
19 customers with the same demand, the high
20 load factor customer is subsidizing the low
21 load factor customers, other consumption
22 patterns being equal."
23 MR. DOYLE: A: Yes, I think then I -- I think that's
24 what I was getting at. The --
25 MR. KEEN: Q: Okay.
26 MR. DOYLE: A: -- are a factor.

1 MR. KEEN: Q: So there may be subsidization. There may
2 also be other factors.

3 MR. DOYLE: A: Yes.

4 MR. KEEN: Q: Thank you. If I can turn you now to the
5 response to -- and this is, again, Exhibit B-5 -- to
6 CEC -- sorry, it's B-23. The response to CEC IR
7 2.117.1.

8 COMMISSIONER COTE: What was that number again?

9 MR. KEEN: 2.117.1. CEC.

10 **Proceeding Time 11:17 a.m. T27**

11 MR. KEEN: Q: You're with me?

12 MR. DOYLE: A: I am

13 MR. KEEN: Q: Great. So BC Hydro in that response is
14 discussing what would happen if the F2016, RS 1823
15 energy rate A was set higher to either the MGS tier 2
16 rate or the LGS tier 2 rate, correct?

17 MR. DOYLE: A: Yes, that appears correct.

18 MR. KEEN: Q: And just to be clear the 1823 A rate is
19 the TSR blended rate? That is to say it's 10 percent
20 of the tier 2 price and 90 percent of the tier 1
21 price?

22 MR. DOYLE: A: It is.

23 MR. KEEN: Q: Okay. And that's used for new customers
24 without a CBL or other customer who for whatever
25 reason don't have a CBL.

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

1 MR. KEEN: Q: So you see in that response the figures
2 of 20 million and 60 million?

3 MR. DOYLE: A: I do.

4 MR. KEEN: Q: Can you tell me if those calculations
5 were achieved by multiplying the 2,398 gigawatt hour
6 load by the difference between 1823A, the 1823A rate
7 and the LGS and MGS rates provided?

8 MR. DOYLE: A: This is something I would like to check,
9 whether we did this as a revenue neutral type
10 calculation or how, how that went in -- how that 20
11 and 60 million was calculated. Whether it was just
12 simply multiplying it and not taking anything else
13 into account or not.

14 MR. KEEN: Q: Okay, I think you're getting ahead of me,
15 but that's helpful. So, if you can undertake to
16 clarify how that calculation was done.

17 **Information Request**

18 So, I will go to the next logical question.
19 If you had done that, just adjusting the RS 1823 rate
20 without touching either the tier 2 price or the tier 1
21 price, you'd have a problem when I came to calculating
22 CBLs for customer, right?

23 MR. DOYLE: A: Sorry, can you repeat the question.

24 MR. KEEN: Q: Maybe I can help you out a bit here. I
25 said you would have a problem in calculating CBLs, and
26 to be clear if you were using a rate that's higher

1 than the blended rate to calculate CBLs you'd get a
2 customer baseline that reflects customer behaviour
3 that isn't applicable to the RS 1823 rate, right?

4 MR. DOYLE: A: I'm not following. So if we to --

5 MR. ANDERSON: A: I guess, Mr. Keen, where I'm
6 struggling is the customer baseline and a load
7 reference relative to a price reference.

8 MR. KEEN: Q: Okay, let's back up then. If we go back
9 and we look at the IF response. If we look at the top
10 of the IR response you see the RS 1823 energy rate A
11 box, and that's 4.303 cents per kilowatt hour. Do you
12 see that?

13 MR. ANDERSON: A: Yes.

14 MR. KEEN: Q: That's the blended rate, right?

15 MR. ANDERSON: A: Correct.

16 MR. KEEN: Q: And so you use that to calculate a CBL,
17 right? You put a customer on that rate --

18 MR. ANDERSON: A: A customer goes on that rate for a
19 period of time until they can demonstrate what their
20 normal operations are, and that forms the baseline,
21 yes.

22 MR. KEEN: Q: Right. And so there's normal operations
23 that predicated on customer behaviour paying that
24 rate, right?

25 MR. ANDERSON: A: Fair enough. I mean it's -- I think
26 our assumption is the customer runs, the expectation

1 is that the customers runs their facility to what they
2 would -- what they want to run it for from an output
3 from a production stand point. And our expectation,
4 again, is that that is their status quo effectively,
5 by which we then set a baseline saying this is normal
6 rate of operations.

7 MR. KEEN: Q: Right, and so when they run their output
8 normally, as you say, that's an economic calculation
9 made by customers, yes?

10 MR. ANDERSON: A: That's correct.

11 **Proceeding Time 11:07 a.m. T25**

12 MR. KEEN: Q: And so if their economics change, their
13 output is going to change?

14 MR. ANDERSON: A: I think that depends on a particular
15 customer, but that is certainly possible, yes.

16 MR. KEEN: Q: Yes, any customer's output is going to be
17 a function of their internal economics, yes?

18 MR. ANDERSON: A: Yes, but I guess to me, that would
19 depend entirely on the amount of cost. Electricity in
20 this case, represents further overall cost structure,
21 their revenue structure in terms of what their market
22 prices is. What their market prices are for that
23 particular product in that period of time. But if
24 you're trying to draw a general correlation I guess
25 between price increase and sensitivity to that, I
26 guess we would certainly say that that's expected.

1 MR. KEEN: Q: What is expected, sir?

2 MR. ANDERSON: A: Well, if you're saying that you're
3 saying that all else being equal, that a higher cost
4 may make them run less, I think is that what you're
5 trying to get to?

6 MR. KEEN: Q: That's where I am going. I'm not sure
7 you said that, but that's where I'm going, yes.

8 MR. ANDERSON: A: Okay.

9 MR. KEEN: Q: And my point is, when it comes to setting
10 a CBL, if you are using a higher electricity price,
11 you would have a risk of a CBL that doesn't reflect
12 their normal operations when it comes to what the RS
13 1823 rate is, yes?

14 MR. ANDERSON: A: I guess I would say again,
15 potentially yes, depending on other factors and
16 variables that that particular customer has.

17 MR. KEEN: Q: Okay. Can I turn you to -- actually,
18 before we go there, at the very bottom of that
19 response, the response concludes, "Not accounting for
20 any demand response to the higher prices." You see
21 that?

22 MR. ANDERSON: A: Yes.

23 MR. KEEN: Q: And just to be clear, you would expect in
24 some cases, if not all, that there would be a demand
25 response to a higher price?

26 MR. DOYLE: A: So, yes, and obviously the amount of

1 that demand response would likely depend on the energy
2 intensity of their business. So if you are a more
3 energy intensive business, there could potentially be
4 a larger response to that.

5 MR. KEEN: Q: Thank you. If we could go back to
6 Exhibit B-5, the response to AMPC IR 1.9.10, that's
7 PDF page 578.

8 THE CHAIRPERSON: So, Mr. Keen, what was the IR, number
9 1.9?

10 MR. KEEN: .10, Correct.

11 THE CHAIRPERSON: 1.10?

12 MR. KEEN: 1.9.10.

13 THE CHAIRPERSON: 1.9.10, thank you.

14 MR. KEEN: Q: Looks like we're all on the same page.
15 In that response, Mr. Doyle, you indicate that
16 industrial customers have an RS 1823 price elasticity
17 of demand of negative 0.16, do you see that?

18 MR. DOYLE: A: I do.

19 MR. KEEN: Q: And you also indicate that industrial
20 customers demonstrate more price elasticity than other
21 rate classes, but are still price inelastic, yes? Do
22 you see that?

23 MR. DOYLE: A: I see that.

24 MR. KEEN: Q: And you see the reference to the F2011
25 DSM milestone evaluation summary report?

26 MR. DOYLE: A: I do.

1 MR. KEEN: Q: Did you have a chance to review the aide-
2 to-cross document that I provided to your counsel on
3 Monday?

4 MR. DOYLE: A: We did.

5 MR. KEEN: Q: You did? And are you able to speak to
6 that sir?

7 MR. DOYLE: A: I can speak to it generally, and
8 anything more detailed, we can take on panel 2 with
9 Ms. Jubb.

10 MR. KEEN: Q: Sorry, with Miss?

11 MR. DOYLE: A: With Ms. Jubb on panel 2. She is with
12 the evaluation.

13 MR. KEEN: Q: Why don't we see how far we get. I
14 promise not to make you do a linear regression on the
15 fly. And so with your permission sir, I'll circulate
16 some copies of that.

17 THE CHAIRPERSON: Please do. Thank you. As long as you
18 promise not to make us not do a linear regression
19 also.

20 **Proceeding Time 11:26 a.m. T29**

21 MR. KEEN: Q: It's easier than it looks.

22 MR. DOYLE: A: Sorry, the number was?

23 MR. KEEN: Q: C12-15.

24 MR. KEEN: Q: Okay, if we're ready to go?

25 THE CHAIRPERSON: Yes.

26 MR. KEEN: Q: So you can confirm that is the document

1 that was referenced in your IR response looking at the
2 cover page?

3 MR. DOYLE: A: Yes.

4 MR. KEEN: Q: Okay.

5 MR. DOYLE: A: It's an excerpt from it, yes.

6 MR. KEEN: Q: Yes.

7 THE CHAIRPERSON: Is this on the record already?

8 MR. KEEN: It's not.

9 THE CHAIRPERSON: Okay. So will this be marked as an
10 Exhibit?

11 MR. KEEN: I was going to mark it at the end, but we can
12 mark it now. C12-15, thank you.

13 THE HEARING OFFICER: C12-15.

14 **(EXCERPT FROM BC HYDRO "F2011 DEMAND SIDE MANAGEMENT**
15 **MILESTONE EVALUATION SUMMARY REPORT, DECEMBER 2011"**
16 **MARKED EXHIBIT C12-15)**

17 THE CHAIRPERSON: Thank you.

18 MR. KEEN: Q: And just while we're marking it I'll
19 speak just a little bit to the content of it with Mr.
20 Doyle and then go back into talking about the content.

21 If you could turn, Mr. Doyle -- there's no
22 internal pagination. If you could turn to I think the
23 fourth page, back of the third page I guess. The next
24 cover page that you see.

25 MR. DOYLE: A: Page 40 down at the bottom there?

26 MR. KEEN: Q: I'm looking at the cover page for the F-

1 2010 Demand Side Management Milestone Evaluation
2 Summary Report. Do you see that?
3 MR. DOYLE: A: Yes, I do.
4 MR. KEEN: Q: Okay. And you've reviewed this as well?
5 MR. DOYLE: A: Yes.
6 MR. KEEN: Q: And so these are both documents prepared
7 by BC Hydro and filed annually with the Commission --
8 of the type filed annually with the Commission?
9 MR. DOYLE: A: I'm not sure whether they are filed
10 annual. I see these two have been. I'm not sure of
11 our regular filing practice with respect to these.
12 MR. KEEN: Q: And can you confirm that some more recent
13 versions of documents like this have been included
14 with the RRA application?
15 MR. DOYLE: A: I cannot confirm that. I'm just not
16 aware.
17 MR. KEEN: Q: Can you take it subject to check?
18 MR. DOYLE: A: I can.
19 MR. KEEN: Q: All right. Chapter 10 in the appendices
20 for anybody checking.
21 And behind those two cover pages we've got
22 some extracts relating to the TSR rate? Do you see
23 that?
24 MR. DOYLE: A: I do.
25 MR. KEEN: Q: All right. So going back to the second
26 page of the bundle -- sorry, the fourth page, number

1 40, page 40.

2 MR. DOYLE: A: That's of the 2011 report, right?

3 MR. KEEN: Q: Yes. At the very bottom of the page
4 there's table 5.2.3 TSR Impact Analysis. And the
5 third column from the right is "Elasticity". The
6 value given is negative 0.1627, you see that?

7 MR. DOYLE: A: I see that.

8 MR. KEEN: Q: And I take it that number is the source
9 of the negative 0.16 identified in the response to
10 AMPC IR 1.9.10, correct?

11 MR. DOYLE: A: They appear similar. I'm not sure
12 whether it is --

13 MR. KEEN: Q: You'll take it subject to check?

14 MR. DOYLE: A: I can take it subject to check.

15 MR. KEEN: Q: And if I can turn your attention down
16 immediately below to the heading "Conclusions and
17 Recommendations"? And you see the line:

18 "The study has several limitations."

19 And the first limitation is that

20 "... the industrial sector...has been subjected
21 to major external economical shocks.

22 Although using sector gross domestic product
23 (GDP) as a driver of the load to try and
24 control for these shocks, this may be an
25 imperfect control."

26 Do you see that limitation?

1 MR. DOYLE: A: I see it.

2 **Proceeding Time 11:31 a.m. T30**

3 MR. KEEN: Q: And that would apply to the reference
4 given to AMPC -- the response given to AMPC in IR
5 1.9.10.

6 MR. DOYLE: A: Yeah, I'm not sure. I'd have to -- I
7 think Ms. Jubb would be better to answer that
8 question.

9 MR. KEEN: Q: Okay, all right. Well, we'll take this
10 up with panel 2 in that case.

11 MR. DOYLE: A: Okay.

12 MR. KEEN: Mr. Chairman those are my questions.

13 THE CHAIRPERSON: Thank you Mr. Keen. Mr. Miller.

14 MR. MILLER: Q: Thank you Mr. Chair.

15 **CROSS-EXAMINATION BY MR. MILLER:**

16 MR. MILLER: Q: Good morning panel.

17 THE CHAIRPERSON: Good morning.

18 MR. DOYLE: Good morning.

19 MR. MILLER: Q: I want to start off with a discussion
20 of some high level principles. Now as I understand
21 it, you're not proposing any changes to the
22 residential rate structure, correct?

23 MR. DOYLE: A: That is correct.

24 MR. MILLER: Q: But there seems to be a number of
25 underlying changes to the principles surrounding the
26 development of the RIB rate according to Staff. So I

1 want to explore those a bit, okay?

2 MR. DOYLE: A: Okay.

3 MR. MILLER: Q: Now if we look at the Bonbright
4 Criteria, which are listed on page 257 of the
5 application, I think. 2-57, sorry. There's eight
6 criteria listed there. It's table 2-7. Those are the
7 eight Bonbright Criteria, correct?

8 MR. DOYLE: A: That is correct.

9 MR. MILLER: Q: Okay, and you prioritized in this
10 proceeding criteria 2, 4 and 8, correct?

11 MR. DOYLE: A: That is correct.

12 MR. MILLER: Q: Those are your top 3?

13 MR. DOYLE: A: Those are the ones we've prioritized,
14 yes.

15 MR. MILLER: Q: Now, that's been a change since the
16 2007 application, correct?

17 MR. DOYLE: A: Yes, it has.

18 MR. MILLER: Q: Okay just -- I don't think you need to
19 turn to it but I'm going to give some reference for
20 IRs and read out a couple statements from your
21 responses.

22 So in IR 1.6.1 you state:

23 "BC Hydro's experiences since 2007 have not
24 caused it to modify its interpretation of
25 the eight Bonbright Criteria."

26 So that's still correct? You don't

1 understand the criteria any differently today than you
2 did then, correct?

3 MR. DOYLE: A: That is correct.

4 MR. MILLER: Q: And then you go on to say:

5 "However, BC Hydro's experiences, including
6 its environment since 2007 have caused it to
7 modify its prioritization of the eight
8 Bonbright Criteria."

9 Correct?

10 MR. DOYLE: A: That is correct.

11 MR. MILLER: Q: And the term you've been using is
12 "trade-off" correct? Different trade-offs?

13 MR. DOYLE: A: Yes.

14 MR. MILLER: Q: Okay. And then you go on to say,

15 "Prioritization of the Bonbright Criteria
16 should reflect the utility situation at the
17 time of the particular rate design
18 initiative and accordingly prioritization
19 can be expected to change over time."

20 Correct?

21 MR. DOYLE: A: That is correct.

22 MR. MILLER: Q: And then in BCUC 2.140.1, this is --
23 you say -- and again I don't think you need to change
24 here, I'll read it.

25 "Making changes to the RIB that would dampen
26 the price signal is not BC Hydro's preferred

1 course at this time. Departing from a
2 script adherence to step 2 being set exactly
3 equal to the latest estimate of the LRMC is
4 reasonable at this time given a desire to
5 have a stable and consistent long run
6 signal."

7 Correct?

8 MR. DOYLE: A: That is correct.

9 MR. MILLER: Q: And then in BCUC 2.141.1 you state:

10 "BC Hydro sought input from its stakeholders
11 through a variety of forms, including focus
12 groups, workshops and one on one meetings.
13 They considered this input and other factors
14 such as the current load resource balance,
15 government policy and how well the current
16 rates are working on a qualitative basis."

