MANITOBA PUBLIC UTILITIES BOARD

Re: MANITOBA HYDRO

2017/18 and 2018/19

GENERAL RATE APPLICATION

PUBLIC HEARING

Before Board Panel:

Robert Gabor	-	Board Chairperson
Marilyn Kapitany	-	Vice-Chairperson
Larry Ring, QC	-	Board Member
Shawn McCutcheon	-	Board Member
Sharon McKay	-	Board Member
Hugh Grant	-	Board Member

HELD AT:

Public Utilities Board

400, 330 Portage Avenue

Winnipeg, Manitoba

December 13, 2017

Pages 1637 to 1840

APPEARANCES

Bob Peters)Board Counsel
Dayna Steinfeld)

Patti Ramage)Manitoba Hydro
Odette Fernandes (np))
Helga Van Iderstine (np))

Byron Williams)Consumers Coalition
Katrine Dilay)

William Gange)GAC
Peter Miller (np))

Antoine Hacault)MIPUG

George Orle)MKO

Senwung Luk (np)) Assembly of
Corey Shefman (np)) Manitoba Chiefs

Kevin Williams (np)) Business Council
Douglas Finkbeiner (np)) of Manitoba

Daryl Ferguson (np)) City of Winnipeg

LIST OF APPEARANCES (cont'd)

Christian Monnin (np)	)General Service)Small, General)Service Medium)Customer Classes
William Haight William Gardner (np)	)Independent Expert)Witnesses

TABLE OF CONTENTS

LIST OF EXHIBITS

LIST OF UNDERTAKINGS

NO.	DESCRIPTION	PAGE NO.
NO. 7	For Manitoba Hydro to attempt to locate the source of the graph found in the December 4, 2017 Manitoba Hydro presentation at page 72. And point to where the data is located on the record in order to provide that presentation depicted on page 72.	1759
8	In conjunction with Undertaking No. 7, if the data exists in the material prior to the year 2000, provide the data to go back to 1990. (TAKEN UNDER ADVISEMENT)	1761
9	For Manitoba Hydro to reproduce page 83 inclusive of a column of maximum net debt with the year of that maximum net debt.	1834

--- Upon commencing at 9:00 a.m.

THE CHAIRPERSON: Good morning, everyone. We'll start with Ms. Steinfeld.

MS. DAYNA STEINFELD: Thank you, Mr. Chair. This morning we will be returning to cross-examination by the Consumers Coalition who expects to be approximately thirty (30) to forty-five (45) minutes. After that point, Mr. Hacault from MIPUG will continue with his cross-examination.

We are scheduled to conclude today at four o'clock, and then we will resume again tomorrow. Following that, we suggest that breaks be taken where appropriate.

THE CHAIRPERSON: Thank you. Dr. Williams...?

MS. PATTI RAMAGE: Mr. Chair --

THE CHAIRPERSON: Oh, I'm sorry, Ms. Ramage, yes.

MS. PATTI RAMAGE: One -- and I haven't given them to Mr. Simonsen yet but we have the response to the undertaking given yesterday to MIPUG that we can distribute. It is from transcript page 1619 of the record and I will -- as soon as I got off the mic, I will pass that over to Mr. Simonsen.

And Mr. Simonsen, can you perhaps assist me with the Exhibit number?

MR. KURT SIMONSEN: Seventy-nine.

MS. PATTI RAMAGE: So that will be Manitoba Hydro Exhibit 79 that we undertook yesterday.

--- EXHIBIT NO. MH-79: Response to Undertaking Number 6.

MS. PATTI RAMAGE: And I hate to get back on the mic with another comment, but I feel this has to be brought to the Board's attention. It has been eight (8) months since we filed our application; three (3) months since first round IRs; six (6) weeks since second round IRs; three (3) weeks since we filed our rebuttal evidence and yesterday afternoon we adjourned early so that these witness -- so that could MIPUG could present these witnesses with a book of documents.

That book of documents came at 9:42 last night. It is not helpful. Our witnesses are tired. They can't stay up all night reading. We have to get a protocol in place. I don't understand why, when we have been -- we've had this much process leading up to today that we're receiving things at that hour with the expectation that our witnesses will be able to speak to them the next morning.

And I don't have a suggestion right now to deal with today. We will do the best we can. I won't promise we're our sharpest because I'm told our witnesses for the most part did stay up and try to read that. But, it can't continue.

THE CHAIRPERSON: I understand your concern. Mr. Hacault...?

MR. ANTOINE HACAULT: First, I apologize to Manitoba Hydro. I think I explained to them some of the personal circumstances that happened on this weekend, but I think with the exception of two (2) documents, one of which I started to go through yesterday, it's all part of the Manitoba Hydro filing.

So what we've tried to do in a book of documents is avoid having to say, Kristen, could you please go to documents so and so in the filing. It's not like we're presenting new documents. It's documents that were either prepared by Manitoba Hydro as part of its filing, or responses that were given to Manitoba Hydro as part of its interrogatories.

So while I appreciate Mrs. Ramage's comments, I also want to say it -- I don't know. We're trying to help the process by making sure that there's a book that's handy instead of going back to Kristen. But, if that causes issues we can just ask Kristen to bring them up. We would have only had two (2) documents that weren't part of this record; a short transcript from yesterday.

So that we're not trying to introduce new documents or trying to cause more problems, we're trying to be helpful to make sure that there's a package, but I do apologize for the lateness of having provided it. We were also anticipating only starting later this afternoon and that has also caused timing issues, and I apologize for that.

THE CHAIRPERSON: That's fine. Your -- your concern's duly noted, Ms. Ramage. I would indicate after the -- the panel will consider this during the hearing but after the hearing there will be a review of the process and, you know, that will be one (1) of the matters in terms of trying to improve the process going forward.

With that, Mr. Cormie, you're a very popular fellow and Dr. Williams was just waiting for your return. Dr. Williams...?

DR. BYRON WILLIAMS: I offer no opinion on whether Mr. Cormie is popular or not. I did neglect to welcome Ms. Stephen and I'll just note, I've had an opportunity to speak to you for the first time and -- and certainly on behalf of our clients, we've enjoyed your testimony.

And Mr. Chair, if I could be permitted the liberty of one (1) minute our clients -- there are some faces for Manitoba Hydro who are not here who are quite familiar to our clients and they did want to -- who have given long service to the public and who with -- with whom our clients did not always agree, but certainly appreciated their contribution to public service and, in particular, I've been asked to acknowledge the contributions of Mr. Schulz, Ms. Neville, Mr. Rainkie and Ms. Doerksen who will not be here because they've -- they've moved on from Manitoba Hydro so our client did ask us to do so. So, we wish them well moving forward.

THE CHAIRPERSON: Thank you.

CONTINUED MANITOBA HYDRO PANEL 2 re REVENUE REQUIREMENT

LIZ CARRIERE, Previously Sworn
LOIS MORRISON, Previously Sworn
DAVID CORMIE, Previously Sworn
SANDY BAUERLEIN, Previously Sworn
JOEL WORTLEY, Previously Sworn

SUSAN STEPHEN, Previously Sworn
CHUCK STEELE, Previously Affirmed
JAMES MCCALLUM, Previously Sworn
HAL TURNER, Previously Affirmed
GERALD NEUFELD, Previously Affirmed
DAVID SWATEK, Previously Sworn
TERRY MILES, Previously Sworn
GREG BARNLUND, Previously Sworn

CONTINUED CROSS-EXAMINATION BY DR. BYRON WILLIAMS:

DR. BYRON WILLIAMS: Mr. Cormie, I've reviewed your conversation with Mr. Peters. You recall having a conversation with him on Monday morning regarding the issue of capacity in the American -- in Manitoba Hydro and in the US marketplace? Sir...?

MR. DAVID CORMIE: Yes, Mr. Williams, we reviewed the supply tables for capacity for Manitoba Hydro.

DR. BYRON WILLIAMS: And without asking you to elaborate, you will recall that you discussed both the implications of the timing of Keeyask coming online, as well as, to use your words, the big jump in summer surplus capacity which may become available when the NSP sale expires in 2025?

MR. DAVID CORMIE: Correct.

DR. BYRON WILLIAMS: And just to back up to a higher plane, Mr. Cormie, for a moment, in terms of capacity Utilities whether in Canada or the United States was always plan so that they can meet their summer -- their customer's future energy requirements; agreed?

MR. DAVID CORMIE: Yes. Utilities have that obligation to serve, yes.

DR. BYRON WILLIAMS: And when Utilities in the United States enter into a conversation with Manitoba Hydro, one (1) option would be for them to contract to buy surplus energy, energy over and above what is dependable from Manitoba Hydro in some future year? Using the words "energy."

MR. DAVID CORMIE: Generally, Mr. Williams, US Utilities plan for capacity and not for energy, so.

DR. BYRON WILLIAMS: Okay. And the reason they do that, Mr. Cormie, is because it's -- you just can't get a -- if you only contracted for surplus energy, you wou -- there would be no guarantee that Hydro would have the capacity to meet that -- that future American need; agreed?

Let me put it another way, sir. A

capacity sale in conjunction with an energy sale effectively guarantees the energy by also purchasing the capacity required to provide the energy; agreed?

MR. DAVID CORMIE: I -- I agree with that.

DR. BYRON WILLIAMS: And that type of capacity sale means that the purchasing Utility can pro -- can rely upon it for planning purposes; correct?

MR. DAVID CORMIE: Correct. And -- and for the Board's benefit, if you put in a capacity resource like a combustion turbine, generally, energy is not a problem because you just buy the natural gas on a daily basis that you would need to serve that and -- and they -- they would -- those Utilities would make sure that there's enough transportation available on the pipeline for that gas to be delivered and then depending on how much gas they needed, they would buy that depending on their requirements on a day-to-day basis.

So it's the capacity that they're -- once they install that capacity, whether it's the generating capacity or transportation capacity, they have the capability and they worry about how much energy they need to have depending on what their needs are at that -- at that moment. So capacity-constrained Utilities generally only focus on the capacity, not the energy.

Manitoba Hydro has to focus on both the capacity and energy because we can run out of -- we -- we can't just order up more water. We have to plan for the minimum and so most Hydro Utilities are both capacity and energy constrained.

DR. BYRON WILLIAMS: And MISO requires their members to have suf -- sufficient capacity available to meet their expected peak demand, plus a reserve margin to account for uncertainty in terms of the availability of generators; agreed?

(BRIEF PAUSE)

MR. DAVID CORMIE: Yes, that -- that is correct.

DR. BYRON WILLIAMS: And for American Utilities purchasing capacity is one (1) way of meeting that capacity requirement; agreed?

MR. DAVID CORMIE: Yes, and Manitoba Hydro needs to have capacity products that are acceptable to the MISO if we're using the -- if they're using the MISO standard for -- as -- as their resource requirement.

DR. BYRON WILLIAMS: Okay. And going to the perspective of these Utilities within MISO, if they fail to meet their capacity requirements, they're actually subject to deficiency charges; correct?

(BRIEF PAUSE)

MR. DAVID CORMIE: Yes, Mr. Williams, you're correct, there is a penalty for not planning to have sufficient capacity resources.

DR. BYRON WILLIAMS: So, from the perspective of the Utilities within MISO, there is a real monetary value to purchasing capacity when they are short of that requirement? That may be -- not be the -- the choice they select, but there's a value to purchasing capacity?

MR. DAVID CORMIE: Yes and they have the choice of building as well as purchasing it, right.

DR. BYRON WILLIAMS: If we could pull up Coalition-Manitoba Hydro first round Information Request 54 and go to the second page of that response.

Mr. Cormie, you'll recall that this Information Request was asked to provide the amount of historical capacity rev -- revenue produced from surplus dependable energy relative to the overall revenue from surplus dependable energy.

Do you recall that, sir?

MR. DAVID CORMIE: Yes, this -- this is our exhibit, yes.

DR. BYRON WILLIAMS: And in essence, what table 1 dem -- shows to us from the time period from 2005/'06 through '16/'17 is the capacity revenue as a percentage of total export revenue; agreed, sir?

MR. DAVID CORMIE: That's correct.

DR. BYRON WILLIAMS: And Manitoba Hydro concludes that on average over this period capacity revenue has made up about 12 percent of total export revenues? It's probably earlier in the response, sir, but if you'll accept it subject to check.

MR. DAVID CORMIE: Yeah, it looks reasonable, 12 percent, yes.

DR. BYRON WILLIAMS: And going out from today out to 2025, I'm not asking you to provide insight into the percentages or prices, but within the actual ongoing dependable sales, there would be revenue associated with the value of that capacity; agreed, sir?

MR. DAVID CORMIE: Yes, in the -- in our financial forecast all the contracts that we have sold that include capacity that capacity revenue is in the IFF.

DR. BYRON WILLIAMS: And, Ms. Carriere, just a couple questions with you and I don't want to repeat the conversation you had with my Learned Friend Mr. Peters on Monday.

But prior to 2016 surplus dependable energy and capacity in the Manitoba Hydro forecasts were assumed to be marketed as a long-term firm expert sale of energy and capacity, i.e., a dependable product; agreed?

MS. LIZ CARRIERE: Yes, but they still are in -- in the forecast.

DR. BYRON WILLIAMS: And just so -- my understanding is that for MH16 and MH16 Update forecasts, it is assumed that surplus dependable energy will be marketed as opportunity energy?

MS. LIZ CARRIERE: Effectively, yes.

DR. BYRON WILLIAMS: And, Mr. Cormie, again, I don't want to -- to go into the details, but this is the policy decision which you referenced in your discussion with Mr. Peters on Monday?

MR. DAVID CORMIE: Yes, the policy

decision on whether to include unsold capacity revenue in the IFF.

DR. BYRON WILLIAMS: Mr. Cormie, I'd like to direct your attention to Coalition Exhibit 32-2 being an excerpt from the NFAT transcript of March 10th, 2014 and specifically in that exhibit it's page 16 that allows Kristen to bring up -- and just for the benefit of the record, that is page 1310 from the transcript of that year.

And I -- we can just leave that up on the screen. Mr. Cormie, before we get to this -- this conver -- this -- this expressed dialogue with the PUB, at the time of the NFAT hearings, Mr. Cormie, you were the division manager of operations for Manitoba Hydro; agreed?

MR. DAVID CORMIE: Yes.

DR. BYRON WILLIAMS: And your duties included directing Manitoba Hydro's activity in the wholesale market export market; agreed?

MR. DAVID CORMIE: Yes.

DR. BYRON WILLIAMS: And you currently hold the position of Director of Wholesale Power and Operations within Manitoba Hydro, sir?

MR. DAVID CORMIE: That's correct. The title has changed; the responsibilities are the same.

DR. BYRON WILLIAMS: Still working hard.

MR. DAVID CORMIE: I have my traveller's tie on.

DR. BYRON WILLIAMS: And in your many years of service to Manitobans in general, sir, and Manitoba Hydro, in particular, you have gained insight into the MISO market generally; agreed?

MR. DAVID CORMIE: Yes.

DR. BYRON WILLIAMS: And you have also gained insight into the US regulatory system, at least to the extent that it may affect prices and supply and demand into them -- in the MISO marketplace, sir?

MR. DAVID CORMIE: Mr. Williams, I'm -- I'm most familiar with those customers that we are -- that we are dealing with, and I'm very familiar with the MISO energy markets. But MISO is a very large footprint extending all the way down into Louisiana --

DR. BYRON WILLIAMS: So -- so --

MR. DAVID CORMIE: -- so I limit my expertise to those Utilities that we deal with directly on a day-to-day basis.

DR. BYRON WILLIAMS: Fair enough, sir. And I thank you for that -- that caution and as so far as -- I'm -- you have had -- gained some insight into the implications of regulatory decisions on the prices and supply and demand as it may affect those players--

MR. DAVID CORMIE: That's correct.

DR. BYRON WILLIAMS: -- in the marketplace. And to the extent that those decisions may affect those particular players in the MISO marketplace, you at least have some knowledge of the role of federal and -- and state regulatory bodies and the implications of their decisions, as it may affect price, supply and demand; agreed, sir? Some working knowledge.

MR. DAVID CORMIE: Some knowledge of how the market works and how the regulators work today. I can't say that I have any skills in what's going to happen ten (10) years from now, Mr. Williams.

DR. BYRON WILLIAMS: Fair enough, sir. Just going -- scrolling down to this excerpt from Coalition 32-2 to the -- to -- about line 15, and if we could show that towards the top of this page.

Mr. Cormie, the particular Utilities in MIS -- MISO with which you have particular experience would include Minnesota Power, Northern States Power and Wisconsin Public Service.

Would that be fair, sir?

MR. DAVID CORMIE: Yes, among others.

DR. BYRON WILLIAMS: And in this paragraph you're talk -- discussing the daunting challenges that these Utilities, as well as Saskatchewan, face in planning for load growth; agreed?

MR. DAVID CORMIE: Yes.

DR. BYRON WILLIAMS: And in general, the Utilities captured in this paragraph come from a tradition of being highly goal dependent.

Would that be fair, sir?

MR. DAVID CORMIE: Yes.

DR. BYRON WILLIAMS: And in general, sir, their fleets are aging, correct?

MR. DAVID CORMIE: That's correct, yes.

DR. BYRON WILLIAMS: And at that time, sir, as well in the context of climate change and the particular concerns relating to sources such as coal, there was considerable uncertainty related to the future of those sources of -- of energy and capacity.

Would that be fair, sir?

MR. DAVID CORMIE: Yes, I think there's still significant uncertainty with regard to the future for coal. Even natural gas generation is being threatened by the evolution and the price reductions that we're experiencing in the market for wind and -- and solar. So, there is -- there is still lots of uncertainty, yes.

DR. BYRON WILLIAMS: And -- and, sir, you also, in this paragraph, talk about the reality of wind and I assume today you would add solar as -- as a significant emerging resource but not necessarily a total solution to the challenges of these Utilities?

