MANITOBA PUBLIC UTILITIES BOARD

Re: MANITOBA HYDRO

NEEDS FOR AND ALTERNATIVES TO

REVIEW OF MANITOBA HYDRO'S

PREFERRED DEVELOPMENT PLAN

Regis Gosselin - Chairperson

Marilyn Kapitany - Board Member

Larry Soldier - Board Member

Richard Bel - Board Member

Hugh Grant - Board Member

HELD AT:

Public Utilities Board

400, 330 Portage Avenue

Winnipeg, Manitoba

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Pages 6321 to 6477

APPEARANCES

Bob Peters	)Board Counsel
Sven Hombach (np)	
Patti Ramage	)Manitoba Hydro
Marla Boyd	)
Douglas Bedford (np)	)
Helga Van Iderstine (np)	)
Jennifer Moroz (np)	)
Byron Williams	)CAC
William Gange (np)	)GAC
Peter Miller	)
Antoine Hacault	)MIPUG
George Orle (np)	)MKO
Michael Anderson (np)	)
Jessica Saunders (np)	)MMF
Corey Shefman (np)	)
Christian Monnin	)IEC
Michael Weinstein (np)	)

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--- Upon commencing at 9:12 a.m.

THE CHAIRPERSON: It's nine o'clock; we'll start the morning's proceedings. I wonder if there are documents that we should acknowledge before we start?

MS. MARLA BOYD: Good morning, Mr. Chair. I do have one (1) document this morning to be filed. It's a response to Manitoba Hydro Undertaking number 79, which has been revised. It's from transcript page 4,232. And the proposal, according to my copy, is to file it as Manitoba Hydro Exhibit number 166 Revised.

MR. KURT SIMONSEN: That's acceptable, thanks.

MS. MARLA BOYD: Thank you.

--- EXHIBIT NO. MH-166 REVISED:

Revised response to Undertaking 79

IEC LA CAPRA ASSOCIATES PANEL CONTINUED:

DANIEL PEACO, Previously Affirmed (Qual.)

JOHN ATHAS, Previously Affirmed (Qual.)

MARY NEAL, Previously Affirmed

MR. RICHARD BEL: Excuse me, I have -- I have two (2) questions from yesterday's cross, just -- just to clarify something. The first question is about the discussion about the relaxing the import constraint. Okay. And a simple question.

Is there any risk or negative to relaxing that import constraint? I didn't hear any of that in the discussion with Ms. Rainkie (sic). I can't see anything in the analysis that says it makes any -- it -- it does anything negative.

MR. DANIEL PEACO: The -- the policy is just that; it's a policy. And what we tried to do in our investigation was to test the policy to see, you know, how much of the -- the policy is -- is an economic-based policy and how much of it is -- is a reliability-based policy.

But the fact that -- that Hydro really hasn't tested an alternative policy in any of their analysis, it's hard to know whether there's really -- at what point you get to a risk. I think there -- there's always a -- you need -- if you're going to be relying on imports you obviously -- there's -- there's a risk associated with the -- the strength of your interties.

And so at some point, the -- the ability for one system to rely on a neighbouring system is -- is limited by the -- the strength of the interties between the systems, so that would have to be evaluated. So there's a -- those kinds of things, but I think at the level that the policy is now, it's largely a policy based upon economics rather than on a strict -- what I would call strict reliability standard, if -- if that's your question.

MR. RICHARD BEL: So the second question is -- I think I get it now. So that example was thrown out by you, and the benefit of using that example is that if we -- if we looked at the No Gen case, I'm -- I'm relying on the comment from -- from Mr. Athas yesterday that he talked about the fact that the No Gen case could actually enhance a development plan.

So, for example, if I'm -- I'm just asking if this is a possibility. For example, we could look at a plan that was DSM, the intertie with the relaxed import limits, and that would have the effect of postponing Keeyask, say, to -- to 2031. So that would be like putting Keeyask in where Conawapa was.

And if we ran that metric it might have high -- or would likely have an impact on the net present values, correct? So streaming the resources, or ordering them in a different way.

MR. DANIEL PEACO: Yeah, and I think the -- to be clear, and I think we talked about this -- I forget which day it is now, but the No Gen case we did was a construct to say, I just want to see -- test how the system performs if you do relax the policy. It doesn't go beyond that to say, When do you hit, you know, physical risk or other kinds of risk.

But it would say -- but it -- but it would at least tell us, if you could relax it, you know, does it -- does it tend to -- to bring more benefits. And I think in this case it really pointed to the fact that it -- it -- to the extent you can relax it, it can improve the economics and the performance of the plan.

So I think that's -- that's as much as we can know from that. And I think it makes -- it says we've got to know more about -- about the -- the flexibility and sort of changing that if we're -- if we're looking at other alternatives as well. With respect to that issue, or the DSM issue, I think what Hydro now has come around to the notion is that PDP can be improved by putting DSM in, which is one (1) issue we raised early on.

And -- and I -- I would put this in the same category as -- it's probably worth looking to see whether some different way of thinking about the import/export relationship might also improve the plan. So I agree that tho -- those elements aren't mutually exclusive to No Gen versus PDP. They're each sort of illustrations of certain combinations. And you say, Well, the import part of that looked at -- lends some benefits. So maybe we need to figure out whether there's a way to refine any of the plans we're going to look at to take better advantage of the opportunity that can actually be had from that.

MR. RICHARD BEL: Okay. Okay. And the last one, a simple one, you introduced -- and this discussion came from the cross in the afternoon talking about the cumulative present value metrics. So you introduced those metrics and when I first looked at those I wondered, Well, why are they there? Okay. I guess that's a question everybody would have.

It seems to me -- for example, the breakeven year metric, so you'd use the breakeven year metric to instruct your decision if you were worried, for example -- I'll take a simple case, if you were worried about, say, in twenty (20) years or -- or at some point in the future there was a disruptive technology going to hit, so you'd want to look at those plans and say, In twenty (20) years where would we be?

So is that why those metrics were introduced?

MR. JOHN ATHAS: That -- that's certainly one of them. I mean, that's exactly from -- if you take -- if you want to take a constant viewpoint from -- you know, because obviously it won't be the same ratepayers and things like that over time and you -- and you -- so you're comfortable with the seventy-eight (78) years, but you were worried about the -- something that would make the assumptions out there rather -- create a big error that anything that we've studied, like a disruptive technology, that'd be one reason to -- to wonder about how did we do before that period of time.

MR. RICHARD BEL: Okay. Thank you. That's it. Thanks.

CONTINUED CROSS-EXAMINATION BY MS. MARLA BOYD:

MS. MARLA BOYD: Good morning, panel.

MR. DANIEL PEACO: Good morning.

MS. MARLA BOYD: I'm going to begin today with Manitoba Hydro's book of documents, Exhibit 167-3, which is Volume III, financials.

(BRIEF PAUSE)

MS. MARLA BOYD: The LTA scope of work included a requirement to develop a financial model that would have the flexibility to change basic assumptions on factors affecting cost to Manitoba Hydro and MISO utility competitive market alternatives.

Is that right?

MR. JOHN ATHAS: Sounds correct.

MS. MARLA BOYD: Could you explain, please, what's meant by 'MISO utility competitive market alternatives'?

MR. JOHN ATHAS: Part of that has to do with -- a major part of that would have to do on price changes. I think at the -- at the MISO -- at the MISO market level.

MS. MARLA BOYD: Well, how does that explain competitive market alternatives? Maybe you could bring up the scope of work for us, please? It -- it's La Capra scope of work. I believe it's Exhibit number 40 -- 45. It's page 5, down near the bottom. There we go.

So you'll see the first couple lines there, it asks for a model that would have the flexibility to change factors affecting cost to Hydro and MISO utility competitive market alternatives.

What did you understand that to mean?

MR. JOHN ATHAS: I understood that to mean that how the -- how the competition within the MISO marketplace could affect the -- the export pricing.

MS. MARLA BOYD: And you've constructed a model that you've provided, correct?

MR. JOHN ATHAS: Yes.

MS. MARLA BOYD: And is it your understanding that that model is to be used for this proceeding alone, or is the expectation that PUB or others will use it in other proceedings in future GRAs?

MR. JOHN ATHAS: It was focussed on this proceeding.

MS. MARLA BOYD: And can you confirm that it was your intention to develop a spreadsheet financial model that is an approximation to Manitoba Hydro's financial modelling framework?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And you relied upon Manitoba Hydro data in our projected financial statements that were provided in Appendix 11.4, correct?

MR. JOHN ATHAS: Correct.

MS. MARLA BOYD: You didn't produce any projections of your own?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: So if we turn to Tab 1 of Volume III of our book of documents. On page 1, this is LCA's financial model using the Preferred Development Plan under the ref/ref/ref scenario.

Is that correct?

MR. JOHN ATHAS: That's correct, with a -- under a scenario where we've changed load growth.

(BRIEF PAUSE)

MS. MARLA BOYD: Does it say that on the top?

MR. JOHN ATHAS: Yeah, it's cell F5, I believe, where it says, "Load growth change percent minus 10," in 'E' -- 'D' and 'E' and 'F' columns.

MS. MARLA BOYD: This is where it says, "Default load growth," yes?

MR. JOHN ATHAS: Oh, it's right below that. But, actually, right, the default load growth is an override of that. Excuse me. I misspoke.

MS. MARLA BOYD: I'm sorry, I didn't hear your answer.

MR. JOHN ATHAS: I misspoke. The -- with the default load growth on as -- yes. It -- it -- ignore the next line. I apologize.

MS. MARLA BOYD: So it is the same as Manitoba Hydro's. It's intended to replicate or approximate Manitoba Hydro's model?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And in this model, you would have relied upon Manitoba Hydro's calculation of general consumers revenue, which is at row 9.

Is that right?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And you would have relied upon Manitoba Hydro's calculation of extraprovincial revenues at row 13?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And you would have relied upon Manitoba Hydro's calculations of operating and administrative expenses in row 20?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And you would have relied upon Manitoba Hydro's calculations of finance expense in row 32?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And you would have

relied upon Manitoba Hydro's calculations of depreciation and amortization in row 33?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And water rentals in row 34?

MR. JOHN ATHAS: Correct.

MS. MARLA BOYD: And fuel and power purchases in row 35?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And capital and other taxes in row 39?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And if we turn in that same tab to page 3, you also would have relied upon Manitoba Hydro's calculations of net plant in-service at row 77?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And Manitoba Hydro's calculations of construction in progress at row 79?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And Manitoba Hydro's calculation of current and other assets at row 80?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And Manitoba Hydro's calculations of long-term debt at row 89?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And Manitoba Hydro's calculations of retained earnings at row 95?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: Is it correct that the underlying calculations for each of those variables are embedded in Manitoba Hydro's models and that you didn't perform those calculations?

MR. JOHN ATHAS: Our intention was to -- was to model the same calculation that's being performed by the -- by the Manitoba Hydro model.

MS. MARLA BOYD: So if any of those calculations were changed by Manitoba -- for example, if the export revenues were to change -- that outcome would change and that -- this model would not -- would not replicate Manitoba Hydro's, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: If we turn to page 5 of Tab 1, LCA has also included a projected cashflow statement. And can you confirm for me that all of the data in rows 103 to 120 is output from Manitoba Hydro's projected cashflow statements which are found at Appendix 11.4?

(BRIEF PAUSE)

MR. JOHN ATHAS: The -- the version of the model that we gave you, I don't have the model in front of me to verify those are all the same numbers; but, yes, with that caveat.

MS. MARLA BOYD: And there's no links between this cashflow statement to the income statement or the balance sheet?

MR. JOHN ATHAS: I believe there aren't.

MS. MARLA BOYD: You believe there are not?

MR. JOHN ATHAS: There are not.

MS. MARLA BOYD: I ask you to turn to Tab 2, page 7, of Manitoba Hydro's book of documents.

(BRIEF PAUSE)

MS. MARLA BOYD: It's an 8 1/2 x 11 hiding amongst all of the big sheets.

(BRIEF PAUSE)

MS. MARLA BOYD: This is LCA's Figure 10.32, which is reproduced from Appendix 10A on page 51 of your report.

Do you recognize that?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: In conducting your rate impact analysis with your financial model, I understand that you focussed on key variable interactions that are shown on this figure.

Is that right?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And you stated at page 51 of your evidence that you had developed your own understanding of the relationships among the different variables based on the financial statements provided by Manitoba Hydro in Appendix 11.4.

Is that right?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: So if we focus on the first relationship, this shows rate changes, impact net income, retained earnings, and debt equity.

Is that right?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And are those the only three (3) variable impacts that you modelled for this relationship?

MR. JOHN ATHAS: Those are -- those are three (3) of the lines of the financial model that would change.

MS. MARLA BOYD: Are they the only three (3)?

MR. JOHN ATHAS: I don't believe so.

MS. MARLA BOYD: Do you have a list somewhere in the material of the others that would change?

MR. JOHN ATHAS: No.

MS. MARLA BOYD: Are you able to provide such a list?

MR. JOHN ATHAS: We'd be able to look at our model and tab -- tabulate what -- what numbers changed, yes.

MS. MARLA BOYD: Could you undertake to do that, please?

MR. CHRISTIAN MONNIN: We undertake to do so.

MS. MARLA BOYD: Thank you. So the undertaking is that you will review your model and provide an itemized list of the variables that are impacted by changes in net income -- rate changes.

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: Thank you.

--- UNDERTAKING NO. 110: La Capra to review their

model and provide an
itemized list of the
variables that are impacted
by rate changes

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: So to follow through that relationship in an example, I'm going to ask you to turn to Tab 3 at page 8 of our book of documents.

I understand this to be LCA's model using the Preferred Development Plan under the ref/ref/ref scenario, but adjusting rate increases from 2033 on to achieve a one point five (1.5) times interest coverage target rather than the one point two (1.2) interest coverage target modelled by Manitoba Hydro.

Is that right?

MR. JOHN ATHAS: Just one (1) second.

MS. MARLA BOYD: Sure.

(BRIEF PAUSE)

MR. JOHN ATHAS: Did you -- from what year on did you say?

MS. MARLA BOYD: 2033 on.

MR. JOHN ATHAS: I don't believe that's correct. I believe that the -- on top of the page it says, "Target year for 75:25 debt equity is 2032." And I believe that if -- if I look at the detailed data on line 66, it says -- it shows that the -- that the -- they had cut -- or, sorry, look at the debt ratio of -- on line 62 and -- as being -- and 63 as being less than 75 percent after that.

MS. MARLA BOYD: And it's less than that because you've moved the interest coverage target ratio to one point five (1.5) rather than one point two (1.2)?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: So I have the year right, the --

MR. JOHN ATHAS: Yeah.

MS. MARLA BOYD: -- interest cover kicks in, in 2033?

MR. JOHN ATHAS: Sorry, I was -- I was focussed on the -- I thought you -- I thought you -- I thought I heard that you had mentioned the debt coverage ratio, but you're right.

MS. MARLA BOYD: Okay. So I'm going to ask you to look at row 11, where LCA has recalculated the additional general consumers revenue starting in

2033, and it's circled in red.

That's -- that's where LCA made a change to the additional consumers revenue, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And if I move over to the last column in that row, fiscal 2037, we can see that in row 15 the total revenue is forty-five fifty-two (4,552) -- 4.5 billion.

Do you see that?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And that compares to forty-one twenty-eight (4,128) in the -- in the row below, row 16 below, which is the total revenue under the one point two (1.2) times interest coverage, correct?

MR. JOHN ATHAS: That's correct

MS. MARLA BOYD: And if I move to row 46, the net income, 107 million -- I'm sorry, 707 million, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And that compares with 283 million in the following row, 47?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: Which is the number from the one point two (1.2) times interest coverage scenario, correct?

MR. JOHN ATHAS: Correct.

MS. MARLA BOYD: And if I go to page 10 of this tab, retained earnings are shown on row 94 as eleven thousand, four hundred and sixty-three (11,463). That's in millions.

Is that right?

MR. JOHN ATHAS: In -- in the last column? Yes.

MS. MARLA BOYD: Yes. And that compares to page 1, Tab 1. It's not the same number.

Or I can compare it to nine three three five (9,335) in the row immediately below?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: So the debt ratio on page 8, row 63, page 8 of that tab, is 66 percent, correct, circled in red?

MR. JOHN ATHAS: Yes, corresponding to the -- what the number would be without the change that we made.