17 Correct? That's what you considered in deciding to
18 change? The tradeoffs or the priorities.

19 MR. DOYLE: A: The prioritization, yes.

20 **Proceeding Time 11:35 a.m. T31**

21 MR. MILLER: Q: Okay. So now I want to explore a bit
22 about, are we adopting a principled approach to this,
23 or what may be characterized as a more reactionary
24 approach to environment, okay? So, we agree, I think
25 we've already established this, you don't have a
26 different understanding of the principles. That's the

1 same now as it was in 2007, correct? But you're
2 trading, you are prioritizing them differently,
3 correct?

4 MR. DOYLE: A: That's correct.

5 MR. MILLER: Q: So, can you give us some examples of
6 how your priority may have changed, or would change in
7 the future, given the criteria you've listed earlier.
8 So we've got current load resource balance, government
9 policy, how well the current rates are working, stable
10 and consistent long run signals, and it may be easier
11 to do this in terms of your criteria about fair
12 apportionment of cost amongst customers. What
13 situation would cause that to drop down from being a
14 priority?

15 MR. DOYLE: A: So I guess a situation that may -- you
16 know, a fair apportionment of cost I think is
17 generally, I think -- I believe it was a prioritized
18 priority back in 2007 as well. That being said, if
19 when you're making changes to such things such as the
20 amount of demand cost recovery for certain rate
21 classes, the bill impacts may -- the bill impacts may
22 force you to make those tradeoffs, and if the bill
23 impacts were significant and there was a strong desire
24 to ensure that bill impacts were kept to a certain
25 level, we may not have that same priority on that.

26 MR. MILLER: Q: Thank you. The next issue I want to

1 address is -- and I am going to be jumping around a
2 lot of our questions have been asked previously. I
3 want to now address your criteria 6 and 7 with regard
4 to stability with respect to non-firm rates and demand
5 cost recovery.

6 So, again, we've established the three
7 criteria that you've prioritized, and criteria 6,
8 which is recovery of revenue requirement and criterion
9 7, revenue stability, are not on your priority list,
10 correct?

11 MR. DOYLE: A: That is correct. I believe as we
12 explained in our application, we do our rates on a
13 revenue neutral basis and as such they are sort of
14 imbedded in our design.

15 MR. MILLER: Q: Right, but with respect to requirement
16 number 6, is it true that because of the government
17 directive, that that's less of a priority for you,
18 because they've determined the ratios for you, in the
19 class? Is that part of the answer?

20 MR. DOYLE: A: I think what you're referring to with
21 the rebalancing is typically done through the fair
22 apportionment of cost and ensuring that the costs
23 amongst the various classes are apportioned properly.
24 Then recovery of the revenue requirement, all of our
25 rate designs ensure we recover the revenue requirement
26 as a whole.

1 MR. MILLER: Q: And that's because of the cost of
2 service model?

3 MR. DOYLE: A: It's because of the revenue neutrality
4 modeling that we do. So we design our -- when we
5 model our rates, we ensure that we're -- our rates are
6 collecting the amount of revenue we need to meet our
7 revenue requirement.

8 MR. MILLER: Q: Now, I want to explore a bit about the
9 new non-firm rates that you either have or you may
10 have in the future. I'm going to list a series of
11 characteristics and tell me whether you agree that
12 generally these apply to non-firm rate
13 characteristics. Generally the non-firm ratepayers do
14 not have to pay a demand charge or they pay a modified
15 demand charge, is that correct?

16 **Proceeding Time 11:40 a.m. T32**

17 MR. DOYLE: A: That is correct.

18 MR. MILLER: Q: And the energy consumption for the non-
19 firm ratepayers is not included in the annual load
20 forecast, correct?

21 MR. DOYLE: A: That is correct.

22 MR. MILLER: Q: And non-firm rates are usually optional
23 rather than the default rate, correct?

24 MR. DOYLE: A: Yes, that's correct.

25 MR. MILLER: Q: Okay. Now, Staff understands that you
26 have roughly a dozen or so non-firm rate schedules,

1 and I'm going to list a few. And you can just confirm
2 with me whether or not you agree they're non-firm
3 rates.

4 The first one is the -- I think the last
5 rate that was approved by the Commission recently.
6 It's the non-firm freshet rate, correct?

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

8 MR. MILLER: Q: And other ones are the RS 1852, the
9 transmission service modified demand rate?

10 MR. DOYLE: A: That's correct.

11 MR. MILLER: Q: And another is RS 1880, which is the
12 transmission service stand-by and maintenance supply?
13 Correct?

14 MR. DOYLE: A: Correct.

15 MR. MILLER: Q: And then RS 1891, transmission service
16 shore power service rate.

17 MR. DOYLE: A: Correct.

18 MR. MILLER: Q: And then we have RS 1863, transmission
19 service IPP station rate.

20 MR. DOYLE: A: I had 1853 on my mind, but I'll take it
21 subject to check.

22 MR. MILLER: Q: Okay, subject to check. But we do have
23 a transmission -- regardless of the exact number, we
24 have a transmission service IPP station rate?

25 MR. DOYLE: A: Yes, we do.

26 MR. MILLER: Q: Okay. And we also have a distribution

1 service IPP station rate, that's RS 1253?

2 MR. DOYLE: A: We do, yes.

3 MR. MILLER: Q: And then we also have distribution
4 shore power service. That's 1280.

5 MR. DOYLE: A: Yes.

6 MR. MILLER: Q: And then we have 1205, which I
7 understand is a commercial dual fuel E-Plus rate?

8 MR. DOYLE: A: That's correct.

9 MR. MILLER: Q: And then we're also looking at now
10 possible modification with respect to the E-Plus, the
11 residential dual fuel interruptible rate?

12 MR. DOYLE: A: Correct.

13 MR. MILLER: Q: And then finally I think that we'll put
14 as perspective CEC's proposed interruptible rate,
15 correct?

16 MR. DOYLE: A: Correct.

17 MR. MILLER: Q: Okay. Now, how much revenue per year
18 -- let's say over the last two years, has been earned
19 through sales of non-firm energy? You could take that
20 as an undertaking, if you -- you can either give us a
21 general number now, if you have any idea, or you can
22 take it as an undertaking.

23 MR. DOYLE: A: Yes. I'd like to take it as an
24 undertaking.

25 **Information Request**

26 MR. MILLER: Q: Okay.

1 MR. DOYLE: A: I will say I think it would be
2 relatively small amount of our overall revenue.

3 MR. MILLER: Q: Okay. And then also with respect to
4 that, how much energy is sold? So the revenue and the
5 energy over the last two years.

6 So because these rates are optional,
7 generally, in nature, it's only those customers that
8 believe they can take advantage of the terms and
9 conditions of these rates that usually choose to be on
10 them, correct?

11 MR. DOYLE: A: Or that meet certain criteria, yes.

12 MR. MILLER: Q: But they still have to make the
13 election if they're optional. But, yes, we think we
14 can do it. We meet the criteria. Let's take a
15 chance. As opposed to getting firm service. Because
16 they face the possibility of interruption.

17 MR. DOYLE: A: Yes.

18 MR. MILLER: Q: Okay. Now, since these rates usually
19 don't have demand charges, or they don't have -- or
20 they have a modified demand charge, is it correct to
21 say that the more rates that are offered as non-firm,
22 assuming that attracts more customers, the more rates
23 you add as non-firm, and it attracts more customers
24 switching from firm to non-firm, will that result in
25 lower firm revenue? Necessarily or what are the
26 factors that may lead it not to result in more firm

1 revenue?

2 **Proceeding Time 11:45 a.m. T33**

3 MR. DOYLE: A: So I'm not sure that that's fair as a
4 general statement. I think if we look at something
5 like the freshet rate, it's a non-firm rate, but the
6 purpose of that rate is incent additional consumption
7 that we would not have otherwise had during the
8 freshet period. So I don't think that would apply.

9 Rate schedule 1852, which is the modified
10 demand is an interruptible rate where we modify the
11 demand period for a discount, but what it provides is
12 our ability to interrupt. So there's potentially some
13 savings there because of different of assets.

14 So I don't think it's quite that easy.
15 Another example would be shore power. One of the
16 conditions within the shore power rate is you cannot go
17 from firm service to non-firm service. It has to be a
18 new request for non-firm service.

19 MR. MILLER: Q: Okay, let's go back to the list I gave
20 you then and tell me just generally whether you would
21 expect if more customers moved to the non-firm there
22 may be a drop in firm revenues. So we've already
23 spoken to the freshet, so I thank you for the answer
24 on that.

25 What about RS 1852? That's the
26 transmission service modified demand. Is that the one

1 you just spoke to?

2 MR. DOYLE: A: So with respect to 1852, as I was saying

3 it's a rate where one, BC Hydro has to grant access to

4 it. So it's intention is where we could I guess

5 potentially not invest in assets to meet a local

6 constraint, we could curtail the customer. They still

7 do pay a modified demand charge. I guess, you know,

8 technically there would be some reduction in firm load

9 but it would be very minimal and that we're still

10 getting most of that revenue. The tradeoff there

11 being is there's a slight reduction for our ability to

12 interrupt the customer.

13 MR. MILLER: Q: What about 1880? That's the

14 transmission service standby and maintenance.

15 MR. REIMANN: A: The 1880 rate is generally thought of

16 a generation turn down, and so it's really an aid to

17 our transmission customers to give them an ability to

18 continue their operations if they have to do

19 maintenance or if they have a force majeure on their

20 unit. So it's really not intended to be a normal

21 consumption rate at all.

22 MR. MILLER: Q: Right, so there's no affect there is

23 what --

24 MR. REIMANN: A: No.

25 MR. MILLER: Q: Just want to run through them, make

26 sure the Panel understands what the affect is with

1 these rates. 1891 I think you've already spoke to.
2 Is that right? That you can go to firm?
3 MR. DOYLE: A: Sorry, 1891?
4 MR. MILLER: Q: The shore.
5 MR. DOYLE: A: The shore power for transmission
6 service. Yeah, you can't go from firm service to non-
7 firm service. You have to connect at non-firm.
8 MR. MILLER: Q: 1863, the transmission service IIP
9 station rate.
10 MR. DOYLE: A: Yeah, so I think that one there is again
11 sort of like a support rate for when an IPP requires
12 sort of a black start service, that the power's
13 available for them as opposed to sort of an ongoing
14 regular service we provide the customer.
15 MR. MILLER: Q: So no affect?
16 MR. DOYLE: A: No affect.
17 MR. MILLER: Q: What about 1253? Distribution service
18 IIP stations under the same category?
19 MR. DOYLE: A: That would be the same at 1853. Just on
20 the distribution side of it.
21 MR. MILLER: Q: 1280 distribution shore power service?
22 MR. DOYLE: A: So similar to the transmission shore
23 power requirement.
24 MR. MILLER: Q: And then the last one, I think, of the
25 current rates is 1205, the commercial dual fuel -- oh
26 sorry, that's the commercial dual fuel E-plus rate.

1 **Proceeding Time 11:49 a.m. T34**

2 MR. DOYLE: A: So with the E-Plus rates, both 1205 and
3 I believe 1105, so the commercial and the residential,
4 those are both closed rates that can't be accessed
5 anymore.

6 MR. MILLER: Q: Okay. And we'll leave the proposed CEC
7 one aside, because we don't exactly know how it's
8 going to be put forward.

9 A little more on the high level principals
10 with regard to Bonbright. Again, the reference for
11 this is the table on page 2-57 of the Application, the
12 eight criteria. The Bonbright principals we assume
13 were the starting point of your valuation for the rate
14 design, is that correct?

15 MR. DOYLE: A: I'm not sure of they were the starting
16 point. They were definitely one of the inputs.
17 Obviously the engagement process, taking stock of how
18 the rates were performing relative to what their
19 expectations where. For example, with the LGS/MGS we
20 had done evaluation reports that indicated they
21 weren't archiving their intended goals of achieving
22 conservation. So they were definitely a factor in
23 evaluating, I'm not sure they were necessarily a
24 starting point.

25 MR. MILLER: Q: Okay. So was this the -- were the
26 Bonbright criteria the only evaluation framework

1 applied or were there other evaluation criteria
2 applied as well in coming up with your rate design?
3 MR. DOYLE: A: So largely the rate design criteria were
4 the primary evaluation criteria other than the
5 feedback received and obviously how those rates have
6 been performing.
7 MR. MILLER: Q: Okay. Can I get you to turn to page 1-
8 20 of the application? 1-20. It's table 1.2 Now,
9 these are the three prioritized rate design criteria
10 from Bonbright, correct?
11 MR. DOYLE: A: That's correct. They are BC Hydro's
12 prioritized criteria for the 2015 RDA.
13 MR. MILLER: Q: And they relate to practicality,
14 stability and fairness, correct?
15 MR. DOYLE: A: That is correct.
16 MR. MILLER: Q: Now, the economic efficiency criterion
17 of energy conservation is not one of the priorities,
18 correct?
19 MR. DOYLE: A: That is correct.
20 MR. MILLER: Q: And the reasons that at least we
21 understand, as set forth in the application, for not
22 prioritizing economic efficiency is the lower energy
23 and demand forecast referred to in Chapter 1 of the
24 application, correct?
25 MR. DOYLE: A: That is correct.
26 MR. MILLER: Q: Not explicitly mentioned is that the

1 conservation price signal has already been built into
2 the conservation rates for residential and
3 transmission customers, is that correct?

4 **Proceeding Time 11:54 a.m. T35**

5 MR. DOYLE: A: I'm not sure you mean by it's already
6 built in. I would say that the rates already are
7 conservation -- rates intended to delivery
8 conservation, that are generally well understood by
9 our customers, and they're delivering conservation.

10 MR. MILLER: Q: There's a conservation price signal
11 built into it.

12 MR. DOYLE: A: There is, yes.

13 MR. MILLER: Q: Is it reasonable to conclude that the
14 omission of the economic efficiency criteria is a
15 result of BC Hydro's view that the existing
16 conservation rates for MGS and LGS have failed to
17 deliver the conservation that was expected?

18 MR. DOYLE: A: All right. So are you asking because
19 the MGS and LGS rates weren't delivering conservation,
20 we didn't prioritize efficiency?

21 MR. MILLER: Q: That wasn't one of your top three
22 priorities.

23 MR. DOYLE: A: Because of -- as a result of -- no, I
24 don't think that's an accurate statement of why we
25 prioritized. I think, looking at the environment and
26 our load resource balance, and needs for energy. That

1 had more of an impact than the MGS and LGS delivery.

2 MR. MILLER: Q: Thank you. Now, amongst the three
3 priorities listed, number 2, fair apportionment, I'm
4 going to talk a bit about its application with respect
5 to cost of service and revenue cost ratios. Did you
6 settle on this priority prior to the rate rebalancing
7 amendment in 2015?

8 MR. DOYLE: A: I would have to look at the timing. I
9 believe where we settled was the -- I'm not sure of
10 the timing of the direction, but as I understand it,
11 we laid out the priorities at workshop 12, which I
12 believe was around June of 2015.

13 MR. MILLER: Q: Do you think you could look at that
14 over lunch and let us know?

15 MR. DOYLE: A: I can do that.

16 MR. MILLER: This would be a convenient time to break,
17 Mr. Chair.

18 THE CHAIRPERSON: Okay. All right. So we'll come back
19 at 1:30, then. Thank you.

20 **(PROCEEDINGS ADJOURNED AT 11:57 A.M.)**

21 **(PROCEEDINGS RESUMED AT 1:28 P.M.)** T36

22 THE CHAIRPERSON: Please be seated. Thank you.
23 Mr. Christian.

24 MR. CHRISTIAN: Mr. Chairman, I have a few matters to
25 address, actually for the witnesses to address. There
26 was a question about Site C unit energy costs asked of

1 Mr. Reimann by Mr. Austin and there was a subject to
2 check arising from that, and Mr. Reimann would like to
3 address that. And Mr. Doyle was also asked a
4 question, in this case by Mr. Miller with respect to
5 the timing of the regulation regarding rate
6 rebalancing, the amendment to Direction No. 7, and he
7 has a few words to say in that regard as well.

8 THE CHAIRPERSON: Okay.

9 MR. CHRISTIAN: Mr. Reimann.

10 MR. REIMANN: A: Yeah, thanks. So Mr. Austin was
11 referencing BCUC IR 1.9.1 and asking about Site C as a
12 marginal resource, and he had referenced the number in
13 the IR as \$83 a megawatt hour. I'd indicated that
14 that was the price delivered to the Lower Mainland
15 adjusted for capacity. That is in fact correct.
16 There's a Table 6-1 in the IRP that shows the number.
17 As it is, Mr. Austin was also correct in that the
18 unadjusted number at the point of interconnection is
19 also \$83 a megawatt hour. And so it just so happens
20 that the puts and takes adjusted for Lower Mainland
21 ends up with the same number.