MR. DAVID CORMIE: Yes, I still agree with what's said here, yes.

DR. BYRON WILLIAMS: And indeed, sir, when you go into the American marketplace to sell the -- the values of renewable energy from Manitoba Hydro, one (1) of your key elements of your marketing message is that -- that Manitoba Hydro can -- can work with these emerging technologies as a support -- as a source of capacity; agreed? And as a backstop when -- when -- to the -- to these emerging technologies.

Would that be fair, sir?

MR. DAVID CORMIE: That's correct. And Manitoba Hydro can offer quite a flexible partnership with -- with the other technologies.

DR. BYRON WILLIAMS: Mr. Cormie, if we can now turn to Coalition 32-2, Tab 4, and specifically page 40.

And Mr. Cormie, just if you're searching for your memory banks when this conversation took, I'll -- I'll remind you that it took place -- or suggest to you May 28, 2015, before the Public Utilities Board, and it's page 40. Yeah. Thank you, Kristen.

(BRIEF PAUSE)

DR. BYRON WILLIAMS: Mr. Cormie, in -- in this conversation with Mr. Peters, you're talking about a huge amount of coal generation in Minnesota that has to retire, agreed?

MR. DAVID CORMIE: Yes, I agree with that.

DR. BYRON WILLIAMS: And also in Minnesota, some challenging issues emerging with nuclear plants reaching the end of their life as well, agreed?

MR. DAVID CORMIE: Yes, that's correct.

DR. BYRON WILLIAMS: And when you speak of the nuclear plants, that may be in the early 2030s, sir?

MR. DAVID CORMIE: It's around there, yes.

DR. BYRON WILLIAMS: Okay. And, sir, in 2015, you expressed the view that you can't run a state electricity system on wind and solar power?

MR. DAVID CORMIE: Yes, and I believe that still true.

(BRIEF PAUSE)

DR. BYRON WILLIAMS: And I don't think -- Mr. Cormie, just -- would it be a fair statement, and if you're not able to answer this, that's -- that's fine, but would it be a fair statement that President Trump appears to be more fond of the fossil fuel industry than President Obama?

MR. DAVID CORMIE: I would say that's fair, yes.

DR. BYRON WILLIAMS: It would also be fair to say though, sir, that Manitoba Hydro cannot identify any coal plant closures in the expo -- its export region that have been delayed or cancelled under the -- since Trump was elected? If you're looking for a reference, it's Coalition 1-53.

MR. DAVID CORMIE: Could you bring up

that reference, please?

(BRIEF PAUSE)

MR. DAVID CORMIE: Yes, I -- I agree with this, Mr. Williams. Then I would say that Utilities know their co-fleets are aging, and ultimately would have to be retired. And under the Clean Power Plan, they were generally thinking they would retire them earlier. With -- with the change in administration, that's less likely that they would retire them early --

DR. BYRON WILLIAMS: Okay.

MR. DAVID CORMIE: -- because of policy decisions.

DR. BYRON WILLIAMS: I understand that, sir. And just -- you -- you worded that very carefully, and -- and I appreciate that.

And -- and so just to be clear, though, Hydro is not -- cannot identify any coal plant closures in this region that have been either delayed or cancelled?

MR. DAVID CORMIE: I agree with that, yes.

DR. BYRON WILLIAMS: And in general,

you would agree that within this market, the generation mix is becoming more diversified, agreed?

(BRIEF PAUSE)

MR. DAVID CORMIE: The generation mix is becoming more diverse, yes.

DR. BYRON WILLIAMS: And in this response, sir, you reference uncertainty in -- related to energy and environmental policy in the United States, correct?

(BRIEF PAUSE)

MR. DAVID CORMIE: Yes, I think that's correct. Yes.

DR. BYRON WILLIAMS: And sir, if you can't answer this based upon your -- your -- this next question, that's fine, but would it be fair to say that generally, in the United States, changing an -- an environmental regulation requires a scientific justification?

MR. DAVID CORMIE: I can't speak to that, Mr. Williams.

DR. BYRON WILLIAMS: In terms -- and

again, Mr. Cormie, if you're unable to answer this I understand, in terms of carbon pricing and policies, including the Clean Power Plan, is it your understanding, sir, that if the administration wishes to change the existing rule, a formal rule-making process with public input is required?

MR. DAVID CORMIE: I believe that is correct, yes.

DR. BYRON WILLIAMS: And to your knowledge, sir, has that formal rule-making process been undertaken?

(BRIEF PAUSE)

MR. DAVID CORMIE: Mr. Williams, I don't know if the legal process has started. But that -- that's the intention, that they would revise the -- the rule -- the rule --

DR. BYRON WILLIAMS: And -- and let's be clear here, though, sir. President Trump has ordered a review, agreed?

MR. DAVID CORMIE: Yes.

DR. BYRON WILLIAMS: But no formal rule-making process has been initiated, correct?

MR. DAVID CORMIE: I believe that is

correct, subject to check.

DR. BYRON WILLIAMS: Mr. Cormie, again, if you can't answer, I this understand. Has Manit -- to your knowledge, has Manitoba Hydro sought an opinion from external experts in terms of whether it is reasonable to conclude that surplus dependable energy after the NSP sale expires in 2025, will have no capacity value?

(BRIEF PAUSE)

MR. DAVID CORMIE: No, Mr. Williams, we have not asked for or received an opinion to that effect.

DR. BYRON WILLIAMS: Just one (1) -- one (1) quest -- one (1) second, Mr. Chair.

(BRIEF PAUSE)

DR. BYRON WILLIAMS: Mr. Cormie, is there anything you wish to share from your conversation with Mr. McCallum?

MR. DAVID CORMIE: No, I'm good.

DR. BYRON WILLIAMS: Mr. Chair, we'll conclude our cross-examination there. And Mr. Cormie, the same thanks for many years of service go -- come from our clients as well to you, sir.

MR. DAVID CORMIE: Thank you.

THE CHAIRPERSON: Thank you. Mr. Hacault...?

CONTINUED CROSS-EXAMINATION BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Thank you, Mr. Chairman. Good morning, all -- good morning, all members of the Manitoba Hydro panel.

As I usually try to do in my cross-examinations, I want to let this panel know where I'm going first. It'll relate to materials I had started going through yesterday, and in particular, it'll be at Tab 1 of our book of documents. And the first page in that document is a slide taken from Manitoba Hydro Exhibit 64, with my attempt to do some colour book colouring.

The discussion and information which I want to have a little bit more clarity on is with respect to firstly, the total cost to ratepayers under both scenarios that are depicted, the 7.9 percent scenario and the 3.95 scenario, and it -- this information will also fit into some of the smoothing discussion that I'll have. And this subject then deals with two (2) areas, intergenerational equity and smoothing.

Just to refresh our mind as to what is shown on this slide, and Mr. McCallum, it probably is you who will be answering, but it's open to anybody, the dotted blue line shows us a trajectory which gets us to 25 percent equity, that's on the left-hand side, and how both rate scenarios fare against that objective. Is that fair?

MR. JAMES MCCALLUM: Yes, I think that's -- that's fair. On the left-hand access, you have the equity ratio and its progression over time under two (2) different rate paths, one (1), the dark blue line at the top is the Manitoba Hydro rate path, results in -- in an equity ratio climbing from 15 percent today to 25 percent by 2027, and the alternative rate path of 3.95 percent is compared here, where we see the equity ratio at 15 percent decline to about 10 percent into the 2030s, and then climb back up. And then those dotted lines reflect the progression of cumulative rate increases under both.

MR. ANTOINE HACAULT: And although it doesn't give us the exact magnitude, would you agree that the yellow area between the red dotted line and the blue dotted line represents the -- the additional revenue you're getting from Manitoba ratepayers on an accelerated basis compared to previous plans?

MR. JAMES MCCALLUM: It -- it would translate to that. What you see here, the difference between the top line and the bottom line is the difference in cumulative rate increase as at each year, as you see in the -- the bottom axes on a percentage basis.

MR. ANTOINE HACAULT: Yes. And conversely, later on in the plan, and I'll bring you to some of the numbers that are in your material. The green shaded area, which is between the blue line at the bottom, and the even rate increase at 3.95, in a general way would provide some sense of the revenue that's being -- or needs to be collected under the 3.95 scenario in the last ten (10) years to meet the 25 percent target. Is that correct?

MR. JAMES MCCALLUM: Yeah. I've never looked at it quite in that sense, so I'd want to -- you know, subject to check, but I think the -- directionally, again, the lower line reflects -- and -- and this is a -- a scenario that we produced upon request, but the -- the lower blue line there reflects savings in terms of cumulative rate increase required after we've attained our 25 percent target.

MR. ANTOINE HACAULT: And when you say that it was a -- a scenario that was produced upon request, I don't have the number, unfortunately, but your counsel distributed what she referred to at the beginning of the hearing as the top ten (10) IRs. And if we could bring that up, please, Kristen.

At Tab 9, there is a response which the Corporation provided in the second round set of interrogatories to the PUB around 2-21(a) to (b), and that has scenarios. Would that assist the Board in having some of the data background that was used to generate this chart?

MR. JAMES MCCALLUM: I -- I'm not clear on your question --

MR. ANTOINE HACAULT: Sure. Okay. Well, if we go to the bottom of the slide 30, if you can revert back to it, I understood on the bottom left-hand side, the reference of your slides, sir, in your initial presentation, that blue line was data from PUB/MH-2-21(b).

Do you see that at the bottom left-hand corner where it says --

MR. JAMES MCCALLUM: Yes.

MR. ANTOINE HACAULT: -- dash -- dash?

So what I'm taking you to, sir, is to the reference that you put on your slide.

MR. JAMES MCCALLUM: I misunderstood your question, sir. The -- the data for the dark solid blue line and the dotted blue line would both come from PUB/MH Round 2-21(b).

MR. ANTOINE HACAULT: And the reason I -- it was conveniently placed on the record by your counsel in the top ten (10) IRs, so that -- thank her for that.

If we go to page 6 of that particular IR, we find the table that gives us some data to provide us background as to what's happening in that line. And am I right in suggesting that to get some idea of what's happening in that drawing, if we go to -- closer to the bottom of that particular slide. There's a line called percent increase?

Do you see that, sir?

MR. JAMES MCCALLUM: Yes, I do.

MR. ANTOINE HACAULT: Okay. And am I correct in understanding that this dotted line represents Manitoba Hydro's current plan, which, if we go across that line, assumes the 3.36 interim is confirmed, correct?

MR. JAMES MCCALLUM: Correct.

MR. ANTOINE HACAULT: And assumes thereafter, six (6) consecutive increases of 7.9 percent, correct?

MR. JAMES MCCALLUM: Yes.

MR. ANTOINE HACAULT: Followed by a 4.54 percent increase and 2 -- increases of 2 percent, bringing us to 2027, correct?

MR. JAMES MCCALLUM: Yes.

MR. ANTOINE HACAULT: Now, I know you disagreed with Mr. -- or Dr. Williams on the jagged nature of -- of a plan, and I'll acknowledge this is just a scenario, but to understand why that line on your slide goes sharply down, we have to go to the next page, correct, that shows us what happens in the next ten (10) years?

MR. JAMES MCCALLUM: That's right.

MR. ANTOINE HACAULT: And if we can turn to the next page, please, Kristen. Again, at that same line, what we see, I would suggest, are two (2) things in the first line, where we see a percentage increase, it's, in fact, negative at nineteen point seven-five (19.75). Do you see that?

MR. JAMES MCCALLUM: I do see that, yes.

MR. ANTOINE HACAULT: And this is the

result of asking the modelling to keep the equity at 25 percent in each of the subsequent ten (10) years shown on this particular page, correct.

MR. JAMES MCCALLUM: That's correct. This is a mechanical exercise of targeting an equity ratio.

MR. ANTOINE HACAULT: And it's this table that's used to communicate the message that at the end of this time period, based on this, what you've described mechanical exercise, the cumulative rate increases to consumers. And that's also a line on this slide would be 44.29 percent.

Is that correct?

MR. JAMES MCCALLUM: Yes, taken all the way out. If you just scroll up a little bit, I believe that's 2036. Correct. So yes, 44 percent out through 2036, which would compare to cumulative increases in the order of 107 percent compared to the 3.95 path.

MR. ANTOINE HACAULT: And what this mechanical exercise of keeping the equity ratio at 24 -- 25 percent does on this slide as far as net income, it basically shows either a very, very small net income in 2028 of $30 million, correct?

MR. JAMES MCCALLUM: 2028 shows a

income to an attributable -- attributable, pardon me, to Manitoba Hydro of $26 million. That's right.

MR. ANTOINE HACAULT: And in each of the next consecutive years, being 2029 to 2036, the Corporation, under this scenario of maintaining an equity ratio of 25/75 actually is projecting losses, correct?

MR. JAMES MCCALLUM: Under this scenario of mechanis -- mechanistically solving for an equity ratio, that's correct.

MR. ANTOINE HACAULT: And we see that the percentage increase, if we go back to that line, has what I would call some instability to it in the sense that some years there are negative increases, and some years there are nominal positive increases in the rates; correct?

MR. JAMES MCCALLUM: Correct.

MR. ANTOINE HACAULT: Okay. And another run that was asked to be provided by this Corporation, which is not shown on your drawing, also gives us some information as to what would happen should we keep the increases at zero each and every year, and that would be found at page 19 of this same document, page 19? Sorry not of the partic -- the tab 9, page 19 of 23 of the IR.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: This is still in the top ten (10) IRs document. So maybe we could just go to a -- the immediately preceding page to confirm that the first part of the increases remains the same as the previous example that I just referred to, that being 3.36 percent increase followed by the Corporation's current plan.

Is that correct?

MR. JAMES MCCALLUM: Yes.

MR. ANTOINE HACAULT: Okay. And we see that in the percent increase line. And if we want to find out what would happen if we gave no increases at all and no decreases at all to Manitoba consumers over the next ten (10) years, we'd need to go to the next page to see what the effect of that would be; correct?

MR. JAMES MCCALLUM: Yes. As you can see at the bottom of the page the percent increase line shows zero percent from 2028 through to and including 2036. And underneath you can see that, consequently, the cumulative percent increase in rates remains static at 77.4 percent, where it was at the end of 2027.

MR. ANTOINE HACAULT: And the other thing that we notice is that the net income on that run starts roughly at 600 million, and increases to the $900 million range towards the end of that time -- ten (10) year time period; correct?

MR. JAMES MCCALLUM: That's correct.

MR. ANTOINE HACAULT: And we also see that with zero percent increases in each of those ten (10) years, the equity ratio goes from 27 percent up to 51 percent; correct?

MR. JAMES MCCALLUM: In this scenario, casting out eleven (11) to twenty (20) years, yes. That's what that shows.

MR. ANTOINE HACAULT: Okay. And when we're discussing intergenerational equity and who is paying in what decade, I would suggest these runs help inform Manitoba Hydro ratepayers and this Board as to what we're asking, at least, and can reasonably project the ratepayers during the first ten (10) years have to pay compared to what the ratepayers in the second decade have to pay; correct?

MR. JAMES MCCALLUM: I believe that was a statement of your point of view. But what I think you take from any of these scenarios, or what you should take, is the range of possibilities. So I think that perhaps a better way of looking at it would be to pull up the 3.95 percent scenario and see some of the increased debt and increased interest cost, which is an enormous source of volatility to ratepayers, both today and in the future.

MR. ANTOINE HACAULT: Yeah. Thank you, sir. If we can go back to the very first slide that I had in our material, which is slide 30 from your presentation, sir. Will you agree with me to this extent, I'm looking at the third bullet, that it's illustrative of this sentence:

"Rate stability with potential for lower rates and bills in the long run."

Does it illustrate that concept, sir?

MR. JAMES MCCALLUM: I think the -- I think it shows certainly the potential for lower rates and bills. The source of the rate stability is -- is pretty straightforward. Really, we're talking about a plan that removes $4 billion of debt from Manitoba Hydro's balance sheet as compared to a path of 3.95 percent. So instead of being $25 billion in debt in 2027, we are $21 billion in debt.

That's still a stratospheric level of debt compared to where we were after limestone, which is also a slide we can pull up. But nonetheless, when you don't have $4 billion in debt you don't have interest payments on $4 billion in debt. And if you don't have interest payments on $4 billion in debt you don't require revenue to pay those interest payments. Therefore, your rates can be lower. And that's what this chart demonstrates. Moreover, they can be more stable. If you're in $21 billion of debt versus $25 billion debt the impact of interest rate volatility is just by definition lower.

MR. ANTOINE HACAULT: Thank you, sir. But can you clarify for the record that the use potential was very deliberate. There is no guarantees that Manitobans under the new Manitoba Hydro plan will actually see lower rates in the second decade.

MR. JAMES MCCALLUM: Well, of course, there isn't, sir. But we are talking about an occurrence eleven (11) years from now. I think it's been well covered that we do these modelling and forecasting exercises as important planning tools, but really we're going to be back to -- to this Board multiple times before we get out there, each time with a -- a plan reflective of our current circumstances. What is true, however, is that if we follow this path, no matter what happens, the rates will be lower under this path than they will be having followed the 3.95 percent path.

MR. ANTOINE HACAULT: Well, let's explore that a little -- a little bit more. In this same response that we've been referring to, sir, being at tab 9 of your top ten (10) IRs at page 4 of 23. It's in the narrative, Kristen. There is a table at -- it's before the tables begin. Yes, you found it.

Let's take the Board through this table and what it tells us and what it doesn't tell us. So the first line refers to the scenario that we discussed first, which is mechanically keeping the rate increases at a level where after the first ten (10) years you continue on a 25 percent equity target; correct?

MR. JAMES MCCALLUM: Right.

MR. ANTOINE HACAULT: And what it shows us, as we saw on the table, is that 25 percent equity ratio is achieved in 2026/2027; correct?

MR. JAMES MCCALLUM: Correct.