MS. MARLA BOYD: The 66 percent is under the LCA scenario, correct?

MR. JOHN ATHAS: Oh, yeah. I'm sorry. Yeah, that's right, yeah, under -- under the -- with the change, yeah.

MS. MARLA BOYD: And without the change, it would have been 70 percent, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: So if I turn to the cash statement, which is at page 12 of that tab, that shows that cash at the end of the year is $156 million in 2037 at row 124, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And that hasn't changed from the one point two (1.2) times interest coverage target scenario. That's Tab 1, page 5.

Can you confirm that?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And on the income statement, which is at page 8, finance expense is shown on line 32. And in 2037, it's -- it's 1,394 million.

Is that right?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And that also has not changed from the one point two (1.2) times interest coverage target scenario?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: So your model captures the direct effects of rate changes on net income, retained earnings, and debt ratio, but it does not capture the change in cash or interest payments.

Is that correct?

MR. JOHN ATHAS: It makes the assumption that there's no change in the amount of pay-down of debt. So the interest coverage didn't change -- so the interest payment didn't change. And it has not captured the higher accumulation of cash.

MS. MARLA BOYD: That's a 'yes', correct?

MR. JOHN ATHAS: Correct.

MS. MARLA BOYD: Would you agree that increases in rates to achieve a one point five (1.5) times interest coverage target results in an increase in -- in cashflows to Manitoba Hydro?

MR. JOHN ATHAS: Yes.

MS. MARLA BOYD: And that increase in cashflows would mean that Manitoba Hydro would no -- no longer need to fund its operation by that amount, and may reduce the amount of additional debt that's required, all else being equal, correct?

MR. JOHN ATHAS: They'd be able to do that. I don't know whether they want to do that.

MS. MARLA BOYD: And if they were to do that, that would result in lower interest payments, correct?

MR. JOHN ATHAS: Correct.

MS. MARLA BOYD: And that would also reduce the interest payments, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And does your model calculate compound interest?

MR. JOHN ATHAS: I think it apportions interest to -- to assets.

MS. MARLA BOYD: On a year-by-year basis. It doesn't carry them forward between the years, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: At Tab 4...

(BRIEF PAUSE)

MS. MARLA BOYD: At Tab 4 Manitoba Hydro has prepared an interest coverage ratio target sensitivity.

Did you have an opportunity to review that?

MR. JOHN ATHAS: Somewhat, yes.

MS. MARLA BOYD: Just for comparison purposes, the projected financial statement for the Preferred Development Plan under the one point two

(1.2) times scenario reproduced from Appendix 11.4 is also included at Tab 5 of the book of documents.

So when we look at Tab 4 -- sorry, Diana. If we look at Tab 4, page 18...

(BRIEF PAUSE)

MS. MARLA BOYD: You can see that cash at the end of the year in 2037 is $172 million, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And that compares to 156 million in Tab 5 at page 24?

(BRIEF PAUSE)

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And finance expense in 2037 on row 20 at page 14, in 2037, is 1,284 million.

Do you see that?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And that compares to 1,394 million at Tab 5, which is on page 20?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: So in the Manitoba

model additional general consumers revenue is 1,470 million in 2037, page 14, row 13?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And in the LCA model the addition consumers revenue is 1,635 million in Tab 3, page 8.

MR. JOHN ATHAS: Without flipping back, I'll -- I'll take your word for it.

MS. MARLA BOYD: Thank you. And by 2062, Manitoba Hydro's model shows additional general consumers revenue of 1,856 million.

Do you see that? It's on page 15, row 13?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And the LCA model shows 2,256 million from page 9, row 11?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And that difference is due to the compound effect in interest, correct?

MR. JOHN ATHAS: Yes.

MS. MARLA BOYD: I'll ask you to turn to Tab 6 of our book of documents.

(BRIEF PAUSE)

MS. MARLA BOYD: The top chart on that page has been reproduced, 10-36, from your report. And if we assume LCA's discount rate of 7.05 percent and compare the NPV analysis of your analysis to Manitoba Hydro's analysis, which is below, we can see that LCA's Figure 10-36 shows an impact of nearly $1.3 billion on the NPV of the Preferred Development Plan by changing the interest coverage ratio from one point two (1.2) to one point five (1.5), correct?

That's the difference between the blue bar and the red bar on the top graph?

MR. JOHN ATHAS: Correct. Correct.

MS. MARLA BOYD: And Manitoba Hydro's figure below shows a significantly smaller impact, just over $300 million, being the difference between the blue bar and the red bar on the bottom graph?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: Essentially, that's a billion dollars in difference in NPV between LCA's analysis and Manitoba Hydro's analysis due to the effects on cash, finance expense, and compounding, correct?

MR. JOHN ATHAS: Due to the assumption that the cash coming in was not used to change the schedule of paying down debt in our -- when we modelled the increased coverage ratio and the increased revenues.

MS. MARLA BOYD: If I turn back to the relationship shown in LCA's Figure 10-32 at Tab 2...

(BRIEF PAUSE)

MS. MARLA BOYD: Page 7. If we look at the next series of relationships, you've got capital costs impacting net debt to the debt-equity rati -- and the debt-equity ratio, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: Does that also impact cash, finance expense, or any of the other variables or calculations?

(BRIEF PAUSE)

MR. JOHN ATHAS: It -- it definitely would change some -- some of the elements on all these -- on these -- on the several pages it takes for the financial statements.

MS. MARLA BOYD: Our staff was not able to reproduce your model with any of those variables changing.

MR. JOHN ATHAS: You sho -- you should have called us up.

MS. MARLA BOYD: Could I ask you to undertake to provide an example of how the relationships would function in the model?

MR. JOHN ATHAS: It might be better served with a conference call.

MS. MARLA BOYD: Well, un -- unfortunately I need it to be on the record. So if I could ask you to undertake to provide that example that shows how those -- those relationships function, I'd appreciate that. I'm happy to have a conversation offline, but we do need to have it on the record as well.

MR. JOHN ATHAS: Yeah, I think that would be easy to follow up with something on the -- something on the record after we have a discussion.

MS. MARLA BOYD: Thank you.

MR. JOHN ATHAS: With a -- including a party that's not here right now, from outside. That's why I just wanted to...

MS. MARLA BOYD: Okay. I'll discuss that with Mr. Monnin and we'll work that out.

MR. CHRISTIAN MONNIN: That's fine, thanks.

THE COURT REPORTER: Is that an undertaking?

MR. CHRISTIAN MONNIN: I don't think at the moment, but we'll go offline and discuss and we'll get it back on the record once we've come to a --

MS. MARLA BOYD: If we -- that's fine.

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: Looking at the next relationship, net debt impacting finance expense and interest coverage, if you change the net debt in LCA's model, does the gross interest or cash change?

MR. JOHN ATHAS: Yes.

(BRIEF PAUSE)

MS. MARLA BOYD: I'm going to have to ask you for the same non-undertaking that we have a discussion about -- about that, because again, our staff was not able to -- to replicate a model that does that. And again, if we can't resolve that, I'll come back and ask that it be put on the record.

MR. CHRISTIAN MONNIN: That's acceptable.

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: In that scenario is interest compounding?

MR. JOHN ATHAS: It's -- it's capturing what should be the effect of compounding interest, yep.

MS. MARLA BOYD: In the same way that it did in the example that we already walked through, where it didn't change?

(BRIEF PAUSE)

MR. JOHN ATHAS: Well, when we did -- I don't believe we don't chan -- we didn't change net debt as well, so that's -- now we're talking about if you don't -- if you change net debt, will the finance expense change, yeah.

MS. MARLA BOYD: You're suggesting that in your model if you change net debt, that finance expense changes?

MR. JOHN ATHAS: I believe so.

MS. MARLA BOYD: Can I ask you to undertake to check that, please, and get back to us? I believe you'll find it does not.

MR. JOHN ATHAS: We can do that.

MS. MARLA BOYD: Yes, LCA is going --

has undertaken to check their model to confirm whether changes in net debt impact changes to finance expense.

--- UNDERTAKING NO. 111: La Capra to check their model and to confirm if changes in net debt impact changes to finance expense

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: Looking at the next relationship, natural gas export, electric prices, and extraprovincial revenues.

If you change the extraprovincial revenues in LCA's model, does the cash, net debt, or finance expense calculation change?

(BRIEF PAUSE)

MR. JOHN ATHAS: I -- I don't believe it does.

MS. MARLA BOYD: And finally, when you look at the relationship between natural gas fuel and power purchase expense and net income, if you change the fuel and power purchase expense in your model, does the cash, net debt, or finance expense change?

(BRIEF PAUSE)

MR. JOHN ATHAS: You -- just to clarify, you said power purchase expense or the --

MS. MARLA BOYD: Fuel and power purchase expense, yes.

MR. JOHN ATHAS: Okay. And does it change --

MS. MARLA BOYD: Does it change cash, net debt, or finance expense?

MR. JOHN ATHAS: Adding that as a check to the prior undertaking, I'll say --

MS. MARLA BOYD: Thank you.

MR. JOHN ATHAS: -- subject to check, yes.

MS. MARLA BOYD: So you'll undertake to check that and advise whether fuel and power purchase expense change -- changes cash, net debt, or finance expense?

MR. JOHN ATHAS: Yes.

--- UNDERTAKING NO. 112: La Capra to check their model to confirm if fuel and power purchase expense changes cash, net debt, or finance expense

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: LCA also conducted a domestic load growth sensitivity in Appendix 10A.

Is that right?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: Did that analysis consider the changes to extraprovincial revenue, cash, net debt, finance expense, or the compounding effective interest?

MR. JOHN ATHAS: I don't believe it did.

MS. MARLA BOYD: And you also conducted the alternative goal analysis on the debt-equity ratio target year in Appendix 10A, correct? I have it at page 53 of your report.

MR. JOHN ATHAS: That's sounds correct.

MS. MARLA BOYD: And did that analysis consider changes to cash, net debt, finance expense, or the compounding effect on interest?

MR. JOHN ATHAS: No.

MS. MARLA BOYD: In Appendix 10B, LCA conducted an analysis of drought using thirty-four (34) year sequences of water years with the various drought years beginning in 2014.

Do you recall that?

MR. JOHN ATHAS: Yes.

MS. MARLA BOYD: Did you develop your own projected financial statements for -- for this analysis using your model?

MR. JOHN ATHAS: Yes.

MS. MARLA BOYD: And are those filed with the material?

MR. JOHN ATHAS: I don't believe we filed those work papers.

MS. MARLA BOYD: Could I ask you to undertake to file them, please?

MR. JOHN ATHAS: Excuse me. We -- we have filed those work papers.

MS. MARLA BOYD: Could you advise me where they're on the record, because we weren't able to locate them?

MS. MARY NEAL: So the supplemental filing, I sent a disc with work papers. I can't recall offhand whether it included anything from 10B, but we could check.

MS. MARLA BOYD: Okay. So I'll ask you to check -- undertake to check. And if they're not filed on the record, either tell me where they are or -

- or file them.

MR. CHRISTIAN MONNIN: We undertake to do so.

THE COURT REPORTER: Sorry, could we get that undertaking clarified, please?

MS. MARLA BOYD: Sure. LCA has undertaken to check their records to determine whether the financial statements associated with the modelling of a thirty-four (34) year sequence of water years for various drought beginning in 2014 are on the record. And if they are not, they will file them. If they are, they will advise where on the record they can be found. Did I get that right?

MR. CHRISTIAN MONNIN: Yes.

--- UNDERTAKING NO. 113: La Capra to check their records to determine whether the financial statements associated with the modelling of a thirty-four (34) year sequence of water years for various drought beginning in 2014 are on the record; and to indicate if they modelled

cashflow, net debt, finance
expense, and compounding
effects of the interest for
that analysis

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: Did LCA model the cashflow, net debt, finance expense, and compounding effects for that analysis?

MR. JOHN ATHAS: Yes, some of those with no change, I'm sure.

MS. MARLA BOYD: I'm sorry, you modelled them but didn't change them from Hydro's -- we don't understand what you mean.

MR. JOHN ATHAS: We -- we modelled the -- they're in the model. Whether the -- without having the work paper right in front of me right now to answer the question, I would assume that -- that some of them were held -- were held constant, just like we talked about in the other financial runs here today.

MS. MARLA BOYD: You say, "some of them." Of the -- the four (4) that we've listed -- cashflow, net debt, finance expense, and compound effects -- are you aware of any of them having changed, or are they all held constant?

MR. JOHN ATHAS: Can you read -- give me the list again?

MS. MARLA BOYD: Yes. Cashflow, net debt, finance expense, and the compounding effects of interest. And I'm going to guess you're going to check that and advise?

MR. JOHN ATHAS: I'll -- I'll check that the -- I believe that those parameters may not have changed. That's correct. We could add that to the other one if you'd like to do the bookkeeping of undertakings with a small number.

MS. MARLA BOYD: Fine. Thank you.

THE COURT REPORTER: Are we adding that to the previous undertaking or is it a new one?

MS. MARLA BOYD: Yes, you can add it to the previous undertaking.

MR. CHRISTIAN MONNIN: That's fine.

MS. MARLA BOYD: In connection with the undertaking relating to the analysis of the thirty-four (34) year sequences of water years or various drought years beginning in 2014, LCA is going to advise whether or not the model included -- whether they modelled cashflow, net debt, finance expense, and compounding effects of the interest for that analysis.

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: LCA also conducted an analysis of the CCGT Plan, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And as I understand it, that was not analyzed from a financial perspective.

Is that right?

MR. JOHN ATHAS: That's correct.

(BRIEF PAUSE)

MS. MARLA BOYD: For the LCA No New Generation Plan that you undertook, did you model that from the financial perspective?

MR. JOHN ATHAS: I don't believe we did.

MS. MARLA BOYD: Did you develop your own projected financial statements for the No Generation Plan?

MR. JOHN ATHAS: No.

MS. MARLA BOYD: On page 10B of your -- sorry, in 10B, page 12, of your report under the heading of B. It's about three-quarters (3/4s) of the way down the page.

MR. JOHN ATHAS: I was -- I was paging through that as you guys were. There is the -- I forgot -- forgotten about this last section of 10B that had a No New Generation case in it.

MS. MARLA BOYD: So --

MR. JOHN ATHAS: So I stand -- I correct myself that we did model No New Generation.

MS. MARLA BOYD: So there are financial statements associated with that?

MR. JOHN ATHAS: Yes.

MS. MARLA BOYD: And are they on the record?

MR. JOHN ATHAS: I believe they're in the -- the same question as whether they're in the work paper disc or not is -- stands for those, as well.

MS. MARLA BOYD: Okay. I'm going to ask for the same undertaking, that you'll check your records to determine whether or not the financial statements for the no -- No New Generation Plan have been filed on the record. If they have been filed, please advise where they are. If they've not been filed, please undertake to file them.

MR. CHRISTIAN MONNIN: We undertake to do so.

--- UNDERTAKING NO. 114: La Capra to check their records to determine whether or not the financial statements for the No New Generation Plan have been filed on the record

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: Are you aware of whether LCA modelled the approximate impact on net debt and finance expense?

MR. JOHN ATHAS: I believe we did.

MS. MARLA BOYD: And you did that on a proportionate basis?

MR. JOHN ATHAS: Yes, with an All Gas starting -- All Gas Plan model starting point.

MS. MARLA BOYD: And that's proportioned to the difference in capital costs, is that right?

MR. JOHN ATHAS: Capital expenditures, yes.

MS. MARLA BOYD: Did LCA model the cashflow and compounding effects for this analysis?

MR. JOHN ATHAS: To the extent that we

believe they changed, yes.

MS. MARLA BOYD: So if there's no change, your evidence is that you don't believe that either cashflow or compounding interest would affect that analysis?

MR. JOHN ATHAS: In the financial scenario we modelled, if there's no change, we would believe there wouldn't have been a change, that's right. I mean, there's -- as you -- as these questions have pointed out, there's different things that can be -- that can change, that it could offset, so there can be a change in cash.

So there might be -- I -- I don't have the work paper in front of me, so I might be -- there might be changes. But I said, To the extent that they changed. And you said, Do I know they didn't change? No, I don't know if they didn't change. So there -- there could be a change in that if the -- but I'm not -- but I didn't want to answer the question in a way that implied that I knew there would be a change.