22 The other number that I'd mention was with
23 the changes with Hydro's dividend payments and
24 whatnot, the debt financing cost of Site C. I believe
25 I mentioned the number \$64 a megawatt hour. That is
26 the price to the Lower Mainland but not adjusted for

1 capacity. Adjusted for capacity, that number becomes
2 \$59 a megawatt hour. So we're not proposing that
3 necessarily as an LRC number but just wanted to
4 correct what those numbers were.

5 THE CHAIRPERSON: Thank you. Mr. Austin?

6 MR. AUSTIN: I'd just like one follow-up question if I
7 may.

8 THE CHAIRPERSON: Go ahead.

9 **CROSS-EXAMINATION BY MR. AUSTIN (Continued):**

10 MR. AUSTIN: Q: This is in relation to the \$65 a
11 megawatt hour as calculated using 100 percent debt.
12 Is it true to say that when that calculation is done
13 that the government is not expecting any return on the
14 risk as owner of BC Hydro that it takes with respect
15 to Site C for a period of 70 years?

16 MR. REIMANN: A: So the effective result is that Site C
17 would be 100 percent debt finance, so from that
18 perspective that would suggest that that's probably
19 true. I think in overall it's a question of how much
20 the government has as a return on its investment into
21 BC Hydro.

22 MR. AUSTIN: Q: But for the purpose of Site C it's
23 expecting a zero return on Site C for 70 years.

24 MR. REIMANN: A: That's right. It would be 100 percent
25 debt finance.

26 MR. AUSTIN: Q: Thank you.

1 THE CHAIRPERSON: Thank you, Mr. Austin. Mr. Christian,
2 do you have something else?

3 MR. CHRISTIAN: Mr. Doyle is going to address the
4 question of the rebalancing regulation agreement.

5 THE CHAIRPERSON: Thank you.

6 MR. DOYLE: A: Yes. Mr. Miller asked me I think just
7 before the break, the date of the rebalancing
8 direction and that is July 15th, 2015, and in relation
9 to the date in which the Workshop 12 where we outlined
10 our priorities was July 30th, 2015.

11 **CROSS-EXAMINATION BY MR. MILLER (Continued):**

12 MR. MILLER: Q: Thank you, panel, for that answer.

13 It's come to my attention that when I
14 started my series of questions to you, I asked you
15 about your rate design principles and put the
16 proposition that they might be viewed as perhaps not
17 principle but more reactionary, and I understand you
18 may want to address that specific issue, so I'm giving
19 you the opportunity.

20 MR. DOYLE: A: Thanks for that opportunity. So BC
21 Hydro believes we took a principled approach to the
22 development of our Bonbright principles. We began the
23 engagement on those principles back in May of 2014.
24 We engaged all the way through 'til July 30th, 2015, so
25 the better part of I guess 16 or 18 months, and
26 throughout that engagement that informed the Bonbright

1 prioritization that we outlined. We do think it was a
2 principled approach we do. It was informed by both
3 stakeholders as well as, as I discussed earlier, the
4 circumstances in which BC Hydro is operating in today.

5 **Proceeding Time 1:33 a.m. T37**

6 MR. MILLER: Q: Thank you. Now I want to follow up on
7 your answer to the question that I asked you just
8 before the break. And you've indicated that your
9 finalizing the priorities occurred subsequent to the
10 rate rebalancing amendment, correct?

11 MR. DOYLE: A: I guess the -- you know, where we
12 finalize them, I'm not sure where -- what date we
13 finally sort of landed on it. Where we presented it
14 at the workshop was July 30th. It would have been some
15 time before that where we were preparing our materials
16 and coming to that finalization.

17 MR. MILLER: Q: Did you have any inkling at the time
18 you were preparing this prioritization that perhaps
19 rate -- that rebalancing was coming down? Did that
20 influence your decision at all on the priorities?

21 MR. DOYLE: A: So I'll take that in two steps. I did
22 have an inkling that there was potentially going to be
23 a direction with respect to rebalancing. That being
24 said, it had no impact on our prioritization. The
25 prioritization is important when dealing with intra-
26 class, as we've talked many times about over the

1 course of the last couple of days, around the demand
2 charge allocation within the class.

3 MR. MILLER: Q: Okay. But as a result of the
4 amendment, we can't rate-rebalance between classes,
5 correct?

6 MR. DOYLE: A: That is correct.

7 MR. MILLER: Q: So am I correct, then, to say that when
8 we're talking about the fairness criterion with
9 respect to rate design, we're really only talking
10 about an intra-class fairness, as opposed to inter-
11 class fairness.

12 MR. DOYLE: A: So, that is a fair statement. All of
13 our -- we do design our rates from a revenue neutral
14 perspective. That being said, what we can't do is
15 take that additional step of rebalancing to ensure the
16 unity.

17 MR. MILLER: Q: Right. And with respect to the intra-
18 class ability you have to maybe change things intra-
19 class, is really the fairness criterion only going to
20 -- is only being used to examine cost recovery through
21 variable versus fixed costs? Is that the only time it
22 applies on the inter-class basis?

23 MR. DOYLE: A: I think that's generally the main area
24 that it's used for.

25 MR. MILLER: Q: So why is that, then -- if that's the
26 case, and we'll take that subject to check, if there's

1 something else you can let us know. But if that's the
2 case, why is it such a high priority, then, for the
3 RDA? You know, I'll put it to you, you seem kind of
4 constrained on what you're able to do. So why does it
5 have such a high priority?

6 MR. DOYLE: A: So, I think it has -- it is quite a high
7 priority when we're looking at -- you know, we looked
8 at our MGS and LGS rates. So we've talked about the
9 problems we had with the energy changes, and customers
10 not reacting to the two-part price signal. But
11 through sort of further investigation around those
12 rates, what we did determine was that the demand
13 charge -- there was no real cost basis around the way
14 the demand charge was structured. There was a three-
15 tier inclining demand block, but BC Hydro's cost of,
16 you know, additional demand on the system doesn't
17 necessarily -- it's not in a tiered relation. So
18 there was a disconnect there. So, that was an
19 important criteria that we look at.

20 MR. MILLER: Q: Okay, I want to move on to a new topic.
21 I've got a series of questions -- this is my last main
22 topic. It has to do with the E-Plus. Now, I'm not
23 going to ask you detailed questions about the rate
24 design. I'm going to ask you more policy-level
25 questions. So, you only need to provide your answers
26 with respect to policy level.

1 interruptability, is one of those clean capacity
2 resources that we think we are going to be going more
3 to in the future. And so there was an interest in
4 trying to make this part of that basket of goods and
5 make it useful as an interruptible rate.

6 MR. MILLER: Q: Can I get you to turn to page 551 of
7 the application? Do you have it there?

8 MR. ANDERSON: A: Yes.

9 MR. MILLER: Q: So, there is a table on that page which
10 shows the RC ratio between 45 and 95 percent, correct?

11 MR. DOYLE: A: That is correct.

12 MR. MILLER: Q: So how does allowing this rate to
13 continue, rather than eliminating it, meet the not
14 unduly discriminatory aspect of the legislative
15 requirements for the Commission approving just and
16 reasonable rates, when I am going to suggest to you,
17 that especially at 45 percent, is one of the lowest
18 ratios there is?

19 MR. ANDERSON: A: So, I think the way I would answer
20 that is really, this is a rate that is already in
21 existence and in place. And what I indicated
22 yesterday is we looked as best we could to find what
23 we believed was the right trade-off. The right trade-
24 off for E-Plus customers who, where there is quite a
25 history of the E-Plus rate commitments by Hydro to
26 those customers, albeit outside of the approved rate.

1 And what we looked at, and as Mr. Reimann indicated,
2 as we looked to explore ways that this could be useful
3 for our other customers is looking at this, if it was
4 interruptible, if we could interrupt it, how would we
5 do so? And could that truly be a capacity resource
6 that we could use in the future? And doing so, we
7 feel we found that balance. So, it is an
8 interruptible rate, that again now, with the proposed
9 changes, we would see other value for BC Hydro moving
10 forward.

11 MR. DOYLE: A: I'll also add, maybe to provide a little
12 bit of context around the table. So, if we look at
13 the preamble up above that, what it's talking about
14 there is the existing curtailment condition of lack of
15 surplus hydro, and sort of ways we could look at the
16 existing revenue-to-cost ratio. So with that, if we
17 had not assigned generation costs because of the
18 ability to curtail for lack of generation, you would
19 have 65 percent. The 45 percent there is sort of a
20 sensitivity if you were to include the generation
21 costs.

22 That being said, when we look at the
23 proposal, BC Hydro can interrupt for capacity or
24 generation, so you could also take the capacity costs
25 out in the same way we do with our interruptible
26 rates.

1 MR. DOYLE: A: Okay.

2 MR. MILLER: Q: Do you have that now?

3 MR. DOYLE: A: We do.

4 MR. MILLER: Q: Are you familiar with it? Or do you
5 want to read it before I ask you questions?

6 MR. DOYLE: A: Well, we could take a couple -- a few
7 minutes to go through.

8 MR. MILLER: Q: Sure. While you're reading it, I'll
9 tell you the question so you can understand the
10 context. Here there seems to be a response from the
11 then Minister indicating that there was a priority for
12 interruptibles. And I'm going ask you a question
13 about your response to the IR where you indicated
14 there was no hierarchy.

15 So my first question is, the Minister has
16 made a statement. Was that ever BC Hydro's policy?

17 MR. REIMANN: A: So I think there's -- I can only
18 guess, I'm not sure what was going on at this point.

19 MR. MILLER: Q: Sure. Just based on your knowledge,
20 yeah.

21 MR. REIMANN: A: My general understanding of the way we
22 would operate the system is, if we run into problems,
23 some sort of an outage, our general sort of priority
24 would be taking out large customers, largely because
25 they're single and unidentifiable. And so we'd go
26 industrial, commercial, residential, as a general

1 rule.

2 **Proceeding Time 1:48 p.m. T40**

3 But if it's an interruptible rate, then it
4 becomes a question of what's practical to do. And so
5 one of the tradeoffs that we had with E-plus was to
6 the extent that we needed to give two days' notice,
7 would mean that we'd have to decide whether or not we
8 were going to interrupt a day before we would do so
9 for large industrials, or two days before we would do
10 if there was uninterruptible customers that we
11 ultimately would have to interrupt for liability
12 stability reasons. So, but as far as I know, I'm not
13 aware of any regulation or anything requiring us to
14 interrupt. This is more of an operating practice.

15 MR. MILLER: Q: But practically, I think that there is
16 a hierarchy. I mean, if you have needs on a system
17 where you have to interrupt, you're going to go after
18 the easier, bigger targets. I mean, this amount of
19 incremental energy that you can save from this group
20 is minuscule. You'd have to be in a really category
21 -- or really dire situation, wouldn't you?

22 MR. REIMANN: A: Well, so the idea -- and I think we
23 had spoken to this earlier, but the idea is that where
24 we anticipate that some combination of customer
25 interruptibility rates would in aggregate form part of
26 a larger bucket of resources. So with the industrial

1 load curtailment we have 100 megawatts. This could be
2 another 25. 125 megawatts isn't inconsequential.

3 And so we would anticipate that as we get
4 into wintertime situations, and I think I had
5 mentioned that we were anticipating that it may be up
6 to three times a winter and up to two weeks at a time,
7 that we would seek in cold snaps to interrupt these
8 customers and take that load off the system. And that
9 would reduce the pressures of meeting load and having
10 adequate capacity in our most constraining period.
11 And by aggregation, it's our belief that we're
12 starting in on this. We've got that load control with
13 the distribution customers in Victoria and the
14 industrial load curtailment. This would be the third
15 thing, and it's an area that I expect we're going to
16 keep working on and it will be helpful.

17 MR. MILLER: I apologize, Mr. Chair. Just one moment.

18 MR. MILLER: Q: I want to talk now briefly about MGS
19 and LGS, again on a high level principle basis. Now,
20 it's my understanding that Order G-16-16 approved BC
21 Hydro's request to change the pricing for new accounts
22 that do not have a historical baseline, and the change
23 is to 100 percent Part 1 pricing, and I think as was
24 referred to earlier this morning.

25 Now, as I understand it in this
26 application, the Commission is going to have to decide

1 on whether to approve the existing rate structure,
2 which I understand, at least at the time they were
3 introduced, had the overarching objective of giving
4 customers an efficient price signal to induce
5 conservation. That was the purpose of Tier 2, right?

6 MR. DOYLE: A: Yes, it was to incent conservation.

7 MR. MILLER: Q: Right.

8 MR. DOYLE: A: I would say that the MGS with the flat
9 rate still remains as an efficient price signal by
10 definition that it reflects the long run marginal
11 cost. There's just not a tiered aspect to it.

12 MR. MILLER: Q: And so can you, just on a high level
13 basis, why is it better to go to a flat rate than to
14 maintain the existing rate while you're working on a
15 solution? Can you explain to the Panel why you've
16 made this option?

17 **Proceeding Time 1:53 p.m. T41**

18 MR. DOYLE: A: Yes. So there's a number of reasons we
19 made this option. I think first and foremost is
20 feedback from a number of our customers around the
21 difficulty in understanding the MGS two-part rate.
22 Throughout our engagement we worked with our
23 customers, both the stakeholders as a whole, but also
24 we had extensive engagement with individual customers.
25 And hearing their feedback on the MGS and the Large
26 General Service rates.

1 And overwhelmingly we heard concerns around
2 how the rate is structured provides it's -- it makes
3 it challenging for them for business planning
4 purposes, because of the baseline. It's set on a
5 three-year sort of rolling average cycle. So changes
6 in customers' production from, you know, one time
7 period to another can affect the way their base --
8 their energy and their baselines and their bills
9 interact. And customers found great difficulty in
10 that.

11 Further, there was very little conservation
12 achieved from the rate. And we did look at, through
13 the course of our engagement, a variety of potential
14 changes to the rate to try to achieve conservation.
15 And in all cases the feedback we received from our
16 customers, and I think our general feeling as well,
17 was that none of these changes were going to result in
18 any conservation.

19 So the best way to do it was to go to a
20 flat rate, that's easily understood by the customers,
21 works for their business planning needs, and that was
22 where we -- what we proposed.

23 I would also add that, you know, we looked
24 throughout North America. BC Hydro was on the
25 bleeding edge of implementing these rates. To my
26 knowledge we're the only -- we were the only utility

1 to implement a two-part rate for our general service
2 class of customers, and my understanding is we're
3 still the only general -- the only utility to have
4 that.

5 And I think what's been demonstrated is,
6 it's not overly compatible with that group of
7 customers. So that's why we've made those changes
8 now.

9 MR. MILLER: Q: Now, I'm going to put a proposition to
10 you, and I think it's already been addressed in the
11 workshop, but I want to make sure the Panel members
12 are aware of it. So, first of all, it would seem
13 counter-intuitive that a group of what you would
14 consider smarter consumers, these larger customers,
15 wouldn't be able to understand the price signal or how
16 to manage it when it's apparently having an effect on
17 the residential class, where it's much easier to
18 understand. But I -- you know, I'm going to ask you
19 to confirm the difference is the baseline that's being
20 imposed on these other classes. It's difficult for
21 customers to figure out. Is that right? The effect
22 of it.

23 MR. DOYLE: A: Yes, the two structures are very
24 different. So the RIB structure is quite simple.
25 There is a fixed threshold of 675 kilowatts per month.
26 And below that you pay one price, and above it you pay

1 the higher Tier 2 price. The medium general service
2 and large general service rates have customer-specific
3 baselines that are based on their historical averages.
4 And there is multiple parts to the rate. And some
5 customers never see the second part, they only see the
6 first part. So there is -- they're two very different
7 rates, the MGS/LGS being a much more complicated rate
8 structure.

9 MR. MILLER: Q: So then the next natural question would
10 be, is, well, why don't you just educate them so they
11 understand it? But I understand this has already been
12 addressed in the workshop as well, so perhaps you
13 could provide an explanation to the Panel.

14 MR. ANDERSON: A: So there's been extensive engagement
15 on MGS/LGS rate, and trying to increase customer
16 understanding of that. And our belief is that, you
17 know, further education in that regard would not
18 really be beneficial.

19 And as Mr. Doyle said, it's really through
20 engagement with those customers and going through the
21 complexity of that rate that it really was evident
22 that this is -- the existing rate is a very difficult
23 one for them, and doesn't align with their business.