MR. ANTOINE HACAULT: And if we go back to that table, we will have seen that the cumulative rate increase to that date will have been 77.4 percent; correct?

MR. JAMES MCCALLUM: Yes.

MR. ANTOINE HACAULT: And the reason we see it going down to a cumulative rate increase at 38.8 percent is we've seen that there is nearly a 20 percent decrease on the 11th year, followed by small negative numbers and sometimes small positive numbers; correct?

MR. JAMES MCCALLUM: Again, that's what the model scenario shows with the purpose of maintaining exactly 25 percent equity.

MR. ANTOINE HACAULT: And what the Corporation has provided as far as additional information is what the cumulative bills will be under that scenario, starting from 2017 to and including 2033/'34; correct?

MR. JAMES MCCALLUM: Yes.

MR. ANTOINE HACAULT: And based on the assumptions made of a residential customer using a 1,000 kilowatt hours per month, that person's total bills under that particular scenario would lead to that person paying twenty-five thousand one hundred and seventy-three dollars ($25,173); correct?

MR. JAMES MCCALLUM: Yes, over seventeen (17) years, I believe.

MR. ANTOINE HACAULT: And you may disagree with my characterization, but most of that would be frontloaded payments as opposed to the gradual 3.9 percent increases; correct?

MR. JAMES MCCALLUM: I would agree with that. That's a -- has been a key element of our plan since our initial application in May, that we are looking to accelerate rate increases in order to come to terms with a problem that is accelerating away from us.

MR. ANTOINE HACAULT: Okay. And the second line on this particular table shows us the even annual increases at 3.95 percent, giving us increases to 2026/'27 of 48.9 percent; correct?

MR. JAMES MCCALLUM: Sorry. There was a cough just as -- as you spoke and I missed last part of your sentence.

MR. ANTOINE HACAULT: I was just asking you to follow me on that table as to what the cumulative increase would be under the 3.95 percent increase scenario as of 2026/'27.

MR. JAMES MCCALLUM: Oh, well, and -- and here I believe we're referencing Coalition/MH Round 2, number 19. This scenario actually reflects that two (2) things I think the panel needs to be aware of. The first is this is a scenario reflecting 4.14 percent rate increases, not 3.95.

MR. ANTOINE HACAULT: Thank you for correcting that.

MR. JAMES MCCALLUM: And -- and you'd say, what difference does ,2 make, but actually the numbers are so big that it's not insignificant. The second thing I would just add is that this scenario assumes twelve (12) year terming of the debt, which we talked about being a $500 million benefit and -- and something that, you know, Manitoba Hydro would struggle to implement from prudence point of view.

If, you know, we were looking at the next ten (10) years of -- and not seeing -- and not only not seeing net income, but seeing net loss it would be a very difficult risk management decision. So I think, you know, we're comparing two (2) scenarios here which are -- are a bit different, but nonetheless.

MR. ANTOINE HACAULT: So your point is that the scenario numbers shown on this particular page are somewhat different than what you've shown on your slide 30, in that this scenario on the slide achieves a 25 percent equity in seventeen (17) years; correct?

MR. JAMES MCCALLUM: That's correct. Using the 4.14 percent rate path for seventeen (17) years --

MR. ANTOINE HACAULT: Yeah.

MR. JAMES MCCALLUM: -- results in a 25 percent equity. Again, assuming the plan all goes right. And also included in that is the twelve (12) year terming of debt. The chart on page --

MR. ANTOINE HACAULT: If we can go just briefly back to slide 30, I'll let you explain.

MR. JAMES MCCALLUM: Yeah, the -- the chart on -- and you can see in the notes at the bottom. And apologies to the Board if we're speaking too much and in shorthanded and code, but the -- in the red lines here, both solid and dotted, reflect a twenty (20) year WATM, that means weighted average term to maturity, with 3.95 percent rate increases for the effectively nineteen (19) years to 2036, the year 2035/'36.

MR. ANTOINE HACAULT: And what that slide shows is that that dotted line intersects the 25 percent equity somewhere between 2034 and 2035; correct?

MR. JAMES MCCALLUM: That's right. We -- we somewhere be -- in that last fiscal year we would cross over the 25 percent threshold. I think, subject it to pulling up the actual numbers, I think we're at 24 percent in 2035 and -- and 26 or 27 percent at the end of 2036. It's kind of a long way off.

MR. ANTOINE HACAULT: And as you said the world changes, so that compared to some of the previous IFFs with an in-service date for Keeyask at a particular date, the Corporation now believes and has modelled about a 20 percent -- a twenty-one (21) month delay in that facility starting to produce revenues; correct?

MR. JAMES MCCALLUM: That's correct.

MR. ANTOINE HACAULT: But in any event, the scenario you show on slide 30 with 3.95 percent increases, and I apologize, that's where I had in my mind that that number with the twenty (20) year WATM being the weighted term maturities for debt. You reach the 25 percent equity prior to the twenty (20) year time frame shown on that slide; correct?

MR. JAMES MCCALLUM: Just prior, yes.

MR. ANTOINE HACAULT: Okay. Now, going back to the table which we were looking at, at page 4 of 23 of the top ten (10) IRs, correct me if I'm wrong but I don't see what we would call an NPV analysis with respect to the cumulative bills.

MR. JAMES MCCALLUM: That's correct.

MR. ANTOINE HACAULT: And if I'm an individual or company and I have to put a lot of expense in the first ten (10) years and less in the second decade, why would an analysis of the net present value, which is NPV, provide me some useful information?

MR. JAMES MCCALLUM: Well, an NPV analysis is basically meant to take a forward stream or projection of cash flows and bring them back to present day using a discount rate. And the discount rate is set, amongst other things, basis the depending on the perceived risk of those future cash flows.

MR. ANTOINE HACAULT: So it deals with the perceived risk and it also deals with the time value of money, I would suggest.

MR. JAMES MCCALLUM: Yes.

MR. ANTOINE HACAULT: So that a dollar twenty (20) years from now may not buy me as much as a dollar which I have to pay today. And that formula is trying to inform us as to the impact of having to pay the dollars today as opposed to tomorrow; correct?

MR. JAMES MCCALLUM: That is correct. Not indifferent from the situation Manitoba Hydro is noticing when the dollars required to replace our assets are considerably greater than the ones we needed in 1950 to build them.

MR. ANTOINE HACAULT: And I would suggest to you, sir, that for most Manitoba Hydro customers the payments they have to make for Hydro bills is a cash flow issue; correct?

MR. JAMES MCCALLUM: I'm not clear on your point. If the customer --

MR. ANTOINE HACAULT: Well, they won't borrow money to pay your bills. All things being equal, they need to have the cash to pay their monthly bills; correct?

MR. JAMES MCCALLUM: I would and anticipate that most of our customers pay their bills out of their monthly income.

MR. ANTOINE HACAULT: And what I would do now is perhaps take you back to our book of documents. The second page in that book of documents is an extract from the second page, please, Kristen. From a report done by the La Capra, but the reason I want to take you to the first full page of narrative of that document is to ask you whether you agree with some of the comments of these consultants on the utility of the net present value in informing the decision.

So the first statement that's shown in

-- in highlight is that in the NFAT Manitoba Hydro had not provided estimates of net present value for additional consumer revenue increase calculated for each development plan. That was a criticism of La Capra at that time, now Daymark. Manitoba Hydro has chosen again not to provide estimates of net present value for the different rate scenarios.

Is that correct?

MS. PATTI RAMAGE: Mr. Hacault, perhaps before we go into this could you confirm? The copy we have does not have highlighting. Is -- were we provided the same copy as...

MR. ANTOINE HACAULT: It -- it should.

MS. PATTI RAMAGE: Yeah, we don't have this copy.

MR. ANTOINE HACAULT: It was the one (1) that was emailed around, including to...

MS. PATTI RAMAGE: The one (1) we received --

MR. JAMES MCCALLUM: The one (1) we received didn't have it.

MR. ANTOINE HACAULT: Okay. We'll have to see what happened from a technical perspective. We can give you the paper version. It was certainly intended that the electronic version, which is shown on the screen, was also the electronic version that you got. Sometimes the scrubbers in our firewalls take out additions to PDFs.

MR. JAMES MCCALLUM: I've never seen that happen.

(BRIEF PAUSE)

THE CHAIRPERSON: We've been requested for a break. You know what, we'll take the morning break.

MS. PATTI RAMAGE: Mr. Chairman, before we go on the break I'd just like -- this illustrates the exact issue I was speaking to this morning, is there's a highlighted version. We didn't see it. We get it last night in blank and --

THE CHAIRPERSON: You know, Ms. Ramage, I've got your point.

MS. PATTI RAMAGE: Yeah.

THE CHAIRPERSON: We don't know what caused the problem.

MS. PATTI RAMAGE: Right.

THE CHAIRPERSON: It may have been that the version they sent got scrubbed at -- at Manitoba Hydro as well, so.

MS. PATTI RAMAGE: Yeah. But I wanted to make the point, just in terms of -- to clarify. My issue is with the older documents, just in terms of what Mr. Hacault was speaking to this morning. We're ready to go on anything that's filed in this proceeding. My issue is with documents that are not on the record otherwise.

THE CHAIRPERSON: That's fine. I don't know what you expect me to do, Ms. Ramage. I've got note of it. If necessary, we can take a break. You know, we'll -- we'll take a break now. If you need more time to do -- go through the documents then we'll have to deal with it that way. But maybe, Mr. Simonsen, if it's possible if we can maybe make some colour copies here over the break and distribute it to Manitoba Hydro.

MR. KURT SIMONSEN: I have two (2) extras they can use and we can try to run a couple more.

THE CHAIRPERSON: Okay. We'll break till 10:30. Thank you.

--- Upon recessing at 10:12 a.m.
--- Upon resuming at 10:33 a.m.

THE CHAIRPERSON: Mr. Hacault...?

MR. ANTOINE HACAULT: Yes, Mr. Chairman, unfortunately we don't know what happened. There was one (1) email sent to everybody with the same attachment and for some reason, which we can't explain, Manitoba Hydro appears to not have had the highlight show up on its -- the version that was sent everybody else. Everybody else is seeing it. So, I'm not an IT person but we'll try and get that resolved.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Before I go back to this document, I just want to clarify one (1) or two (2) things with respect to slide 30.

Mr. McCallum, you'll agree with me that in the interrogatory that's in your top 10 interrogatories, there was another scenario which you could've chosen for this slide, being, zero percent rate increases for the time period from 2027 to 2036?

MR. JAMES MCCALLUM: Well, I suppose, sir, we could have chosen really any scenario. The purpose of the interrogatory and the purpose of this chart is to show the potential, and the possibility that arises for Manitoba ratepayers if Manitoba Hydro take steps now to come to terms with its debt.

What it opens up for us is a much broader suite of possibility beyond 2027 and dependent on where we find ourselves at that time in terms of the capital needs of the business, the state of the export markets, the state of interest rates, the state of load growth and so on and so on and so on.

And so, you know, we -- we can compare any two (2) scenarios we want, and we've done a lot of that. But this is meant to show, really, the power of reducing your debt to levels that are -- are still very high, but more sustainable than what we are contemplating absent the action we're proposing.

MR. ANTOINE HACAULT: You see, sir, what I'm -- maybe you can help me understand why the Corporation would put a scenario that shows nine (9) consecutive losses as even being a potential scenario, given the aversion of this Corporation in its current plan to any deficits at all.

MR. JAMES MCCALLUM: The scenario was requested by the Public Utilities Board and we responded to it.

MR. ANTOINE HACAULT: But all the public that's watching, unless we went to the details, would not know that this scenario, I would suggest, has no potential whatsoever if this Corporation is not going to do nine (9) consecutive losses in the second decades of -- of this -- of this -- of its rate scenarios; isn't that correct?

MR. JAMES MCCALLUM: I -- I think we've been clear that this scenario was a purpose -- is a modelling exercise. Are we going to propose zero or -- and -- and I think, subject to check, we're kind of talking about really right around breakeven, maybe losing $50 million or making $30 million.

I've said I don't think that's a good planning matter. Our entire planning matter is focused on the next ten (10) years. So what is interesting is that nonetheless the business continues to -- to deliver even with negative net income, which is how the Company is able to maintain the equity ratio at 25 percent, but we'll come to what the right thing to propose is when we know a heck of a lot more about what the world looks like in 2028.

MR. ANTOINE HACAULT: Thank you very much, sir. If we can move back to the page that caused us to take the break where I had tried to highlight and provide some indication of what I would be putting to witnesses.

It's talking about the net present value and I've already put a context to that in previous questions. My question before the break was: Notwithstanding that the Corporation knew of this recommendation via La Capra and NFAT to show net present values, the Corporation chose not to do that with respect to slide 30?

MR. JAMES MCCALLUM: The -- well, I think we're really comparing two (2) different things and two (2) different reasons to do a net present value.

If you read through the La Capra report and you think back to what NFAT was and what its purpose was, La Capra's recommendation was to compare rate paths and customer bills on a net present value basis as and between different development plans. A different purpose.

MR. ANTOINE HACAULT: Correct. It was rate scenarios and I would suggest to you, sir, that part of the discussion that's happening over the next weeks will be what rate scenario is appropriate for Manitobans.

Don't you agree, sir?

MR. JAMES MCCALLUM: I clearly agree. But to be clear, NFAT was about comparing different development plans with different resources at different times, and trying to -- which lead to different rate impacts in different eras and trying to bring that back to -- to a common ground through an NPV analysis. You're really not doing the same thing as what you're -- you're proposing to do here.

MR. ANTOINE HACAULT: Okay. Also highlighted is -- it was La Capra's view that there was no obvious reason not to provide that metric.

Why would the Corporation choose not to provide that metric in this filing?

MS. LIZ CARRIERE: I'm just looking at the timing of this -- this report. It's dated January 24th. I believe the original filing was in August of 2013. So it might just be a timing thing, but as a matter of fact, by the time this -- this report was published, Manitoba Hydro did put present values of the different rate -- of the different development plans on the record.

My recollection was that when -- in the -- in the main submission in August of 2013, there is -- there was literally hundreds of pages of evidence provided with net present value of the economic analysis. And at the time I don't think that in the original plan since we were focused on -- on rates and bill impacts and -- and financial impacts, with all that was -- already on the record, we just didn't include that in the application.

Having said that, we did provide in NFAT PUB-MH1-149(a) of the NFAT, we did provide net present value of -- of the bill impacts and we provided them under a range of -- of -- of discount rates as well to complement the economic analysis.

But again, as -- as Mr. McCallum is stating, I'm not sure, you know, looking at the -- the -- the table on page 7 of MIPUG's book of documents what we're supposed to derive from looking at comparative rate increases -- or bill impacts for resource plans that the underlying data for that is -- is probably four (4) years old at this time.

The other thing I'm not clear on -- I -- I can't recall is how this -- the NPV in the far column was calculated. I'm -- I'm not sure if that's millions of dollars, billions of dollars, and the bill impacts shown here are in nominal dollars.

But if I take you back to MH Exhibit 64 on page 67 we're looking at a graph of -- of cumulative rates relative to inflation, and Mr. Hacault was making a comment about the two (2) scenarios where in the second ten (10) years of the forecast, he was concerned that the future generation wasn't paying their fair share of costs under that scenario.

Well, that presumes that the previous generation has paid their share and that the current rates are fair. I'm looking at this graph and we can see that for a long period of time that overall rate increases are significantly lower than the Canadian price indices and, in fact, it's significantly lower than a construction price indices that has more comparable cost components included in it compared to Hydro generation and construction costs.

So where -- where I'm going with this overall is that if you took -- if you took the bill impacts and converted them into real dollars based on the same indices, I think you'd see that, in fact, bill -- bills would be declining in real terms, and perhaps over the next several years would increase but, essentially, we're saying that this -- this is what the evidence is of into intergenerational equity.

THE CHAIRPERSON: Ms. Carriere, can I just ask you a question on this screen?

MS. LIZ CARRIERE: Sure.

THE CHAIRPERSON: Can you -- can you remind me when -- when we're talking about the rates here, what -- what rates are being shown here? What -- what rates are being contemplated? This is the application, the current application?

MS. LIZ CARRIERE: Yes.

THE CHAIRPERSON: It's -- it's those rates.

MR. JAMES MCCALLUM: These are the historical rates, sir --

THE CHAIRPERSON: I know but, sorry, but going -- right, right, it's --

MR. JAMES MCCALLUM: We're not projecting on that --

THE CHAIRPERSON: -- these are only this -- sorry, my apologies. This -- the actual rates.

MS. LIZ CARRIERE: Yep.

THE CHAIRPERSON: Right, thank you.

MS. LIZ CARRIERE: Yep.

THE CHAIRPERSON: Unfortunately I looked at it and I thought -- I guess I shouldn't look sideways. I thought it was '26/'27 but...

BOARD MEMBER GRANT: Looking around the room and just -- why does the graph start at 94? Is this -- what generation are we talking about because I'm not sure how many -- you just might to go back a bit earlier.

MS. LIZ CARRIERE: It -- I -- I think

it started in 1994 because this was a period post Limestone since that -- that was the last construction project that we had.

BOARD MEMBER GRANT: So why wouldn't we go back earlier?

If the -- if the point is about intergen -- intergenerational equity, there have been previous generations before Limestone.

MS. LIZ CARRIERE: You could go back earlier, absolutely.

THE CHAIRPERSON: Mr. Hacault...?

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Thank you very much for that historic explanation, Ms. Carriere, but could somebody on the panel, please, answer the question that I asked which was:

Why did Manitoba Hydro choose not to show the NPV between the two (2) rate pass in this application?

MR. JAMES MCCALLUM: Well, again, the purpose of the NPV analysis that La Capra did in connection with NFAT was for a completely different purpose. My simple answer is -- is -- is one of I don't actually believe it's -- it's -- it's an interesting theoretical exercise at best, but I guess my -- my question in return might be, you know, we went through two hundred (200) minimum filing requirements fifteen hundred (1500) first round Information Requests, six hundred (600) second round Information Requests and at no point were we asked for this.