MS. MARLA BOYD: And in looking at your modelling, if we find there is no change in the numbers, that wouldn't surprise you?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And that would suggest

that the even annual rate increases that you've included in your report are not calculated on the same base as other rates included in that chart, correct?

MR. JOHN ATHAS: I -- I wouldn't make that logical connection.

MS. MARLA BOYD: The rate impacts that you're showing don't include the impact of compounding interest, correct?

MR. JOHN ATHAS: We're talking about whether they change, and -- and I'm -- we -- we made every effort to capture the changes in annual -- even annual rate increases that would -- would occur with a consistent set of financial statements with the changes that we were able to model. So they were -- if there is an error, which I'm sure will be pointed out after you get your work -- after you get to look at our work papers, then it -- then it might -- then there might be some inconsistency.

But there is no -- no planned inconsistency on how we calculated that number from the other ones on that page.

MS. MARLA BOYD: Diana, could I ask you just to scroll down a bit so that we can see the top of that chart -- sorry, scroll up.

This shows nominal rate increase in the

No New Generation Plan, correct?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: So that's not showing a change. That's showing what the expected outcome is of that plan.

MR. JOHN ATHAS: Over time, yes.

MS. MARLA BOYD: And that plan doesn't include compounding interest effects, as we've just reviewed, correct?

(BRIEF PAUSE)

MR. JOHN ATHAS: Just need to make sure I'm answering the question that you're asking. Do I -- if there were changes, I believe it includes them. Do I -- do I know that there was change right now? I don't till I -- till we file the work papers.

MS. MARLA BOYD: And from the review that we've done of the work papers so far, it would show that your model does not include compound interest, correct?

MR. JOHN ATHAS: Includes changes in compound interest portion of the changes in assets.

MS. MARLA BOYD: On an annual basis, not moving from year to year. It doesn't carry those changes forward into the next year.

MR. JOHN ATHAS: An annual interest expense is just that: an annual interest expense. If it was -- if by -- what you've been referring to is a compounding of interest in a -- in an income statement that says interest expense, then I -- then I now come to realize that I'm not sure what the compounding interest effect that you're talking about is, because certainly the interest expense is proportionate to outstanding debt.

And I don't -- and -- and hopefully -- well, we've modelled the assumption that -- that Manitoba Hydro is paying its interest expenses. And -- and therefore, there isn't the compounding. If the -- if they -- if there's borrowing that's embedded in here to cover interest expense, then I guess you could call that a compounding of interest.

But I'm not -- I'm not -- in the income statement, I'm not sure what you mean now by 'compounding interest'.

MS. MARLA BOYD: Well, you can take it back to a simple analogy of your own credit card: If I don't pay it all in one month, the next month I pay interest on the interest, correct?

MR. JOHN ATHAS: That's correct. And

in the -- and the assumption here is that -- in the modelling that the interest due is paid off in each year. So that means that the -- so I'm not sure that there's a compounding effect.

MS. MARLA BOYD: And a change in interest would lead to a change in cash requirement.

MR. JOHN ATHAS: A change in interest expense in a year could lead to a change in cash requirements.

MS. MARLA BOYD: In your supplemental expert analysis report, page 13, you indicate that Manitoba Hydro did not conduct financial modelling analysis for the additional plans, referring to the CCGT and the No Generation Plans.

Do you see that?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: And your conclusion is, accordingly, the LCA financial analysis on those plans is limited.

Is that right?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: Could I ask us to pull up Figure 10-7, please? It's on page -- 10A, page 18. Thank you.

So according to your description, the

red portion of the graph represents increases in general consumers revenue, absent the plan.

Is that your understanding?

MR. JOHN ATHAS: No.

MS. MARLA BOYD: Okay. Why don't you explain to me what you understand that graph to represent?

MR. JOHN ATHAS: That's the increase in -- the red is in the increase in general consumers revenues at approved rates. It's without -- it's without adding -- accounting for the additional costs required of the plan. But it does not model a case where you didn't do the plan.

MS. MARLA BOYD: And what does the blue represent?

MR. JOHN ATHAS: Additional consumers revenue to -- to meet the modelled financial parameters under the Preferred Development Plan.

MS. MARLA BOYD: Including the plan and all other revenue requirement?

MR. JOHN ATHAS: That's correct.

MS. MARLA BOYD: Thank you, panel. Thank you, Mr. Chair. Those are my questions.

THE CHAIRPERSON: I do have a few follow-up questions in relation to what we've just been discussing and specifically addressing the issue of the modelling.

Now, developing your modelling allowed you to do what?

MR. JOHN ATHAS: Allowed us to test -- or provide some variation around certain assumptions that were -- that were made by Manitoba Hydro when they -- when -- in their -- in their modelling choice. For -- for instance, like the -- I think we spoke about it yesterday or the day before. The example that was brought up by one (1) of the Intervenors during questioning was pointing to the chart that had the variation and what year we target to get to the 75 percent debt-equity ratio, and we changed that parametrically. That's -- that's an excellent example of the kind of things that our model was able to provide metrics and insight for.

THE CHAIRPERSON: Did you attempt to construct your model as closely as possible or aligned as closely as possible to Manitoba Hydro's financial modelling?

MR. JOHN ATHAS: Yes.

THE CHAIRPERSON: And your opinion, did it -- did it align pretty closely or did it approximate or...?

MR. JOHN ATHAS: It -- it approximated. I believe they -- the observations we've made are consistent with the degree of approximation.

THE CHAIRPERSON: So while it may not have perfectly aligned, it allowed you to get some sense of the sensitivity of the results to the parameters -- the change in parameters, right? I mean --

MR. JOHN ATHAS: That's -- that's correct.

THE CHAIRPERSON: Okay.

MR. JOHN ATHAS: I mean, we certainly weren't able to match any logic that was embedded into the -- into the financial planning and financial modelling, for instance, as to the exact timing of paying off debt that Manitoba Hydro may have made, with a change in perturba -- perturbation of something like a target year or other stuff.

So we don't profess to have -- to have our model essentially be a forecast of Manitoba Hydro actions.

THE CHAIRPERSON: Now, the rate changes that were described in the figure we just examined were not -- we shouldn't be relying on them on precise values.

They're estimations, in your opinion, of the impact of different parameters?

MR. JOHN ATHAS: The -- the relative reasonableness is -- is -- changes probably, as -- as in many of the -- many of the numbers in this case have been carried out to more digits than they're probably significant digits. So there's probably -- I would caution, that looking for anything any different than a tenth of a percent, or maybe even a couple of tenths of percent, anything within those kind of numbers are the same numbers.

THE CHAIRPERSON: Thank you very much. I'll turn the microphone over to Mr. Peters, please.

MR. DANIEL PEACO: Could I -- could I just add one (1) thing to that? The financial modelling that we did was -- was more done as an incremental analysis and do -- to do parametric tests. We did not have the benefit of having the additional financial runs done from the Company because they weren't -- they were asked for but not provided, indicating it took too much time.

So our modelling was limited by we did not have -- virtue of the fact of the kinds of work papers that we've provided Manitoba Hydro to do this modelling. So the extent that we're -- our model was able to replicate their system, it didn't have the benefit of the kind of background on their -- on their system that -- and how their models worked, that we were discussing here today about our model.

MR. JOHN ATHAS: Simply put, if we had -- if -- if in an undertaking Manitoba Hydro provided financial analysis of all -- of their modelling of all the sensitivities that we ran in our case, we'd be glad, after a review of their model, to update our charts with their information.

CROSS-EXAMINATION BY MR. BOB PETERS:

MR. BOB PETERS: Good morning, Ms. Neal, Mr. Athas, Mr. Peaco, Mr. Monnin. I have some questions for the panel. And whoever is best able to provide full and complete information to the panel please do so. And my questions this morning, -- and I'll stress this morning' -- are not designed to elicit CSI onto the public record, so please keep your guard up as you have on that matter.

If you believe that a complete response to my questions needs to get into CSI matters, please advise your counsel. And that answer can be provided either in writing as CSI or it can be deferred till later today.

And lastly, by way of preliminary, just please feel free to reference any of your slides to assist in your answers, if you wish to demonstrate some information to the -- to the panel.

I just wanted to follow up, Mr. Peaco and Mr. Athas, on that last comment you had in response to the Chair. Is it correct that Manitoba Hydro did not provide LCA with its financial model to run -- to run your cases?

MR. JOHN ATHAS: That's correct. The financial model and the economic model were not provided to La Capra.

MR. BOB PETERS: And they were requested?

MR. JOHN ATHAS: Yes.

MR. BOB PETERS: And your -- your last indication was that if Manitoba Hydro wants to re-run the La Capra cases, La Capra would be prepared, if the panel so directed, to review the -- those results and compare them to the La Capra results?

MR. JOHN ATHAS: That's correct. That's correct, and if they were -- and to the tune of producing the same charts we have with their -- using their numbers.

MR. BOB PETERS: All right. Just so

the panel understands your request. I thank you for that.

(BRIEF PAUSE)

MR. BOB PETERS: In Appendix 9B of the La Capra report, on page 30 La Capra provides a table -- or a Figure 9-98.

You're familiar with that table?

MR. JOHN ATHAS: Yes.

MR. BOB PETERS: This table was La Capra trying to provide some -- some comparisons as between the plans to isolate the relative economics of certain aspects of those plans, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And I believe we could also indicate, and perhaps should for the benefit of the panel, that in Manitoba Hydro Exhibit 104-8 -- that's 104-8 and maybe we'll just put that one on the screen, on page -- I have page 3 of 7. Thank you. This is a doc -- a document that you reviewed at some length with Mr. Hacault.

You remember that?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: Would it be correct

that the information in 104-8 that's on the screen now was more current information than -- than La Capra had when it did its Figure 9-98?

MR. JOHN ATHAS: Correct.

MR. BOB PETERS: And at the bottom of the figure that's on the screen, we see some different sensitivities run, and again I'm not going to review those on this chart.

The long and the short of this information is that what's on the screen in front of the Board as part of Exhibit 104-8 had revised capital costs and also revised treatment of common factors that La Capra did not have at the time it prepared its Figure 9-98?

MR. JOHN ATHAS: In addition, it has, in a couple of the plans, a change in the treatment of the -- whether WPS was making an investment or not.

MR. BOB PETERS: All right. Good point. You indicate that -- for Plan 5 and Plan 14, Manitoba Hydro has updated those to include a sale of 308 megawatts to WPS, but WPS is not going to invest in the transmission line.

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: All right. Understand your point. If we go back to, then, Figure 9-8 in your book of documents -- I'm sorry, Figure 9-8 on page 30 of 9B, this information that you're providing to the Board was done in your supplemental report, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And it was done after you received some additional information from Manitoba Hydro that it -- that you weren't able to obtain when you prepared your initial report.

Have I got that right?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: The information before the Board on the screen is the full complement of the -- of the cases that Manitoba Hydro provided in its August 16th, 2013, filing?

MR. JOHN ATHAS: No. It actually -- the analysis that we were putting forth here was trying to compare plans to -- to show a difference of one (1) particular element. And just as a quick glance, it wasn't necessarily meant to be all inclusive of every plan. So I -- like just -- there was no analysis that needed the Wind/Gas Plan, for instance, so obviously there's nothing there that relates to Plan 3.

MR. BOB PETERS: No, I -- I understand that point.

But the information here to run these

plans came out of Manitoba Hydro's initial August 16, 2013, filing?

MR. JOHN ATHAS: I apologize for not understanding the question.

MR. BOB PETERS: No.

MR. JOHN ATHAS: That -- that's correct.

MR. BOB PETERS: All right. And let's just look at a few of the -- a few of the issues.

If we go down to -- let's just start with adding Keeyask as an example so that the panel is clear, that you tested Plan 2 against Plan 1 to see what the impact economically would be of adding Keeyask generating station, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And this -- if we follow -- based on the information that was available when this was prepared, it shows the Board that on -- in comparing the Keeyask to the All Gas, and the All Gas is the -- is the -- the base case, so to speak, there's a -- a seventy-eight (78) year net present value difference of $887 million?

MR. JOHN ATHAS: Yes, under the reference assumptions.

MR. BOB PETERS: And that's from adding

Keeyask?

MR. JOHN ATHAS: That's from adding Keeyask in the year 2022.

MR. BOB PETERS: And it shows the Board that in the first thirty-five (35) years of adding Keeyask, the -- the benefits haven't yet materialized.

They're still negative relative to the All Gas?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And so those benefits for Keeyask materialize somewhere between year 35 and year 50, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And that -- we could find that exact location if we wanted to use this dated data by looking at the -- the breakeven year?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And moving down to the economics of adding the 750 transmission line instead of the 250 transmission line, you ran it through a number of different comparators, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And why did you chose different cases to test as opposed to just -- to just one (1) case?

MR. JOHN ATHAS: Just to make sure that we don't mislead. These -- these are all numbers that were modelled by Manitoba Hydro. So what we -- what we did is make comparisons to do -- to -- to gain some information, insights from the comparisons. So we chose the -- we chose all three (3) because we didn't want to -- we wanted to examine how the -- the change from the two fifty (250) to the seven fifty (750), what the economics would change based on what other resources were in place at the time.

And -- and those -- and that -- and therefore we got -- and that's what -- that's what we were just trying to -- to find out.

MR. BOB PETERS: And so you -- La Capra tested the seven fifty (750) economics versus the 250 megawatt line economics by way of three (3) rate -- three (3) comparisons?

MR. JOHN ATHAS: That's correct.

(BRIEF PAUSE)

MR. BOB PETERS: And just so the panel is understanding of your -- your results, the Plan 6, which was the Keeyask/Gas31 and the seven fifty (750), was compared to Plan 4, where Keeyask in '19, Gas in

'24, and a 250 line was used, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And this basically isolated out the -- just the timing, I suppose, of the -- of the additional resources is -- is shown here.

Does that impact on the economics of the transmission line?

MR. JOHN ATHAS: The timing change in the resources of the gas timing certainly does chan -- does affect that. The -- the need for it is changed with the 750 line versus the 250 based on the -- the way the -- the dependable energy calculation is -- is made.

So -- but it -- it captures both the effect of changing the timing of -- of new plant installed and the changes of the mechanics of whether -- of how much value there is to imports and exports.

MR. BOB PETERS: And the 750 line doesn't become eco -- more economical than the 250 line under any of the years in which that was examined?

MR. JOHN ATHAS: That's correct. Well, cumulatively under any -- under any of these.

MR. BOB PETERS: And does it also then demonstrate that there wouldn't be a benefit to having a 750 line compared to a 250 line if there was no

Conawapa?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: In terms of adding Conawapa, again there were -- there were four (4) tests done, as shown on Figure 9-98, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And these again used all of Manitoba Hydro's original filed numbers that you've indicated?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And in these particular cases, the economics of Conawapa appear predominantly negative except in a couple of cases, when you get out to at least seventy-eight (78) years?

MR. JOHN ATHAS: That's correct.

(BRIEF PAUSE)

MR. BOB PETERS: Would the panel be correct in observing that the Conawapa economics only become positive if there's a 750 line accompanying that generating station?

MR. JOHN ATHAS: In -- within the cases analyzed, that's correct.

(BRIEF PAUSE)

MR. BOB PETERS: The Board has also understood from Manitoba Hydro's revised filings that not all of the plans that are initially filed by Manitoba Hydro have -- have been run through new economic analysis based on the most current updates.

And that's your understanding, sir?

MR. JOHN ATHAS: That's my understanding.

MR. BOB PETERS: And in terms of -- including such things as the levels of DSM activity, perhaps we can go to La Capra Exhibit 47, page 5.

(BRIEF PAUSE)

MR. BOB PETERS: What La Capra provides the Board on slide 5 that's in front of them from your Exhibit 47 is a matrix of the plans and the updates that La Capra understands Hydro has done to date?

MR. JOHN ATHAS: At the time of the update, that -- yes. I think that it -- that we are now aware that Plan 6 had file -- was filed in -- in some detail with DSM. So I'd add Plan 6 to the -- to the -- in -- in parentheses, similar to -- on the third

-- on the fourth note there, similar to what it is on the third.

MR. BOB PETERS: All right. So what you're telling the Board is Hydro started off with fifteen (15) resource plans, and then they updated five (5) of those plans based on 200 -- sorry, based on 2013 information, correct?

MR. JOHN ATHAS: Correct.