24 And I do believe there's an IR that I can
25 find here that --

26 MR. MILLER: Q: That's fine.

1 MR. ANDERSON: A: Is that okay?

2 **Proceeding Time 1:57 p.m. T42**

3

4 MR. MILLER: Q: No, I think yesterday there was some
5 discussion, I can't remember who was asking you.

6 MR. CHRISTIAN: Sorry, I think the witness was trying to
7 find the IR --

8 MR. MILLER: Oh, I said it was okay, he didn't need to.

9 MR. CHRISTIAN: I think he understood, yeah, that's a
10 good idea.

11 MR. MILLER: Q: You can point to the IR, that's fine.

12 MR. ANDERSON: A: Sure, give me a moment. Yeah, so we
13 talked to that in BCUC IR No. 1.66.1, where we outline
14 really that position.

15 MR. MILLER: Q: Okay, so to continue on then, there was
16 some discussion yesterday about what you're proposing
17 to do to try and see if you can send a conservation
18 signal, I understand, to this group of customers, is
19 that correct? And there is going to be some further
20 work on it?

21 MR. DOYLE: A: I can take that question. So I think
22 that comment was more with respect to the large
23 general service class.

24 MR. MILLER: Q: Okay.

25 MR. DOYLE: A: I think it was -- our engagement I think
26 was probably more clear on the medium general service

1 class that their, the likelihood of there being a rate
2 that would incent conservation is probably less. The
3 large general service class, what we're looking at is
4 whether the largest portion of the large general
5 service, so I think we've called them extra large
6 general service, whether there is a basis to break
7 that group out and maybe we can develop a -- there has
8 been some suggestions of a rate more similar to
9 transmission service rate customers. So, if we did it
10 for say the top few hundred general service customers,
11 that would be administratively possible, as opposed to
12 trying to implement that for the 6,000 large general
13 service customers.

14 So I think the comment was more focused
15 towards the large general rather than the medium
16 general service.

17 MR. MILLER: Q: Thank you. So, I also understand that
18 time of use rates are not in accordance with
19 government policy at this time, but would time of use
20 rates perhaps send a proper conservation signal to
21 this group of customers?

22 MR. DOYLE: A: So, I can take the question. I think I,
23 you know, to confirm that mandatory time of use rates
24 are not consistent with government policy. With
25 respect to the efficient signal, or the conservation
26 signal, time of use rates are aimed typically at

1 capacity, because we're trying to shift consumption
2 from high peak hours to low peak hours, rather than
3 reducing the absolute level of consumption, which is
4 what the residential inclining block rate was intended
5 to do, and what the intent of the medium general
6 service and large general service. So, those rates
7 were -- those rates target reducing overall
8 consumption, whereas the time of use rates targets
9 moving that consumption from one time to another.

10 MR. MILLER: I am going to hand out a witness aid, Mr.
11 Chair. This was unfortunately given to the Panel this
12 morning. I hope they've had a chance to identify it
13 -- or digest it I guess I should say.

14 Now, panel, can I confirm that you've had a
15 chance to review this witness aid?

16 **Proceeding Time 2:01 p.m. T43**

17 MR. DOYLE: A: Yes, we have reviewed it.

18 MR. MILLER: Q: Okay. Now, subject to check -- I don't
19 know if you had a chance to go back and check all
20 these rates or not, but subject to check, do you agree
21 that the other interruptible rates, without underlying
22 rates like namely the shore power services, pay a much
23 higher energy charge than E-Plus?

24 MR. DOYLE: A: I can confirm that they pay a higher
25 energy charge than E-Plus customers.

26 MR. MILLER: Q: Now, as a matter of policy, even though

1 it may not be formal policy, wouldn't it be right to
2 interrupt the general service and transmission service
3 customers first, even though their rates are higher,
4 just for practical reasons? There's more savings
5 there, or more energy you can use.

6 MR. DOYLE: A: Repeat the question, please, Mr. Miller?

7 MR. MILLER: Q: Sure. As a matter of a practical
8 basis, if you're facing a situation where you have to
9 interrupt some customers, practically you're going to
10 go on a general basis the larger customers first.
11 Because there's more ability to interrupt there.
12 There is more interruptible energy available there to
13 solve your problem.

14 MR. DOYLE: A: So all else held equal, I think that's a
15 fair proposition. But as Mr. Reimann stated earlier,
16 there are specifics to when you may interrupt, given
17 the notice periods or other criteria. So all else
18 held equal, I think the proposition makes sense.

19 MR. MILLER: Q: Yeah.

20 MR. DOYLE: A: That being said, there is notice periods
21 and that which would obviously have an impact on the
22 interruption.

23 MR. MILLER: Q: Okay. And so just on a high level, if
24 that's right, why wouldn't the E-Plus customers, if
25 they are practically, at least on a general level, all
26 else equal, be charged a higher energy rate, seeing

1 that they're practically on the lower hierarchy of
2 interruption? It seems contrary to policy. But it
3 may not be, so I'm giving you an opportunity to
4 explain.

5 MR. DOYLE: A: So maybe I'll start with providing some
6 context around the shore power rates, and Mr. Anderson
7 can speak more to the E-Plus rate.

8 So the shore power rates referenced in this
9 table, the basis for that charge is the -- roughly the
10 Tier 2 of the transmission service rate. And that was
11 based on rate schedule 1880. And one of the
12 considerations when we were engaging with customers
13 there on the rate was when -- there was a desire to
14 have some level of certainty around the prices. So
15 rather than using potentially a market-based price for
16 what the interruptible energy could have been priced
17 at, the customers felt that they would rather have
18 certainty around that price.

19 So when cruise ships are coming in, the
20 terms -- they're not making decisions of whether it's
21 more effective -- more cost-effective to go onto
22 diesel or generation, depending on the market price.
23 So there was a cost certainty element there, and that
24 was the basis of where those shore power prices come
25 from.

26 The E-Plus, obviously, that was a rate

1 done so prior to 1991, and they've had that rate for a
2 period of 25 years?

3 MR. DOYLE: A: Correct, other than those that maybe
4 bought a house and was transferred at the time, before
5 2007-2008.

6 COMMISSIONER COTE: And I think you reported yesterday
7 the savings were approximately 50 percent to this
8 group?

9 MR. ANDERSON: A: That's the average rate difference
10 between the regular price and the E-Plus price.

11 COMMISSIONER COTE: And how does that compare to the
12 other interruptible rates which Mr. Miller has been
13 addressing?

14 MR. REIMANN: A: So I had mentioned a price of -- works
15 out to about 2 cents a kilowatt hour if it was made at
16 the same level as the large industrial interruptible.
17 And that works out to about 20 percent, versus 50
18 percent.

19 COMMISSIONER COTE: Okay, have you ever considered
20 changing, or looking at a price change along the way
21 over the last 25 years?

22 MR. DOYLE: A: So, I am not sure prior to.

23 COMMISSIONER COTE: Fair enough, I am just dealing with
24 more recent --

25 MR. DOYLE: A: Yeah, more recently we considered it.
26 It was one of the considerations when we were looking

1 at, you know, what changes. Obviously that was one of
2 the options with the E-Plus. I know there were some
3 -- BC Hydro had said it would never be lower than two-
4 thirds of the rate, in some of the communications that
5 the E-Plus customers have put on the record. And also
6 taking in the feedback sort of some of the bill
7 impacts that would -- those customers would experience
8 if we made that change. So obviously we are making a
9 change to make it practically interruptible and that
10 was sort of where we felt the changes were best
11 addressed.

12 COMMISSIONER COTE: I understand where you're going.

13 Now, I think it's one of the IRs. BCUC 2.143.6.3, and
14 no need to look it up. Basically your final paragraph
15 in it, and it was alluded to by Mr. Miller,

16 "Given the E-Plus business practice would
17 require BC Hydro to provide interruption
18 notice two days ahead, BC Hydro would
19 interrupt E-Plus customers when resources
20 are forecast to be limited, or even if the
21 situation does not actually materialize."

22 Could you explain why, if there is not a problem, why
23 you would do it in any case?

24 MR. REIMANN: A: Ultimately it comes down to

25 forecasting weather and forecasting load. And so --

26 COMMISSIONER COTE: I understand that, yeah.

1 MR. REIMANN: A: And so that's why. So there was --
2 the question was, is how much notice, and there was
3 talk about a seasonal notice.

4 COMMISSIONER COTE: No, I understand the notice part, I
5 am just wondering that if the situation didn't evolve
6 as forecast, then you'd still cut them off.

7 MR. REIMANN: A: So once we've given them two days
8 notice that the interruption is to happen, they need
9 to act. So, if we get to that period and if we find
10 out that the cold snap never happened, or the load
11 isn't as large as we expected, then I think we could
12 get back to them and say "Okay, the event is over."
13 But they may have already been interrupted before we
14 know whether or not the weather pattern is happening,
15 or when it is happening.

16 COMMISSIONER COTE: Okay, so what you're saying is that
17 the reason why you've done this is that it may have
18 already -- the event or the timing date may have
19 already passed it, and you realize it wasn't as bad as
20 you thought and --

21 MR. REIMANN: A: Right.

22 COMMISSIONER COTE: I understand.

23 THE CHAIRPERSON: I have a question about the long run
24 marginal cost, and using IPP greenfield projects as a
25 measure of the long run marginal cost. Is it correct
26 that there is some IPP greenfield projects that

1 provide intermittent energy?

2 **Proceeding Time 2:01 p.m. T43**

3 MR. REIMANN: A: Yes.

4 THE CHAIRPERSON: Yes. So, for example, wind and run-of-
5 river.

6 MR. REIMANN: A: So when I talked about the energy,
7 long-run marginal cost versus capacity --

8 THE CHAIRPERSON: Yes.

9 MR. REIMANN: A: The reason we do an energy long-run
10 marginal cost --

11 THE CHAIRPERSON: Right.

12 MR. REIMANN: A: -- is so that resources are treated on
13 a comparable basis.

14 THE CHAIRPERSON: Right.

15 MR. REIMANN: A: And so how do you compare the value of
16 a biomass project which has capacity to a wind or a
17 run-of-river one that would have marginal capacity.
18 And so what we do is, we take the amount of capacity
19 contribution that they give to the system, we back
20 that out, and what you're left with is a strictly
21 energy cost.

22 THE CHAIRPERSON: But if you have to commission
23 additional resources to provide a back-up for an
24 intermittent resource, should the cost of that back-up
25 resource -- would that not be considered in the energy
26 cost of the intermittent resource? Because the

1 carrying costs, at least, of that would -- are they
2 not considered as part of the energy cost of the
3 intermittent resource?

4 MR. REIMANN: A: So we've broken that out of the energy
5 cost.

6 THE CHAIRPERSON: And that comes into the capacity side
7 of it.

8 MR. REIMANN: A: Right. And so it's definitely true
9 that you would need both in some mix, depending on
10 what your situation.

11 THE CHAIRPERSON: Yes, right.

12 MR. REIMANN: A: You'd need energy and capacity to meet
13 the load.

14 THE CHAIRPERSON: Right.

15 MR. REIMANN: A: And so the question becomes, if this
16 is the cost for the energy only, and not the capacity
17 --

18 THE CHAIRPERSON: Right.

19 MR. REIMANN: A: -- if it's an energy rate, do you put
20 that capacity price signal in there?

21 THE CHAIRPERSON: Right. Okay. Thank you.

22 MR. REIMANN: A: Okay.

23 THE CHAIRPERSON: We don't have any further questions.
24 Mr. Christian, do you have any re-
25 examination?

26 MR. CHRISTIAN: I do not.

1 THE CHAIRPERSON: Okay. Well, on that note, then, thank
2 you much, I appreciate that, panel.

3 MR. REIMANN: A: Thank you.

4 (WITNESSES ASIDE)

5 THE CHAIRPERSON: And we'll take a few minutes, then, as
6 we prepare for the pricing panel, is that correct?

7 MR. CHRISTIAN: That's correct. Panel number two.

8 THE CHAIRPERSON: Okay, so -- pardon me?

9 MR. CHRISTIAN: Panel number two.

10 THE CHAIRPERSON: Panel number two. So we'll come back
11 at 25 after.

12 (PROCEEDINGS ADJOURNED AT 2:12 P.M.)

13 (PROCEEDINGS RESUMED AT 2:27 P.M.)

14 THE CHAIRPERSON: Please be seated.

15 Mr. Christian?

16 MR. CHRISTIAN: Mr. Chairman, I'm happy to present BC
17 Hydro's policy -- or, sorry, pricing panel. Panel
18 number 2. Starting closest to you, Ms. Anthea Jubb,
19 Mr. Paulus Mau, Mr. Gordon Doyle, who you're now very
20 familiar with, and Dr. Ren Orans.

21 The witnesses, with the exception of Mr.
22 Doyle, could be sworn, please. Mr. Doyle remains
23 under oath, is my understanding.

24 **BC HYDRO PANEL 2 - PRICING PANEL:**

25 **ALTHEA JUBB, Affirmed:**

26 **PAULUS MAU, Affirmed:**

1 **GORDON DOYLE, Resumed:**

2 **REN ORANS, Affirmed:**

3 MR. CHRISTIAN: Thank you, Mr. Bemister.

4 **EXAMINATION IN CHIEF BY MR. CHRISTIAN:**

5 MR. CHRISTIAN: Q: Ms. Anthea Jubb. You are Ms. Anthea
6 Jubb?

7 MS. JUBB: A: Yes, I am.

8 MR. CHRISTIAN: Q: And you are the manager of
9 conservation and energy management evaluation at BC
10 Hydro?

11 MS. JUBB: A: Yes.

12 MR. CHRISTIAN: Q: And you've had that position since
13 2012.

14 MS. JUBB: A: I have.

15 MR. CHRISTIAN: Q: Could I have you turn to your direct
16 testimony, please? It's part of Exhibit B-38.

17 MS. JUBB: A: Yes, I have it here.

18 MR. CHRISTIAN: Q: Do you have any corrections you'd
19 like to make to that testimony?

20 MS. JUBB: A: I do have a correction, thank you for
21 that.

22 Under question 7, in the list of IRs that
23 I'm listed as being responsible for, there is an error
24 in round 1. It notes that I'm responsible for COPE IR
25 1.36.1. My apologies, that IR doesn't exist. It
26 should have read CEC IR 1.36.1.

1 MR. CHRISTIAN: Q: Thank you. And do you have any
2 other amendments or corrections you'd like to make to
3 your testimony, or the IR responses that you're
4 responsible for?

5 MS. JUBB: A: I do have a correction to an IR, which
6 might be easier to follow along if I point you to the
7 reference. This is -- can be found in Exhibit B-23,
8 and it's BCUC 2.178.1.

9 THE CHAIRPERSON: Sorry, what was the number?

10 MS. JUBB: A: BCUC 2.178.1.

11 THE CHAIRPERSON: Thank you.

12 **Proceeding Time 2:30 p.m. T46**

13 MS. JUBB: A: Starting on the second page of that IR,
14 you'll find two tables. And there is a descriptive
15 text immediately above the first table. The last
16 sentence of the last paragraph above the first table
17 reads,

18 "This is more than offset by the
19 conservation effect of the RIB rate on step
20 2 consumption, which ranged from a low of 43
21 gigawatt hours to a high of 216 gigawatt
22 hours."

23 The 43 reference is an error, and it should indeed
24 read 18, which is what is shown in the table. This
25 error -- this correction does not change BC Hydro's
26 answer to the IR, which to summarize is that BC Hydro

1 recognized that Step 1 customers had a price response
2 due to natural conservation, and that this response
3 was more than offset by the effect of the RIB rate on
4 Step 2 consumption.

5 MR. CHRISTIAN: Q: Thank you, Ms. Jubb, and subject to
6 those corrections, can you confirm that your direct
7 testimony and the evidence referred to therein is
8 accurate and true to the best of your knowledge and
9 belief?

10 MS. JUBB: A: Yes, I can.

11 MR. CHRISTIAN: Q: And do you adopt your direct
12 testimony in evidence in this proceeding?

13 MS. JUBB: A: I do.

14 MR. CHRISTIAN: Q: Thank you. Mr. Mau, can you confirm
15 that you are Mr. Paulus Mau?

16 MR. MAU: A: Yes.

17 MR. CHRISTIAN: Q: And you are a senior regulatory
18 specialist with BC Hydro?

19 MR. MAU: A: That is correct.

20 MR. CHRISTIAN: Q: And you've had that position for
21 four years?

22 MR. MAU: A: That's correct.

23 MR. CHRISTIAN: Q: Could I have you please turn to your
24 direct testimony as part of Exhibit B-38?

25 MR. MAU: A: Yeah, I have it.

26 MR. CHRISTIAN: Q: Do you have any corrections you'd

1 like to make to that testimony sir?