MR. ANTOINE HACAULT: Sir, see the reason I was asking that question was, as I understood your evidence, today is that there was a lot of benefits in prepaying a lot of this debt and I'll put the next sentence to you in this highlight.

I'm going to ask you whether you agree with this statement and I'm quoting:

"Rate increases impact consumption and investment decisions by consumers and businesses that undoubtedly involve considerations of present versus future net values."

Do you agree with that statement, sir? Or does the Corporation agree with it? It doesn't have to be Mr. McCallum that answers.

MR. JAMES MCCALLUM: One moment please.

(BRIEF PAUSE)

MR. JAMES MCCALLUM: Sorry, Mr Hacault, can you just clarify and -- and summarize your question for me again.

MR. ANTOINE HACAULT: All I would do is repeat the same quote and ask whether you agree with that quote, sir.

I'll read it again.

"Rate increases impact consumption and investment decisions by consumers and businesses that undoubtedly involve considerations of present versus future net values."

Do you agree with that statement or not, sir? And I'm saying "you" but I mean the Corporation. I assume you're speaking on behalf of the Corporation.

(BRIEF PAUSE)

MR. JAMES MCCALLUM: I agree with the idea that rate increases and expectations around rate increases and probability weighted expectations around rate increases are likely to affect customer decision-making.

I'm -- but I -- I'm not sure what the author of this means by "involve considerations of present versus future net values." I -- I don't know what that means, but I hope I'm at least being responsive to your point.

MR. ANTOINE HACAULT: If that's your best answer -- the Corporation's best answer, I'll live with that, sir.

MR. JAMES MCCALLUM: If you would propose a supplementary question that gets to the -- exactly what you're -- you're looking for confirmation or contradiction on, I'm here to do my best, sir.

MR. ANTOINE HACAULT: I understand that. The next part which is highlighted is the conclusion of these consultants:

> "Thus, discounting the stream of rate increases appears to be appropriate. [And I'll continue] and provides additional information that would be useful in the evaluation of development plans."

So that relates to development plans, but would you agree with the portion of the statement that discounting the stream of rate increases would be appear -- appear to be appropriate in evaluating varial -- various rate increase scenarios?

MR. JAMES MCCALLUM: You know, a -- use of a present value analysis is designed to kind of bring back to current and account for time value of money and account for risk on -- you know, to compare, you know, two (2) different paths.

And so we're talking about multiple development plans here vis-a-vis two (2) paths of -- of how to address Manitoba Hydro's balance sheet issues. It -- it -- it kind of -- to compare them properly you need to assume that you are in a like starting place. And the like starting place would have to be that the rates today are fair.

And our point of view, as Ms. Carriere just essayed, is that there has been a -- a prolonged -- you know, we spoke about this in our opening day evidence. Mr. Shepherd spoke to it I believe. We talked about Manitoba Hydro not having asked for the right rates for a prolonged period of time.

And so part of what we are seeking to address and the course of action we're taking is a bit backwards looking to true up or -- or begin addressing the consequences of rates that aren't -- aren't at the right levels today, let alone for the future. So we're not, you know, comparing to a -- to a -- two (2) different paths to -- to the same outcome.

I -- I -- I just -- actually, I'm -- I've struggled and since I've seen this in the Morrison Park evidence, I've struggled with the -- the point of this, but we can go through it. Nonetheless, I think, and has been seen in our rebuttal evidence, that on a net present value basis even using the same discount rate for our path versus the 3.95 path, our path yields a higher value, and I purposely said, using the same discount rate, which isn't appropriate.

MR. ANTOINE HACAULT: Thank you, sir. Next I'd ask Kristen to please go to our volume 1 of the book of documents of MIPUG-23-1 and tab 7. And at page 3243 of the transcript, please.

This question will be of Mr. Barnlund. Mr. Barnlund, have you had a chance to refresh your memory with respect to the exchange that you were having with me?

MR. GREG BARNLUND: Yes, I have.

MR. ANTOINE HACAULT: And in that exchange I was canvassing the Corporation's view of the consumer optics with respect to a similar situation where we would have a 23 percent reduction all of a sudden in one (1) of these modelling plans.

Do you recall that?

MR. GREG BARNLUND: Well, what I do recall was that the analysis that I was speaking to on the transcript was, one (1) of the analyses we put forth in the NFAT which was in addition to the net present value examination from an economic perspective, Manitoba Hydro also forecast the impacts from a revenue requirement perspective of the various development streams or development pathways.

And from that, developed some nominal monthly bill amounts over a sixty (60) year. And so it was a basis, again, of comparison between options within those different development pathways and that was the context of which I was speaking to these monthly bill impacts that had been generated in that analysis.

MR. ANTOINE HACAULT: And do you still agree today, sir, with that context being provided, as to what you responded to from lines 3 to 13, as reproduced in the transcript?

MR. GREG BARNLUND: Well, I'd have to say that -- that the intent or the -- the object of -- of what I was speaking to or the analysis that I was speaking to at the NFAT is different than what we're speaking here today.

I mean, we're talking about an application for rates for the upcoming -- or for three (3) test years and we're providing some perspectives in terms of a number of potential rate increases that could occur in subsequent rate cases. And so that's, you know, the focus that we have in terms of those matters today are different than what we are referring to in this cross-examination during the NFAT proceeding.

MR. ANTOINE HACAULT: Thank you. Let's take that in small bites.

So as I understand it, this Corporation wants some direction from this Board as to whether it's ten (10) year plan, as presently depicted, is something the Corporation is prepared -- sorry, the PUB is prepared to embark on; is that fair?

MR. GREG BARNLUND: Well, I think to the extent that our current IFF as -- as underpinning this rate case is targeting at 25 percent equity -- return to a 25 percent equity level within ten (10) years, I think that that's implicit in what we're seeking in this rate application.

MR. ANTOINE HACAULT: Thank you for that clarification. So, I would suggest to you that one (1) of the contrasts in today's application with the type of discussion that was happening at NFAT is -- in this rate application, the Corporation is taking a ten (10) year view as to when it should hit a 25 percent equity level; is that correct?

MR. GREG BARNLUND: Well, they are different financial plans, yes.

MR. ANTOINE HACAULT: And would you agree with me that the Corporation until this current ten (10) year view was taking a view that was more twenty (20) years in other GRAs.

MS. LIZ CARRIERE: Mr. Hacault, I think it might help if I take you to your tab 8 in volume 2. And I'm looking at -- it would be page 66 of your document and this is page 3025 of the -- of the NFAT transcript on March 20th.

And starting at the bottom here we see that there is a discussion between Mr. Rainkie and the Chairperson that goes on for several pages. And I'm not going to make you read all -- through all of this. But part of it was the difficulty the PUB panel -- or the NFAT panel at the time was having with the -- the rate setting methodology in the main submission where you had three nine five's (395) going up until you hit a 25 percent debt equity ratio; and then you have the significant decrease in the -- in the rates to bring -- to maintain a 1.20 interest coverage ratio.

And you'll -- you'll recall that I've -- I've mentioned, I think a couple of times, that in doing that mechanicals sort of rate setting methodology that we -- we likely wouldn't put that into practice because it resulted in some unusual results. We had significant -- some significant losses in the front-end.

And Mr. -- Mr. Hacault made that comment that, in practice, we prob -- we wouldn't actually support putting forward a forecast with significant losses, at least in the near term and that, in practice, we would adjust for those rates.

So on April 11th of the NFAT forecasts -- or in the NFAT 2014 in conjunction with providing the DSM evaluation in that proceeding, we also provided alter -- alternative rate plans to assist the -- the panel in understanding what potential rate plans could look like.

So, for example, in that -- it was Manitoba Hydro Exhibits 104-12-1 and 104-12-2. And I'll just focus on the plans that we're -- most closely resemble the -- the rate plans -- or the rates -- or the development plans that are similar to what we're looking at today. So originally plan 5 with a DSM level to -- which is Keeyask in 2019, and approximately the same level of DSM that we're looking at today. Originally that rate plan had a 3.74 percent rate trajectory.

So when we looked at addressing those losses, we adjusted rates in the period from two thousand -- 2016 to 2022 to minimize those losses. So we're only talking about looking at a breakeven scenario here where we're not sustaining significant losses and that rate increase went from three seven four (374) to 4.60 percent.

And then we looked at the same case under High Capital Costs, and that rate trajectory went from 2016 to '22 was closer to 5 percent. So -- and in both of those cases, net debt was around $20 billion. So we're looking at significantly higher net debt today.

And, you know, in terms of -- when we're talking about smoothing in rate increases, you can only do that to the point that it -- it's financially prudent to do that. So even at -- at NFAT we were -- we were considering that rates would -- may need to be higher than the 3.95.

MR. ANTOINE HACAULT: I'll get back to

my question which was: In the GRA, so, General Rate Applications, prior to this one, wasn't the view of the Corporation that it would target the 75/25 in approximately twenty (20) years? And I had asked that question of Mr. Barnlund. But anybody else can answer it.

(BRIEF PAUSE)

MS. LIZ CARRIERE: Yes, that's correct. Somewhere between 2032 and 2034 was the previous plan.

MR. ANTOINE HACAULT: Sorry. And the Corporation has made it clear in its messaging that it believes that these previous plans shown in previous GRAs are failed plans; that's the Corporation's view today?

MS. LIZ CARRIERE: It's the Corporation's view that, you know, perhaps with hindsight that we've likely done too good of a job of smoothing in its costs. When we look at, you know, that -- the -- the graph on page 67 of -- of Ex -- Manitoba Hydro Exhibit 64 and we see that our rates are lower than inflation. And then, again, later in -- in MH-60 -- Exhib -- Exhibit 64, we see also roughly over the same period, a little bit shorter period of time, but that our rates have not kept pace with the cost.

We've seen -- since 2009, since we've introduced the 3 and -- 3 and a half percent rate increases, we've seen significant decreases in -- in export revenues and decreases in load. And as Mr. Hacault points out, yes, we've seen very favourable rate increases.

But we've also seen significant increases in the overall net debt. So just to give you an example, net debt in 2009, by 2018 was 15.4 percent -- or was $15.4 billion.

THE CHAIRPERSON: Sorry, Ms. Carriere, can you give me the date again?

MS. LIZ CARRIERE: That was -- for 2017/'18, projected under IFF2009, we projected $15.4 billion in debt.

Today, based on our MH16 update, we're looking at -- at the same point in time for 2017/'18 $18 1/2 billion dollars of net debt. Now, the one (1) thing to note is that cumulative rates over that period of time from 2011 to 2018 are about 34 percent, both projected and cumulative. So the PUB, over this period of time, has done their job in -- in terms of giving Manitoba Hydro the rate increases that we're asking for.

But what's happened is is that the overall financial picture has deteriorated significantly. And my point I think I said is that the seven point nines (7.9s) are still smoothing rate increases for customers. It's just that the urgency has increased because we've kept our projected rates at -- at roughly double inflation for seven (7) consecutive forecasts, and we have a significant deterioration since those rates were introduced.

MR. JAMES MCCALLUM: If -- I think, given we've got it up on the -- the screen here, page 67, we may as well -- if we could go to slide 72, to get to Mr. Hacault's question of -- of, you know, is it the Company's position that the 3.95 percent rate path has failed? And that is the Company's position. It's failed as circumstances has -- have evolved.

So let's -- like, let's look at this, because I think it really brings it all together. This is a chart of net costs, indexed to the beginning year in -- in 2000, but beneath this chart -- and this is in our rebuttal evidence -- is a -- is a progression of those net costs on a -- on a unit basis. And what you see happening is a couple of things. The -- the rate path, or the rate increase path, is that dotted line. And you can see the gap forming between 2010 or '09, when the -- the export market kinda fell apart on us, through to 2017.

On an index basis, you see that our costs are rising faster than our revenues. That's the issue we've talked about in that having not asked for the right rates along -- along the way here. But then -- then we need to look at what happens next. And this is -- this is the part that -- that I think we should all be really concerned with with the 3.95 percent rate path.

And so what happens is you can see that top line is if we -- is on a net cost basis if we follow the 3.95 percent rate path, which principally affects our interest payments due to a difference in our debt load. And you can see that chart just takes off relative to the 3.95 percent rate path, which is the dotted line at the bottom. And you see this huge gap opening up.

And when you take that back to -- to numbers, what it means is that from 2018 to 2024, our net cost on a unit basis is increasing 65 percent. If we follow the 3.95 percent rate path, we're increasing our -- our revenues on a unit basis by 30 percent. So a 65 percent cost increase, 30 percent revenue increase. It doesn't work.

MS. SUSAN STEPHEN: And just to add to that, we as a Corporation are not the only ones who have noticed this. Just to be reit -- reiterate from Moody's latest report on November 28th, 2017, they indicate in the report that rate increases in recent years have clearly not kept up with costs, as evidenced by the ongoing weak financial metrics.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: I want to give everybody an opportunity to talk about this. It's not a question I asked, but if you want to continue, I'd be more than happy to listen.

Now, you'll agree, sir, that the table that you showed us -- and that's what we're -- the focus of all of this was, I asked whether the view was now only a ten (10) year view. And this table stops, and it doesn't show us what happens after 2027, correct?

MR. JAMES MCCALLUM: That is correct, and there is good reason for that.

MR. ANTOINE HACAULT: Now...

(BRIEF PAUSE)

MR. ANTOINE HACAULT: The one (1) thing that Ms. Carriere brought up was some of the runs that were being done in the NFAT, and in particular, the runs in Exhibit 104, and she referenced 12-1 to 12-2. I don't know if we can -- I'll maybe deal with this after lunch, but there is a relevant slide that would help put things in context, which is a further update, which is at slide 6 in that same exhibit. So just...

(BRIEF PAUSE)

MR. ANTOINE HACAULT: So that -- we'll go the -- through this after lunch, but just to give a fair warning to Ms. Carriere, because I hadn't gone down that road. But if we're going to go down that road, I think the complete picture needs to be put. So I'll -- I'll move on for the time being.

We started down this line when I asked one (1) question of Mr. Barnlund at page 3,243 as to whether or not he still agreed with the statements he made in NFAT. I don't think I got an answer to that yet. That was at Tab 7, page 3,243.

And I'll put the statement in for the record. I'm reading from line 3:

"Well, there's a number of considerations a consumer would obviously take into account. Probably the main one, and I think the purpose of why we are here is to look at the difference in bills at 2063 to see the total value and the total, respect of costs, are of each of the plans."

Would you change that answer today, sir?

MR. GREG BARNLUND: Well, I would say that from the perspective of what we're discussing here today in terms of our rate plans, it's a different context, and I would answer -- I would answer the same question differently today with regards to a rate-setting case like -- like our current General Rate Application.

MR. ANTOINE HACAULT: Thank you. Next under this same tab, I have extracts from Boston Consulting. It's from PUB/MFR-72, a the first page was page 305, I believe, in the PDF, 305 of 615. That's in our book of documents, Volume number II.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: It's at Tab 1, and it follows the La Capra report.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: Now, I have a first question, just of clarification. We were provided with this fairly large volume of what appears to be PowerPoint presentations, which chronologically continue.

Were there any services provided by Boston Consulting after providing the last set of slides and presenting the last send -- set of slides?

(BRIEF PAUSE)

MS. PATTI RAMAGE: Mr. Hacault, it might be helpful just in terms of when you say "last set of slides" to remind the panel, because we don't have them up on the screen in front of us, what that last sli -- set of slides dealt with.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: I -- and we can go to that. Maybe you can just, you know, provide the answer after lunch. I thought it would have been easier to just respond to, well, yeah, whatever the last set of slides that we've shown in here that ended their services, and we didn't ask him to do anything after that, no discussions, no nothing.

But if you think that I need to put a particular date as opposed to a type of event to the witnesses to help them respond, I guess we can do that.

MS. PATTI RAMAGE: I believe the last set of slides was the timeline review, but just to make sure that's what we're dealing with.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Yeah, well, what --

MR. JAMES MCCALLUM: It -- it -- the -- I -- there -- I -- yeah, I'd have to check the exact date, but after the BCG group finished their review, and you have the slides that, to my knowledge, cover everything reviewed, there was no further work after that, no further engagement, if that's your question. So I -- at the timeline, it would be approximately

September of 2016.

MR. ANTOINE HACAULT: Yeah. I think the last slides were -- have on the bottom left-hand side 2016/10/11, which I would gather might be October, but does that help remember?

MR. JAMES MCCALLUM: Yeah. And if you'll forgive me, ten (10) days being captured within my approximation of September 2016, yes.

MR. ANTOINE HACAULT: So after those slides, there would not have been any services provided as -- by that consulting group verbally or otherwise, to the Corporation?

MR. JAMES MCCALLUM: That's correct, to my knowledge.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: That appears to be a presentation to the capital subcommittee that was the made in October of 2016. Would that help jog your memory? Was there anything done after the presentation to the capital subcommittee?

MR. JAMES MCCALLUM: To my knowledge, no. I believe the last presentation, subject to check, was some work BCG did to review the tieline, that's the Minnesota -- Manitoba-Minnesota Transmission Project and the Great Northern Transmission Line. And after that, again, to my knowledge, there was no further work requested or provided.

MR. ANTOINE HACAULT: Thank you for that, sir. Going back to this slide which is put on our screens, this -- chronologically, if we go to the bottom left-hand side of the slide, to put some timeframe to it -- technological problems. We had a program that froze.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: It appears to be a slide deck that was presented to the capital subcommittee on or about August the of 2016. Would you or any members of the panel have any knowledge of this slide, apart from it being produced here?

MR. JAMES MCCALLUM: Well, personally, my employment at Manitoba Hydro didn't begin until -- I should have by now checked this, but we'll say September 6th, so no, I wasn't at this meeting. I've obviously seen this slide through the course of these proceedings.