MR. BOB PETERS: And then since that was filed back in August of 2013, there's been some updated analysis based on 2014 capital costs, as well as some changes in how Manitoba Hydro treats the common factors?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And your last point was Plan 6 should be added to your fourth bullet, because your understanding is that in terms of the analysis based on different levels of DSM, Plan 6 is going to be -- or has been included in some of the materials provided by Manitoba Hydro?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: When you said, previously, back to your Figure 9-98, I understood you to be saying there was no benefit to the 750 megawatt line over the 250 line without Conawapa.

I had that correct?

MR. JOHN ATHAS: That's what these comparison show.

MR. BOB PETERS: That -- does that conclusion take into account the benefits of additional import capability that was modelled in the no new generation case?

MR. JOHN ATHAS: No, it does not.

MR. BOB PETERS: Directionally what -- what benefit would that -- would -- would additional imports have relative to -- to the economics of the 750 line without Conawapa?

MR. JOHN ATHAS: If the -- in the comparison shown here, if the relaxation of the import criteria was only in the 750 transmission cases it would probably make the -- the second and third comparisons in the middle of that chart, you know, the twelve eleven (1,211) and the fifteen thirteen (1,513) comparisons, it would probably make those more positive or less negative, and it would probably make the six four (6-4) ones less negative.

(BRIEF PAUSE)

MR. BOB PETERS: Based on the

information that La Capra now understands has been updated and filed before the Board, is La Capra able to revised this Figure 9-98 in any meaningful way, if so requested by the -- by the Board?

MR. JOHN ATHAS: In nine (9) -- in the addendum -- in the addendum we actually tried to update -- updated some of the information here, and I believe it's in -- in the presentation. I'm sorry. If you could just maybe stay in -- you can stay in the presentation, I believe. But we keep going down. I don't remember what -- we'll eventually hit a table that's smaller that --

MR. BOB PETERS: Are you referring to the baseball chart on page 70 of your presentation? I'm looking at Exhibit La Capra 45, or was it --

MR. JOHN ATHAS: Oh, that's right. In La Capra 45, it's prob -- that's where it is. And that sounds about right: seven zero (70).

MR. BOB PETERS: I'm not sure --

MR. JOHN ATHAS: Okay. And this --

MR. BOB PETERS: -- the Masters starts today so I think the scorecard should be more appropriately a golf score card, but I recognize your affinity for baseball, apparently, so let -- let's --

MR. CHRISTIAN MONNIN: And the -- the

Boston Bruins are playing tonight, so it's a hockey card.

MR. BOB PETERS: A home game, for some.

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: All right, back -- back to matters at hand.

MR. JOHN ATHAS: The -- the -- since these comparisons here shown are -- and now -- and now we know that there's an additional comparison -- additional information on Plan 6 that we didn't have from the presentations, but we have in the detailed analysis, we have the kinds of information that we -- that we could use to make some of the comparisons on tap -- Figure 9-98 for the addition of the capital cost change to make the -- the -- account for the capital cost change and -- well, the capital cost change, in -- in our analysis the treatment of common factors does not affect it at all.

MR. BOB PETERS: But what you have on the screen before the Board on page 70 of La Capra Exhibit 45 doesn't take into account the most current of the changes from Manitoba Hydro, does it?

MR. JOHN ATHAS: It doesn't cha -- cha -- take into account any changes to 2013 loads and assumptions, and it doesn't take into account DSM.

MR. DANIEL PEACO: The -- the only change is the change to capital cost.

(BRIEF PAUSE)

MR. BOB PETERS: Perhaps, because we have this on the screen, let's -- let's scroll back on the same document, please, Diana, to page 24.

What the Board is seeing now in reverse order is -- what's on the screen now on page 24 is the baseball card, the hockey card, the golf score card, based on the initial filing from Manitoba Hydro, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And this is based on the 2012 assumptions based on Manitoba Hydro's reference case, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And so from -- from slide 24, that's when you updated it on slide 70 to show the Board, for those five (5) or six (6) plans that you had additional information related to capital costs, what the look would be, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: Now, if we turn back, please, Diana, to slide 70 of this deck, does La Capra have sufficient information to update slide 70 of La Capra Exhibit 45, based on not just the capital costs, which is -- which is included, but also based on the 2013 update as well as the DSM information updates?

MR. JOHN ATHAS: Only for a case -- updating to this table, we'd only be able to update 5 and 14 lines, and we might be able to add 6 to that.

(BRIEF PAUSE)

MR. JOHN ATHAS: And I just would point out that the line -- line 3 would be unchanged, so in a sense we -- that would -- that could get carried over to an updated table.

MR. BOB PETERS: All right. Thank you for that information. We'll -- we'll let the panel consider whether that'll be a request. But before we -- we move these charts --

MR. JOHN ATHAS: I'm sorry. I misspoke. The -- the -- you asked for 2013 assumptions. That line 3 would not be the same. I'm sorry, Plan 3 would not be the same.

MR. BOB PETERS: Okay. But would you

be able to update Plan 3 for the 2013 assumptions, based on the information that La Capra has to date?

MR. JOHN ATHAS: No.

MR. BOB PETERS: In the discussions that you've had with other counsel, the issue of different metrics has come up.

You'll recall -- you'll recall that?

MR. JOHN ATHAS: Yes.

MR. BOB PETERS: And would I be correct in concluding the La Capra evidence to be suggesting that the panel should consider more than just one (1) metric in making -- in deciding whether it's going to make a recommendation related to a plan?

MR. JOHN ATHAS: It should -- it should be aware of more than one (1) metric and then make a decision as to what it wants to consider in making the decision.

MR. BOB PETERS: And I think you're walking tightly to the line that La Capra is not going to draw a conclusion that it thinks this panel is supposed to draw.

Would I be correct in that?

MR. DANIEL PEACO: That's correct.

MR. BOB PETERS: And you're indicating that the panel should at least be aware of the different metrics, and then decide as the panel as to which ones, if any, they want to put weight on?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And if they do put weight on it, how much weight they put on it.

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: So when we see a -- a score card of different metrics like we have, the -- some of the metrics may be negative, some of them may be positive for the same plan, depending on the length of view that's taken. And I think Board member Bel pointed that out this morning. Correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And so how does La Capra recommend that these different metrics be considered if the panel should choose to consider them? That is, why would -- why would there be a twenty (20) year view or a thirty-five (35) year view, or a fifty (50) year view, or a seventy-eight (78) year view of -- of net present value?

MR. JOHN ATHAS: Are you asking for an example of how you could use like two (2) metrics together and -- to inform a decision, more than one (1), at least?

MR. BOB PETERS: Well, I'm -- I'm

asking just about the -- the present value. And to be clear, the cumulative present value is just a snapshot on the -- on a point in time on the -- on the seventy-eight (78) NPV gets you your fifty (50) year NPV, correct?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: So -- so maybe, yes, to your question. Under -- give an -- give an example as to why these different mile posts on the NPV journey would have any significance to -- to decision makers.

MR. JOHN ATHAS: The -- as -- as I pointed out, these are somewhat indic -- substitutes for the line chart that we -- we spoke about that had the year-by-year. And so they -- so -- I mean, because certainly it gets the -- especially if we went back to all fifteen (15) plans, it would get kind of crowded on the line -- on the chart.

So what -- like let's take for example -- let's take example, Plan 8 line, the second from the bottom. And the -- if the -- if I was trying to consider, because of two (2) relevant points that I know about the analysis, that of the thirty-five (35) years is where there was some detailed load forecast, detailed modelling with SPLASH, and, you know, full consideration in developing the year-by-year scenarios, and there was -- and I -- but I'm very interested to know where the -- where a life cycle, kind of seventy-eight (78) year analysis would be.

So I'm kind of interested to know about those two (2) points. One (1) would -- could weigh it to say, Well, the -- the estimated seventy-eight (78) year benefit of $403 million is, you know, certainly a positive number in the black there. It's over -- it's over seventy-eight (78) years.

And one could say, Well, the fact that it's still a billion dollars in the hole in -- at the negative one-o-nine one (1,091) number in the C -- thirty-five (35) CPV column, that one could weigh it to say, That's -- that's okay, or they could weigh it to say, That's a pretty big number to still be in the hole at the end of the detailed analysis to just be going after $400 million over seventy-eight (78) years.

MR. BOB PETERS: So I take form your example that -- that the -- there's a forecast period involved for all of this, correct?

MR. JOHN ATHAS: A detailed forecast and modelling period through thirty (30) -- through thirty-five (35) years.

MR. BOB PETERS: Well, that's -- there's a forecast out to seventy-eight (78) years, but the details are in the first thirty-five (35) years?

MR. JOHN ATHAS: The -- the analysis was taken out through seventy-eight (78) years by extension of -- extension of the parameters that came out of SPLASH and exte -- with on -- on a real dollar basis and utilizing only replacement in kind assumptions for the -- any technology that had a short life that needed to be replaced before seventy-eight (78) years. There was no real load forecast made to change. There were -- there were no changes to individual things like power prices, or the like.

MR. BOB PETERS: All right. So you're suggesting that the most reliable information that there is in this forecast is in the first thirty-five (35) years and not after that, where there was an extension as opposed to a forecast?

MR. JOHN ATHAS: The ones that got the most thought, yes.

(BRIEF PAUSE)

MR. BOB PETERS: When it came time to calculate the -- the export revenues the power prices were escalated out through seventy-eight (78) years?

MR. JOHN ATHAS: No. The -- the net

effect of -- of -- the net revenue for a particular plan modelled either net cost or net revenue that takes into account any thermal costs that were incurred by Manitoba Hydro, any water rental costs that were incurred by Manitoba Hydro, any power sales revenue that was by Manitoba Hydro, any power purchase costs by Manitoba Hydro, and effect in -- embedded in there the power prices, was all held constant from -- after the year 35 based on the year 35 analysis. Or it might have been the last three (3) years; I actually forget.

But it was at -- it was basically using something constant, where you didn't have to make the individual forecasts --

MR. BOB PETERS: It was --

MR. JOHN ATHAS: -- that I was talking about.

MR. BOB PETERS: -- a constant avenue -- constant annual average growth rate used in the last few years of the forecast?

MR. JOHN ATHAS: That's right.

MR. BOB PETERS: Before we leave the chart that's on the -- the screen, which is found at Tab -- page 70 of La Capra Exhibit 45, we talked about the -- the net present value benefits. Are there circumstances where an NPV is -- is a better measure than any other measure, from La Capra's perspective?

(BRIEF PAUSE)

MR. JOHN ATHAS: NPV is always an important measure. Most of these other measures would probably -- you probably wouldn't want to use without having -- being aware of what the NPV is.

MR. BOB PETERS: And so the internal rate of return numbers, how -- how should these be interpreted relative to -- to Manitoba Hydro's moving forward?

MR. JOHN ATHAS: Well, what the internal rate of return numbers show from a couple -- two (2) aspects: The first one they show is -- they essentially show how much did I improve upon my cost of money. The cost of money in this reference case is -- on a real dollar basis is five point-o-five (5.05), the interest rate -- the -- the discount rate being used. And -- and so to the extent that the -- that -- again, using my Case 8 as -- there's a forty (40) -- $403 million net present value. That's equivalent to getting 5.5 percent interest on -- in the bank instead of 5.05 percent. So you can -- so it's -- it's indicative of -- of how much -- how much improvement

I've made versus the -- versus my cost to -- to borrowing money.

The -- so you would also -- then you could look at the case where Plan 4 has a number that's -- that's 6.4 percent. And that says that it's $900 million represents -- even though there were years when I had -- had to have increased cost in the front, that I -- that I bettered my cost of money by about a little less than a percent and a half over time. And it also is much better than the Plan 8 by about a percentage point.

So that says that the -- that says that those -- that that comparison is fairly -- is, you know, a good indication of numbers.

Now, let's take -- let's take an example of the LCA Wind case and compare that to the Plan 8. If I could be as -- as bold as to say that 459 million and 403 million are about the same number at -- over seventy-eight (78) years, it would be -- one could wonder how I would choose one (1) plan over the other there if that was the only choice I was making and that was the only consideration.

What the 8.2 percent IRR tells me in Plan -- on the Plan 3 line is that I've had relatively little years, a little amount of -- of years where I've had to have in -- experience increased cash flows versus All Gas in -- in the LCA Wind/Gas Case 3, because I have an 8.2 percent internal rate of return. And so the internal rate of return kind of measures the end point versus the amount of -- the amount of money that I had to go down and -- as -- so to increase my cost.

And similarly, the Plan 8 line says that my -- for just about the same net present value, I onl -- I had an internal rate of 5.5 percent. That means I must have had to take a -- a bigger amount of years when -- a large amount of years and maybe dollars where I had to ins -- incur a higher cost in order to -- before I could start experiencing benefits that ultimately got me to the -- about the same $400 million of net present value.

So normally, if they -- if you -- if you took those numbers as about the same, four fifty-nine (459) and four-o-three (403), it would probably be -- all else being equal and just looking at the numbers, we could say, I like the one that doesn't have as mony -- many years that are higher cost.

MR. BOB PETERS: I take from that answer then that IRR would be the -- a measure of a more efficient use of capital?

MR. JOHN ATHAS: Yes, it would be an indication of that.

MR. DANIEL PEACO: And you could see is -- the relationship on IRRs is -- is similar to what you'd see by comparing the seventy-eight (78) year NPV to the present value of the capital spent, which is the first two (2) columns. You know, so you look in the -- it's another way to look at a fairly similar effect.

MR. BOB PETERS: Sorry, Mr. Peaco, I -- do I interpret your answer there, keeping on Plan 8, to say you're spending $3.5 billion to -- to come out 400 million ahead?

MR. DANIEL PEACO: Yeah. And -- and to use John's example, you could -- if you're choosing between three (3) and eight (8), in one (1) case you can spend $1.2 billion to come out $400 billion ahead -- $400 million ahead, or you can spend $3.5 billion to come out $400 million ahead.

MR. BOB PETERS: All right. But in the -- in the circumstance of Manitoba Hydro being a Crown corporation, does that increase or decrease the importance of an IRR?

MR. JOHN ATHAS: If the -- if we could go to -- up a few slides to where you had the year-by-year chart, it will definitely stand out by its line chart versus all the other bar charts that we had here.

(BRIEF PAUSE)

MR. JOHN ATHAS: Okay. Let's look at this one (1) -- back one (1), I'm sorry. If --

MR. BOB PETERS: And just for the record we're on page 32 of La Capra Exhibit 45?

MR. JOHN ATHAS: That's correct. If that -- in the IRR looking at kind of these would say, If I'm not worried about having a year -- the impact of the years when I have negative cash flow in the -- or increased cash flow requirements, like -- that you see going very -- down in the blue line a lot, if I'm not worried about the capital component that Mr. Peaco pointed out in the first column, so if -- if I have no -- no constraints on me for that, and so -- so both of these elements do not cause -- cause any kind of a problem, then I would say it's not -- it -- it's not necessary to look at IRR.

But to the extent that it -- the capital constraint, or I like to understand or minimize the years of negative cash flow, IRR can be a good indicator.

MR. BOB PETERS: I take from that

answer, Mr. Athas, that if the -- if the dip in the blue line doesn't cause a concern, then looking out past 2062 you wouldn't put any weight on -- on the -- on the early years of that plan?

MR. JOHN ATHAS: Yeah, if I -- well, if I -- if I'm not worried about the dip, I -- then the next question is, How long am I -- how long is my perspective? And if it's -- if it's long enough, you would -- you would be able to use a year-by-year -- at that point in time, NPV like seventy-eight (78) years, and say the blue line is a higher number than the black line and, all else being equal, and no -- no other thoughts making them prefer one (1) over the other, that you could -- you'd make a decision and say, Probably the blue line is better.

MR. BOB PETERS: While we have this slide up, the All CCGT Plan appears less favourable than Manitoba Hydro's All Gas Plan.

Would I have that correct interpretation?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: Why is that the case?

MR. JOHN ATHAS: The All CCGT Case, by putting in combined cycles you're spending more money for more efficient -- for more efficient gas-fired units. This is indicating that at the -- when you're averaging the -- all the ninety-nine (99) different flow years that were modelled for each year, that the -- the operating savings by having -- by either burning less fuel when I'm using the CCGT, or may -- being able to change my import/export kind of decisions, were not sufficient to cover the -- the increased capital cost that I -- investment that I made.