2 MR. MAU: A: No.

3 MR. CHRISTIAN: Q: And is your direct testimony, and
4 the evidence referred to therein, accurate and true to
5 the best of your knowledge and belief?

6 MR. MAU: A: Yes.

7 MR. CHRISTIAN: Q: And do you adopt your direct
8 testimony evidence in this proceeding?

9 MR. MAU: A: Yes.

10 MR. CHRISTIAN: Q: Thank you. Dr. Ren Orans, you are
11 Dr. Ren Orans?

12 DR. ORANS: A: Yes, I am.

13 MR. CHRISTIAN: Q: And you are the founder and managing
14 partner of environmental -- Energy and Environmental
15 Economics, a firm you founded in 1989?

16 DR. ORANS: A: Yes, that's correct.

17 MR. CHRISTIAN: Q: And could I have you turn to your
18 direct testimony, please.

19 DR. ORANS: A: Yes, I have it.

20 MR. CHRISTIAN: Q: Do you have any corrections you'd
21 like to make to that testimony?

22 DR. ORANS: A: No, I do not.

23 MR. CHRISTIAN: Q: And is your direct testimony, and
24 the evidence referred to therein, accurate and true to
25 the best of your knowledge and belief?

26 DR. ORANS: A: Yes, it is.

1 MR. CHRISTIAN: Q: And do you adopt your direct
2 testimony in this proceeding?

3 DR. ORANS: A: Yes, I do.

4 MR. CHRISTIAN: Q: And Dr. Orans, I'd like you to turn
5 to your curriculum vitae, attached to your direct
6 testimony and --

7 DR. ORANS: A: Yes, I have it in front of me.

8 MR. CHRISTIAN: Q: Thank you. And if you could by
9 reference to your curriculum vitae, give a summary
10 background of your experience in electricity rate
11 design since you founded E3 and prior to that if it is
12 relevant?

13 DR. ORANS: A: Yes, I'd be happy to do that. For the
14 last -- since 1989 I've been the managing partner of
15 Energy and Environmental Economics. We specialize in
16 consulting for large power systems. Electric
17 utilities, public and private, large hydro systems,
18 particularly west coast systems with high levels of
19 renewable integration issues. We are also working
20 extensively in New York and in Hawaii, where they are
21 also doing lots of renewable integration.

22 Prior to forming my energy consulting
23 company, I worked at Pacific Gas and Electric company,
24 for five years. My last job at PG&E, which at the
25 time was the largest vertically integrated utility in
26 North America, I was responsible for the design of all

1 electric rates. I have a bachelor of arts from U.C.
2 Berkeley in economics, and I have a masters degree and
3 Ph.D. degree from Stanford University in civil
4 engineering.

5 I list in my CV a number of large projects
6 I've worked on, directly related to wholesale and
7 retail rate design. My experience in wholesale rate
8 design, I've worked in Quebec and in Ontario and in
9 British Columbia and was a principle witness in
10 gaining market access for power for all three
11 jurisdictions. I also have an extensive list of
12 publications. I have 24 refereed journal articles
13 relating to rate design and asset evaluation, and a
14 number of other publications.

15 MR. CHRISTIAN: Q: Thank you, Dr. Orans. Subject to
16 any questions or submissions from my friends, I
17 propose to have Dr. Orans qualified as an expert in
18 electricity rate design?

19 THE CHAIRPERSON: Are there any submissions from anyone
20 on that? Certainly.

21 **Proceeding Time 2:35 p.m. T47**

22 MR. CHRISTIAN: Thank you, Mr. Chairman, and the panel is
23 available for cross-examination.

24 THE CHAIRPERSON: Thank you. Ms. Khan?

25 **CROSS-EXAMINATION BY MS. KHAN:**

26 MS. KHAN: Q: Good afternoon, panel. And I'd just like

1 to also inform the Commission that for our questions
2 for Panel 2, I'll be asking questions relating to
3 residential rate design and pricing principles, and
4 Erin Pritchard will be asking questions relating to
5 general service and transmission rates.

6 Panel, I'd like to start with a question
7 that I had originally asked Panel 1 but they asked me
8 to redirect it to you. And so I'd like to turn to a
9 witness aid that we had referenced, which was -- let
10 me just find the exhibit number.

11 So it's at Exhibit B-19. It's the revised
12 response to BCOAPO 1.108.4 and it's at the Excel
13 spreadsheet attachments and I had handed out copies of
14 the spreadsheet. It looks like this. Sorry, I should
15 have advised you right at the outset.

16 MR. DOYLE: A: Sorry. Is the title of that one
17 "Potential Cost Savings From --"?

18 MS. KHAN: Q: That's right. "Potential Cost Savings
19 From an Energy Saving Kit." So in this sheet we see
20 that it shows a maximum savings of \$113.37 from an
21 Energy Savings Kit where 75 percent of the savings is
22 the number that appears to be due to a reduction in
23 natural gas consumption. So how are you -- well,
24 first of all, how did you come up with the savings
25 between the three items that are listed at the bottom
26 of that chart under "Gas" -- next to "Gas"? How did

1 you come up with the amount of estimated annual
2 savings there? And also, how can you attribute
3 electricity savings to gas related savings in this
4 case? Or vice versa?

5 MS. JUBB: A: The savings for -- maybe I'll start by
6 just saying what the table lists is the number of
7 products that are included in the Energy Savings Kit,
8 which is a kit of energy conservation measures that BC
9 Hydro provides at no cost to low income customers.
10 And listed there are the product types and the
11 estimated annual savings from installation of each of
12 those products. Depending on the fuel mix in the
13 home, the products will either save electricity or
14 they'll save natural gas. As this program is
15 delivered in partnership with Fortis, customers with
16 natural gas fuel mix are also eligible for it. So the
17 customer savings will depend to a certain extent on
18 the fuel mix in their house.

19 In this example, which is an example of the
20 maximum savings that a customer could obtain, the
21 natural gas savings here are associated with natural
22 gas hot water. And those natural gas savings of
23 \$84.97 were provided by Fortis. The other line items
24 save electricity and those savings would be derived
25 based on what are called engineering calculations that
26 take into account the usage of a device such as the

1 immediate prior table, which shows the estimated -- do
2 you guys -- does everybody have the immediate prior
3 table?
4 MS. KHAN: Q: Yes. Yeah. Well, we handed that out
5 this morning.
6 MS. JUBB: A: You handed that out, right? Yeah.
7 MS. KHAN: Q: Or yesterday.
8 MS. JUBB: A: And it shows the savings for a faucet
9 aerator at 35 kilowatt-hours per year. And that is --
10 that would be if it was electrically heated.
11 THE CHAIRPERSON: But that's not in dollars.
12 MS. JUBB: A: No, that's not in dollars.
13 THE CHAIRPERSON: Okay. I'm sorry to interrupt.
14 MS. KHAN: Q: No, no, that was a good --
15 MR. PULLMAN: Ask him what it would be in dollars?
16 MS. KHAN: Q: What would it be in dollars, on that
17 first table?
18 MS. JUBB: A: Paulus brought his calculator. I should
19 have brought mine.
20 MS. KHAN: Q: Thanks. We assume it's about \$3.
21 MS. JUBB: A: Yeah, \$3.50, yeah, roughly.
22 MS. KHAN: Q: In annual savings.
23 MS. JUBB: A: Yes. And I believe that the number of
24 aerators -- I think it varies.
25 MS. KHAN: Q: Two.
26 MS. JUBB: A: Yeah, and I -- yes. Depending on the

1 customer selection, I believe they can choose a
2 different number of aerators.

3 MS. KHAN: Q: Okay. Is it possible that Fortis has
4 given you a misleading number for the savings that
5 customers could achieve on the page where it shows the
6 potential gas savings for faucet aerators?

7 MS. JUBB: A: We certainly would not expect that to be
8 the case. The savings for gas -- the \$84 here, are
9 combined across a number of measures, including the
10 low-flow shower head and the water heater pipe rack.

11 MS. KHAN: Q: Could you request -- would it be possible
12 for you to request from Fortis the data supporting the
13 number for the \$85 in savings for the gas customers?
14 On the second page of those charts.

15 MS. JUBB: A: We can certainly request it. However,
16 I'm not sure the analytical burden --

17 MS. KHAN: Q: Sure.

18 MS. JUBB: A: -- that would be involved in responding
19 to that undertaking.

20 MS. KHAN: Q: Okay. And I understand that you can't
21 give -- you can't really give an undertaking for
22 Fortis to respond to you.

23 MS. JUBB: A: Right.

24 MS. KHAN: Q: So I'm just asking that you make a
25 request to them and see if they can provide the
26 information to you.

1 MR. CHRISTIAN: We can do that. We can make a request.
2 But as you say, there is no undertaking beyond the
3 request.

4 MS. KHAN: Q: Yes. Accepted.

5 **Proceeding Time 2:44 p.m. T49**

6 MS. JUBB: A: Mr. Doyle was just pointing out, which I
7 was perhaps unclear, that a kit can include multiple
8 aerators. So the unit savings for one would be 35
9 kilowatt hours per year. But a customer could request
10 up to three or four.

11 MS. KHAN: Q: Right. But in a standard kit, how many
12 aerators are there?

13 MS. JUBB: A: I believe that the -- subject to check, I
14 believe the customers now can specify the number of
15 aerators that they want. So there is some
16 customization, I believe, in the kits now.

17 MS. KHAN: Q: Right, okay.

18 MS. JUBB: A: As, of course, as if you -- as a standard
19 process.

20 MS. KHAN: Q: I was more just asking as a -- you know,
21 for example, we requested a bunch of kits from Hydro
22 to hand out to groups, you know, representatives of
23 low-income service organizations. And in the kit that
24 you sent us, would those -- I didn't actually look
25 inside to see how many aerators there were, but in a
26 standard kit, would there be one aerator, as far as

1 you know?

2 MS. JUBB: A: In terms of the current practice, I'm not
3 sure. I do know that there is a different kit for
4 apartments versus for single-family homes.

5 MS. KHAN: Q: Right.

6 MS. JUBB: A: So I would imagine that there would be a
7 different number of aerators as a standard practice,
8 depending on the housing type.

9 MS. KHAN: Q: Yeah, and you would accept those at --
10 it's -- or, in general terms, there are quite a high
11 number of residential ratepayers who live in
12 apartments. And in general, generally speaking,
13 apartments often just have one bathroom.

14 MS. JUBB: A: The aerator can also be used in the
15 kitchen. And that -- in the kitchen sink. And that
16 might be a more common application of it.

17 MS. KHAN: Q: Okay.

18 MS. JUBB: A: But I would certainly accept your premise
19 that there would be relatively fewer aerators used in
20 apartments, and that the savings for a single aerator
21 are modest, if that's your point.

22 MS. KHAN: Q: Okay, thank you. Now, I'm wondering,
23 panel, if you could turn to Exhibit B-1, page 5-25.
24 And that's at page 221 of the PDF version, electronic
25 version of the application. Here there is a couple of
26 tables -- Table 5-3 and 5-4. And would I be correct

1 in saying that the purposes of the -- well, I'll start
2 with Table 5-4. So would I be correct in saying that
3 the purpose of this table -- the purposes that you are
4 comparing the F2017 bills under your proposed RIB rate
5 with Option 1, with the F2017 bills if flat rates were
6 adopted?

7 MR. DOYLE: A: Yes, that would be the first column.
8 And the third column.

9 MS. KHAN: Q: Now, I don't need to -- I don't think we
10 need to turn to this response, but I'll just give the
11 reference anyway. So in response to BCOAPO 2.266.1,
12 which for the record is at Exhibit B-23 at page 422 of
13 the PDF, you explained by "better off" -- so better
14 off being referenced in the tables here, that by
15 "better off" you meant that bills were at least one
16 percent lower. So for example for the low-income --
17 for low-income, the table indicates that with the flat
18 rate, nine percent of customers would see bills that
19 are lower by one percent or more. Is that an accurate
20 description?

21 MR. DOYLE: A: Yes, it is.

22 MS. KHAN: Q: And can you tell us if there would be
23 low-income customers that would see bills that were 10
24 percent lower or more, under the flat rate? And you
25 can use the 2017 numbers. And we just need general --
26 generally to know whether there were -- there are low-

1 income customers that would see bills that were 10
2 percent lower or more.

3 **Proceeding Time 2:49 p.m. T50**

4 MR. DOYLE: A: So, while we can't discern that from the
5 information provided in Table 5.4, what I can say is
6 if you look at Figure 5-13 which is on the preceding
7 page, if a customer were to have a bill impact of less
8 than 10 percent they would have very large usage. You
9 can see the shape of where you start to get bill
10 impacts going well below zero. You start to get into
11 very large consumption, much over 18,000 kilowatt
12 hours per year.

13 MS. KHAN: Q: Okay.

14 MR. DOYLE: A: So if there was it would be a very very
15 large customer.

16 MS. KHAN: Q: Okay. A very very large low income
17 customer. Large consuming low income customer.

18 MR. DOYLE: A: Very large consuming.

19 MS. KHAN: Q: Okay. And so on the downside can you
20 tell us how many low income customers would be worse
21 off under the flat rate proposal? i.e. seeing bill
22 increases of 1 percent or more? And I think the
23 answer is found in your response to BCSEA 1.8.1, which
24 says that 137,701 customers would see that bill
25 impact. Is that --

26 MR. MAU: A: Can you repeat the question please?

1 MS. KHAN: Q: Sure. So on the downside can you tell us
2 how many low income customers would be worse off under
3 the flat rate proposal, seeing bill increases of 1
4 percent or more?

5 MR. MAU: A: Yes, so that would be the 137,701 as
6 referenced in the IR you mentioned.

7 MS. KHAN: Q: Okay. And that number, the 137,701
8 number, is that in the context -- is low income being
9 defined as before tax LICO and under?

10 MR. DOYLE: A: Yes, we're using the LICO number.

11 MS. KHAN: Q: Okay. Next I'm wondering if you could
12 turn to Exhibit B-1 at page 5-38, and that's page 234
13 of the PDF version. So here you set out the bill
14 impacts of Option 2, which applies all of the revenue
15 requirement increases for F2017 to the basic charge
16 and the Tier 1 rate. So just to be clear, Figure 5-23
17 shows the impact of moving to Option 2 for F2017
18 versus the F2016 rates. Is that right?

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

20 MS. KHAN: Q: And in contrast, am I correct that Table
21 5-9 just below it shows the percent of customers that
22 are better off under Option 2 by comparing the F2017
23 bills under Option 2 with the F2017 bills under the
24 proposed approach, Option 1?

25 MR. MAU: A: That's correct, yes. So again, that is
26 the second column and the last column of that chart.

1 MS. KHAN: Q: And Table 5-9 indicates that 21 percent
2 of all customers and 13 percent of low income
3 customers would be better off under Option 2. That
4 is, have bills that were at least 1 percent lower. Is
5 that correct?

6 MR. MAU: A: That's correct.

7 MS. KHAN: Q: And can you tell us what percent of total
8 residential customers would be worse off, i.e. have
9 bill increases that were at least 1 percent higher in
10 F2017 under Option 2 versus the proposed RIB rate?
11 And you can take that as an undertaking if you'd like.
12 We don't need to have the --

13 MR. DOYLE: A: Sorry, the proportion of all residential
14 that would be worse off under Option 2?

15 MS. KHAN: Q: Yeah. The percent of total residential
16 customers that would be worse off.

17 MR. DOYLE: A: So if 21 percent or better.

18 MS. KHAN: Q: Yeah.

19 MR. DOYLE: A: I would assume roughly 80 percent would
20 be worse off. And obviously there's around that 1
21 percent that's going to be -- so around 80 percent.

22 **Proceeding Time 2:54 p.m. T51**

23 MS. KHAN: Q: Okay, that's fine. So, similarly, can
24 you tell us what percent of low-income residential
25 customers would be worse off, in other words have bill
26 increases that were at least 1 percent higher in F2017

1 under option 2, versus the proposed RIB rate?

2 MR. DOYLE: A: So generally again I would say around 85

3 percent given that we have 13 percent better off.

4 MS. KHAN: Q: Okay. Again, I don't think you need to

5 turn to this reference, I am just putting it for the

6 record, so at page 5-41 of the application at Exhibit

7 B-1, which is at page 237 of the PDF copy, you say

8 that the current RIB rate basic charge recovers 45

9 percent of customer related costs. And in this one, I

10 am wondering if you could turn to. This is BCUC IR

11 1.42.2, which is at Exhibit B-5, page 191 of the PDF

12 version.