MR. ANTOINE HACAULT: And no one else on the stand today was at that subcommittee or saw that slide in or about the time it was produced -- or that slide deck? I'll take silence as 'no', if --

MS. PATTI RAMAGE: I believe there's evidence on the record, Mr. Hacault, that Manitoba Hydro staff were not involved with BCG at this stage.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: And my recollection of the evidence was that your CEO attended at certain meetings, but -- and he said that other staff had attended from time to time, so I wasn't too sure whether he had other senior staff that attended. That's why I was asking whether any of the senior staff here today had attended at that meeting.

MR. JAMES MCCALLUM: I believe the answer -- just looking around, the answer to that is no.

MR. ANTOINE HACAULT: Thank you. The question I have with respect to this slide and the position of the Corporation relates to the paragraph that talks about the accelerating of the 25 percent target from 2035 to 2022. So I gather from the answer that none of the senior staff would have been aware that this suggestion was being made to the capital subcommittee by Boston Consulting Group?

MR. JAMES MCCALLUM: Just to clarify, Mr. Hacault, the suggestion by the Boston Consulting Group to meet a 25 percent target by 2022?

MR. ANTOINE HACAULT: Yes.

MR. JAMES MCCALLUM: Okay. And -- and, sorry, to be helpful --

MR. ANTOINE HACAULT: My quest -- my question was whether any of the senior staff was aware that Boston Consulting Group was put in this position to the capital subcommittee in August of 2016.

MR. JAMES MCCALLUM: Well, I think certainly Mr. Shepherd would have been aware of that. He would have -- subject to check, of course, have participated in the meeting, seen these slide decks. I would anticipate, though can't confirm, that Mr. Rainkie in his then-role as chief financial officer would have, you know, been privy to this work.

I can certainly confirm that I saw this work kind of immediately upon starting with the Company and in the first week of September.

MR. ANTOINE HACAULT: Okay. And what Boston Consulting Group was suggesting is that there would be a surplus equity position which could be used for three (3) different purposes, correct?

MR. JAMES MCCALLUM: Right. The sub-bullet on the page reads:

"Create surplus equity position which can be used to maintain investment grade rating, issue government dividend, and/or fund future capital projects."

(BRIEF PAUSE)

MR. ANTOINE HACAULT: And if we flip to the next page of this book of documents. Boston -- and this is slide 14 of that same slide deck, it shows us visually where we would be going with a plan they're proposing.

THE VICE-CHAIRPERSON: Mr. McCallum, just before we continue, could you tell me what the acronym DSCR stands for, please?

MR. JAMES MCCALLUM: Absolutely, madam vice-Chair. It's one (1) of those 1 million-odd -- that's not an accurate number -- but credit ratios and financial ratios that people like me use. This one stands for debt service coverage ratio.

(BRIEF PAUSE)

MR. JAMES MCCALLUM: Sorry, Mr. Hacault, is there a question outstanding? I -- I --

CONTINUED BY MR. ANTOINE HACAULT:

Yes. I'll try and repeat it. We need to ensure everybody understands it, quite frankly.

MR. JAMES MCCALLUM: I -- I might need more --

MR. ANTOINE HACAULT: Without asking, I would have known -- would not have known what --

MR. JAMES MCCALLUM: I -- I --

MR. ANTOINE HACAULT: -- DSCR would have been either.

MR. JAMES MCCALLUM: I -- I might need more ginseng or something. The short-term memory has already failed me.

MR. ANTOINE HACAULT: But the -- the Boston Consulting Group was showing that if we met the target levels by 2022, how the future would look under what it was proposing. Am I -- with the future, working it out to 2035, correct?

MR. JAMES MCCALLUM: Well -- you know, again, having not been in the meeting, I -- I can't speak to what the Boston Consulting Group was proposing as a course of action, but I -- I can certainly confirm that, you know, this page 14 here shows a financial projection, including escalating -- this is the equity ratio we're -- we're showing in the right-hand chart here. So showing escalating levels of -- of equity.

And I apologize in advance if I'm jumping ahead of -- of you, Mr. Hacault, but, you know, this is -- and you can see the logo at the bottom of the Boston Consulting Group. I -- Manitoba Hydro, you know, has -- has clearly come forward with a plan focused on the first ten (10) years. In our evidence is a pretty strong statement that we don't see ourselves pursuing an investment grade credit rating, as judged by Standard & Poor's.

In our evidence is a pretty strong statement that we don't see ourselves pursuing a capital structure consistent with what you see in a privately-owned utility. In our evidence is pretty strong statement we don't see ourselves pursuing the 61 percent equity ratio by 2036 that falls out of continuing a model for ten (10) more years with inflationary rate increases following achieving our -- our ten (10) year target.

I think we've kind of tried to make clear here throughout we're focused on the next ten (10) years, and as we get closer to -- to year ten (10), and each time we come back here, we're going to be refreshing with our most current understanding of everything in our environment, and continuing to talk about what we see as the prudent path forward.

MR. ANTOINE HACAULT: And I would suggest to you that a notable thing that's missing is a discussion or a suggestion that there might be reduced rates, or perhaps refunds to clients as an option as to what can be done if rates are increased.

MR. JAMES MCCALLUM: Well, again, but there's -- there's a -- you're right, that's not on this page. I can't identify where in the six hundred (600) odd pages it -- it is or isn't said, but it's I think worth noting, when you hire a consultant to help you with something and provide even upwards to recommendations, at the end of the day, management, together with this Board of Directors, actually run the Company and make the choices, and there's no obligation to follow a consultant's views on a path forward. And Manitoba Hydro has been clear in its evidence that what we see on this chart is not our view -- vision of the future.

MR. ANTOINE HACAULT: And you bring a good point, sir, because after this subcommittee considered these things from Boston Consulting, my natural expectation was to see that there might have been some changes to these slides on those issues for the next presentation which gets done to the Board of Directors.

Can we go to the next slide in this deck --

THE VICE-CHAIRPERSON: Mr. Hacault, could I interrupt one (1) more time?

Mr. McCallum, just before we leave this slide, then, is that to leave us to understand that the debt service coverage ratio target on here at the 1 percent was a Boston Consulting Group recommendation as opposed to a Manitoba Hydro target?

MR. JAMES MCCALLUM: You know, to be -- to be honest, I -- I'm not -- I'm not sure. I think what they're showing here is a minimum level of -- of parity, effectively by this measure, meaning your cash in and your cash out are kinda equal. I -- I don't know that they're suggesting a -- a target. I think they're just trying to indicate that over the next four (4) or five (5) years, you know, you're in a cash deficit position, and then you -- you kind of grow from there, I -- I believe, but I can't speak entirely to this page.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Thank you. Is there anything else that I could ask that would be useful for the Board, you know, with respect to this slide? If not, I'll move to the next one.

If we go to the bottom left-hand corner, we'll see that this slide deck, which is about a hundred pages further in the slide decks, is talking about a Board of Directors meeting.

Do you see that, sir?

MR. JAMES MCCALLUM: Yes, I see a footnote that reads three (3) heartbeat (...) BOD meeting 25, August 2016, version 2, and some more, but I would take that to mean that's a Board of Directors meeting on the 25th of August.

MR. ANTOINE HACAULT: And we do see some changes in the other areas, if we compare one (1) of the five (5) year workout, there's a -- unfortunately we were having some problems printing this fla -- slide. There's some blanks in the letters. I'm not too sure why. That's the electronic version.

But towards the top of the page, it says "five (5) ear," and it should be "year," I believe, "workout." And then there's two (2) blanks. It should be:

"Program developed with balance
contribution from three (3) areas to
close $3.6 billion funding."

I think that's what it should read, for the record, "funding gap." One (1) of the recommendations of Boston Consulting Group was that the first bullet under that heading, the Corporation should consider a $350 million reduction as capital project mitigation in that five (5) year time period.

Now, that evolved between the previous slide deck, did it not, sir?

MR. JAMES MCCALLUM: Well, I think if we turn back two (2) pages in your book of documents -- that -- to the August 22, I see -- if I'm looking at the right place for you, sir -- Manitoba Hydro up to 0.8b for 'billion', and in parentheses,

"(275 to 525 million in efficiency,
300 million in capital project
mitigation)."

And then if I turn back to your reference at the Board slide, I see that 300 million has been changed to 350 million.

MR. ANTOINE HACAULT: So there appears to be some interaction between the information that's being provided between the subcommittee meeting and the Board of Directors meeting, which is suggesting that Hydro could actually have a higher target in the capital project mitigation.

Would you agree with that, sir?

MR. JAMES MCCALLUM: No, I'm not in a position to agree with it. I -- I can't intelligently speak to why this number changed from three hundred (300) to three hundred and fifty (350).

MR. ANTOINE HACAULT: Thank you, sir. Can you identify what capital project mitigation workout program the Corporation has put into place in the next five (5) years?

MR. JAMES MCCALLUM: This may be best served for the capital panel when it -- when it comes up, but these references to capital project mitigation, I am virtually certain are as to the major capital projects being Bipole and Keeyask, and if you look to the -- and -- and I don't have a page reference to offer you, but just as a general matter, which I hope you'll accept, that if you look to the Boston Consulting Group report, they were identifying the range of potential capital cost outcomes for each of Bipole and Keeyask and suggesting here that -- that part of our path forward would be to continue aggressively managing those projects to -- within the high end of the ranges they were identifying.

MR. ANTOINE HACAULT: Well, sir, if you do have that reference in the slide deck, could you bring it to our attention, please?

MR. JAMES MCCALLUM: I will find one and --

MR. ANTOINE HACAULT: Thank you.

MR. JAMES MCCALLUM: -- provide that for you.

MR. ANTOINE HACAULT: The one...

THE REPORTER: Is that an undertaking?

MR. JAMES MCCALLUM: Do you need it to be?

MR. ANTOINE HACAULT: It doesn't need to be an undertaking, from my perspective.

MS. PATTI RAMAGE: No, I don't think it should be an undertaking, because we -- I'm not sure exactly what we're looking for or whether it exists. We're just saying if we do see it, we will bring it.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: It -- it may be after lunch if something comes to mind, sir, that you can address it before we start. I'm not asking for an undertaking on that.

MR. JAMES MCCALLUM: I'm happy to.

MR. ANTOINE HACAULT: The one (1) thing that hasn't really changed is the sentence that you read in from the previous slide on the issue of the 25 percent target equity.

By the time it's reaching the Board of Directors, there continues to be only three (3) purposes that are identified for creating a surplus equity position, being to maintain investment grade rating, firstly. Secondly, issue government dividend. And lastly, and/or fund future capital projects.

Is that right?

MR. JAMES MCCALLUM: The sentence appears the same. Boston Consulting Group appears to have used the same words.

MR. ANTOINE HACAULT: And the communication narrative, that's the next heading, also remains the same, is that the Corporation should -- and this is the first dash:

"Put emphasis on deteriorated

economics/time lines and, the
decision to move forward with
projects as is."

And the communication narrative also being a balanced workout program.

Is that what the Corporation is following, sir?

MR. JAMES MCCALLUM: I -- I can confirm that the words are the same as to the August 25th Board slide and the August 22nd capital committee slide. But, no, I'm -- I'm not in a position to speak to the Corporation's view of this. I wasn't here.

MR. ANTOINE HACAULT: My -- my question was the communication strategy which followed these reports. You were there, sir.

Is that consistent with the Corporation's communication strategy?

MR. JAMES MCCALLUM: To be honest I don't recall the exact specifics of our press release on the -- I believe it was the 21st of September, where we -- where the Boston Consulting Group report was -- was made public.

MR. ANTOINE HACAULT: I'm entering another area, which I think I should be able to finish by 12:30. I don't know when it makes sense. I can pick a different area, if you've got a different time frame in mind, Mr. Chair.

THE CHAIRPERSON: You know, I think maybe we would rather break before then. But I've got a question for Mr. McCallum, if I may, off that page. Mr. McCallum, I appreciate that you were not employed by Manitoba Hydro at the time of the Board of Directors meeting or the subcommittee meeting.

But I note one (1) of the differences between the August 22nd subcommittee meeting and the August 25th Board of Directors meeting. And I'll refer to the subcommittee meeting first is under the reference to the five (5) year workout program. The third bullet refers to the province and says:

"Can close remaining gap of 2.4 billion."

And then comes up with some recommendations. First, taking DSM off the balance sheet, 450 million by 2021. And then secondly, forgiving provincial payments for five (5) years, water rental, capital tax, debt guarantee or similar capital injection up to 1.9 million.

I note that when the matter moves to the presentation to the Board of Directors those suggestions or recommendations, or possible recommendations, are deleted and it just says:

"May need to close remaining gap of 1.9 billion to 3 billion."

Which provided a range rather than the 2.4 billion target. I understand DSM because of Efficiency Manitoba, but I don't know if there's a later reference in the document about forgiving -- forgiving the provincial payments for five (5) years.

So the question I have is, do you know if there were discussions with the provincial government about possible loan -- possible -- I don't know if forgiving your deferral or not making payments for those items took place.

(BRIEF PAUSE)

MR. JAMES MCCALLUM: One moment, Mr. Chair.

THE CHAIRPERSON: Yeah.

(BRIEF PAUSE)

MS. PATTI RAMAGE: And, Mr. Chair, I'm just -- I'm cautioning the witness with respect to what -- what I refer to because I've been around a little longer than some, but Crown community and our obligations. But there is a response that can be provided based on public information that I am comfortable with Mr. Callan -- McCallum providing.

THE CHAIRPERSON: Okay. Thank you.

MR. JAMES MCCALLUM: Yeah, and -- and so just appreciating every thing's on the record, of course, with the caveat that -- that I wasn't -- I wasn't a part of these conversations. My understanding certainly is that subsequent to the Boston Consulting report being -- being made public and really, over the course of the fall and early winter, you know, October, November, December, there were discussions.

And I think this is in -- in the media with both the Premier and -- and the chairman of Manitoba Hydro having made comments, that there were discussions about potential provincial support for Manitoba Hydro, either in the form of a one (1) time equity injection or in the form of some level of suspension of -- of the -- the basket of three (3) payments we're obligated to make to the province.

And, you know, clearly, as we came to developing our financial plan and submitting our -- our rate application we -- we had -- you know, I think the Premier was pretty direct, in the media anyway, with -- with the response that the province wasn't interested.

THE CHAIRPERSON: Thank you. The problem I have is we have to get that on the record, and that was the purpose of doing it versus media reports that are not on the record.

MS. PATTI RAMAGE: I -- I appreciate that, Mr. Chairman, and that's --

THE CHAIRPERSON: Yes.

MS. PATTI RAMAGE: -- just why I wanted to. And --

THE CHAIRPERSON: Yeah.

MS. PATTI RAMAGE: -- and I don't know if this is the right time, but I could address the previous request right now.

THE CHAIRPERSON: You know what? I -- I think maybe we'll wait until Mr. Peters is -- is back.

MS. PATTI RAMAGE: Okay.

THE CHAIRPERSON: Okay. Thank you. Mr. Hacault, have you got anything short?

MR. ANTOINE HACAULT: I'll try to go through some areas which I think are shorter.

THE CHAIRPERSON: Sure.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Tab 3 of our book of documents deals with Boston Consulting Group again, but on a very narrow issue of another part of the possible workout program.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: It's at tab 3.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: Page 23.

(BRIEF PAUSE)

MS. PATTI RAMAGE: There's three (3) page numbers written on this same document. So I understand Mr. Hacault's confusion. It's page 215 of 6 -- 615, page 1023, and page 59. So between --

MR. JAMES MCCALLUM: I think it's page 23. Page 23 of your book of documents, volume 2.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Volume 2, yeah.

MR. JAMES MCCALLUM: I'm happy to answer any questions on this page.

MR. ANTOINE HACAULT: It's in the book -- in volume 2. So MIPUG-23, volume 2.

MR. JAMES MCCALLUM: There we go.

MR. ANTOINE HACAULT: What I'd like to have a bit of explanation on for this Board is the issue of backing off on DSM spending by this Corporation as suggested by Boston Consulting Group, recognizing, of course, that maybe pretty soon you won't have any power to do it.

The second heading on this particular slide indicates DSM deferral could potentially contribute to reduce financial pressure in initial years through reduced Capex.

And for my benefit and everybody that's capital expenditures, Capex?

MR. JAMES MCCALLUM: That's -- that's correct.

MR. ANTOINE HACAULT: And incremental revenue increase through higher domestic revenues. I'll take that in little bites. Again, I think we've provided some explanation on that. There are some DSM expenses to achieve savings, that's number 1.

We have to understand; correct?

MR. JAMES MCCALLUM: That -- that's right. And expenditures on demand-side management, or DSM, are -- are designed to reduce electricity consumption.

MR. ANTOINE HACAULT: So recognizing if we want to deal with income issues we can either deal with it on the expense side or on the revenue side, the first part is there's a suggestion we might be able to save something on the expense side by spending a little bit less aggressively on demand-side management.

That's the suggestion; correct?

MR. JAMES MCCALLUM: That's right. It would reduce the outflows of the Corp -- cash outflows of the Corporation.

MR. ANTOINE HACAULT: Now, it's kind of counterintuitive, and in previous hearings I actually went through some detailed examples. Demand-side management doesn't necessarily relate, and -- or, sorry, result in increased revenues for the Corporation.

If the Corporation is, for example, getting seven (7) cents from the residential consumer but has to sell that power which is not consumed by the residential consumer on the opportunity market, it might only get two and a half (2 1/2) cents instead of seven (7) cents, thereby reducing revenues.

Does that example work?

MR. JAMES MCCALLUM: That -- that is the net effect in the end. The degree of that spread is -- is a function of the type of demand-side management program, and the customer affected and the rate that customer pays. But -- but you are correct to say that we are essentially forgoing or saving a sale to a domestic customer at domestic rates and turning around and we -- we still obviously have that energy.