MR. BOB PETERS: And was the All CCGT Plan optimized, or was it as Manitoba Hydro had initially filed it?

MR. JOHN ATHAS: Well, the All CCGT Plan was requested from staff initially, the PUB staff. The All Gas Plan has -- had -- had some degree of optimization attempted by a process where they -- using some busbar costs and preliminary runs to determine which -- whether they thought the addition -- a gas addition should be a combined cycle or a -- a simple cycle.

MR. BOB PETERS: And is it correct that, as -- as depicted here, there's no new export contracts included in the All CCGT case?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: And while we're on again the No Gen case, there was some discussion yesterday about import policies of other large hydro power systems.

Do you recall that, Mr. Peaco?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: Did Manitoba Hydro provide comparisons to other hydro power systems in its -- in its filing?

MR. DANIEL PEACO: No, it did not.

MR. BOB PETERS: And were there any economic analyses, other than those requested by La Capra, with respect to limits on the import policy?

MR. DANIEL PEACO: No.

MR. BOB PETERS: And I took from an answer you gave the Chairman, I believe, or perhaps it was Board Member Bel, earlier this morning that the current policy may preclude any consideration of any form of increased reliance on imports. And the thrust of what you were telling the -- the Board this morning was there may be reason that that should be examined.

MR. DANIEL PEACO: Yeah. We -- we reviewed all the materials that the Company had done to review their policy, and it -- and it didn't give us an indication that they'd tested the economics or -- or other considerations of -- of relaxing that policy. And they preserved the policy they've had place more or less since their initial analysis in 1977.

MR. BOB PETERS: And you said yesterday in some of your questions (sic) to other counsel, there was probing as to whether or not the inclusion of DSM and increased imports would also improve the Preferred Development Plan.

Do you recall that?

MR. DANIEL PEACO: I do.

MR. BOB PETERS: And I believe Manitoba Hydro discussed the potential for changes to the Preferred Development Plan that would enhance, I suppose, the comparison to the -- the No Generation case that -- that's currently up on the screen, as well as other plans.

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: And did Hydro consider such alternative features in its Preferred Development Plan in its -- in its submission?

MR. DANIEL PEACO: No, it did not.

MR. BOB PETERS: And did La Capra ask Hydro, in the course of La Capra's work, to examine such alternatives?

MR. DANIEL PEACO: Yes. As part of the scope of work, we were asked to explore a number of possibilities. And we asked for a number of different analyses that would have explored those issues. But the -- the two (2) cases that we were provided were -- were the -- were the limit of the analysis that was produced as a result of that.

MR. BOB PETERS: So other than those two (2) cases that La Capra requested, were there any other evaluations of those alternatives?

MR. DANIEL PEACO: No.

(BRIEF PAUSE)

MR. BOB PETERS: I want to turn to slide 32 of La Capra Exhibit 45, if I could. I think that's still the one on the screen, Diane.

This plan, that is, the CCGT Plan that we've been talking about, that was different than Manitoba Hydro's All Gas Plan, correct?

MR. DANIEL PEACO: Correct.

MR. BOB PETERS: And Manitoba Hydro's All Gas Plan had a mixture of single-cycle as well as combined-cycle generating turbines.

MR. DANIEL PEACO: That's correct.

MR. BOB PETERS: And I think you've explained that the -- the combined cycle are more efficient as well as higher in capital cost.

MR. DANIEL PEACO: That's correct.

MR. BOB PETERS: And in the Manitoba Hydro plans, were they optimized for each of the alternatives?

MR. DANIEL PEACO: They -- they did a -- an optimization routine to pick a -- a cycle. But we tested that and -- with some of their detailed results, and we -- we came to the conclusion, and I think it's summarized on page 26 of our -- of this same exhibit, that there was opportunities to improve on both the -- their All Gas and the All CC case.

Specifically, I'm referring to the conclusion in the third bullet of the observations, is that in the All CC case, there were effectively seven (7) combined cycle units added to the plan and -- and there -- there were four (4) combined cycle units in the All Gas Plan.

And to us it looks like four (4) was too little, seven (7) was too many, and five (5) or six (6), the Goldilocks' case probably would have been five (5) or six (6).

MR. BOB PETERS: That wasn't tested in any detail?

MR. DANIEL PEACO: No, other than the -- the review that we did of the -- the two (2) cases that they provided.

THE COURT REPORTER: Excuse me, Mr. Peaco. Did you say Goldilocks' case?

MR. DANIEL PEACO: Sorry. Yes, I did.

(BRIEF PAUSE)

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: Before I leave the discussion of some of the plans, since your report was filed, it's my understanding of the evidence that Hydro has indicated to conserve the Minnesota Power 250 megawatt and the WPS 308 megawatt contracts without building Conawapa in terms of providing the energy.

Is that -- is that a conclusion you've reached, as well?

MR. DANIEL PEACO: The Minnesota Power 250?

MR. BOB PETERS: Yeah. I think we can put up, if we could, Manitoba Hydro Exhibit 138. And turn, please, to the chart on the next page.

(BRIEF PAUSE)

MR. BOB PETERS: Leaving aside the

specific contractual terms and whether there's conditions precedent or termination options or whatever there may be, is it -- is it correct for the panel to understand that the Minnesota Power 250 sale and the WPS 308 sale could be serviced without the need for Conawapa?

MR. DANIEL PEACO: Well, if I understand this -- this chart correctly, the Minnesota Power 250 contract would be in the dark blue assigned export.

MR. BOB PETERS: Let's make that assumption.

MR. DANIEL PEACO: Okay. If that's the case, then -- then, clearly, this shows that dependable supply post-Keeyask to be well above both of those contracts for the duration of -- of the contracts in this -- depicted in -- in the chart here.

(BRIEF PAUSE)

MR. BOB PETERS: Mr. Chairman, I want to turn in -- and the time I have left, run through some of the specific reports. It might be an opportune time for a break, although I do have another matter that could just take a few minutes, if I could.

THE CHAIRPERSON: Let's do the few minutes. And then we'll --

MR. BOB PETERS: All right.

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: If we could go back. Sorry to jump around a little bit on you, Diana, but back to 9B of the La Capra report, and page -- the page just before the one that's on the chart -- on the screen is page 9B-29. And I only raise this so that the witnesses have it in front of them.

The suggestion -- if we make the assumption that -- that the export contracts that Manitoba Hydro has signed in -- going into the future will still remain available even if Keeyask is delayed a couple of years, how does La Capra analyze whether that delay is a good thing or a bad thing from Manitoba Hydro's perspective or its ratepayers' perspective?

MR. DANIEL PEACO: I guess the question is whether that's absent further work from Manitoba Hydro.

MR. BOB PETERS: Well, at this point, Manitoba Hydro hasn't done that analysis, correct?

MR. DANIEL PEACO: That's correct.

MR. BOB PETERS: Now, based on the

analysis done by La Capra, are you able to provide the Board with any conclusions that La Capra has reached on that issue of whether or not a delay of Keeyask is a -- is good, bad, or indifferent?

MR. DANIEL PEACO: Well, only in a very limited way, and -- and it's very difficult. You -- you may recall the discussion we had yesterday regarding a -- an approximation we did on a delay case for Keeyask and -- and apparently a case run early on by Manitoba Hydro to that effect. Both of those exercises would suffer from the fact that they don't incorporate any of the set of changed assumptions we've talked about.

So I would presume with -- if we had an analysis of that, or if we had -- if we had updated Plans 1 and Plan 2 we could -- we could infer some things from tha -- from that as we -- as we attempted to deal with the Plan 1 and Plan 2 information we have in hand.

But, you know, you -- you really should have a -- an additional plan run to show a five (5) year delay, whether it's better or worse, you ought to at least know what that looks like and -- so that you can either rule it in or out.

MR. BOB PETERS: You said five (5)

years in your answer and I was trying to keep you to two (2) years in my question. Is there a difference between those?

MR. DANIEL PEACO: Well, Plan -- well, I think it's Plan 2 as -- as constructed was about a two (2) year delay without the contracts. So we have -- what -- what Hydro has -- has run is a -- a plan with Keeyask coming in in 2019 with a transmission line, with the MP250 contract. And then they have a plan with Keeyask alone in 2022, I believe.

It -- it's...

(BRIEF PAUSE)

MR. BOB PETERS: You were comparing Plan 2 to Plan 4? Do you know them by -- by numbers?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: And so you're saying that you'd have to test even a further delay to see whether or not --

MR. DANIEL PEACO: Well, I missed -- I guess I misundertood -- understood the -- your question. I was assuming that you were saying delaying beyond that delay that would be in Plan 2.

But you're postulating a -- a delay of

Keeyask within the context of everything else in Plan 4 staying as is?

MR. BOB PETERS: That was my -- my supposition.

MR. DANIEL PEACO: Okay.

(BRIEF PAUSE)

MR. DANIEL PEACO: Okay. I'm sorry.

MR. BOB PETERS: So in terms of the -- the two (2) year delay, what would be the impact on Manitoba Hydro and its ratepayers?

MR. DANIEL PEACO: Well, I'm just trying to think of whether -- what we can -- there really isn't a case that would inform that. So that if the par -- just to be clear, the -- the question you're asking would be Plan 4 with, I presume, the Minnesota Power contract in place delayed two (2) years, Keeyask delayed two (2) years, and the transmission line delayed two (2) years?

MR. BOB PETERS: Yes.

MR. DANIEL PEACO: Yeah, I'm -- there's nothing from the runs that we have from Manitoba Hydro that would -- would inform that directly. I mean, if we were to -- to -- asked -- to come up with estimating what that would look like, we would have to sort of make some inferences from information we have. But I -- you know, that's... It may or may not be sufficient for what you're looking for.

MR. BOB PETERS: I'll -- I'll accept that. Thank you. I want to just --

MR. RICHARD BEL: Could I ask a -- could I ask something with -- in that respect? But there is another option I sort of mentioned this morning where we -- we do the seven fifty (750) right away, well, right away means 219 -- or 2019 and then given the DSM imbedded in the new analysis, given a restriction -- or a relaxation of the import restriction, the question would be: Could you delay Keeyask further and finally say as far as 2031? So the -- so the three-o-eight (308) could be taken care of. So that -- that's just a run.

MR. DANIEL PEACO: Yeah, well --

MR. RICHARD BEL: Because that's what -- that's what the No Gen case showed; in a way, you can stream resources in a different way,

MR. DANIEL PEACO: Well, a couple of things that we do know about that particular configuration would be Hydro has already evaluated by -- by implementing the Level 2 DSM that moves the year of need for energy and capacity out to about 2030, plus or minus depending upon the pipeline uncertainty.

And, so if you -- if you built a transmission line, even if you preserve Hydro's current import policy, the virtue of having that larger line would expand the import opportunities the same way it currently does in -- in the Preferred Development Plan, or those plans with that line in. So you would -- you would have -- that would provide you some extra dependable energy just because that changes the -- the accounting for reliance on imports that -- within their current policy.

So you'd have -- you'd have the DSM change, which moves the year -- the year of need for domestic resources out close to 2030; and if you implemented the transmission line, that would also basically effectively expand the amount of dependable energy available and push the need out further for domestic energy and capacity. Then the question would be: What would be -- if you -- what -- what you think about how to make a decision on timing for Keeyask.

MR. RICHARD BEL: Right. And the -- the key there would be how much we could export -- so could we satisfy the 250 Minnesota contract with those changes without Keeyask -- that -- that's the question

-- until 2030, 2028. That was the question. So --

MR. DANIEL PEACO: Yeah.

MR. RICHARD BEL: -- so we'd have to run that to see that.

MR. DANIEL PEACO: That's -- that's correct. And I think that was Mr. Peters's question a few minutes aga, Is it -- is that based on the new DSM, there looks to be surplus dependable energy to -- to accomplish that. If I understood his question correctly.

MR. RICHARD BEL: And there could be another question. The other question was Mr. Athas spoke about the Connecticut situation. And in Connecticut they asked the question: How much DSM for -- to a avoid generation? But we could also ask a question : How much DSM do we need in that scenario to satisfy the Minnesota 250 contract? So is it two point one (2.1), or et cetera.

So we could also ask that question in that analysis.

MR. DANIEL PEACO: Correct.

THE CHAIRPERSON: I think it's an appropriate time to take a break. Let's take ten (10) minutes.

--- Upon recessing at 10:51 a.m.
--- Upon resuming at 11:19 a.m.

THE CHAIRPERSON: Okay. Mr. Peters, I believe that we can resume the proceedings.

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: Yes, thank you. I'd like to turn to the La Capra report that was filed January 24th, and go to page 1-26 and Figure 1-11, please? Thank you, Diana.

On this picture, La Capra is showing the Board, perhaps in answer to Board member Bel's last question, what happens with the forecast supply, and also then the -- the demand that may be coming for that supply, correct?

MR. DANIEL PEACO: That's correct.

MR. BOB PETERS: And the red line is showing the supply based on 2013 load forecast?

MR. DANIEL PEACO: Yes, and this is -- this is peak demand.

MR. BOB PETERS: And what you're showing here is that -- I'm going to go to approximately -- I'm going -- 2018/2019, and the red line has a little bit of a downward trend on it.

That reflects the Brandon coal station being mothballed, does it?

MR. DANIEL PEACO: I believe that's correct, yes.

MR. BOB PETERS: And then as we get further out close to '24/'25, that's when the diversity agreements drop off?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: Do you know, as you sit here, Mr. Peaco, whether the Great River Energy Diversity Agreement is included in that red line, or whether it is just the NSP arrangement?

MR. DANIEL PEACO: I believe it's just the existing -- it was the preexisting one, and this is based on the -- that's my recollection.

MR. BOB PETERS: All right. Thank you. And would it be a correct interpretation, just in terms of orienting the panel to this, that if we pick -- let's pick the black line at the bottom, which is the -- the aggressive DSM, four (4) times DSM.

Where that intersects the red line would be a time when new capacity would be required?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: And so if we compare where the grey line intersects -- that's the 2013 demand and reserves and the one point five (1.5) times DSM -- it appears that new capacity would be needed in about '26/'27.

Would you agree with that?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: And if DSM was ramped up and more successful, it could push off the need for new capacity out to as far as 2030/'31?

MR. DANIEL PEACO: Yes. And -- and that's essentially the number that Manitoba Hydro has since put on the record.

MR. BOB PETERS: With their different levels of DSM?

MR. DANIEL PEACO: Yeah, with a four (4) times DSM, yeah, at the Level 2.

MR. BOB PETERS: Thank you. Back, if I could, to La Capra Exhibit 45; and I think this is called a waterfall from the panel, page 16 of the submission.

This is what, on the transcript, you've called a waterfall, Mr. Peaco?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: And what the Board will first notice is that the capital cost updates of 871 -- of the $871 million number, that, and that item alone, was what your updated materials that you went through yesterday or the day before related to?

MR. DANIEL PEACO: Yes. And it was included in the addendum materials that were circulated. So the -- the only thing that we've submitted to update in that fashion is -- is exactly what you've described.

MR. BOB PETERS: The impacts of the capital cost updates were reflected in La Capra Exhibit 12-2, which is the addendum to Technical Appendix 9A and 9B.

MR. DANIEL PEACO: That's correct.

MR. BOB PETERS: All right. So the Board has that point.

When -- one (1) of the items on this waterfall is the delay of Conawapa by a year, from 2025 to 2026?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: There's a zero value attached to that.

Is that a calculated value, an assumed value, or how do we get to that number?

MR. JOHN ATHAS: We observed two (2) -- from two (2) of the -- from -- from two (2) of the plans that were originally filed as filed by Manitoba

Hydro that had different Conawapa in-service dates. There was a very relatively small change in their present value, like in -- it's like a five (5) year -- five (5) year difference in -- in Conawapa in-service dates, and I believe it was under -- well, certainly under $100 million of net present value difference.

So when we -- we took from that that the -- that the impact would be de minimis, so we used zero.

MR. BOB PETERS: It's a rounding error, so you used zero.

MR. JOHN ATHAS: Yeah. So this is for one (1) year versus the five (5) that we were --

MR. BOB PETERS: Yeah.

MR. JOHN ATHAS: -- looking at.

MR. BOB PETERS: I understood your answer then. The end of the waterfall shows $45 million of net present value.

And that's a number that Manitoba Hydro has -- has put on the record as well, correct?

MR. DANIEL PEACO: Yes, correct.