13 MR. DOYLE: A: Just to confirm, that was BCUC IR?

14 MS. KHAN: Q: BCUC IR 1.42.2 at Exhibit B-5. Apologies

15 for the flipping around for these questions.

16 And that IR sets out the calculation of the

17 45 percent. So, as I understand this calculation, it

18 is based on determining the F2016 residential basic

19 charge revenue, and dividing it by the F2016

20 residential customer related costs as determined by

21 the cost of service study, is that correct?

22 MR. DOYLE: A: So, it's the revenue collected from the

23 basic charge I believe.

24 MS. KHAN: Q: Yes.

25 MR. DOYLE: A: Yes.

26 MS. KHAN: Q: Yeah, so did -- yes, that's right. So,

1 would I be correct in saying that the cost of service
2 methodology set out in the negotiated settlement
3 agreement that we came to earlier this year, didn't
4 change the total residential customer related costs of
5 \$273.4 million which is referenced in that IR
6 response?

7 MR. DOYLE: A: Sorry, I am just looking for what was
8 determined at the --

9 MS. KHAN: Q: Sure.

10 MR. DOYLE: A: I could say generally if it did change,
11 it would be very minor in any change. But I --

12 MS. KHAN: Q: Okay, so subject to check then, the cost
13 were --

14 MR. DOYLE: A: Subject to check, it's generally around
15 that area.

16 MS. KHAN: Q: Okay. Now, back to this IR response, at
17 42.2, the basic charge revenue value used in the
18 calculation is \$119.3 million, right? It's just there
19 on line 3 of the response?

20 MR. DOYLE: A: That's correct.

21 MS. KHAN: Q: And however, so really we are just trying
22 to get some clarification. We have been having some
23 difficulty reconciling this value as the residential
24 customer account in the cost of service study, was
25 1,766,045 customers. So 1766045, and that number can
26 be found -- and I am going to hand up a spreadsheet,

1 MS. KHAN: Q: Next, can you confirm that the revenue-
2 to-cost ratio for the residential class derived from
3 the cost of service study was 93.9 percent?
4 MR. DOYLE: A: Do you have a reference for that?
5 MS. KHAN: Q: Sure. Appendix E to Exhibit B-1. But
6 it's the spreadsheet at tab 4.
7 MR. DOYLE: A: So that's not -- that doesn't reflect
8 the cost of service, the NSA. Is that clear before
9 the NSA?
10 MS. KHAN: Q: Yeah, I believe it's as part of the cost
11 of service study.
12 MR. DOYLE: A: So, following -- my understanding is --
13 so I have 93.3 percent in Appendix A. In Appendix A
14 of the negotiated settlement agreement. So following
15 the changes made from the negotiated settlement
16 process, it's 93.3.
17 MS. KHAN: Q: Okay. What I'm going to do then is I'm
18 going to just at the break revise some questions based
19 on that, and come back to that afterwards.
20 MR. DOYLE: A: Okay.
21 MS. KHAN: Q: Okay, next I'd like to talk to you about
22 the applicability of the doctrine of price elasticity
23 to the ESUB rate that Mr. Colton has proposed, for a
24 moment. Well, probably more than a moment. You would
25 agree with me, would you not, that people applying the
26 doctrine of price elasticity would assert that it

1 normal goods.

2 MS. KHAN: Q: Now, assuming that there is some
3 elasticity for low-income customers, so if you apply
4 the doctrine of price elasticity to the ESUB rate, the
5 concern would be that as prices go down and
6 consumption goes up, that would mean that as
7 consumption of low-income ESUB participants goes up,
8 and I accept what you're saying is the consumption
9 increase might be more modest, I think is what you're
10 saying?

11 MS. JUBB: A: Yes, that's our belief. That's our
12 expectation, is that it would not result in a
13 meaningful increase in consumption for low-income
14 customers.

15 MS. KHAN: Q: Okay, but it wouldn't be that meaningful,
16 but there would be still some increase, so the cost of
17 ESUB would go up as well to some degree, isn't that
18 true?

19 DR. ORANS: A: If I may jump in, I think the evidence
20 is quite clear that when we first looked at the RIB
21 rate and its effect, we couldn't find any
22 statistically meaningful response to low usage
23 customers to the rate. So we lowered the tier 1 rate
24 from the flat rate, and we couldn't pick up among all
25 the other things, among changing economy, among
26 changing weather, et cetera, any material effect. So,

1 a rebound effect of them consuming more.

2 It's true that not all low-income customers
3 are low-usage. So, there could be some higher usage
4 low-income customers that might respond, but as a
5 class overall, I would expect it to be modest, very
6 negligible, and we can't statistically pick it up in
7 any kind of modeling in British Columbia.

8 MS. KHAN: Pardon me, I am just taking a minute here,
9 sorry.

10 THE CHAIRPERSON: Take your time.

11 COMMISSIONER COTE: Take your time.

12 MS. KHAN: I might be able to cut out some questions.
13 Actually, it would be quite helpful right now if I
14 could just have a five minute break just to review the
15 questions, because I might be able to reduce some of
16 them.

17 THE CHAIRPERSON: Okay, so we'll come back at quarter-
18 past then.

19 MS. KHAN: Thank you.

20 **(PROCEEDINGS ADJOURNED AT 3:07 P.M.)**

21 **(PROCEEDINGS RESUMED AT 3:16 P.M.)** **T54**

22 THE CHAIRPERSON: Please be seated. Thank you.

23 Ms. Khan, did that give you enough time?

24 MS. KHAN: Just about.

25 THE CHAIRPERSON: Good.

26 MS. KHAN: Q: Okay, so next I'd like to take you to --

1 I have been able to reduce my questions quite a bit,
2 thank you. Thanks for the break.

3 So I'd like to take you to Exhibit B-1
4 which is at page 5-17, which is page 213 of the PDF.
5 So there you talk about the residential elasticity for
6 usage in Step 1 being minus .05. Well, that's the
7 natural conservation rate.

8 MS. JUBB: A: Yes.

9 MS. KHAN: Q: Are you assuming then that for low income
10 it's -- how would that change for low income?

11 MS. JUBB: A: The negative .05 is an assumption for the
12 natural conservation for the rate class average across
13 the entire rate class. So it's not differentiated by
14 different customer groups.

15 MS. KHAN: Q: So does that mean then for each 1 percent
16 decrease in price, residential Step 1 consumption can
17 be expected to increase by .05 percent?

18 MS. JUBB: A: The negative .05 -- can you provide the
19 line number that you're referring to? It's 13?

20 MS. KHAN: Q: On page 5-17.

21 MS. JUBB: A: Is it line 13?

22 MS. KHAN: Q: Yeah, that's right.

23 MS. JUBB: A: So that is the assumption of the price
24 elasticity had residential customers been under a flat
25 rate.

26 MS. KHAN: Q: Right.

1 MS. JUBB: A: So a hypothetical situation and an
2 average across all customers had they been under a
3 flat rate.

4 MS. KHAN: Q: But you have estimated a higher amount
5 for Step 2. So that's why we're saying that .05,
6 minus .05 is for Step 1.

7 MS. JUBB: A: We have verified a Step 2 price
8 elasticity that is indeed higher than negative .05.
9 So we verified that our larger customers are more
10 price responsive.

11 MS. KHAN: Q: Okay, so there's another reference that I
12 can take you to on price elasticity and that minus .05
13 amount. So if you turn to BCUC 1.40.2 which is at
14 Exhibit B-5, page 182 of the PDF. 1.40.2. And here
15 in the first paragraph it talks about the calculation
16 was based on an elasticity of minus .05 for Step 1,
17 minus .10 for Step 2, and minus .10 for Step 3.

18 MR. MAU: A: That's correct.

19 MS. KHAN: Q: Okay. So is minus .05 the Step 1?

20 MR. MAU: A: Yeah, so for -- so this is on a
21 forecasting basis and we've made a choice to use minus
22 .05 as the Step 1 elasticity.

23 MS. KHAN: Q: Okay.

24 Track 55

25 **Proceeding Time 3:21 p.m. T55**

26 DR. ORENS: A: Just to be clear, you understand, and we

1 don't get crossed up in future questions.

2 MS. KHAN: Q: Yes.

3 DR. ORENS: A: So there are assumptions BC Hydro is
4 using for forecasting. And then there's a set of data
5 that it can verify. And Ms. Jubb is talking about
6 what she's been able to verify. She's been able to
7 verify minus .1 for larger step 2 type customers.

8 She cannot verify the minus .05 assumption
9 Mr. Mau is using in the forecast, to be conservative
10 for step 1 consumption customers.

11 And then there is a third number, minus
12 .05, which BC Hydro has used for many years, at least
13 as long as I can remember working with them on this
14 topic, for just natural rate level induced
15 conservation.

16 MS. KHAN: Q: And that's just for rates increasing.

17 DR. ORENS: A: Rates increasing, and I think the
18 evidence was, rates increasing for the whole class.

19 MS. KHAN: Q: Right.

20 DR. ORENS: A: So that would be a blend of smaller
21 users and larger users that have higher elasticities.
22 But again, it's much more likely that the lower-use,
23 the very lowest-use customers, have a very low price
24 elasticity.

25 MS. KHAN: Q: Okay. And so out of the customers who
26 would be eligible for the ESub rate, those 170,000

1 customers who were at a before-tax LICO amount, the
2 price elasticity that they would have, if they were to
3 -- if the Commission was to approve an ESUB rate,
4 would be negligible.

5 DR. ORENS: A: For the majority of them, that would be
6 my guess. Again, there could be some higher use Tier
7 2 customers, who would --

8 MS. KHAN: Q: But assuming that they had -- well, we
9 are assuming that the customers who would be eligible
10 for the ESUB rate would have incomes at or below
11 Statistics Canada's LICO. And so they wouldn't be
12 able to have -- they just can't afford high
13 consumption. They don't have the income to deal with
14 it. I accept that there could be a few outliers, but
15 in general terms the vast majority of those customers
16 at the 170,000 level.

17 DR. ORENS: A: Yeah, the literature evidence on the
18 relationship of income to price elasticity is mixed,
19 and not very strong. And not very many people have
20 closely looked at that issue. But to the extent there
21 is correlation, and significant and positive
22 correlation between low income and low use, you can
23 track it through the good data on low use and price
24 responses.

25 MS. JUBB: A: And a set of results that might add to
26 that information can be found in Appendix 3-3B, page

1 110, for 609 out of 609. For the record.

2 And I'll just cite the relevant result
3 here, which is that we found, we were able to verify a
4 low estimate of price elasticity among apartment
5 dwellers of negative .03. Which is a much smaller
6 price response than we found, for example, among those
7 in single-family homes. So that is a result that we
8 were able to verify, that apartment dwellers who have
9 lower consumption have a much smaller price
10 responsiveness than those in single-family homes who
11 have higher consumption.

12 **Proceeding Time 3:25 p.m. T56**

13 MS. KHAN: Q: Okay. Next I'd like to take -- or just
14 give me one minute.

15 Okay, next I'd like to take you to BCOAPO
16 -- to your response to BCOAPO 1.58.3, which is at
17 Exhibit B-5, and page 809 of the PDF.

18 MR. DOYLE: A: Sorry, that was 1.58.3, BCOAPO?

19 MS. KHAN: Q: That's right. Okay. So what this table
20 shows, or what this IR response shows is that low-
21 income usage data -- it shows low-income usage data by
22 deciles. And given that -- given 161,000 low-income
23 customers, each decile represents about 16,000 low-
24 income customers. And so what the table shows is that
25 16,000 low-income customers are in the first -- sorry,
26 is that 16,000 low-income customers are in the first

1 decile, and they have an annual usage of 1,714
2 kilowatt hours, and that the 16,000 low-income
3 customers in the second decile have an annual usage of
4 2,618 kilowatt hours, and so on.

5 So, keeping that IR response open, I'd next
6 like to give you a table that I'll just reference for
7 identification purposes now as BCOAPO -- it's a
8 witness aid, and I'll just call it for convenience
9 BCOAPO Cross Exhibit 1. I have provided your counsel
10 with a copy already.

11 MS. JUBB: A: We have it, thanks.

12 MS. KHAN: Q: Now, I'm not going to mark that as an
13 exhibit yet, because I'll just go through and ask some
14 questions about it before I mark it.

15 But while we're on that point, Mr. Bemister
16 has just pointed out that the exhibit that we marked
17 earlier as C2-33, which has at the top of it
18 "Distribution customer allocators", was incorrectly
19 marked, and it should have been marked as Exhibit C2-
20 34.

21 THE HEARING OFFICER: C2-34.

22 (**"DISTRIBUTION CUSTOMER ALLOCATORS" CHART RE-MARKED**
23 **EXHIBIT C2-34)**

24 MS. KHAN: Q: Okay. So turning back to BCOAPO Cross
25 Exhibit 1, if you compare what's in that document with
26 the response to BCOAPO 1.58.3, you can see that the

1 deciles are replicated, and that the usage is taken
2 from that response as well. And that the column that
3 is marked "Elasticity" has the number .05 on it, which
4 is the price elasticity that we've talked about
5 already.

6 And would you accept, subject to check, on
7 the Cross exhibit, that the next column, labeled
8 "Change in usage", is the usage for each decile times
9 the price elasticity of .05?

10 DR. ORENS: A: Yes. It's .05 times -- for a 1 percent
11 change.

12 MS. KHAN: Q: Yes.

13 DR. ORENS: A: So it's .05 applied to a 1 percent price
14 change.

15 MS. KHAN: Q: And would you also accept, subject to
16 check, that the final column marked "Cumulative change
17 in usage" is simply the changed usage from 16,000, the
18 number of low-income customers in each decile?

19 **Proceeding Time 3:29 p.m. T57**

20 DR. ORANS: A: Yes, I think it is labeled incorrectly.
21 I don't think -- I think it's the number in each
22 decile, I don't think it is cumulative. I think the
23 only number that is cumulative is the bottom.

24 MS. KHAN: Q: Right, I see what you mean, that's right.
25 And so when you add up the cumulative usage increases
26 for all low-income customers, each 1 percent reduction

1 in price provided through ESUB yields an annual usage
2 increase of 95,672 kilowatt hours on that table.

3 Would you accept that?

4 MR. DOYLE: A: I guess my one comment would be the
5 change in usage stops at the 40th decile, rather than
6 going all the way through, so I don't -- I think you
7 said that all low income customers, but we've missed
8 the 50th through hundredth decile.

9 MS. KHAN: Q: The reason we've done that is because it
10 cuts off -- the ESUB cuts off at 4800 kilowatt hours.

11 MR. DOYLE: A: Sorry, the ESUB cuts off at 4800, but
12 it's available to all of the customers. It's the
13 first 4800, it is just 4800 -- it's their first 400
14 kilowatt hours per month, but I didn't think that --
15 my understanding was it doesn't limit any customer
16 over 4800 kilowatt hours per month. It is available
17 to all low-income customers. However, it is only
18 available in their first 400, so I am not sure what
19 the table is outlining.

20 MS. KHAN: Q: Yeah, but once the customers go -- hit
21 4800 they go back into the tier 1 rate.

22 MR. DOYLE: A: Sorry, for the remaining part of their
23 consumption. But the customers all the way through
24 the hundredth percentile, their first 40 -- as I
25 understand it, their first 4800 -- or 400 per month
26 will be at the lower rate, and then the remaining 275

1 will be at what is now tier 1, which would be tier 2,
2 so I don't think this is correct.

3 MS. KHAN: Q: I take your point. Yes, I think you are
4 absolutely right. You might be right. We'll check on
5 that and see if we have anything further. Sorry, this
6 is a bit of a tortured line of questioning. But we'll
7 check on that.

8 So, we won't have that marked as an exhibit
9 yet, because we'll need to just go back and I'll need
10 to go just go back and check on it first.

11 Now, you touched on this, Dr. Orans
12 already, but would you -- are you aware of, or any of
13 you on the panel aware of any third party evaluations
14 of low-income discount programs, anywhere, that have
15 found a systematic increase in usage in response to a
16 low-income usage discount?

17 DR. ORANS: A: Prior to seeing the witness aid I think
18 that you sent around, I had not seen any systematic
19 studies of that in my review of all of the elasticity
20 work, in this case, or in the case leading up to the
21 original RIB decision.

22 MS. KHAN: Q: Okay. And is that still the case then?

23 DR. ORANS: A: Yes, that is still the case.

24 MS. KHAN: Q: Thank you.

25 MS. JUBB: A: And I would confirm that the only such
26 studies I've seen are the ones cited in the witness

1 aide.