And so, what we do with extra energy is we put it to the -- to the export market at the opportunity price in the short term, anyway. And insofar as that price is lower than our domestic rates then -- then our revenue would -- would go down. In the past we actually saved the domestic kilowatt hours and sold it for more than the US market, but that -- that market went away unfortunately.

MR. ANTOINE HACAULT: So I tried to put a bit of context to the statements of Boston Consulting Group that they're pointing out that Manitoba Hydro's electric demand-side management plan at that time expected to require $1.2 billion of capital expenditures over fifteen (15) years.

And what they were suggesting in the next bullet is that Manitoba Hydro could perform a prioritization of demand-side management initiatives, with the result that you might be able to, as a Corporation, reduce your annual capital expenditures.

Is -- am I getting the gist of this messaging right?

MR. JAMES MCCALLUM: Yes, sir. I -- I believe that -- I believe that you are. I think there's an important point to make here, but I don't want to jump in front of your -- your path.

MR. ANTOINE HACAULT: Yeah, and if I don't ask the question I'll -- I'll let you at the very end. The second aspect of this is they're identifying that reducing these expenses would have the potential of increasing some annual revenue on the revenue side, versus what Manitoba Hydro is currently planning.

Is that correct?

MR. JAMES MCCALLUM: In the short-term, yes.

MR. ANTOINE HACAULT: And the caveat on the all of this -- and I think we see it in the --

in the next slide, actually, is that when you start toying around with DSM spending, you have -- there's a lot of other considerations you need to take into account; correct?

MR. JAMES MCCALLUM: Yeah, and that was the sort of caveat or important point I just wanted to make sure that, you know, our audience was -- was aware of. It -- it -- I -- I would certainly agree that there is an opportunity to – to save some cash in the short run by, you know, -- I think BCG is correct in saying there's -- there's this opportunity.

But you have to weigh it against the consequence, and the consequence may be that changing your -- your need for -- for new resources, demand-side management is an important part of the whole planning horizon of when you need new resources which, obviously, come at -- at large capital costs. And so it's a little bit, I think, as you were getting to, Mr. Hacault, counterintuitive that you would spend money in order to free that kilowatt hour to sell it for less.

But the value comes from being able to defer capital investment to add new capacity. And so it's a -- it's truly an integrated picture you need to look at in terms of looking at -- at, you know, merits and drawbacks.

MR. ANTOINE HACAULT: And am I right in under -- interpreting the next slide that we're actually looking at, is if we take a view up to 2030, it was Boston Consulting's view that there would be a noticeable difference in the equity ratio as compared to the base case, if that study concluded that a significant ramp down was a good thing to do in the next five (5) years?

(BRIEF PAUSE)

MR. JAMES MCCALLUM: And -- and, sorry, just to be precise. Your exact question is...

MR. ANTOINE HACAULT: Well, taking little clumps firstly, the graph is predicated on a ramp down in a five (5) year period, not on a permanent basis.

Do you agree with that, based on the previous slide?

MR. JAMES MCCALLUM: I -- actually, I don't -- I don't know specifically what went into these model scenarios. But I think as a generalized matter I'm -- I -- I would agree that there is some element of reduced spending in -- in the initial years of the forecast.

MR. ANTOINE HACAULT: Well, let's just go back to the previous like to clarify that. The third heading down, and I'm quoting:

"Manitoba Hydro performed prioritization of DSM initiatives."

So I gather this was a corporate initiative resulting in four (4) scenarios with 35 to $65 million of annual capital expenditure reductions, and between 11 million and 22 million annual revenue increase in the next five (5) years. So this was a short-term scenario run, not a long term change in how we do DSM.

Are we on side with that?

MR. JAMES MCCALLUM: Yeah, I believe that the correct, sir.

MR. ANTOINE HACAULT: And what I was suggesting to you is that then if we moved to the next slide, which was presented, is that Boston Consulting was illustrating what the different paths might look like using that five (5) year ramp down or following different scenarios.

Are still with me?

MR. JAMES MCCALLUM: Yes, I am.

MR. ANTOINE HACAULT: Okay. And on

the slide on the left-hand side we see that it's Boston Consulting's information based on those Hydro runs that if we tried to reach a 1.5 percent government target, that's the dashes.

MR. JAMES MCCALLUM: M-hm.

MR. ANTOINE HACAULT: The equity ratio would deteriorate.

Do you see that?

MR. JAMES MCCALLUM: Yes I do.

MR. ANTOINE HACAULT: And would you read the graph the same way as I do, because we're starting at .16, that would be 16 percent, that's where we're -- where we were at the following to 2015/2016?

MR. JAMES MCCALLUM: Yes, I believe the Boston Consulting Group didn't do a good job of formatting here.

MR. ANTOINE HACAULT: Yeah. We would've expected sixteen (16) without the point-one (.1), because otherwise the percentage heading is redundant; correct?

MR. JAMES MCCALLUM: That's correct.

MR. ANTOINE HACAULT: And they then show a baseline, and a solid line as to if we keep on doing what we're doing that's where Manitoba Hydro is telling us we're going to be at.

Is that a fair reading of that graph? And if you can't answer it maybe other people can, because this is interim management, so I'm not too sure who was involved in -- in providing this data as previously described in the other slide.

MR. JAMES MCCALLUM: Yeah. I'm -- I'm not -- I'm not -- I'm not either, clearly, but -- and I -- and I, just for kind of clarity, I don't know whether this is our 2015/'16 demand-side management plan, or our '16/'17 plan, and -- but I think -- I don't know that we need to be that precise to -- to kind get to the -- to -- to the point I think you're trying to get to, so I'd suggest we -- we carry on.

MR. ANTOINE HACAULT: Okay. So what we do see, though, this five (5) year moderation would have noticeable results by 2030, I would suggest, depending on the option that you chose.

MR. JAMES MCCALLUM: I agree with that, yes.

MR. ANTOINE HACAULT: Yeah. The government one-point-five (1.5) mandated -- if that was mandated would keep the equity fairly low; correct?

MR. JAMES MCCALLUM: The -- yes.

MR. ANTOINE HACAULT: And if the Corporation, after proper consideration of the risk implications, decided it could do a significant ramp down over five (5) years that could have a positive impact on the equity by, I'm just guessing, 4 or 5 percent based on that graph.

MR. JAMES MCCALLUM: Based on that graph and limiting our time horizon to 2030, and perhaps not considering what might happen after that in terms of resource need going forward. But and -- and I think that's what, not to speak for them, but I believe that's what Boston Consulting Group is -- is maybe talking about in part is broad risk implications need to be considered before any downward adjustment of DSM.

I think they would be speaking to wanting to understand what you were doing to your bigger picture resource plan, and also wanting to understand what you'd be doing to -- what -- what you're relying on in terms of the effectiveness of the current plan. These are obviously, like everything else, projections. We've got a set of programs that we pursue and we've got a set of programs that are in the plan that we haven't tried yet. And we've got assumptions around how successful they are, so -- so all to say this is imprecise.

MR. ANTOINE HACAULT: Okay. And it may be Ms. Morrison that can answer this.

Has the Corporation as a result of this Boston Consulting Group report done an analysis and received a report and recommendations as to what it would make sense to do over the next five (5) years as far as keeping the current plan or ramping it down?

(BRIEF PAUSE)

MS. LOIS MORRISON: Sorry, the brief pause. Could you repeat the question? I just want to make sure that I answer exactly what you've asked.

MR. ANTOINE HACAULT: Hopefully I'll repeat it similarly. What I was looking for is, we've got what appears to be some suggestions or recommendations from Boston Consulting Group which board some investigation.

And in the context of that I was asking whether or not Manitoba Hydro had done an analysis following these recommendations and come up with a report on whether it made sense to follow any of these suggested five (5) year ramp downs in DSM spending.

MS. LOIS MORRISON: So I should

probably characterize these different levels that were presented at the request of BCG as part of their analysis. As I stated, these were asked of us by BCG for them to do their analyses. So we did very rudimentary what ifs, in terms of what could we possibly shift out into the future as part of the -- if we were to do a ramp down. What could we slow down in terms of our intervention with hopefully not jeopardizing our place in the marketplace, in terms of the connections in the capacity that we had built up in terms of contractors, engineering, and supplier networks.

Then we looked at a -- an approach where if we really, really ramp down everything, which would potentially impact those types of relationships, and that's what that significant ramp down represents, which is recognizing that you will be losing capacity in the marketplace if you were to go down to this level.

And then we looked at very -- again, very high level, what would it take for us to -- or what -- what investment would we require to get to the government mandated targets of -- or targets that we knew at that time they were entertaining of 1.5 percent. So these were very high level analyses that were undertaken for the purposes of this discussion with BCG

Whether -- Manitoba Hydro has not since done any additional analyses for setting a course for DSM going forward. As I mentioned, at this point in time we've continued to basically in a holding pattern because we knew legislation was coming out related to Efficiency Manitoba, and that the mandate for this type of analysis as to what direction Manitoba will be taking in terms of demand-side management would be given to this new Crown Corporation, or what we now know to be a Crown corporation.

So Manitoba Hydro has not taken -- undertaken any additional analyses to look at what would happen if we were to do less than what we've already set out as being part of our DSM path going forward.

BOARD MEMBER GRANT: Could I -- do you -- could I approach this from a somewhat different perspective?

I -- I think we heard the other day that a rate increases is your ultimate DSM program. It has zero resource cost. In fact, there's the utility benefit to it and that it imposes a very large cost on the customer. So it's quite a unique one (1).

But it is the ultimate DSM program. And arguably with, you know, the elasticity estimates you had in robust you can achieve the 1.5 percent rate increase.

So I guess the way I was hoping to pose the question is presumably when you set out a DSM program you have in mind particular rate increases at the same time and -- and so if your rate increases change should not your DSM plan change at the same time?

MS. LOIS MORRISON: Traditionally when we're looking at demand-side management we're not incorporating regular price increases. We did in our demand-side management plan incorporate a conservation rate design, which would influence customers to reduce their energy consumption on the tail end.

So every last kilowatt hour used they would si -- they would take serious consideration of before using it. So it would -- it would encourage customers to choose either actions or measures that would help them reduce their last kilowatt hour used.

Typically, as I mentioned, they won't look at -- jurisdictions won't look at general rate -- rate increases as being counted as demand-side management when they're counting them towards things like these targets. It will be up to the government and the persons in -- that will be leading Efficiency Manitoba to determine how they're going to count those savings towards that 1.5 percent target.

So we are anticipating that when the government starts to move forward and they start to write the regulations that will define how that 1.5 percent target is met, and how it will be counted or what measures are actions will be counted towards determining whether or not they've met that 1.5 percent, then we'll have a better feel for whether or not that will be included.

At this point in time when we've done our counting towards a one (1) point -- towards that percent of load reduction, we haven't included things related to just general rate increases, but we have included, like I said, the conservation rates. We've included codes and standards reductions, or reductions in energy use due to codes and standards.

So really it -- it will depend on what the regulations state as what is included or not included when they determine how you calculate the 1.5 percent.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Sorry. Thank

you. I have two (2) or three (3) questions with respect to the plea -- previous slide as it ties into this one (1). We see broad risk implications. So if we could go back to the previous slide at the bottom. There is a heading that says:

> "Any downward adjustment of DSM expected to have further broad risk implications."

Do you see the use of that same language, Ms. Morrison?

MS. LOIS MORRISON: Yes, I do. Thank you.

MR. ANTOINE HACAULT: And the broad risk implications are stated to be that the PUB and external stakeholders are anchored on development targets as defined in the Power Smart Plan. So that's the broad risk that would need to be overcome?

MS. LOIS MORRISON: That is a risk that BCG identified and needs to be taken into consideration.

MR. ANTOINE HACAULT: Thank you. And again, in the next bullet they're talking about taking appropriate communication actions if something like that were to be undertaken; agreed? That's the last bullet.

MS. LOIS MORRISON: Yes, that is one (1) of their conclusions.

MR. ANTOINE HACAULT: And would you recall, Ms. Morrison, that MIPUG, in a previous rate hearing, also voiced its objection to DSM moving from Manitoba Hydro to an independent entity? Would you recall that view of Manitoba Industrial Power users group?

MS. LOIS MORRISON: Yes, I do recall that.

MR. ANTOINE HACAULT: And they explain various reasons why as industrials they preferred Manitoba Hydro delivering DSM programs.

Do you recall that?

MS. LOIS MORRISON: Yes, I do.

MR. ANTOINE HACAULT: And to that extent Boston Consulting Group, in the previous paragraph and heading, the third bullet, also concludes that moving DSM to an independent external entity financed by Manitoba Hydro is not seen as beneficial. So that consulting group appears to have the same view as the industrial consumers.

Would you agree?

MS. LOIS MORRISON: Yes, that would be the conclusion of BCG.

MR. ANTOINE HACAULT: And the middle bullet of setting up an off-balance-sheet vehicle to fund DSM could potentially improve the perspectives on financials. I don't know who best on this panel might be able to answer that.

But my understanding of this accounting exercise is basically the government funds. So you'd need some kind of funding from the government to put that initiative in place. Is that correct?

MR. JAMES MCCALLUM: Well, I believe the -- Manitoba Hydro's expectation is that the customers of Manitoba Hydro will fund the DSM expenditures that are carried out by Efficiency Manitoba.

MR. ANTOINE HACAULT: Could you perhaps help me understand what off balance sheet means in financial terms?

(BRIEF PAUSE)

MR. JAMES MCCALLUM: No, I -- I actually don't -- and I can't find it right now, but I saw that term as being used by BCG here and I didn't understand what they -- they meant by it. There are -

- and -- and Ms. Bauerlein or Ms. Stephen may be better positioned to speak to this, but off-balance-sheet is a term you sometimes come across in the -- in the financial business where you design a debt security in such a way that -- that you can avoid having it recognized in your financial statements. But I can't speak to the exact architecture of how you -- how you do that. There are folks at Enron who can, but...

MR. ANTOINE HACAULT: Ms. Bauerlein isn't around, I guess, 'eh. Would you be able to help us understand how taking stuff off Hydro's balance sheet, as I understand this, would improve the perspective of Hydro's financials?

MS. SANDY BAUERLEIN: I would just to reiterate what Mr. McCallum said. I'm not really sure what BCG meant by this comment. And again, I'm inferring some type of debt financing, but exactly how -- how this would work, I'm not quite sure.

MR. ANTOINE HACAULT: If we go back, I think it's our page 9, we might be able to get some understanding of that. Under the five (5) year workout program and the dot province, there's a dash saying:

"Taking DSM off-balance sheet $450

million by 2021."

Would that help us understand what this off-balance sheet -- they're using the same terms -- would mean?

MR. JAMES MCCALLUM: Sir, I -- I don't know. I don't know what BCG had in mind here, what they saw as the opportunity here, who they saw paying, whether it's a matter of having the province fund DSM expenditures so that our customers don't, or whether it's some, and I can't even off the top of my head imagine how you'd do this, but some structural way of having Manitoba Hydro fund it but not recorded in its financial statements. I -- I simply don't know, sir.

MR. ANTOINE HACAULT: Okay. I see there's some discussion happening with Ms. Carriere and the back row. Perhaps so we can -- I would suggest that we just take our lunch break, if that's appropriate. And there -- some further consideration may allow that answer to be given, and then I'll move on to another subject.

THE CHAIRPERSON: Certainly. We'll -- we'll break till 1:20. Thank you.

--- Upon recessing at 12:20 p.m.

--- Upon resuming at 1:23 p.m.

THE CHAIRPERSON: Mr. Hacault, before we start, I'm going to go to Ms. Steinfeld to talk about -- about scheduling issues because it appears that we're moving faster than the light of speed, and there are some -- some developments in that front.

Ms. Steinfeld...?

MS. DAYNA STEINFELD: Thank you, Mr. Chair. For counsel's information and the information of parties, I have just a few moments ago circulated electronically a revised outline of proceedings.

This has the revenue requirement concluding on Monday, December 18, and the cost of service and revenue -- or rate design panel beginning on Tuesday the 19th. That schedule will then proceed on the 19th and 20th and should things go according to plan, we will not be sitting on Thursday, December 21st.

I suggest that everyone check their emails as that's available to you electronically and, if necessary, we can make hard copies available. Thank you, Mr. Chair.

THE CHAIRPERSON: Thank you. Mr. Hacault...?

MR. ANTOINE HACAULT: Thank you, Mr. Chairman.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Before I go into what I said I would being the NFAT Exhibit 104-12-6. I just have a question of clarification perhaps for the record with respect to one (1) of the slides that I believe Mr. Mccallum was referring to, again today, being slide 72, Hydro Exhibit 64, I believe.

I think you're going to have to do a clear of your -- your ram. It seems to be overloaded.

With respect to this slide could Manitoba Hydro be kind enough to point me in -- I'm sure I've missed it, in the evidence filed prior to this presentation where I can find, firstly, this graph.

(BRIEF PAUSE)

MR. JAMES MCCALLUM: We'll have to find that for you. This was a chart that was produced by Mr. Bowman in his evidence, I believe, that we've re-created. But again, subject to check.

MR. ANTOINE HACAULT: If you can't locate it in any of the evidence, sir, and this is directed to the panel generally, could you then also point me to where I could find the data in Manitoba

Hydro's prefiled evidence to be able to understand and re-create this table?

And those two (2) questions I would ask for as an undertaking.

MS. LIZ CARRIERE: Undertaking, yes, we can get back to you where -- if not the graph, the data resides in the record.

MS. PATTI RAMAGE: The undertaking is, in the first instance, to attempt to locate the source of the graph found in the December 4, 2017 Manitoba Hydro presentation at page 72.

And alternatively, point -- point to where the data is located on the record in order to provide that presentation depicted on page 72.

MR. ANTOINE HACAULT: Except I wouldn't say alternatively, I'd like both. We don't know where the data source and data references would be in the materials so we're looking for -- for both.