MR. BOB PETERS: And yesterday there was a discussion between La Capra and other counsel about the net costs in the context of Manitoba Hydro's incremental NPV analysis.

Do you recall that, Mr. Athas?

MR. DANIEL PEACO: Yes.

MR. JOHN ATHAS: Yes.

MR. BOB PETERS: And specifically, can you explain what net cost concept you were referring to in your answer?

MR. JOHN ATHAS: Yes. I mean, this -- this chart that's up now, the waterfall chart, is all -- is all -- is all -- well, the -- the first bar and the last bar are all comparing the -- the Preferred Development Plan -- both the Preferred Development Plan to the All Gas Plan.

MR. BOB PETERS: I actually intended to take you to slide 70, but you're welcome to stay here if this is your answer, if you -- if it's better to answer for the panel from this.

MR. JOHN ATHAS: Well, just -- just -- it'd be good for a moment to just stay here. The -- so -- so those -- so the black bars kind of represent, you know, an economic comparison in their own right to All Gas. The -- each of the other bars represents some other com -- relative comparisons of different plans, much like this -- the information that you -- that we examined in 9B at that table that we had up earlier. I forget which one it was. I think it was like 93 or something like that.

And -- and so -- so -- but many of the bars actually just come out from a result in changing cost, like the capital cost red bar that you have there that you mentioned about, that purely doesn't need any comparison to All Gas. It's just a change in cost of Conawapa and Keeyask, so it can be -- so it reflects the change in cost.

So that the -- so it's important to understand, to differentiate in my mind a little bit, of when people are asking questions, as to whether they want to understanding change in cost in isolation of the plan itself or a change in costs of assumption that might affect the two (2) -- two (2) plans that they are comparing.

If it's -- if it's desirable, I -- I, you know, work through an example from some of the -- the information on the record to contrast the -- or the -- or kind of to explain why I refer to the Manitoba Hydro risk profiles as demonstrating more of an uncertainty around -- around costs rather than around value. I'm not sure -- if you -- if you'd like that at any time, I could do that.

MR. BOB PETERS: Well, if it's responsive and it'll provide the panel with more information, then -- then, yes, I think it should be provided.

MR. JOHN ATHAS: I'd be happy to. I -- I think I need the -- the --

MR. BOB PETERS: The button?

MR. JOHN ATHAS: -- the button to control here if it doesn't -- if it's not a problem.

MR. BOB PETERS: While you're getting the button, can you explain to us what this example is supposed to -- to demonstrate?

MR. JOHN ATHAS: The intention is to -- is to demonstrate that the...

(BRIEF PAUSE)

MR. JOHN ATHAS: Okay, what -- what I'm -- I'm trying to show is that the -- that the risk profile -- I -- I termed the risk profiles that were put together by Manitoba Hydro as showing the change in cost of a plan without necessarily showing the change in benefits that I defined as the -- the amount that that -- that plan has either cost more or less than the All Gas Plan, so -- which is the attempt that we made in our work to do.

MR. BOB PETERS: All right. So you'll

have to orientate myself and the panel as to --

MR. JOHN ATHAS: Yes. I'll -- this is --

MR. BOB PETERS: -- where you are with -- is this on the -- this material on the record?

MR. JOHN ATHAS: This is a work paper, number 15, that was filed with the original January 24th filing by La Capra. It represents information inside of the model that was supplied to us by Manitoba Hydro. It's one of the -- I -- I referred to an interim step in the calculation that Manitoba Hydro does and that we also are doing for their -- to determine the benefits of cost -- benefits between two (2) plans.

What -- what this has here is when -- each cell here represents the result of their modelling of a case. So this first cell here under column E that says twenty-nine (29) -- twenty-nine twenty-one (2,921) is the costs that come out of their economic model, the present value of their costs over seventy-eight (78) years of their economic model, by modelling the Preferred Development Plan. And including in that of -- modelling of the costs of the Preferred Development Plan is the benefit from any export revenues that had happened over that seventy-eight (78) years.

The fact that is negative show -- means that -- that the incremental costs of the resources were higher than the -- the export revenues that were -- that were collected. So in other words, the -- over time, as we've mentioned before, I think, several places, that the -- that even the Preferred Development Plan represents an increase in costs over time versus today.

These -- these represent the -- these are not a total revenue requirement analysis. These are the incremental cashflow analysis. So what gets taken into account to produce that twenty-nine twenty-one (2921) for the Preferred Development Plan is the -- the investment -- the -- it going forward investments in Keeyask, the going forward investment in Conawapa, the investment in a 750 line, the impacts of all -- of the -- of the -- all the power contracts that were put in place in the -- under the Preferred Development Plan assumption, the -- you know, all the -- the production costs, or -- or export revenues that come in to -- under that plan. So it essentially but -- ral -- models all -- micro relevant costs.

MR. BOB PETERS: It -- it doesn't have the sunk costs included?

MR. JOHN ATHAS: That's correct.

MR. BOB PETERS: All right. I think I'm with your.

MR. JOHN ATHAS: Okay. So this number twenty twenty-one (2021) here is what -- what comes out of the -- we can look down in the individual case and says this is what the economic model calculates as the net present value seventy-eight (78) year cost of that plan.

This number over here in the Colum -- Column M under the All Gas column repr -- is the same number, kind of number; it's $4.6 million negative. And that means the -- the combination of adding plant in the All Gas case and having probably -- adding plant even though it had less capital cost to add plant, it has significantly less export revenues. So it's more negative, or -- or in other words, it incre -- increases the cost more for those incremental assets. The difference in those two (2) I've shown here, is the -- is the 1. -- $1,696 million, or $1.69 billion, that's -- that we've all seen a lot of time.

So when -- when Manitoba Hydro prepares its -- its quilt, the first thing it does, it -- it essentially takes all the other cells on this -- in this quilt, or matrix, and subtracts from that forty-six seventeen (4617), the All Gas/reference/reference case here.

THE CHAIRPERSON: It's a little bit unfortunate that we didn't pull out this chart yesterday afternoon. I think it would have informed that discussion. Thank --

MR. JOHN ATHAS: Yeah, I --

THE CHAIRPERSON: -- thank you for showing us.

MR. JOHN ATHAS: Yeah, I didn't -- it took me a little while to figure out where was the place on the record that I could find it.

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: Just -- just to interrupt so that I can understand in real time, if I could, Mr. Athas, is that forty-six seventeen (4617) subtracted from every other cell in all the other plans, or just the ref/ref/ref line?

MR. JOHN ATHAS: Well, it -- it's all the plans if you want to produce a matrix, a -- a quilt for Hydro -- in Hydro's methodology. So I look at them -- if I look at the -- what I put here -- the business case analysis that was filed by Chap -- Chapter 10 under the Manitoba Hydro filing, in a slightly different order of columns -- it's on page -- page 14 of 62 on Chapter 10 of -- of the Manitoba Hydro filing. And I'll make it a little bigger.

What this -- this is the -- the quilt as Manitoba Hydro filed, obviously, that you get when you -- when you subtract the -- the cell that -- on the All Gas reference from all the other cells. So you get this one-six-nine-six (1696) in the last column under the reference, the middle of the page, and -- and that's -- that's where they -- that's -- that's the famed reference/reference/reference number.

And for comparative purposes, or the -- or explanative purposes, if I was to go to a case like low energy prices, high -- high discount rates, and low capital costs, I would get a num -- I -- the -- the way that cell would be populated in the multi-colour cell would be to take this -- the Column E twelve (12) cell and subtract from that the reference/reference/reference cell, the forty-six seventeen (4617). And that's what I've done here.

And that number -- so being the net cost of the PDP at that cell minus the net cost of All Gas at reference/reference/reference yields a positive one fifty-seven (157).

And if I go back to the quilt for the moment, you see that that plan up here has a one fifty seven (157) cell entry into their quilt, and is plotted on their -- it makes -- onto their risk profiles at some point in time.

The La Capra methodology -- and the La Capra methodology would subtract the net cost of the PDP for the All Gas cost of that same assumptions which now is in the -- under the conditions of low energy prices and other things. It's much -- it's a much lower cost to the All Gas Plan than the original plan, just like there was a much higher cost to the -- to the Preferred Development Plan than the original -- than the reference case assumptions.

And that economic comparison between those two (2) plans under those conditions yields that the -- that the PDP has a hi -- increase in costs compared to the All Gas case under those references as of $1,958 million, or $1.958 billion (sic) dollars. So that's how --

MR. BOB PETERS: If I could just interrupt. On the LCA methodology, La Capra is subtracting the All Gas cost row-by-row to zero out the All Gas column?

MR. JOHN ATHAS: Exactly. And it's -- it's very simi -- it's the exact same calculation that was performed by Manitoba Hydro on the next page from what I was showing -- I think it was the next page. Or -- or another page. Actually I was looking at the presentation that was...

(BRIEF PAUSE)

MR. JOHN ATHAS: No, I have to -- I apologize. I have to find that.

There's a -- the -- that exact calculation was done by Manitoba Hydro in -- in a couple of place -- I believe maybe it's in the -- let me see if I can find it.

(BRIEF PAUSE)

MR. JOHN ATHAS: Yeah. I think it's here. It's the presentation that was given in September to introduce the Preferred Development Plan -- I mean the NFAT analysis. There is a chart -- no -- yeah, maybe I don't have it. I'll probably be able to figure out shortly where I come -- where it was.

But there's a similar chart that was given to our -- our analysis where they -- we would -- we would populate our All Gas column in our quilt with -- with all zeros, because we'd make that gran -- line by line subtraction that you mentioned, Mr. Peters.

(BRIEF PAUSE)

MR. BOB PETERS: Thank you for explaining the -- the different methodologies, Mr. Athas.

Why does La Capra believe its methodology is more informative for the panel?

MR. JOHN ATHAS: Well, is -- I'll -- I'll try it this way. It's -- sometimes you can look at digital metrics and say, It's all about the math, and -- to understand it. And some -- I would say it's all about -- so it's -- so just like a math problem.

I think the metrics is more like a spelling problem. In other words, you don't know the meaning of a word until you can use it in a sentence. And when I use these -- well, I can use -- when I look at the numbers that we calculate within our quilt, each one of those -- the sentence that it satisfies is: Whi -- how -- which plan would have higher costs under these conditions of any of the twenty-seven (27) conditions of the -- of the plan?

So that when -- so you could look at -- at our quilt, and if -- if I pulled it up -- and say --

and ask that question about any plan comparison and any -- any of the twenty-seven (27) branches and ans -- and get the question answered.

The way -- whether -- and -- and for convenience, versus All Gas, they're all -- anyone that's negative would be -- would be a higher -- a lower cost than any -- anyone that's negative would be a higher cost than All Gas, and anyone that's positive would be a lower cost than All Gas.

And so at a glance, the colours of the red and green, staying with the same convention that Manitoba Hydro used, all the greens would mean that the plan has lower costs -- the plan has lower costs than the All -- All Gas Plan. And I think that's in -- that's filed in our -- that quilt is in Appendix 9A. Okay, 9 -- 9.3?

So if we -- if we go to -- if we go to Manitoba Hydro Appendix 9.3, and that's why I was having trouble finding it, it happens to be ready to go, because I looked at it earlier if I remembered the right click. Okay.

So that says that now, compared to the All -- compared to this quilt, which was prepared exactly as with the LCA methodology except that these numbers don't get put into a risk profile by Manitoba

Hydro --

MR. KURT SIMONSEN: Mr. Athas, can you give us the reference to Manitoba Hydro's --

MR. JOHN ATHAS: Oh, I'm sorry. This is on page 68 of -- of Appendix 9.3 of their -- of their appendices filed in -- on August 16th.

So -- so now, when I -- when I look at the red here, the red means that -- that these cases have higher costs than the All Gas Plan. So if you look over here at the one (1) cell for the Plan 14, we'll see the famed six nine six (696) (sic) down here, and it's green, one point six-nine-six (1.696) (sic) over the middle of the page toward -- second column from the right under the Preferred Development Plan.

So green means that that plan under this analysis, under the -- by comparing it to All Gas, is lower costs. Red means it's higher costs. That's why I kind of believe that my -- the negative and positives of our methodology are more intuitive and more informative.

The -- the Manitoba Hydro quilt has different reds and greens, which is the page before it, page 67. I don't know how to use the negatives and positive differences in a sentence, so that's my analogy to this billing.

MR. DANIEL PEACO: I think another way to think about -- John, if you could put the spreadsheet back up. So if I could offer up a sentence for -- for Mr. Athas on this, this table here shows the net preve -- present value cost of each of the twenty-seven (27) branches of each of the development plans that Manitoba Hydro has run.

And the -- these numbers all -- and -- and there could be -- there would be a similar table, which is their quilt that they show, which is the same numbers if you subtract the number minus -- minus four six one seven (4617) from each one of those. So basically, if you shift them by four six one seven (4617), you have the same number. So it's essentially just subtracting a constant number from all the numbers in this table and -- and redisplaying it.

So it's basically the same cost numbers adjusted by -- so it's a question of whether you measure your height from the floor or from the table you're standing next to. You're still measuring the same thing. There's nothing changing. You're just subtracting a constant from all the numbers.

So -- and so it -- it really comes back to it's just a -- the cost of each of those branches in the twenty-seven (27) outcomes with -- with a constant number removed from all them, which they -- which happens to be chosen as -- as the result for Gas ref/ref/ref.

But I think, as Mr. Borison testified, it's arbitrary. They could have used any number. They could have used zero, they could have used that number, any other number to subtract from all the numbers, and -- and get the same relative result in their quilt.

MR. JOHN ATHAS: So that's if you look up and down a column, you see the -- the relative spacing between one (1) cell in the same column to the other cell in the same column is a reflection of the differences in cost of those plans, and not a difference in their benefits versus the All Gas Plan. And that was the reason why I was calling their profile a cost profile rather than a value profile.

MR. BOB PETERS: Okay. Thank you. I'm not sure if My Friend opposite will have some questions on that, but we'll -- we'll move ahead if we could.

I want to go to Appendix -- Technical Appendix 2 of La Capra's report. And it's page 2-18. And it's under, "Levelized cost of energy analysis." Just I need a clarification, if I could.

This approach uses the present value of project costs, correct?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: And -- and it also uses the present value of energy generated?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: And to get the present value of the energy generated, a price is needed, is it not?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: How did La Capra arrive at that number?

MR. DANIEL PEACO: I think -- we didn't -- we -- this is a discussion of Manitoba Hydro's calculation.

MR. BOB PETERS: Were you able to verify it though?

MR. DANIEL PEACO: Yeah, I believe we were.

MR. BOB PETERS: Is -- is it gross revenue from exports only or is it exports as well as domestic rates?

MR. JOHN ATHAS: I think -- I -- I think the key thing to realize here, this is a cost of production and it doesn't get reflected on whether it's used to supply export opportunities or domestic energy.

MR. DANIEL PEACO: The -- they -- do -- if I could just --

MR. BOB PETERS: The calculation is indifferent to -- to the -- to the end use of the energy?

MR. DANIEL PEACO: This calculation, as -- as presented in Manitoba Hydro's materials, is used for the sole purpose of screening. So what they're simply doing is saying, If I have resource A versus resource B, which ones do I think are -- pass some cost threshold worth considering in the planning process?

And so, at this juncture, they're not doing a development plan. They're just simply sorting through the various resource options and costing them out in an approximate way to -- with the levelized cost of energy metric to say, you know, all the ones that are below -- below some threshold I'm going to continue to -- to look at further in -- in development plans. Ones that are above that threshold, I'm going to screen out of the process and not spend time with.

So that -- that's the -- the purpose to which they use it. And the discussion here really was looking at a review of their screening process, in terms of what resources they -- they considered in or out for their development planning purposes.

MR. BOB PETERS: All right. If we scroll towards the bottom of the page, please.

There's methodology for Manitoba Hydro is -- is noted as being different from the revenue requirement methodology, correct?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: Can you explain the difference to the panel, please?

MR. DANIEL PEACO: This -- it's similar to what Mr. Athas, I think, described yesterday. The -- they're -- they're doing -- they're not -- some of the things that are missing from this would be like financing costs and other -- other things that would go into a full -- what I would say a full pro forma of the -- the development costs of a project, because you're looking at more of the economic costs.

MR. BOB PETERS: So from the ratepayers' perspective, you'd need to go to the revenue requirement methodology?