2 MS. KHAN: Q: Yeah. And those studies find that they
3 don't find a systematic increase in usage in response
4 to a low-income customer usage discount. And just for
5 the rest of the room, we are referring to a document
6 which I was originally going to take everyone through,
7 but now I don't think I need to. And this was a
8 document that Mr. Colton provided in response to BCSEA
9 IR 13.3 to BCOAPO, which is at Exhibit C2-18. You
10 don't need to turn there, it's page 14 of the PDF. In
11 that document, Mr. Colton referenced, regarding price
12 elasticity, a 2015 report that he had done on water
13 affordability in Philadelphia, comparing tiered
14 discount and percentage of income based bill
15 affordability proposals, and at appendix A of that
16 document, there was a summary of evaluation findings
17 regarding the impact of low-income bill affordability
18 programs on program participant usage. And there was
19 a whole bunch of third party evaluations cited there,
20 and so I think what Dr. Orans is saying, if I can just
21 summarize then, is that he's not aware of any third-
22 party evaluations of low-income discount programs that
23 have found a systematic increase in usage in response
24 to a low-income discount program. Is that accurate?

25 Say, again, I'm just repeating it, now that
26 I've given the cite for that Colton report.

Proceeding Time 3:35 p.m. T58

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DR. ORENS: A: I think it's fair to say I haven't seen any studies on the effect of low-income programs and/or rates on consumption. I think it's more broadly that those studies can't find a relationship between income in general and consumption. It's hard to imagine anybody can parse it even further into low income or medium or high income.

MS. KHAN: Q: Mm-hmm. But in the studies that he's cited in that report, the third-party evaluations in that report, it does -- it shows that there is no systematic decrease. Sorry, sorry. No systematic increase in usage.

MR. DOYLE: A: When you say "systematic increase" what do you -- I'm looking at --

MS. KHAN: Q: I mean across the board.

MR. DOYLE: A: I'm looking at one study, and of the clients, 57 percent fell within the range of 10 percent increase to 10 percent decrease. 37 percent increased consumption, 20 percent decreased. So, there seems to be some increase, some decrease.

MS. KHAN: Q: Yes, exactly. It's not consistent.

MR. DOYLE: A: In this case, it was a greater --

MS. KHAN: Q: It's not all customers. What we're trying to -- the point is that all low-income customers don't increase their usage in response to a

1 low-income discount program.

2 MS. JUBB: A: Of these studies, the one that appears to
3 be the most rigorous is the one that's called "PPL
4 Electric Utilities Universal Service Programs". And
5 the reason I would suggest it's the most rigorous is
6 that it uses an experimental design with a control
7 group. And it also has an electric heat customer
8 group that it analyzes.

9 So of the studies cited, I would suggest
10 that this would be the most rigorous and possibly the
11 closest to our B.C. situation with electric heating.
12 And that study found a very modest net change in
13 usage, of an increase of 63 kilowatt hours per year,
14 which is less than 1 percent.

15 MS. KHAN: Q: Okay, thank you. Next I'd like to take
16 you to CEC's -- or BCOAPO's response to CEC IR 15.1.
17 And that can -- actually I don't seem to have the PDF
18 page for that.

19 MR. DOYLE: A: Sorry, it was BC Hydro's response to?

20 MS. KHAN: Q: BCOAPO's response to CEC IR 15.1. And I
21 also don't have the exhibit number for that. I know
22 it's a C2 series. I think it's around C2-18. C2-15.

23 THE CHAIRPERSON: What was the number? Sorry.

24 MS. KHAN: CEC 15.1.

25 THE CHAIRPERSON: In C2-15?

26 MS. KHAN: C2-15.

1 response to out 1.58.2 at Exhibit B-5, which is page
2 808 of the PDF copy. It's 1.58.2. BCOAPO 1.58.2.
3 And this is the residential equivalent to the low-
4 income response that we talked about a few minutes
5 ago, and it shows deciles of customers and the annual
6 consumption within each decile.

7 And so it shows, for example, that the
8 annual consumption for the lowest decile is 2,558
9 kilowatt hours and the consumption in the second dial
10 is 3,821 kilowatt hours and so forth.

11 MR. DOYLE: A: Sorry, I think you said it was low-
12 income, but I believe this is the population as a
13 whole.

14 MS. KHAN: Q: Yes, that's right. Sorry.

15 MR. DOYLE: A: Thank you.

16 MS. KHAN: Q: If I said low income, I meant to say
17 population as a whole. It's the equivalent to the
18 low-income response.

19 MR. DOYLE: A: Okay, thanks.

20 **Proceeding Time 3:44 p.m. T60**

21 MS. KHAN: Q: I'm very sorry. I think because the
22 table I'm going to refer to you at Cross Exhibit 3,
23 which I've provided to your counsel already, I'd like
24 to just check that to make sure it doesn't have the
25 same potential issue as Cross Exhibit -- as the
26 earlier Cross Exhibit I had provided to you. Because

1 that's what I was going to refer to through this line
2 of questioning.

3 So I'd just like to check that tonight and
4 then maybe return to it in the morning, if we need to.
5 So I'm sorry for the -- yeah. Sorry for --

6 MR. MAU: A: Yeah, no problem.

7 MS. KHAN: Q: Okay, so I'd like to talk to you about
8 load curves and load factors for a few minutes. You
9 would agree with me, would you not, that BC Hydro says
10 that low load factors are indicative of customers that
11 are more costly to serve?

12 I can give you a reference for that, if
13 you'd like.

14 MR. DOYLE: A: That would be great.

15 MS. KHAN: Q: Okay. So that's Exhibit B-1, at page --

16 MR. DOYLE: A: Sorry?

17 MS. KHAN: Q: Exhibit B-1, B-1, at page 4-8. There, it
18 says, starting at line 5:

19 "Load factor is the customer's average
20 demand divided by their peak demand, and low
21 load factors are indicative of customers
22 that are relatively more costly to serve."

23 MR. DOYLE: A: Yeah, all things held equal, that's
24 correct.

25 MS. KHAN: Q: And would you agree that if low load
26 factors are indicative of customers that are more

1 costly to serve, then by necessary implication high
2 load factors are indicative of customers that are less
3 costly to serve?

4 MR. DOYLE: A: Again, assuming their consumption
5 patterns are similar, with respect to the coincident
6 peak, yes.

7 MS. KHAN: Q: I'd next like to take you to your
8 response to our IR 1.49.1, which can be found at
9 Exhibit B-5, page 788 of the PDF.

10 And that response includes responses
11 1.49.1.1 and 1.49.1.2. You see that at the top. So,
12 in this request we asked the company to provide a
13 calculation of residential load factors using a
14 definition of load factor as total average energy use
15 versus a customer's demand, coincident with overall
16 system peak demand, for CP. We've also asked the
17 company to provide a calculation of residential load
18 factors using a definition of load factor as total
19 average energy use, versus a customer's demand
20 coincident with the residential class or NCP.

21 So when you flip over that response, flip
22 the page, you'll see a chart that's labeled "Load
23 factor using customer coincident demand at system
24 peak". And at the top line of the graph, the dark
25 line shows the load factor. And at the bottom of the
26 page I see a graph labeled "Load factor" -- sorry, I'm

1 on page 3 of that response. The third page.

2 **Proceeding Time 3:49 p.m. T61**

3 So at the bottom of the page, I see a graph
4 labeled "Load factor at class peak", and then labeled
5 "Load factor using customer non-coincident demand at
6 rate class peak?" And again, at the top line of that
7 graph, the dark line shows the load factor. So, if we
8 can look at the top graph first. The X-axis of the
9 graph goes from low consumption to higher consumption.
10 And the first up-and-down line is -- in from the left
11 is for annual consumption of 2500 kilowatt hours, and
12 the second up and down line and in from the left is
13 for annual consumption of 5,000 kilowatt hours.

14 Looking at the graphs, would you agree with
15 me that the load factors were sharply higher for the
16 four CP system peak for customers with annual usage at
17 or below roughly 7500 kilowatt hours?

18 MR. DOYLE: A: Sorry, are you referring to the top
19 graph, or the bottom graph now? The top?

20 MS. KHAN: Q: Well, I'm looking at the one -- yeah, I
21 don't think it matters.

22 MR. DOYLE: A: Okay, so based on the -- and these were
23 calculated using the definitions of load factor
24 provided by BCOAPO in the question, and yes, I can
25 confirm the differences there.

26 MS. KHAN: Q: Okay. And so the same is true for the

1 NCP class peak, that the load factor is sharply higher
2 for the NCP class peak for customers with annual usage
3 at or below roughly 7500 kilowatt hours?

4 MR. DOYLE: A: Yes, the lower use customers have --
5 sorry, lower load factors, is that what you're --

6 MS. KHAN: Q: Yes. The load factor is higher, sharply
7 higher for the NCP class peak for customers with
8 annual usage at or below about 7500 kilowatt hours.

9 MR. DOYLE: A: You're looking at the top line versus
10 the bottom line.

11 MS. KHAN: Q: Yeah. The top line.

12 MR. DOYLE: A: Yes.

13 MS. KHAN: Q: And so customers with annual usage below
14 3750 kilowatt hours had a 4 CP load factor of 80
15 percent. Do you see that?

16 MR. DOYLE: A: Sorry, again, that is based on the load
17 factor definition provided for these, not the standard
18 load factor definition that is used to calculate load
19 factors. The way these load factors were calculated
20 was in relation to a definition provided in the IR.

21 MS. KHAN: Q: Mm-hmm. So, if I go over to the
22 company's response to BCOAPO information request
23 1.58.2, which is at the same exhibit, page 808 of the
24 PDF. I see that fewer than 20 percent of all
25 residential customers have annual consumption below
26 the 3,750 kilowatt hour level.

1 MR. DOYLE: A: That's correct, based on the table.

2 MS. KHAN: Q: And if I turn over to the company's
3 response to BCOAPO 1.58.3, I see that between 30
4 percent and 40 percent of low income customers have
5 annual consumption below this level, the 3750.

6 **Proceeding Time 3:53 a.m. T62**

7 MR. DOYLE: A: Yeah, that seems right.

8 MS. KHAN: Q: And going back to the graphs the company
9 provided in 49.1, customers with annual usage below
10 2,500 kilowatt hours had a 4 CP load factor of more
11 than 75 percent?

12 MR. DOYLE: A: Yes, but again these, these aren't the
13 common way of calculating load factors, but based on
14 the calculation that's correct and again those --

15 MS. KHAN: Q: I accept that.

16 MR. DOYLE: A: -- those calculations were provided by
17 BCOAPO.

18 MS. KHAN: Q: Yes. Accepting that. Yes. And going
19 back to the company's response at 58.2. Fewer than 20
20 percent of residential customers had annual
21 consumption that was that low, which -- meaning at the
22 2,500 kilowatt hour level, right?

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

24 MS. KHAN: Q: And roughly 20 percent of low income
25 customers had annual consumption that low.

26 MR. MAU: A: Sorry, can you see that that low means

1 again?

2 MS. KHAN: Q: And roughly 20 percent of low income
3 customers had annual consumption that low?

4 MR. MAU: A: Below? Sorry what is the below?

5 MS. KHAN: Q: Below 2500.

6 MR. MAU: A: Oh, yes.

7 MS. KHAN: Q: Yes.

8 MR. MAU: A: That's correct.

9 THE CHAIRPERSON: Did you say of low income customers or
10 of customers?

11 MS. KHAN: Low income customers.

12 Q: And overall the sharply increasing load factor
13 begins at an annual consumption of about 6200 kilowatt
14 hours for both the 4 CP and the NCP peaks.

15 MR. DOYLE: A: So again, and I'm sorry to be
16 repetitive, but again based on those calculations
17 which are not common and Mr. Colton in response to BC
18 Hydro's IR asking whether the manner by which BC Hydro
19 calculates load factor differs materially from
20 industry norms, he confirms that no, we do not. So I
21 believe the first graph on the page, on the
22 conventional load factor on the first graph of that IR
23 response is the more industry norm of calculating the
24 load factor.

25 And that was Mr. Colton's response to BC
26 Hydro IR 1.4.2.

1 MS. KHAN: Q: And so when you look at the response to
2 1.58.3, nearly 60 percent of low income customers fall
3 into the usage range of 6200 kilowatt hours for both
4 the 4 CP and the NCP peaks.

5 MR. MAU: A: Yeah, correct.

6 MS. KHAN: Q: And 58.2 shows that slightly fewer than
7 40 percent of residential customers as a whole do.

8 MR. MAU: A: Sorry, can you repeat that?

9 MS. KHAN: Q: Sure. At 1.58.2 it shows that slightly
10 fewer -- maybe a couple of percentage points perhaps
11 or less -- fewer than 40 percent of residential
12 customers as a whole do.

13 MR. DOYLE: A: That's correct.

14 MR. MAU: A: Correct.

15 MS. KHAN: Q: And I'm almost done on this point. So
16 I'd like to take you to BCOAPO IR 1.70.1 and that can
17 be found at Exhibit B-5 at page 851 of the PDF. And
18 so in this request BCOAPO asked the company to provide
19 the most recent study showing the month by month load
20 curve in (c) for low income residential customers for
21 a complete 12 month period, in (d) for low use
22 residential customers who are also low income and in
23 (e) for low use residential customers whether or not
24 such customers are low income.

25 When I flip over to the second page of the
26 response, the company responded that BC Hydro does not

1 have the income level of customers in the billing
2 database and is unable to provide item (c) and (d).
3 And the company further stated that Hydro does not
4 label residential customers by their usage level in
5 the billing system and is unable to provide item (e).

6 **Proceeding Time 3:58 p.m. T63**

7 So, now going over to Hydro's response to
8 1.72.1, so just a couple of pages after that, and
9 that's at the same exhibit at page 854 of the PDF.
10 That's 1.72.1. In this request the company was asked
11 to provide a copy of any study that considers the
12 differences in load curves for residential customers,
13 depending on (1) the monthly kilowatt hour consumption
14 of the customer, (2) the annual kilowatt hour
15 consumption of the customer, and (3) the income of the
16 customer. And with respect to the monthly and annual
17 consumption, the company said that BC Hydro hasn't
18 done any comprehensive study of residential load
19 curves based on monthly or annual consumption.

20 And with regard to income, Hydro responded
21 that Hydro has not done any study with respect to
22 customer income and residential load curves.

23 So, would you agree with me that when you
24 present data for residential customers, it includes
25 all residential customers, correct? Including both
26 low-income and non-low-income customers?

1 MR. DOYLE: A: Sorry, present it where?

2 MS. KHAN: Q: Well, for example, in the charts that
3 we've been looking at through some of the IR
4 responses, which showed the usage by decile for all
5 residential consumption. Those charts also included
6 low-income consumption. Correct?

7 MR. DOYLE: A: Yes. I'm sorry.

8 MS. KHAN: Q: All residential includes both.

9 MR. DOYLE: A: The all residential would be cumulative,
10 and all residential, low-income and non-low-income.

11 MS. KHAN: Q: Okay. And so would you agree that as a
12 matter of math, if you have one group of low-income
13 customers with a small number, and one group of all
14 customers with the larger number, could we conclude
15 that the differences between those two numbers would
16 be even bigger if the comparison was limited to low-
17 income customers versus non-low-income?

18 MR. DOYLE: A: Yeah. Can we break that question down
19 just maybe a little bit slower, and go --

20 MS. KHAN: Q: Sure. Sure. I mean, I think you've
21 pretty much already stated it. So by the fact that
22 when you're showing that table, for example, by usage,
23 for all residential customers, because it includes
24 low-income customers within that, then the numbers
25 might be -- when low income is taken out, if the
26 numbers are -- can be different.

1 MR. DOYLE: A: Kind of. I think I understand. So if
2 we remove the low-income population, the remaining
3 population would have a higher number because
4 obviously the low-income was pulling that down. Yeah,
5 I think that's fair.

6 MS. KHAN: Q: Okay, thanks.

7 Panel, I have just a clarification question
8 from earlier, and then my colleague, Ms. Pritchard,
9 would like to start her cross-examination. But she
10 can either start this afternoon or in the morning.
11 It's -- we're totally in your hands. I think she has
12 about 45 minutes to an hour.

13 THE CHAIRPERSON: I wouldn't mind at least getting half
14 an hour of additional questioning in, if your
15 colleague is prepared to do that.

16 MS. KHAN: Okay. So I'll just finish up with my
17 clarification question.

18 **Proceeding Time 3:58 p.m. T64**

19 MS. KHAN: Q: Okay, so I just wanted to go back to the
20 question, I'll just start from the top, so where I had
21 mentioned, if you could confirm that the revenue to
22 cost ratio for residential derived by the cost of
23 service study, and I had said 93.9 percent, you
24 mentioned that that had changed to 93.3 percent? And
25 so would I be correct that for F2016 residential rates
26 to fully recover the F2016 costs, allocated to the

1 residential class, the rates would have to be
2 approximately 7.18 percent higher? Okay, sorry.