Is that acceptable?

MS. PATTI RAMAGE: Yes, it is.

--- UNDERTAKING NO. 7: For Manitoba Hydro to attempt to locate the source of the graph found in the December 4, 2017

Manitoba Hydro
presentation at page 72.
And point to where the
data is located on the
record in order to provide
that presentation depicted
on page 72.

MR. ANTOINE HACAULT: And if the data exists in the material prior to the year 2000, we would like the data to go back to 1990 to follow-up on Dr. Grant's question as to what would've happened prior to 2000.

Is that acceptable?

MS. PATTI RAMAGE: We'll take that one under advisement in terms of what data is available and what data was available to provide this during the -- the discovery process.

MR. ANTOINE HACAULT: Thank you. Just to state for the record, we don't believe we seen this or the data so we would've been in a position to ask IRS to bring it back, or to have the data go back further. So although, I understand that she's taken it under advisement, the reason I'm asking for the data to go back to 1990 is so it provides a fuller picture.

So, my requests stands and if there is a refusal over the next days that's communicated, I would be requesting a ruling from the Panel as to whether or not the data should be provided or not.

THE CHAIRPERSON: Okay, well, we'll just wait to see what Ms. Ramage has to say. Thank you.

--- UNDERTAKING NO. 8: In conjunction with Undertaking No. 7, if the data exists in the material prior to the year 2000, provide the data to go back to 1990.
(TAKEN UNDER ADVISEMENT)

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Thank you. Now I'll move to the NFAT Exhibit 104-12-6, which is one (1) of the documents and having that document in front of us now, there is a -- a discussion in the Board report on NFAT from pages 187 to 189. For the record, I don't think we need to go to it, but just for the record if people need to go back to the NFAT report, it will be referencing scenarios on alternative rate methodologies starting at the bottom of page 187, which then describes what each of these methodologies would be.

Do you recall that there were different methodologies, Ms. Carriere, and then I'll get into what they are?

MS. LIZ CARRIERE: Yes, I believe I said this morning that there were three (3) addition -- or two (2) additional rate methodologies that were submitted.

I wouldn't mind seeing the part of the NFAT report you're referring to. I don't have it handy.

MR. ANTOINE HACAULT: Okay, fair enough. We'll -- maybe we can get that on the screen. Again, I apologize for not having this ahead of time but it was just raised this morning by this witness, so, I thought it would be useful to have some kind of an explanation as -- and provide some context through this witness as to what was happening.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: We're at pages

187 and 188 and we've provided to Board secretary a paper copy of it. So perhaps, he'll be able to put it on the monitors through the... There we go

So, at the bottom of page 187 is where the report starts discussing the alternative rate methodologies and, in fairness to this witness, perhaps I will leave her and -- and all present to read the bottom of that page, and then we'll move to the top.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: So firstly, in these alternative rate methodologies, the first one would be looking at reaching a debt equity ratio of 75/25 by 21 -- '31/'32. Just to put things in perspectives when we look at the three (3) alternatives that I'm going to point you to.

Is that fair?

MS. LIZ CARRIERE: That would be the -- the rate alternative assumed in the main submission?

MR. ANTOINE HACAULT: That's right. So I'm going to be referring to the main one and then there's going to be two (2) alternatives and to understand what those are, we need to flip to page

188.

So I'll read it in for the record:

"Manitoba Hydro filed two (2) alternative ratesetting methodologies with the Panel that would moderate the projected rate increases. According to Manitoba Hydro, these methodologies were provided as information for the Panel and did not indicate a policy change or yielding on its financial targets, but rather are a means of providing additional flexibility in relation to the amount of rate increases and the timing of reaching financial targets"

Continue in the quotation.

"The alternative rate methodologies with proposed rate increases based on the interest coverage ratio are described below."

And so the -- I'm going to be going through the three (3) examples with you, Ms. Carriere. The first alternative methodology maintains the annual rate increase is -- this is at 3.95 percent for each development plan until the 1.20 interest coverage ratio is achieved, followed by subsequent rate increases to maintain that ratio.

This alternative yield significantly on the debt-to-equity target and only achieves debt-to-equity ratios in the order of 82 percent in the All Gas Plan and 88 percent in the preferred development plan. And we'll go through what it yields in the Keeyask models.

Then we had a second alternative which minimize the losses caused by the first methodology, followed by 3.95 annual increases until the 1.2 interest cover -- coverage ratio was achieved, and then maintaining that.

Is that consistent with your recollection, Ms. Carriere?

(BRIEF PAUSE)

MS. LIZ CARRIERE: Mr. Epp and I were just discussing this as the Board's interpretation of what the intent of -- of those -- those rate methodologies were. Specifically we're not sure what it means when it says:

"...this alternative yield

significantly on the debt-to-equity target."

I can say that both of the methodologies were introduced in -- part way through the process to address what we called the hockey stick or the -- the correction factor I believe was a term used at -- at the NFAT. And the first was -- the first -- the methodology 1 sort of assimilated all of the past -- or the past plans that the Board had seen, so, it was something that was familiar to them, and that it's shaved off the correction factor or hockey stick that we saw.

The second one, as I said -- I should point out that methodology 1 still resulted in losses in the number of the cases. So methodology 2 was also introduced to address those -- those losses, and to minimize them.

You know, having -- as I've stated previously, those were rate projections that were produced at that time. The first two (2) being very mechanical, very methodological, in that we were running a lot of -- a lot of scenarios that needed something where the model logic could step in and make decisions based on a set of parameters to produce those -- those -- those rate plans for a large volume of financial model runs.

Whereas methodology 2, we didn't reproduce those for all of the runs because it was something that an analyst had to actually step into and -- and adjust rate increases on a year-to-year basis. So, we did those for a very, very small volume of -- of runs to demonstrate rate plans that at that time would have been more likely to be put into practice.

Since that time, things have dramatically changed. I talked about the -- the rise in the debt. If we had the same assumptions now and we were to rerun these, we would see significantly higher rate increases than what you're seeing here.

MR. ANTOINE HACAULT: On -- and I'll deal with some of those last comments when I go through financials later, and also through some of these particular slides.

Could we go, Kristen, a little bit up on that page again. I just want to confirm everybody's understanding that Hydro filed those two (2) alternatives that you've just talked about to give the Panel some idea of what could be possibilities to moderate -- I emphasize the word "moderate" -- the projected rate increases.

Is that correct?

MS. LIZ CARRIERE: Yes, that's what the NFAT panel report says.

MR. ANTOINE HACAULT: And that's because -- and Dr. William (sic) has referred to it as a sawtooth. You've referred to it as a hockey stick. Even under the base rate of reaching a 25 -- or 75/25 by 2032, essentially, a twenty (20) year time period right after that time period we had a huge drop in rates a little bit like what I took this panel through this morning under the ten (10) year plan that Hydro's proposing.

Isn't that correct?

MS. LIZ CARRIERE: Yes, that's correct. In the actual Exhibit 104-12-1 it refers to the --

MR. ANTOINE HACAULT: Sorry, I -- I will let you go through some things, but -- and I've tried to be as patient and let you answer as many things as a panel but, unfortunately, I had provided estimates to counsel opposite on how long I was going to be, and if we go to things that aren't answering my questions and I wanted to go to a specific slide, which is 104-12-6 and ask questions about that, I won't have time to finish what I want to finish or need to finish. You can deal with these things in rebuttal with your counsel.

MS. LIZ CARRIERE: Well, Mr. Hacault, you've -- you've put the NFAT panel's interpretation of what the rate increases -- or the rate methodologies are, and I am trying to answer your question about, you know, these moderate rate increases and I was just going to read you Manitoba Hydro's words from the -- where we actually describe its -- there's two (2) sets of exhibits, one (1) where we actually introduce the rate methodology and the one that Mr. Hacault has put in front of us is a second set where we add additional analysis for additional plans and pipeline load.

So I was just referring to the original description of the methodologies.

THE CHAIRPERSON: In this instance, I think it might be valuable to actually understand what Manitoba Hydro's position was at the NFAT versus what the panel's interpretation was, but I -- I do join Mr. Hacault in terms of, if the panel could respond to the questions there's -- there's -- this morning there was, if I could say, sort of a sale's pitch of reaffirming Manitoba Hydro's position. We understand it. We've heard it in direct. I'm sure we'll hear more information in rebuttal. So if you could focus on responding.

However, in this instance, I think you're -- you're right, Ms. Carriere, in terms of -- if this is the issue put forward, we want -- it would be good to understand what Manitoba Hydro said at the NFAT as to what the two (2) alternatives were because, in fact, the Board may not have interpreted it correctly.

MS. LIZ CARRIERE: So I think when we said "moderate" was -- it addressed the issue where, and I quote this,

"By using 21 -- '31/'32 debt equity target -- debt equity ratio target for goals -- goal solving purposes, the result was that it produced more erratic rate adjustments in the years immediately following 2031/'32 than had been seen in the original -- the original submission."

And that's the point that I would -- I was wanting to draw your attention to is that these -- the term "moderation" was to smooth out those erratic rate adjustments for the -- for the NFAT panel's understanding.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: And perhaps we can put that on the screen. I think you're quoting from a sentence -- you've correctly quoted the first part of the sentence.

But would I be correct in quoting the full sentences as follows. I'm quoting:

"This rate setting approach serves to minimize the erratic rate adjustments in the years immediately after 2031/2032..."

And it's right above the heading number 3, in the part that you chose not to read was:

"...and more closely aligns with how Manitoba Hydro may smooth these rate adjustments in practice."

That's the full quote, isn't it?

MS. LIZ CARRIERE: I was actually quoting the line just prior to number 2, Roman Numeral II on the same page.

MR. ANTOINE HACAULT: Okay, understood. But we were talking about the alternatives and what the alternatives would do.

What you're telling this Board is that you quoted a part that didn't relate to the alternative methodologies in describing the alternative methodologies.

MS. LIZ CARRIERE: I think it gives the context for introducing the -- the two (2) rate methodologies.

MR. ANTOINE HACAULT: Thank you. I'll -- do you think there's anything else that's useful for the Board to understand about the alternate rate methodologies in -- as described in this particular document Manitoba Hydro 104-12-1, which was an exhibit in the NFAT, or can we now move along to the actual example which I'd like to take you through.

MS. LIZ CARRIERE: Let's move on.

MR. ANTOINE HACAULT: So on the -- just explain the screen, what I've asked Kristen to do is to kind of condense some of the rows because the spreadsheet is fairly wide and the font becomes fairly small and we used to do this in NFAT to allow my bad eyes in any event to be able to read some of these things.

And for context, I -- I'd like to direct your attention, Ms. Carriere, to row 19 on the left-hand side. There's a bunch of rows and once we clear the printing overlays we'll see that it's Keeyask 19. And with the 750 megawatt line, that's the plan 5 with DSM level 2.

And as I understand it, that's as close as we can get to what the PUB ordered to be implemented as a result of the recommendations? It didn't order, it recommended. Correct?

MS. LIZ CARRIERE: Correct. I'll just note also that it was a high capital cost scenario for Keeyask.

MR. ANTOINE HACAULT: And -- and that's a good point, Ms. Carriere, because in this detailed analysis that was done that at NFAT, we looked at reference construction costs and high construction costs and low construction costs. And I'm going to choose to go to the high one.

Is that a fair way to proceed because the costs are, in fact, high?

MS. LIZ CARRIERE: I don't know if that's where you want to proceed.

MR. ANTOINE HACAULT: Okay. So this chart shows the next column at the top, debt equity ratio as at 2031/2032, being the target of 75/25.

Are you following me so far? In fact, all scenarios reach that by that date.

MS. LIZ CARRIERE: Yeah, I was just going to comment that, yes. When you're goal seeking for a specific date they'll all achieve that by some means or other.

MR. ANTOINE HACAULT: And there should also be a column which is actually not shown on here but it's the next column on the left screen. If we could expand it a bit further. After the dark blue heading there's -- keep going. A -- in row 19, if we had been able to follow it through on the left-hand side gives us a result that we would have to have equal annual increases of 3.99 percent if Keeyask's costs were high; correct?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: And that would lead us to a 75/25 debt equity ratio, correct?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: And it's after that point was reached that we were seeing that hockey stick effect in all scenarios, including this particular one; correct?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: Now the -- one thing you're correctly pointing out and you've pointed out a number of times if we go again to the right-hand screen, there should be column G - as in Good - G and H which should give us the net debt.

And we can see that the net debt under the projected scenarios as of 2031/2032 was going to be 18.6 billion which is a number under what we're currently projecting; correct?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: And the retained earnings under that scenario were supposed to be $6.2 billion as of 2031/2032, correct?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: Now, having had the explanation about the alternative rate scenarios, we had to go one (1) sheet down, which was the second excel spreadsheet, down to row 39, 3-9, to look at what would happen if we're moderating the increases in accordance with the assumptions that we've just read for alternative 1.

Again row 39 is the plan, essentially, that was recommended by the PUB with DSM level 2, and we're assuming high costs for Keeyask.

You're following me so far?

MS. LIZ CARRIERE: Yes, I see that.

MR. ANTOINE HACAULT: Okay. What we see, though, is a -- and as a -- as you've explained, we aren't mechanically tying ourselves to reaching 75/25 debt equity as of 2031; correct?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: Because we see that this alternative plan of moderating rate increases would actually only achieve a debt equity ratio as of 2031/2032 of some 85 to 15, correct?

MS. LIZ CARRIERE: Yes.

MR. ANTOINE HACAULT: And under that scenario, our debt gets higher because we're moderating the rate increases and we can see that following that line 39 we're up to $21.1 billion of debt; correct?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: And conversely, instead of being at $6.2 billion of retained earnings, we aren't increasing the retained earnings as aggressively and they would only be $3.6 billion as at 2031. Correct?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: And then there was one (1) last illustration that would help the Board understand. It's a discussion about moderating rates. It's on the next page, being page 3 of this spreadsheet and it's rule 59.

That would provide us with that example of Keeyask with high costs and DSM level 2. Are you following me?

MS. LIZ CARRIERE: Yes.

MR. ANTOINE HACAULT: Okay. And if we minimized the losses, debt would increase under that scenario to somewhere between the other two (2) at twenty billion point 1; correct?

MS. LIZ CARRIERE: Yes.

MR. ANTOINE HACAULT: Do you see that? And to no one's (1) surprise, I guess, the retained earnings is somewhere between the two (2) scenarios, too. This time, it's at 4.7 billion, correct?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: And finally, we aren't reaching the 75/25 debt/equity ratio under this last alternative. We're only getting to 81/19, correct?

MS. LIZ CARRIERE: That's correct.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: And I think in fairness to this witness, something that isn't showing on the screen which we all need to understand is because we're doing these mechanical exercises of putting rate increases until we hit certain debt ratios, or certain metrics like the one point two (1.2) coverage, achieving that -- those arbitrary ratios would have meant in this last scenario that we also need to look at one (1) other column on the left-hand screen, if you can go a bit further right, which would show how we start our increases upfront.

So this last alternative mechanically would tell us that we would do a num -- upfront increase of about 4.86 percent to force the one point two (1.2) metric to happen by 2016, and it would be from the time 2016 to 2022, correct?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: And is this scenario which would be more what Hydro is likely to do, was that the words that I had read into the record earlier?

MS. LIZ CARRIERE: At that time, yes.

MR. ANTOINE HACAULT: Thank you very much. I'll move on to another subject.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: I'll revert back to our book of documents at Tab 2. I apologize in advance to everyone present in the afternoon, going through a series of numbers and explaining tables, but it's Tab 2.

THE CHAIRPERSON: Mr. Hacault, is it Volume 1 or Volume II?

MR. ANTOINE HACAULT: Sorry, Volume II --

THE CHAIRPERSON: Okay.

MR. ANTOINE HACAULT: -- and Tab 2 is at page 14.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Now, what I'd like to achieve, and hopefully I can, is to provide this Board a better understanding of one (1) of the tables that was produced in the rebuttal, and its part of that table. It's found at page 15 of the rebuttal, just for the record.

And it was a table that Mr. Peters went through in a fairly general way. And I'd like to dig in deeper to try and help the Board understand better. When we're saying, We have a cash flow deficiency, what does that mean? What are we paying? What can't we pay? And that'll be the purpose of this line of questions.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: I wonder if we could just quickly go to the rebuttal evidence, just to show where this was extracted from so that if we're going back to Manitoba Hydro rebuttal evidence eventually, we'll have some link and some understanding of what part of the document I was trying to get more clarification on.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: So that what I'm going to be taking Manitoba Hydro witnesses through is the column immediately after actual. So we'll see the line of numbers under 2018 be reproduced in what I'm going through, and go in details. So you'll note in the document I'm going to be going through that will have the number 2.152 billion, and all the other numbers. Are you still with me, Ms. Carriere?

MS. LIZ CARRIERE: Yes.

MR. ANTOINE HACAULT: So if we could -- if we could revert back to page 14 of our book of documents, which is on the screen, we see that number being 2.152 billion that I just referenced from the rebuttal, and we also see the bottom line is showing a cash flow deficiency of some $228 million. Are you still following me?

MS. LIZ CARRIERE: Yes, I do.

MR. ANTOINE HACAULT: Okay. And what I want to do is to better understand what we're getting for this cash flow deficiency. If we go to the table, the receipts from customers, am I correct in understanding that's also including exports?

MS. LIZ CARRIERE: Yes, that would be correct.

MR. ANTOINE HACAULT: And the next line, which indicates payment to suppliers and employees, this is operating only, and not capital. Is that right?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: Okay. Would it include things that we've been talking about, such as payments for water rentals to the Province of Manitoba?

MS. LIZ CARRIERE: Yeah.

MR. ANTOINE HACAULT: Would it include capital taxes that need to be paid to the province of Manitoba?

MS. LIZ CARRIERE: Yes.