MR. DANIEL PEACO: Right.

MR. BOB PETERS: So the finance expense, the depreciation expense, OM&A, taxes, those would have to be included?

MR. DANIEL PEACO: Yes. These were -- these are more on the economic cashflow kind of basis, the way Mr. Athas described in the economic model.

MR. BOB PETERS: So those -- so those items were not included?

The -- the items that -- that usually make up some of the revenue requirements, like finance expense, depreciation, OM&A, and capital taxes, are not included?

MR. JOHN ATHAS: Just -- just to clarify. In the methodology of using cashflows, you don't need to include them and -- as opposed to like something that was needed to be included but not included. In revenue requirements, you would capture the effects of all those -- all those elements that you had.

MR. BOB PETERS: All right. I -- I have your -- your distinction. In your Appendix 3B on page 4, there's a Figure 3.8 shown on the screen.

Would it be correct to interpret the CCGT capacity supply as the plan proposed by La Capra?

MR. DANIEL PEACO: No. There was the alternative gas case that Manitoba Hydro prepared.

MR. BOB PETERS: And in that alternative gas case, we had some discussion about it already, Mr. Peaco, Manitoba Hydro swapped out the single cycle and -- and put in the combined cycles?

MR. DANIEL PEACO: That's correct.

MR. BOB PETERS: And you had a discussion as to whether it could have been optimized to a greater or lesser -- or to a greater degree than it -- than -- than it was.

MR. DANIEL PEACO: That's right.

MR. BOB PETERS: All right. Did La Capra carry out an analysis that looked to meet of any -- to meet Manitoba Hydro's new export contracts with an expanded All CCGT Plan?

MR. DANIEL PEACO: No. Not specifically to -- to supply those contracts, no.

MR. BOB PETERS: Would that have been an option?

MR. DANIEL PEACO: Would it -- would it have been an option?

MR. BOB PETERS: Yes, to supply those contracts with -- with gas turbine generation.

MR. DANIEL PEACO: Well, we didn't specifically look at that but the -- those contracts typically are system power -- system -- system power contracts. So to some degree, they may be able to be supplied with the addition of -- of gas. The conditions on supply really are tied to Manitoba Hydro contingencies, not -- not the buyers. So, you know, in theory there -- there's at least some amount of that that -- that could -- could well be done that way.

MR. BOB PETERS: What -- one of the distinctions you drew is that in -- in many of these arrangements that are -- we've got exhibits with the contracts described.

But when there's system power participation agreements, it's the purchaser who's getting the power from Manitoba Hydro no matter how it's generation.

MR. DANIEL PEACO: Yeah, and typically the -- I don't know if we're going to get in -- I don't want to get far into contract terms because I'm -- when -- when I reviewed the contracts they were 100 percent redacted. So my -- my understanding of what is and isn't in -- in CSI anymore is not very good.

But -- but that's correct. I think you'd have to look at the -- the way the accounting is done on system power, and -- and in terms of the extent to which you could perform under the contract terms with -- with the system as configured with gas turbines.

MR. BOB PETERS: If we turn the page to page 3B-5 and look at Figure 3-9, did La Capra quantify the additional generation output that the CCGT Plan will provide during the twenty (20) to thirty-five (35) time period under -- under maximum flows?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: Do you have that number, or could you --

MR. DANIEL PEACO: I think it's in this chart that you've pulled us to.

MR. BOB PETERS: I was looking for, I guess, the cumulative additional generation output.

MR. DANIEL PEACO: Okay. Let me try -- try that question again. I'm not sure if I understood it.

MR. BOB PETERS: Okay. If we look at the maximum line, which is the dark line on the chart -- not the blue one, but the brown one or black one -- how does that output level compare with the Preferred Development Plan outputs from, say, twenty (20) to thirty-five (35)?

MR. DANIEL PEACO: The Preferred Development Plan outputs?

MR. BOB PETERS: Yes.

MR. DANIEL PEACO: This -- this figure is plotting the -- the production specifically from those gas units added to the plan. So in the Preferred Development Plan, it doesn't have gas plants until fairly far out into the planning horizon. Is that what -- is that what you're asking?

MR. BOB PETERS: No. I was asking whether you were able to determine how much more the Preferred Development Plan would -- would produce than what's shown under the -- the All CCGT Plan.

MR. DANIEL PEACO: You mean how much surplus energy?

MR. BOB PETERS: Yes.

MR. DANIEL PEACO: I don't know that we produced that anywhere. I bel -- I mean, the numbers, those -- those could be derived from -- from the cases we looked at, but I don't -- I'm not recalling that we have it anywhere to show you.

MR. BOB PETERS: And again, this -- this isn't the La Capra CCGT Plan?

MR. DANIEL PEACO: Yes. This is the -- the alternative plan that includes all combined cycle units.

MR. BOB PETERS: But it's Manitoba Hydro's alternative.

MR. DANIEL PEACO: Well, it's the new plan that was done in response to our request.

MR. BOB PETERS: All right.

MR. DANIEL PEACO: I think the -- maybe

I threw you off on the distinction, as we had requested a somewhat different configuration, but Hydro was in the process of putting together a plan that was combined cycle. And -- and so that ended up sufficing for purposes of fulfilling that request. So my -- I may have thrown you off by -- by...

(BRIEF PAUSE)

MR. BOB PETERS: If La Capra could undertake to provide the comparison of surplus energy compared to the Preferred Development Plan compared to this plan, that would be appreciated.

MR. DANIEL PEACO: Okay.

MR. BOB PETERS: Yes. The -- just looking for the -- the surplus energy from the CCGT Plan that's shown on Figure 3.9 -- 3-9, and also the amount that would be achieved under the Preferred Development Plan. And let's just narrow the time line between 2020 and 2035, please, Mr. Monnin.

MR. CHRISTIAN MONNIN: We undertake to do so.

--- UNDERTAKING NO. 115: La Capra to provide a comparison of surplus energy from the CCGT Plan as shown in Figure 3-9 to the Preferred Development Plan between 2020 and 2035

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: On page 3 dash -- 3B-17, in the second paragraph, I just want to understand, there's a reference here that SPLASH modelling used a generic gas plant with a heat rate equal to the average of the CCGT and SCGT heat rates, correct?

MR. DANIEL PEACO: Correct.

MR. BOB PETERS: Can you explain to the panel why the use of separate heat rates for the two (2) different units could not be modelled to reflect their different operating conditions, as opposed to averaging them together?

MR. JOHN ATHAS: This -- this is an interim run as opposed to being meant to be an economic analysis case. This is the run in part of the optimization process, where first they -- whenever they're going to add gas, they add it in with that average heat rate.

Then they take a look at the operation of that -- of that unit and say -- and basically look at it. If it operated enough to be warranted, the investment of a combined cycle, they would change it to a combined cycle. If it didn't, they make it a -- a simple-cycle gas turbine. Both of those -- each of those at their appropriate heat rate.

So the economic analysis you see never has the -- a model run with the average heat rate. It's just something that's used in their optimization process to decide on simple-cycle combustion turbines versus combined-cycle gas turbines.

(BRIEF PAUSE

MR. BOB PETERS: Are you able to indicate to the panel whether the results would be different if you were to use the heat rate more applicable to the SCGT as distinct from the heat rate that would have been used for the CCGT?

MR. DANIEL PEACO: I think that was -- we were talking about this earlier. We had a slide up from -- from our presentation talking about our conclusions about there being a different configuration of, or mix of, combined cycle and combustion turbines that might give a better solution. I suspect that that result would come from -- from a more specific look at the heat rates of these two (2) types when -- in designing the plan.

MR. BOB PETERS: On page 26 under the same appendix, the middle paragraph, have a second to look at that.

Did La Capra examine the possible integration of an All CCGT Plan with higher import limit as a means to deferring hydraulic resources?

MR. DANIEL PEACO: Other than the case we were just talking about, that was -- that's the only one that we had.

(BRIEF PAUSE)

MR. BOB PETERS: I want to turn to -- to drought risk in the time I have left. On Appendix 5, I believe, page 4 -- 5-4. If we can just go up, please, to -- that's good, yes. In the second paragraph. I have a question as to whether or not La Capra is able to explain what this energy in excess of the reserve requirement is in the context of Lake Winnipeg operations?

(BRIEF PAUSE)

MR. DANIEL PEACO: I've read the passage here. Could -- I -- I'm not sure if I'm understanding your question.

MR. BOB PETERS: There's -- there's reference in the brackets to energy in excess of the reserve requirements. And I'm not sure I understand what -- what's meant from that.

Are you able to explain that any further?

MR. DANIEL PEACO: This is basically just -- and I think the reserve require -- reserve requirements there essentially is the energy required for domestic -- domestic consumption and fixed obligations.

MR. BOB PETERS: Is there a minimum energy and storage level above the 711 feet lower licence limit that Manitoba Hydro operates under?

MR. DANIEL PEACO: Well, they have a minimum and a maximum range they can operate within under, you know, under their control. And then if it's -- if it's too low they're -- they're governed by some -- one (1) set of rules and if it's too high it's another set.

MR. BOB PETERS: And they have a -- from that lower limit is there a requirement to keep an energy reserve in excess of that lower limit?

MR. DANIEL PEACO: That's -- I believe there is. Though, I think as we talk here somewhere, we really didn't get to the point where we have a good documentation of their operating policy and -- to get to the exact answer to your question.

MR. BOB PETERS: And you -- there's also then reference to the drought storage requirement. Is that to recognize the lower licence limit of 711 feet?

MR. DANIEL PEACO: Well, that's -- I -- I think that that's -- that's talking about the reserve that they will establish and how much water they need to hold. There clearly is operating decisions as to -- as to how much water to hold to protect against the -- the effects of -- of drought versus how much they can use for current operations.

MR. BOB PETERS: If we turn to 5-6, please...

(BRIEF PAUSE)

MR. BOB PETERS: And I'm looking down at the bottom of the page under, "Drought Management Plan."

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: It says that Manitoba Hydro provided a confidential document entitled, "Energy Operations Planning Drought Management 2013 Draft"?

MR. DANIEL PEACO: Yes.

MR. BOB PETERS: And it says that Hydro did not provide a drought operating plan on page 5.7 -- 5-7?

MR. DANIEL PEACO: Right.

MR. BOB PETERS: Did La Capra examine Hydro's actual drought operations from the last most serious drought in Manitoba in 20 -- 2003?

MR. DANIEL PEACO: No, we didn't -- we didn't get an opportunity to review that in detail.

MR. BOB PETERS: And in terms of this energy operations planning drought management, that's Manitoba Hydro's Drought Management Plan?

MR. DANIEL PEACO: Or what they -- what they produced to us when we asked for it.

MR. BOB PETERS: Does that suggest that you got a piece of what it was, or do you -- do you know?

MR. DANIEL PEACO: Well, what we got was not quite to the point where we understood exactly what their plan was. And there was draft documents and -- and different pieces, but we didn't find in those documents what we were looking for to answer the question -- some of the questions that we were -- we were asked to pursue in terms of what the -- what the operating policy would be.

So that's what we're characterizing here, is what we did have and what we can infer from the documents that were provided.

MR. BOB PETERS: Was this energy operations planning document also labelled a power resource plan?

MR. DANIEL PEACO: I'm not sure that it was. I think this was a separate -- what we were looking for was a separate ope -- document of their operations.

MR. BOB PETERS: All right. I -- I'm going to ask Mr. Monnin to -- to undertake to provide a copy of that as CSI to the Public Utilities Board, if it's in the possession of La Capra. And -- or was this a SharePoint document that was provided?

MR. DANIEL PEACO: I believe it's a SharePoint document. I have to check our list. We've -- we've got a listing of all the documents. I -- could you -- could you scroll down to the bottom of the page and see what the footnote says. If it doesn't have a reference there we'll have -- we have to verify...

MS. PATTI RAMAGE: If I could jump in, Mr. Peters. There's already an undertaking on the record for Manitoba Hydro to file that document.

MR. BOB PETERS: All right. Thank you. Then, Mr. Monnin, your -- your workload got lighter.

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: In the -- in the drought modelling has La Capra been able to form an opinion either to agree or disagree with Hydro's rationale and conclusion that the 1987/'88 to '91/'92 period is an adequate reflection for calculating drought risks?

MR. DANIEL PEACO: We examined the -- the effects of a number of different stream flow sequences from the period of record included in this -- in this technical appendix, and showed some of the sensitivity that -- I think that we found -- we didn't find that there was substantial added exposure for extended periods of drought consideration. But we did present some analysis to show the sensitivity of results to a number of different configurations in --

in our analysis.

MR. BOB PETERS: All right. Thank you. Mr. Chairman, those are the questions that I have for La Capra on the public record. I do have more relating to some of the contract specifics that I think are best kept at the CSI level, and I would ask those this afternoon.

I recognize this is to be the end of the public session, although My Friend opposite may have a question with respect to a spreadsheet that I saw for the first time from Mr. Athas today, although it's probably one (1) of his working documents. So perhaps Ms. Ramage has a question.

MS. PATTI RAMAGE: Oh, I have a few questions. They don't relate to the spreadsheet. It just relates to some of the information -- their responses during the course of Board counsel's cross-examination.

RE-CROSS-EXAMINATION BY MS. PATTI RAMAGE:

MS. PATTI RAMAGE: And, Mr. Peaco, in your review of Manitoba Hydro's plans is it fair to say you've recognized advantages to coordinating plans with neighbouring utilities so as to provide benefits to the Manitoba Hydro system?

MR. DANIEL PEACO: Yes.

MS. PATTI RAMAGE: And one (1) of those benefits would be Manitoba Hydro selling surplus power and energy.

Is that right?

MR. DANIEL PEACO: Yes.

MS. PATTI RAMAGE: Another benefit would be the ability to purchase energy during a drought.

Is that correct?

MR. DANIEL PEACO: Correct.

MS. PATTI RAMAGE: Another benefit would be increased power system reliability.

Is that right?

MR. DANIEL PEACO: Yes.

MS. PATTI RAMAGE: And another benefit would be in permitting and constructing international power lines.

Is that right?

MR. DANIEL PEACO: Correct.

MS. PATTI RAMAGE: And would you agree that -- that when we're doing this with our neighbours, anything we do is going to have to bring value to our neighbours' plans and their customers also? It's not a one-way street?

MR. DANIEL PEACO: Yes. yes.

MS. PATTI RAMAGE: Okay. Yeah. And so in response to Board member Bel's question regarding doing the 750 line, relaxing the import restriction and delaying Keeyask, can you confirm that under the terms of the Minnesota Power Agreement if Keeyask is not built, MP has no obligation to build any transmission line, be it a two fifty (250) or a seven fifty (750)?

That's one of the benefits we're deriving from that deal, is gaining that cooperation?

MR. DANIEL PEACO: I'm not recalling a specific condition precedent in favour of Minnesota Power with respect to whether Keeyask is built or not built.

(BRIEF PAUSE)

MS. PATTI RAMAGE: Do you recall if Manitoba Hydro delays Keeyask for one (1) year, will the contact continue?

MR. DANIEL PEACO: Yes.

MS. PATTI RAMAGE: And if the contract is delayed for two (2) years, will the contract continue?

MR. DANIEL PEACO: Yes.

MS. PATTI RAMAGE: And if the contract is delayed three (3) years, will the contact continue?

MR. DANIEL PEACO: Well, it depends on whether Manitoba Hydro decides to waive its condition precedent.

MS. PATTI RAMAGE: And we may have to deal with specific clauses in the CSI session. I'm trying to do as much in the public session as I can.

Sir, if I put to you that Manitoba Hydro is required to build Keeyask within two (2) years or that contract is at an end, does that -- is that correct?

MR. DANIEL PEACO: I would want to review the conditions.

MS. PATTI RAMAGE: And further, with respect to Dr. Bel's question, if you relax the criteria, would you agree that, as per our discussion yesterday, you no longer have the additional import energy for emergencies, and you're going to be counting on it?

MR. DANIEL PEACO: I'm sorry, could you ask the question again?

MS. PATTI RAMAGE: If you relax the -- the generation planning criteria and you allow additional import -- or you will -- you'll -- you will be using that energy when you relax the criteria for your regular system operations, correct?

That's the purpose of relaxing it? To -- to gain the benefit of more power?

MR. DANIEL PEACO: Yes.