3 MR. DOYLE: A: Can we walk through --

4 MS. KHAN: Q: So, we had talked about -- you had
5 mentioned that in the cost of service NSP, the revenue
6 to cost ratio for residential customers was determined
7 to be 93.3 percent.

8 MR. DOYLE: A: Yes, I believe that's in appendix A of
9 Order G-47-16.

10 MS. KHAN: Q: Right, okay.

11 MR. DOYLE: A: The table labeled cost of service module
12 schedule 4.0.

13 MS. KHAN: Q: So would I be correct that for F2016
14 residential rates to fully recover the F2016 costs
15 allocated to the residential class, the rates would
16 have to be approximately 7.18 percent higher? And we
17 got that calculation by dividing 100 by 93.3, and
18 coming up with 1.065?

19 THE CHAIRPERSON: Sure.

20 MR. DOYLE: A: Yes, my understanding is that seems
21 correct.

22 MS. KHAN: Q: Subject to check that's -- so, in
23 calculating the percentage of customer costs recovered
24 by the basic charge, would it not be more reasonable
25 to increase the basic charge revenues used in the
26 calculation by 7.18 percent, particularly if we

1 already used this percentage as a benchmark for
2 setting the SGS basic charge?
3 MR. DOYLE: A: Sorry, are we getting -- is the question
4 could we increase the basic charge revenue by 7.1
5 percent and get a revenue to cost ratio of 100?
6 MS. KHAN: Q: Yes, I believe --
7 MR. DOYLE: A: No, so I think --
8 MS. KHAN: Q: To make the 45 percent work.
9 MR. DOYLE: A: Sorry, I'm not sure what doesn't work
10 with the 45 percent? Sorry, I think --
11 MS. KHAN: Q: Because only 93.3 percent of the costs
12 are being recovered.
13 MR. DOYLE: A: Oh, I see what you're saying.
14 MS. KHAN: Q: Yeah.
15 MR. DOYLE: A: Because the revenue to cost ratio is
16 lower, we should reduce. Yeah, I mean it's one
17 solution you could do. Then you would have a change
18 in the rates, a corresponding change to the energy
19 rates on step 1 and step 2.
20 MS. KHAN: Q: Yeah, okay. Okay, thank you, those are
21 my questions. I am going to hand it over to Erin, and
22 sorry that some of those questions were a bit
23 convoluted.
24 Yeah, and we are going to look through some
25 of the cross-exhibits that we had prepared tonight and
26 see if I have any additional questions for you in the

1 morning.

2 **Proceeding Time 4:07 p.m. T65**

3 THE CHAIRPERSON: Ms. Pritchard, I would like to wrap up
4 around 4:30, at 4:30, so let me know when you get to a
5 good place to stop. Thanks.

6 MS. PRITCHARD: Okay.

7 **CROSS-EXAMINATION BY MS. PRITCHARD:**

8 MS. PRITCHARD: Q: Good afternoon panel. So first I
9 would like to start asking you some questions about
10 transmission service rates. So if we could first look
11 to page 7-14 of Exhibit B-1, and that's at page 371 of
12 PDF.

13 MR. DOYLE: A: That was 7-14.

14 MS. PRITCHARD: Q: 7-14, yes. So I here you discuss
15 why you prefer using the customer bill neutrality
16 definition of revenue neutrality as opposed to the
17 forecast revenue neutrality definition. So I
18 understand there's generally three reasons why this
19 definition is preferred. First, it allows you to
20 maintain the tier one/tier two differential. Second
21 it address AMPCs concern that use of forecast revenue
22 neutrality is unfair to transmission customers that
23 conserve energy. And third it's consistent with
24 police action 21 of the 2002 Energy Plan, is that
25 correct.

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

1 MS. PRITCHARD: Q: So first with respect to the tier
2 one/tier two differential issue, am I correct that the
3 tier one/tier two differential is using the forecast
4 revenue neutrality definition because you chose to
5 address the .5 million revenue shortfall for fiscal
6 2017 by increasing the tier one rate from 3.981 cents
7 to 3.986 cents?

8 MR. DOYLE: A: So I'll start and Mr. Mau I'm sure will
9 jump in if I'm going astray, but -- so with fiscal
10 '17, so while we've proposed the customer bill
11 neutrality approach, for fiscal '17 because of the
12 requirement that the step 2 reflect the long run
13 marginal cost for the TSR, the transmission stepped
14 rate, we made an adjustment in fiscal '17 to increase
15 that step 2 to reflect the long run marginal cost, as
16 it was a little bit below. So as such it did minimize
17 the differential a little bit in fiscal '17. For
18 fiscal '18 and '19 it continues on.

19 MS. PRITCHARD: Q: Okay, but for fiscal 2017, with the
20 forecast revenue neutrality definition, would it be
21 fair to say that rather than increasing the tier one
22 rate to address the shortfall you could have either
23 increased the tier two rate or increased both the tier
24 one and tier two rates by the same percent, which
25 would have addressed the differential concern?

26 MR. DOYLE: A: So we could have made any number of

1 change -- I guess there are different ways we could
2 look at it, but the main thing we needed to do for
3 fiscal 2017 to be consistent with the legislation is
4 to make sure that that step to was reflective of the
5 long run marginal cost. So we adjusted that in fiscal
6 2017.

7 MS. PRITCHARD: Q: Okay, and next with respect to AMPCs
8 concern, as I understand it from the response to BCUC
9 1.95.3, that's Exhibit B-5. I don't think you need to
10 turn to it, but it's page 3-58 of the PDF. I
11 understand that the concern is that under revenue
12 forecast neutrality a transmission customer saving
13 energy will have a higher bill than if customer bill
14 neutrality is used to set the rates. Is that right?

15 MR. DOYLE: A: I think this goes to the conversation we
16 had earlier in the discussion with Mr. Keen with
17 respect to the investments that the transmission
18 service customers had made. And if there's a change
19 -- if there's -- the change to step one would affect
20 the investment payback that they were receiving, that
21 they expected to receive based on when they made those
22 investments.

23 MS. PRITCHARD: Q: Right. Okay, but would I be correct
24 in saying that the bill savings that the customer will
25 achieve through energy savings would be the same under
26 both approaches if transmission rates under forecast

1 revenue neutrality are set as you've set out in BCOAPO
2 1.160.7? It's at Exhibit B-5 again, at page 1111 of
3 the PDF.

4 MR. DOYLE: A: Sorry, you will have to give me a
5 minute, we are going on a couple of IRs here.

6 MR. MAU: A: Just to confirm it 1.160.7?

7 MS. PRITCHARD: Q: Yes.

8 MR. DOYLE: A: I'm at the IR now if you could please
9 repeat the question.

10 MS. PRITCHARD: Q: So would I be correct in saying that
11 bill savings that the customer will achieve through
12 energy savings would be the same under both approaches
13 of the transmission rates under forecast revenue
14 neutrality are set as you've set out in that IR?

15 **Proceeding Time 4:13 p.m. T66**

16 MR. DOYLE: A: Sorry, you're going to have to help me
17 how you got to that conclusion.

18 MS. PRITCHARD: Q: That in both cases, both savings are
19 based on the Tier 2 rate, which is .892.

20 MR. DOYLE: A: So any savings with respect to their
21 Tier 2 energy, given option 1 and option 2 at 8920,
22 would be the same.

23 MS. PRITCHARD: Q: Okay. Okay, and I don't think you
24 need to turn here, but at page 7-16 of the application
25 you state that the demand charge is recovering 65
26 percent of the demand-related costs identified in the

1 F2016 cost of service study.

2 MR. DOYLE: A: That's correct.

3 MS. PRITCHARD: Q: Okay. And can we turn to BCOAPO
4 1.151.1? It's at Exhibit 5, page 1075 of the PDF.
5 1.151, BCOAPO 1.151.

6 MR. DOYLE: A: I see that.

7 MS. PRITCHARD: Q: All right. So here you show the
8 calculation of the 65 percent as being demand charge
9 revenues of 196 million, divided by demand costs from
10 the cost of service study of 303 million. Is that
11 correct?

12 MR. DOYLE: A: Yeah. And plus 1.7 for the customer-
13 related costs.

14 MS. PRITCHARD: Q: Okay. This might answer the
15 question, then, but I'll just confirm. In response to
16 BCOAPO 2.285.1 --

17 MR. DOYLE: A: Sorry, 2.285.1?

18 MS. PRITCHARD: Q: 2.285.1. And that's at Exhibit B-
19 23, on page 464 of the PDF.

20 MR. DOYLE: A: Yes, I see that.

21 MS. PRITCHARD: Q: So, there you provided the billing
22 demand associated with transmission service customers
23 as 27,803.9 megavolt amp months. Sorry.

24 MR. DOYLE: A: Yes.

25 MS. PRITCHARD: Q: Yes? Okay. And when I multiply
26 this by the F2016 transmission service demand charge

1 of 7.341 per kilovolt amp, and that's on page 7-5 of
2 the application, there we got 204.1 million, not 196.
3 I'm just wondering if you could explain the
4 difference.

5 MR. DOYLE: A: Did we convert the megavolt amps to
6 megawatts? Was that calculated -- because the demand
7 charge is in megawatts, I believe. Sorry, we might
8 just have a units issue, so.

9 So it's in kilovolt amps. So I'm not sure
10 where the difference is. I don't know if it's a time
11 issue or not. So you had 196 versus 204?

12 MS. PRITCHARD: Q: 204.1, yes.

13 MR. DOYLE: A: And I'm not sure what the difference is.
14 It may be a timing -- depending on when the timing of
15 the data was collected.

16 **Proceeding Time 4:17 p.m. T67**

17 MS. PRITCHARD: Q: Okay. And would I be correct in
18 saying that the cost of service methodology as set out
19 in the NSP agreements would change the demand-related
20 cost attributable to transmission customers? So it's
21 a 55 percent demand and 45 percent energy, as opposed
22 to vice versa.

23 MR. DOYLE: A: With respect to that, I believe it was
24 the large -- the Hydro generation capacity, so yes,
25 that's correct.

26 MS. PRITCHARD: Q: Okay. And can you tell us what the

1 revised percent of demand-related costs recovered
2 through demand charges would be based on the NSP
3 methodology?

4 MR. DOYLE: A: I don't have that, sorry.

5 MS. PRITCHARD: Q: Okay. Would you be able to give an
6 estimate?

7 MR. DOYLE: A: No, but I could undertake to get that.

8 **Information Request**

9 MS. PRITCHARD: Q: Okay, thank you.

10 Okay, I'm going to turn to some questions
11 about small general service rates now.

12 MR. DOYLE: A: Okay.

13 MS. PRITCHARD: Q: And this is along the same lines.
14 Would I be correct in saying that the cost of service
15 methodology in the NSP agreement did not change the
16 total SGS customer-related costs of 45.2 million?

17 MR. DOYLE: A: Subject to check, I believe that the
18 customer-related costs did not change.

19 MS. PRITCHARD: Q: Okay, could you turn to BC Hydro's
20 revised response to BCOAPO 1.137.2? And that's at
21 Exhibit B-26, or page 7 of the PDF.

22 Yes, so again the reference is BC Hydro's
23 revised response to BCOAPO 1.137.2. And that's at
24 Exhibit B-26.

25 COMMISSIONER COTE: Twenty-six?

26 MS. PRITCHARD: Twenty-six, yes.

1 MR. DOYLE: A: I have that, yes.

2 MS. PRITCHARD: Q: Okay. So there you show the
3 calculation of the 35 percent recovery of customer
4 related SGS costs through the current SGS basic
5 charge.

6 MR. DOYLE: A: There in the third paragraph there?
7 Yes, I believe we do, in the third paragraph.

8 MS. PRITCHARD: Q: Yes, the fourth paragraph, yeah.

9 MR. DOYLE: A: Fourth paragraph. I'm sorry. One, two,
10 three, four, five, sorry. It's a bit late in the day.

11 MS. PRITCHARD: Q: All right. So I note that the
12 number of accounts in that revision, it was revised to
13 180,367. Is that correct?

14 MR. DOYLE: A: I see that, yes.

15 MS. PRITCHARD: Q: Okay. And then if we look at the
16 cost of service study filed as Appendix C of Exhibit
17 B-1 -- and you don't need to turn there, this is one
18 of the references I mentioned to my friend Mr.
19 Christian before. But I note that the number of SGS
20 accounts used in the derivation of customer-related
21 costs is 182,647.

22 MR. DOYLE: A: That's correct.

23 MS. PRITCHARD: Q: So for the purposes of calculating
24 the percentage in BCOAPO 1.137.2, we're just wondering
25 why the same value wasn't used in determining the
26 revenues from the basic charge, as was used in

1 MR. DOYLE: A: Yes, that's correct.

2 MS. PRITCHARD: Q: All right. And would you be able to
3 tell us what the revised percentage of demand related
4 costs recovered through demand charges will be based
5 on the NSP methodology?

6 MR. DOYLE: A: I cannot.

7 MS. PRITCHARD: Q: Undertaking?

8 MR. DOYLE: A: I don't have that --

9 MS. PRITCHARD: Q: Would you be able to undertake to
10 find that out?

11 MR. DOYLE: A: I can.

12 **Information Request**

13 MS. PRITCHARD: Q: And your initial proposal was to
14 align the LGS demand cost recovery, with the demand
15 cost recovery for the transmission customer class? Is
16 that correct?

17 MR. DOYLE: A: Yeah, again, there is no magic number
18 when we're doing it, it was sort of a goal post that
19 we worked towards to better align cost causation. So
20 whether it was 65 and now it is 63 or 67 or 68 or you
21 know what that number is. Again, I think it's
22 directionally what we're trying to do was increase the
23 cost recovery from the status quo.

24 MS. PRITCHARD: Q: And this is another thing that you
25 might need to undertake to provide if you can do so,
26 but do you know what would be the LGS demand charge

1 yes, I believe that's -- that's correct.

2 MS. PRITCHARD: Q: Okay.

3 MR. DOYLE: A: And yes, that is higher than the energy
4 charge.

5 MS. PRITCHARD: Q: Okay. And if we turn to BCUC
6 2.150.1, that's at Exhibit B-23, or page 150 of the
7 PDF.

8 MR. DOYLE: A: BCUC 2.150 --

9 MS. PRITCHARD: Q: Point one.

10 MR. DOYLE: A: -- point one. And B-23.

11 MS. PRITCHARD: Q: B-23, yeah. Are you there? Okay.
12 So we're wondering about your statement that all of
13 the cost recovery levels shown in BCUC 1.60.2 yielded
14 energy rates that were reflective of the updated LRMC.
15 Would you be able to explain this statement, as it
16 appears to us that as you move to -- the cost recovery
17 ratio closer to the proposed 35 percent level, the
18 energy rates are moving farther away from the energy
19 LRMC?

20 MR. DOYLE: A: Yes. So that's correct. I think the
21 key word there was "reflective". So while we're not
22 going after, you know, sort of a precision of equaling
23 the long-run marginal cost, you know, all of them were
24 in the sort of -- I think the lowest was 875 as
25 opposed to 946. So, to us, that's reflective of the
26 long-run marginal cost. And as I said earlier, you

1 know, when customers conserve at the meter, there's
2 obviously savings beyond just the energy savings, that
3 the utility benefits. So whether those are
4 distribution infrastructure asset savings, losses,
5 transmission and generation capacity. So there's a
6 number of other savings that occur. So, when you're
7 -- when we're in the ball park, I think that that is
8 reflective and we feel that all of those are
9 reflective of the long-run marginal cost.

10 MS. PRITCHARD: Q: Okay. And would it be fair to say
11 there is a real trade-off between fairness and
12 efficiency in considering your proposal for MGS rates,
13 as well as the acknowledged trade-off between fairness
14 and bill impacts?

15 MR. DOYLE: A: Sorry, I don't -- yeah, again, because I
16 think all the rates are reflective of the long-run
17 marginal cost, I don't think there's a trade-off with
18 respect to efficiency. One may be slightly more
19 efficient than the other, because it's closer to the
20 long-run marginal cost. But I don't -- given the
21 small difference, I don't believe there's any
22 significant trade-off that's being made.

23 MS. PRITCHARD: Q: Okay. And this is my last issue for
24 questions, for this panel. So would I be correct in
25 saying that the cost of service methodology in the NSP
26 agreement will also change demand-related costs