MS. PATTI RAMAGE: Right. And that means that the power that you're importing, that you're counting on for everyday operations, is no longer available for an emergency.

Is that correct?

MR. DANIEL PEACO: Well, I think that's the -- that's the assessment that would need to be done, determine where the economic tradeoff is there.

MS. PATTI RAMAGE: Would you agree that tie-lines are Manitoba Hydro's lifeline in the event of an emergency? Emergencies like drought, catastrophic failure, and -- or extreme weather events, like we discussed yesterday?

MR. DANIEL PEACO: As I spoke -- spoke with your colleague yesterday afternoon, I -- I now understand the explanation that Manitoba Hydro relies substantially on reserves in MISO for -- for contingencies coverage in -- within the system.

MS. PATTI RAMAGE: But Manitoba Hydro is not a full MISO member, is that correct?

Is that your understanding?

MR. DANIEL PEACO: Correct.

MS. PATTI RAMAGE: And Manitoba Hydro -- a full MISO member in -- is able to rely on MISO's obligation to serve them.

Is that correct?

MR. DANIEL PEACO: Right. I was referring to the reserve agreement.

MS. PATTI RAMAGE: But Manitoba Hydro -- MISO has no obligation to serve Manitoba Hydro?

MR. DANIEL PEACO: Under the reverse agreement?

(BRIEF PAUSE)

MS. PATTI RAMAGE: You would agree that we have a contractual reserve agreement with a start and end date that right now provides us with reserves, but on an ongoing basis MISO has no obligation to plan for Manitoba Hydro's needs?

MR. DANIEL PEACO: But my understanding was the -- the reliability construct for Conawapa was dependent upon the reserve agreement. That's the only reason -- reason you can -- you can configure the system with Conawapa and the transmission to keep reliabilities, is if you've got reserves in MISO to cover the loss of Bipole.

MS. PATTI RAMAGE: But you'd agree that's to the extent that we have exports.

MR. DANIEL PEACO: I guess I'm losing your question. Are you saying you're -- you're not capable of extending the reserve agreement without Conawapa?

(BRIEF PAUSE)

MS. PATTI RAMAGE: Let's try this. Energy supplies over a tie-line, you'd agree, are not under Manitoba Hydro's control.

Is that right?

MR. DANIEL PEACO: I guess I'm not understanding your question.

MS. PATTI RAMAGE: They're -- they're not -- we're not generating them. We're relying on a third party to generate at that point.

MR. DANIEL PEACO: That's correct.

MS. PATTI RAMAGE: And if we are looking to the United States, we will -- it will be subject to the laws of another country.

Is that correct?

MR. JOHN ATHAS: I would presume so, yes.

MS. PATTI RAMAGE: And it will be subject to the market rules of a -- of organizations of which Manitoba Hydro is not a full controlling member.

MR. DANIEL PEACO: I -- that's what I understand, yes.

MS. PATTI RAMAGE: And those tie-lines are also subject to unforeseeable events, correct?

MR. DANIEL PEACO: That's correct.

MS. PATTI RAMAGE: And Manitoba Hydro is on the periphery of the North American electric grid.

Is that correct?

MR. DANIEL PEACO: Connected across the border, yes.

MS. PATTI RAMAGE: But, for example, compared to where you live in Boston, we don't have the same number of options. There's not a lot of large centres around Manitoba Hydro --

MR. DANIEL PEACO: Actually, I live in Maine, and we're kind of on the periphery of everything as well. So I feel your pain -- I feel your pain.

MS. PATTI RAMAGE: But we're not a large centre like a Boston or --

MR. DANIEL PEACO: Yeah, I understand. You don't have neighbours on -- on four (4) sides.

MS. PATTI RAMAGE: So the import criteria will ensure that Manitoba Hydro has access to -- the -- the goal of it, whatever level it's at, the -- the -- it's to ensure Manitoba Hydro has access to additional supply in events outside the planning criteria.

Is that correct?

MR. DANIEL PEACO: I'm not sure if I -- I got your question.

MS. PATTI RAMAGE: The import criteria portion --

MR. DANIEL PEACO: Of your planning criteria.

MS. PATTI RAMAGE: -- of the planning criteria assists Manitoba Hydro in accessing additional supply in -- in events that are outside the planning criteria. We reviewed that. That would be the drought worse than record, the catastrophic failure of generation, or extreme weather events. That's part of what that --

MR. DANIEL PEACO: It defines -- it defines the extent to which that -- you -- you allow for that within your energy planning criteria, correct.

MS. PATTI RAMAGE: It also ensures that Manitoba Hydro, or -- or any hydro utility, for that matter, isn't overly reliant on others. That's the -- that's part of the --

MR. DANIEL PEACO: That's -- yeah. Any -- any such criteria would -- would be seeking that objective, yes.

MS. PATTI RAMAGE: And any criteria would also want to avoid simultaneous reliance on non-firm purchases to support firm exports in the same market.

MR. DANIEL PEACO: I'm sorry. I'm -- say that one again?

MS. PATTI RAMAGE: You can't import and export at the same time. It has to recognize what your -- what your business --

MR. DANIEL PEACO: You mean across the same interface?

MS. PATTI RAMAGE: Yes. If you have a firm sale, you -- you shouldn't be relying on non-firm imports to occur at the same time. And that's one (1) of the -- what our planning criteria does.

MR. DANIEL PEACO: Well, some -- some of your firm sales can be performed financially. So the firm sales that require physical delivery would --

would -- that would apply.

(BRIEF PAUSE)

MS. PATTI RAMAGE: That's all our follow-up questions. Hopefully we've been able to help the panel understand the importance of the planning criteria.

THE CHAIRPERSON: I wonder if we could spend a few more minutes. I just want to explore something with the witnesses. And if we could call up LCA-45, page 70, Diana. Okay. I'm trying to -- I'm trying to -- I'd like to explore with you the option of substituting wind -- looking at -- I'm looking at Plan 5, which has got K19/Gas25/750, and

I'm looking at the -- if we were to substitute wind into that mix instead of gas, can we -- can we draw the -- can -- can we use the LCA results from line 3 to -- to conclude that it would make sense to use wind instead of gas in that scenario?

MR. DANIEL PEACO: It -- it would be a little tough to make too many inferences on that simply because the -- the Wind/Gas case does not have any additional hydro in there, in that plan. And with -- with Keeyask in the mix it's not clear to me how -- you know, the wind obviously would operate when it operates. And the gas can sort of work around -- will operate when it's needed.

I haven't looked specifically at how the gas facilities operate within that plan to know how that would compare to wind and how it would interrelate with the storage capability. So it's a -- there's a lot of moving parts that we'd -- we'd have to sort of speculate on without doing a -- doing the run.

But the -- to the extent that you've got a plan that is -- will be more surplus energy and have less -- less times when it's -- when the system is -- is not exporting, the wind economics will be -- would be somewhat different in that kind of a configuration.

THE CHAIRPERSON: I guess what I'm trying to establish is that the wind would be operating during -- during the day and you could -- Manitoba Hydro could be selling some of that firm capacity into -- into the US market, couldn't it, at that point?

MR. DANIEL PEACO: Yeah, I think that in any plan, particularly when you're -- when you're operating as something we've seen even in the -- in the Preferred Development Plan analysis that we've looked at, when you're in average or below average water years there's enough flexibility in the system, or, you know, the reservoirs are operating sort of within the -- between the min and max and there's -- there's some -- some operating flexibility there.

We see that in the Gas plans they're using the storage to -- to shape that -- the -- the generation of the gas and -- and target additional on-peak exports as a result. So in those circumstances the Wind energy could be shaped in the same way.

Obviously, in -- in very high water conditions there may be some limits on -- on the flexibility of the reservoir, but in -- in other water conditions so long as there's -- you're within the normal operating range of the reservoir there would be some ability to shape that energy into, you know, on-peak exports.

MR. JOHN ATHAS: If I can just help out a place where we can -- where you -- we've seen the closest thing to that as the -- why the -- why the question mark. In a -- in a lot of ways the -- the introduction of DSM is not that different than wind. Obviously it has a different cost, but it's ess -- it's like a -- it takes away a set amount of energy that needs to be satisfied with every -- all the other assets.

What you -- what you saw in the wind

analysis that -- I mean, in the -- in the DSM analysis performed by Manitoba Hydro is the same DSM levels with the exact same costs and the exact same load effects have different benefits depending on what system they're added to.

And -- and that complexity that Mr. Peaco was talking about are the same things that contribute to the value -- to the benefit of the DSM as it would be to the benefit of the wind. We -- we're assuming that their modelling captures most of those opportunities that you describe with the shifting of wind when you actually use hydro generation and the like, just as it would on the DSM cases.

But it's that -- but the wind cases are just -- are -- I mean, the DSM cases are a good example of how you can introduce some degree of -- the same degree of cost into two (2) different places and the same degree of -- the same energy change, which would be like wind dispatch change into two (2) -- two (2) systems. But because they had a different starting point and different lev -- amount of other resources, they have a different economic production cost benefit.

THE CHAIRPERSON: To the point that, you know, if you introduce the higher capacity line, the seven fifty (750) in there and you're -- you're drawing in US power, you could argue that what you're doing is you're substituting US wind power for gas, aren't you?

MR. DANIEL PEACO: To your -- I'm not sure if I understood fully your -- the -- the case that you're wanting to ask about.

THE CHAIRPERSON: We've been discussing the -- you know, the benefits flowing from the 750 line. And so the 750 line available to draw power from the US would be presumably drawing some wind power from the US?

MR. DANIEL PEACO: It could. It could.

THE CHAIRPERSON: So the introduction of a higher capacity -- higher amounts of imported power by lifting a restriction on the -- on the 10 percent, for example, would, in effect, be replacing the gas component in some of these scenarios, wouldn't it?

MR. DANIEL PEACO: Sure. If you had -- if you had increased transfer limits into -- into Mani -- into Manitoba Hydro's system, however you get there, more transmission or -- or a change in the operating policy, that would provide you access to either.

So the system power that may be surplus when wind is blowing a lot in the -- in the US or specific contracts tied to that production, that you would -- you know, the -- the more import capability you have, the more flexibility you have to take advantage of that.

MR. JOHN ATHAS: Another example I'd say that why it's dependent on the time, there are periods where that -- where the increased import would take a case that if -- with the lower imports and say, Look at the day ahead, and Hydro wouldn't have generated any electricity with their -- with their gas plants.

What the opportunity of the import does is it chan -- it might take some hydro that they would have generated at night and let it generate during the day. And then they could -- then they could actually have gotten a higher value for -- out of that transactions without really affecting gas is what I would say because the gas is on -- at play so little in a case with one (1) or more hydros, that it's very -- more often than not, it's the -- that economics of when you're going -- when you're going to actually export.

THE CHAIRPERSON: Would you be able, based on the data you have in hand, give us a scenario -- the results from a scenario that would pull out the Gas25 and Plan 5 case and simply have K19 750? Would it be available? Would you have the data that would allow you to give you the outcomes from a net present value perspective, and the CPV as well?

(BRIEF PAUSE)

MR. JOHN ATHAS: One (1) second. I -- I think what you're describing is -- might be Plan 6. I just have to check my recollection on all these.

(BRIEF PAUSE)

MR. JOHN ATHAS: What we -- what we do have data on is -- and the detailed data that came in after we did our update is Plan 6 has gas when it's needed, which happens to be thirty (30) -- thirty-one (31) and a 750 line. So that's maintaining the same planning criteria, the equivalent of adding the -- it's either one way or the other, either adding the 750 to the Plan 4 or taking out the WPS sale on investment from Plan 5.

And you -- either way -- whichever way you're coming from you get to Plan 6, which is equal liability criteria and a Gas31 timing.

MR. DANIEL PEACO: Yeah, the only --

the only other problem is that Plan 6 -- Plan 6 does -- I don't think has the contract in there, so there would be a contract change, as well. I'm not sure that we have exactly what you -- without running the -- the dispatch over without the gas, you don't know exactly how -- whatever energy would be otherwise produced by the gas would be -- would be replaced and at what cost.

THE CHAIRPERSON: Because the DSM would have the effect of pushing out the date for gas beyond 31, wouldn't it? I mean and in addition, you know, the higher import capability -- and the -- the more cri -- the more critical point is that -- that DSM would have a effect of putting out the need for gas in that kind of scenario.

MR. DANIEL PEACO: That's right. And we kind of -- and we -- if you recall we looked at a chart. I had the -- the thermal generation for our No Gen case and call it -- and with the DSM there of the -- the thermal generation in the system was -- was almost zero for quite some time in that plan, because -- because of the reliance on imports and -- and the DSM.

But I guess to your question, if -- if you're looking for something that is just with -- withholding the gas from -- I guess one (1) thing we could ask is if we could -- we could look at would be whether the gas operation in those plans is sufficiently limited such that it wouldn't have a material effect on the change of the economics. Would -- that would be a determination we'd be able to make.

But if gas is -- is playing a significant role in some way in the dispatch, it's a little bit trickier to figure out how much -- how that would be replaced if it weren't there.

(BRIEF PAUSE)

MR. BOB PETERS: Just by way of clarification for the record, is the panel asking for that undertaking now, or is the panel going to consider it further and decide later if they wish to -- to make that request of La Capra, is the question from the court reporter.

THE CHAIRPERSON: I think this is information that could go on the public record, so I think that -- you know, if you could make an undertaking to establish -- and I'm sure -- perhaps it'd be better if you expressed what you can do.

MR. DANIEL PEACO: All right. First, just to be clear, the -- the plan that you're particularly interested in was the -- were -- you were looking at Plan 4 in our chart, correct?

THE CHAIRPERSON: No, Plan 5 --

MR. DANIEL PEACO: Oh, Plan 5.

THE CHAIRPERSON: -- where the gas is -- where the gas is removed from that mix and perhaps put in at a later date, and beyond -- I mean, what I'm seeking is the effect of eliminating the gas in that mix, and pushing it out a later date and maintaining the WPS sale, if that's possible.

MR. DANIEL PEACO: Okay. Let me -- let me ask a couple more questions just to make sure we're getting to where you want to be. The -- the version of Plan 5 depicted in this table is the Plan 5 as filed originally with 2012 assumptions with the only change from that being updated capital cost. There's been a further update -- and John probably is a little more familiar with what we have in hand on -- on updated Plan 5 from Manitoba Hydro.

So is it -- is it -- is your request to -- to have that information based upon the Plan 5 as originally filed, or do you want us to look to some more current version of that that Hydro's produced?

THE CHAIRPERSON: More current version of that, if possible.

(BRIEF PAUSE)

MS. PATTI RAMAGE: Mr. Chairman, if it assists and perhaps assists in La Capra's work load also, Manitoba Hydro -- I'm looking at the -- this chart, it is filed as -- what number is that?

It's Mr. Wojczynski's presentation from March 25th, and it indicates that Manitoba Hydro will be providing -- has provided Plan 5 Keeyask19 W...

MR. CHRISTIAN MONNIN: I believe it's 129-7, Diana.

MS. PATTI RAMAGE: What Manitoba Hydro has provided is K19 with 750 and WPS Gas in 2031. I'm not sure if that will answer your question. And -- and that's Level 2 DSM.

THE CHAIRPERSON: And that will include DSM, but not increased imports.

MS. PATTI RAMAGE: No.

THE CHAIRPERSON: Okay, that -- I think that's helpful. I think that addresses mostly what I was looking for.

MR. DANIEL PEACO: So that -- that case actually accomplishes what you're directly...

THE CHAIRPERSON: And if -- if over the lunch hour we change our mind on that, we'll -- we'll back -- get back on the --

MR. DANIEL PEACO: Sure.

THE CHAIRPERSON: Thank you. I think that it's an appropriate time to break now. So I suggest we break now and resume at ten (10) after 1:00. Mr. Peters, is that --

MR. BOB PETERS: Yes. And we'll be going into a commercially sensitive information -- information examination, so it'll be a closed session to those who are entitled to be present. And the audio and video feeds will be disconnected as we -- as we deal with that. I do understand that I believe La Capra will be able to make a presentation at the start, and then Manitoba Hydro indicated they had thirty (30) minutes of questions, and then we'll have some, as well. Thank you.

THE CHAIRPERSON: Thank you. Have a good lunch, everyone.

(PANEL RETIRES)

--- Upon adjourning at 12:26 p.m.

Certified Correct,

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Cheryl Lavigne, Ms.

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