MR. ANTOINE HACAULT: And those capital taxes are based off the total capital employed. Is that correct, or is there some other definition that you'd like to explain to the Board?

MS. LIZ CARRIERE: Essentially, it's the debt and equity of the corporation less credit for investments, for example, in the partnerships and subsidiaries.

MR. ANTOINE HACAULT: Okay Am I correct in understanding, though, that these capital taxes, then, even with respect to the major builds like Bipole that's not in service and Keeyask are put through this line, they aren't capitalized? There's a lot of capital there, but capital taxes with respect to the projects not yet in service continue to be paid and in -- included in that line instead of being capitalized in another line?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: And then the next line on this table is the interest paid. I've tried, maybe unsuccessfully so, to come up with respect to that number as to how we get it. Do we have to start -- and I'm -- got a little box on the right-hand side, from all interest that's paid?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: And included in that box is also the Provincial guarantee fee of 1 percent that's paid to the Province?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: And then there's some adjustments, because we're capitalizing some interest and other items?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: And the two (2) biggest items that are being capitalized relate to Bipole III at wei -- weighted average rates, and then capitalized interest with respect to Keeyask, and Manitoba-Minnesota Line, and the Great Northern Transmission Line. Is that correct?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: Okay. And then some other small items like timing difference and interest received, correct?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: That then brings us to the separate entry on the left-hand side, being Bipole III, another business operations capitalized interest. So am I correct in understanding that I have to take the 174 million that I had previously accounted for in the top box and put it in this line item with respect to Bipole III?

(BRIEF PAUSE)

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: And then the other part that gets up to 197 million is other business operations issues that capitalized interest with respect to those other business operations at 22 million?

(BRIEF PAUSE)

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: Okay. Now, the next number includes a number of different components, correct?

MS. LIZ CARRIERE: Yes, that's right.

MR. ANTOINE HACAULT: And we've used the phraseology "sustaining capital," that are sometimes business operation capital expenditures to describe that group?

MS. LIZ CARRIERE: Yes, that's the term we're referring it to -- to what we had previously referred to as sustaining and -- and capital expenditures associated with capacity constraints. We've shortened that to business operations capital.

MR. ANTOINE HACAULT: Okay. And if we can, Kristen, flip to the next page, I think it would be useful to understand a bit more about what that means. And at the very top, I had trouble reconciling what was in the capital expenditure forecast for 2016, which came at 608.3 million, with the table that was in your rebuttal.

Am I right in understanding that the difference is due to capitalized interest that's included in Bipole III at $22.3 billion?

(BRIEF PAUSE)

MS. LIZ CARRIERE: The difference is what you're seeing in the previous page, the five hundred and eighty-six (586) is the cash amount of interest that's being paid. In -- or --

MR. ANTOINE HACAULT: Sorry. I think you said interest, but you meant business?

MS. LIZ CARRIERE: Business operations capital, that's right. Sorry.

MR. ANTOINE HACAULT: Okay. So the

difference was interest? Is that where we're getting a difference between the numbers?

MS. LIZ CARRIERE: No, it's the cash expenditures.

(BRIEF PAUSE)

MS. LIZ CARRIERE: Yes. Interest.

MR. ANTOINE HACAULT: So just so the record is clear, the difference of -- on the -- this table of minus $22.3 million is an interest component that's taken out to bring us to 586 million.

Is that correct?

(BRIEF PAUSE)

MR. JAMES MCCALLUM: Yes, that's correct.

MR. ANTOINE HACAULT: Okay. Now, time doesn't permit, and I acknowledge as soon as you choose examples, you're open to criticism, but I'd just like to go through a couple examples of the types of things that we are funding with this $228 million shortfall, as it were.

And the first one I have highlighted is

the executing pros -- projects under generation and wholesale, which would be Pine Falls units 1 to 4 major overhauls. Do you see that line item? It's highlighted at $20.3 million.

MS. LIZ CARRIERE: Yes, that's correct.

MR. ANTOINE HACAULT: And my understanding from CEF is that this project's justification was that a gen -- additional generation could be obtained, in parentheses, "(approximately 17 percent with increased discharged capability)."

And this is one (1) of the things that these expenses would assist in achieving; is that correct?

MR. JAMES MCCALLUM: No, I -- I think that's perhaps over-simplifying the matter. And -- and, you know, if we really want to get into the very specifics of -- of these projects, we'll need to -- to have Mr. Wortley and Mr. Turner, in the case of this one, returned. But if you look to the -- and I think this is in your -- your book of documents, Mr. Hacault, on page 22, and it's a -- yeah, here it is.

Okay. So if -- if you read under the just -- justification, assessment of the mechanical systems has identified concerns in terms of obsolete equipment, safety, fire risk, and adaptability to present day operating conditions and standards. And then it carries on, and I -- I agree it -- it talks about additional generation being obtained.

But I think -- and this is a similar story as to Kelsey, where you have a project that was required in order to protect and defend a generating asset where we saw a low cost incremental opportunity to increase generation, but the project itself and the vast majority of the spending were to defend what was there, we just -- you know, it's kind of, Well, you've got the thing open, you may as well take the opportunity to upgrade it if makes economic sense.

MR. ANTOINE HACAULT: Thank you for that explanation. And at least when I was a young lad and going up in the pond -- Pine Falls area, that plant was already there, so it's got to be prior to 1960, for sure.

MR. JAMES MCCALLUM: I'd need to check, but it's -- it's certainly, as to the mechanical parts of it, was at sort of that useful life, would be my understanding.

MR. DAVID CORMIE: In -- in service in 1951, now, Mr. Hacault.

MR. ANTOINE HACAULT: You're great

with data. Thank you, Mr. Cormie.

So it -- it's extending the life of that facility and updating up -- and maintaining as needed.

MR. DAVID CORMIE: Yeah. Like Mr. McCallum said, is -- once you take the unit out of service for whatever reason, you're losing its revenue-generating potential, so you might as well do as much of the work as you can take advantage of the outage.

And this is a situation where we needed to take those outages to maintain safety, and fire risk, and adaptability, present day's conditions and standards. And at the same time, if you're going to have the unit out of service, put a couple of modern turbines in. And that's the situation where we're able to do that.

MR. ANTOINE HACAULT: So that description is found really at the top of this page, where we're indicating we're rewinding generators. While we're doing this, we're installing two (2) new transformers, and we're doing two (2) propeller-type turbines, and machining associated wat -- water passage components.

That's a summary of what's happening.

Is that fair?

MR. DAVID CORMIE: Yes.

MR. ANTOINE HACAULT: And would it be fair, Mr. Cormie, that past ratepayers had the existing generator windings, if I'm looking at this, and turbines in their rates?

MR. DAVID CORMIE: Yes. If -- if these are the same units that were installed in 1951, they would have been fully depreciated and paid for by previous ratepayers.

MR. ANTOINE HACAULT: Okay. And these overhauls which are described as major overhauls, is it fair to say that they're going to provide service into the future, and that's what makes it a capital investment?

MR. JAMES MCCALLUM: Yes, they're providing service into the future and enabling us to maintain the same productive capacity, and in fact, increase it marginally.

MR. ANTOINE HACAULT: And if we followed a total cost, if it does come in at that $88.8 million, future ratepayers, through depreciation expense, will be paying for all of these major overhauls in their rates that find themselves through the depreciation expense. Is that correct?

MR. JAMES MCCALLUM: The depreciation expense associated with this project will be recorded in our -- as time passes, yes.

MR. ANTOINE HACAULT: And that's part of the rate base in the revenue requirement, correct?

MR. JAMES MCCALLUM: Correct.

MR. ANTOINE HACAULT: And consistent with that, we see that future ratepayers will have the incidental benefit not only of these major overhauls, but of approximately an additional 17 percent of generation, correct?

MR. JAMES MCCALLUM: Again, I can't speak specifically to this project, but that seems to be what the justification is saying.

MR. ANTOINE HACAULT: Okay. If we could go back to the previous page, I've chosen the first line under transmission execution projects. And perhaps it would be useful to go to the description of that particular project to better understand what it is, and so that I don't make the same mistake I made the first time of only quoting part of what's being done. That would be at page 21 of our book.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: Does the description we see at the top of that page give us a good summary of what this project's about?

(BRIEF PAUSE)

MR. JAMES MCCALLUM: I -- I -- again, not being the technical engineer in charge, I would -- for these purposes, I'm prepared to accept that it does, yeah.

MR. ANTOINE HACAULT: And we see part of the costs coming in this year, but the total forecast -- or revised forecast costs for that project is $75.5 million project? Am I reading that table correctly at the bottom?

MR. JAMES MCCALLUM: That is the overall budget for the project taken over several years, with -- it looks to be about $49 million left to be spent. In fact, sitting here in December, it probably stands to reason the projects have been almost wholly spent.

MR. ANTOINE HACAULT: Yeah. And that gives us the capacity to get additional growth, as the last line indicates in the justification, and it provides a whole bunch of other benefits to customers who were having some outages, correct?

MR. JAMES MCCALLUM: That's right. This is -- I think Mr. Neufeld spoke to this -- well, the days are kinda running together, but earlier, that this is a project in support of regional load growth--

MR. ANTOINE HACAULT: Yeah. And --

MR. JAMES MCCALLUM: -- our mandate of supplying customer need.

MR. ANTOINE HACAULT: Would -- would this description be right, that it actually provides benefits for a future for at least the next twenty (20) years, based on the forecasts?

MR. JAMES MCCALLUM: Yeah, I -- again, you -- we'd need to go to Mr. Neufeld to speak precisely to the -- the business case here in justification, but typically, you know, when we're faced with a need to provide service and meet growth, we don't kind of put it -- put things in one (1) year increments. We look for opportunities to be efficient, plan for the future.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: If we can go back to the previous page, at the bottom, and all the sheets are there, so I don't intend to go through all of them, but can I have agreement that all the projects under the heading 'M' as in 'Mother', 'NG', as in 'Good', ampersand 'T', Sustainment/Capital Projects, starting with Pointe du Bois and actually going under the other subheading right up to Manitoba/Saskatchewan Transmission Project, are part of what's described in the capital expenditure and Demand-side Management Forecast as major new generation and transmission projects?

I can maybe just take you down to the next slide please, Kristen, if you -- subject to check -- if you look at all those items they show up in -- highlighted -- in this sheet.

Do you see it on the screen? Well, can I take it subject to -- to check?

MS. LIZ CARRIERE: I'd say all with the exception of the -- the project that we were just looking at.

MR. ANTOINE HACAULT: I wasn't suggesting the Lake Winnipeg one. If we go back up to the previous sheet, you'll see at the very bottom there's Pointe du Bois Spillway, next, Gillam Re-development, next, Kettle Improvements, next, Grand Rapids Fish Hatchery Upgrade, next, Wuskwatim

Generation, next, Kelsey Improvements, next, Point du Bois transmission, and next, Manitoba/Saskatchewan Transmission Project.

All of those projects are described in your Capital Expenditure Project, CEF, as being Major New Generation and Transmission.

MS. LIZ CARRIERE: Yes. Sorry, I was confused by the highlighting on the previous page, but the projects you just identified are included on this page here under Major New Generation and Transmission.

MR. ANTOINE HACAULT: And the last example I'll focus on, if we go back, is I'll go to the Gillam Re-development Expansion Program just to get a little bit of an understanding of what that project involved as far as total spend, what we're getting in any budget adjustments.

So, would a proper starting point be going, again, to the description of those projects in the CEF, which is at page 20 of our book of documents?

(BRIEF PAUSE)

MR. ANTOINE HACAULT: Is that a good starting point to give us a general summary of what this project is about?

(BRIEF PAUSE)

MR. DAVID CORMIE: Yes, Mr. Hacault, that's sewer, and water, and roads, and community infrastructure. That's generally what this is about.

MR. ANTOINE HACAULT: Okay. And in the justification in the second line, it's -- talks about prepare for the growth associated with new generation facilities.

Could you identify which generation facilities that those would be, Mr. Cormie?

MR. DAVID CORMIE: I'm assuming that's associated with the Keeyask.

MR. ANTOINE HACAULT: And am I correct in understanding that the scope of this project is anticipated to be reduced?

You may not be able to speak to that on the record, I don't know.

MS. LIZ CARRIERE: I think it's fair to say that Gillam Re-development and Expansion phases 2 and 3 are under review, yes.

MR. ANTOINE HACAULT: Could you give me a little bit of an idea of what's being looked at in Phases 2 and 3, what's being reconsidered, that may not be spent?

Where does it relate, for example, on the bottom on cash flow? Is it -- is there something you can do to help me on that?

MS. PATTI RAMAGE: Mr. Hacault, I think we'd need Mr. Wortley here to be able to provide any detail on these projects.

MR. ANTOINE HACAULT: Okay -- at -- if -- that's okay. I'd -- I wasn't looking in a lot of detail, but if Ms. Carriere had some general concept of what Phases 2 and 3 were that gave us some idea of what's --

MS. PATTI RAMAGE: Unfortunately I think it -- when I say "any detail," I think means any detail.

MR. ANTOINE HACAULT: Okay thank you. I'll move on.

(BRIEF PAUSE)

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: If we can go back to the very first page of this tab. What we've been going through for the last bit is the $586 million of capital expenditures described as a business operation capital, and that's part of what influences the bottom line of negative $228 million; correct?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: And we've seen projects that are in the order of seventy (70), eighty (80) million, and in the hundreds of millions of dollars; correct?

MS. LIZ CARRIERE: That's right.

MR. ANTOINE HACAULT: Now, the next item is deside -- Demand-side Management at --

MR. JAMES MCCALLUM: Par -- Pardon me, Mr. Hacault, I just wanted to make sure I did -- I didn't fully understand your comment about seeing projects worth hundreds of millions of dollars.

When you look at this $586 million number of business operations capital expenditures, a very small fragment of that is tied to the projects that Mr. Hacault has -- has walked us through, and are included in this category of Major New Generation and Transmission.

The vast bulk, and it -- it's subject to check, I'll -- I'll peg it at about five hundred and thirty (530) of the five hundred and ninety-two (592) million, give or take, you know, are tied to -- to regular normal course sustainment, capacity reinvestment, fixing things as they fall down, whether by storm or by age and kind of running the business.

MR. ANTOINE HACAULT: But Pine Falls is not a major new generation project so when you're saying that there's only thirty (30) million, if I go to the next page, or sorry about sixty (60) million. We see under the generation and wholesale projects that there's projects between two (2) million and fifty (50) million for a total of sixty (60) million in and of itself that relates to generation.

Are you saying that that's not a capital expense and doesn't provide some benefit into the future?

MR. JAMES MCCALLUM: Well, they -- they absolutely provide benefit into the future in that they keep the lights on. Like these are all the projects that go into maintaining the normal safe operation and reliable operation of the system for Manitobans.

MR. ANTOINE HACAULT: I guess much like a hydro pole that might last seventy (70) or eighty (80) years, it provides benefit for decades; correct?

MR. JAMES MCCALLUM: Yes, that's correct. These are long-lived assets.

MR. ANTOINE HACAULT: I'm sorry, I got off track from the DSM expenditure which is on the previous page.

So the Demand-side Management expenditure at fifty-five (55) million we've covered what happens when we incur that expense earlier on today. Correct? It has the effect of reducing our revenues?

MS. LIZ CARRIERE: Yes, that's correct.

MR. ANTOINE HACAULT: But it also differs generation in fairness?

MS. LIZ CARRIERE: Yes.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: And this is the spending as distinguished from the amortization or depreciation of past expenses; correct?

MS. LIZ CARRIERE: No this -- this -- the DSM ex -- demand-side management shown here is the actual expenditure incurred by the Corporation in 2018.

MR. ANTOINE HACAULT: Yes. Sorry. I must've impur -- incorrectly worded my statement. I wasn't implying that it wasn't spent, I was implying that everything on this table is spent as opposed to a separate line item which we see elsewhere being depreciation and amortization, which is an additional separate cost.

MS. LIZ CARRIERE: Yes. This table focuses on the cash flow statement and sort of rejigs how -- from the presentation of the cash flow that we see it included in the IFF and just puts it in a different format -- different categories really. And the depreciation expense is obviously not seen on that cash flow statement, or in this table.

MR. ANTOINE HACAULT: Mr. Chairman, I am more than happy to continue. I'm going to be moving to a different subject it really --

THE CHAIRPERSON: No, but I think we'll take a break for -- for ten (10) minutes. Yeah, I just remind you we're finishing at 4:00, so, we'll take ten (10) minutes right now.

--- Upon recessing at 2:39 p.m.

--- Upon resuming at 2:57 p.m.

THE CHAIRPERSON: M. Hacault...?

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Good afternoon. I hope everybody's had coffee after that laborious sheet that I had to go through. I'll be, I think, dealing with two (2) subjects. I know Mr. Cormie has to leave.

And 1) it's going to be a very short subject, but I thought it would be useful to have a bit of an explanation, I'll call, with -- with respect to resource economics and this aging fleet that we've been talking about. And secondly, what I intend to do is go through, hopefully I won't put everybody asleep, my Tab 9 documents which provides some analysis with respect to where we're at, compared to other GRAs.

So getting the Tab 4 firstly, resource economics is what I've called the subject, I've take -- taken the page number -- sorry -- she's got to be twenty-nine (29), I believe. No, Book 2, Tab 4.

Yeah. But the table I'd like to bring the Board's attention to is on table -- page 26. This was out of cost of service and is a place where I've found, I think, what I would call the book value or book cost of the facilities on the left-hand side.

Is somebody from Manitoba Hydro able to confirm that? For example, we have the project

Limestone, and in the first column at the top it says, "capital cost" and millions of dollars. And we have the number one billion four hundred and forty-six (1,446,000,000).

Would that be the -- the book cost?

MR. DAVID CORMIE: Mr. Hacault, as you can note, on the bottom of the previous page the cost of the Church River Diversion, Lake Winnipeg regulation, and the HVDC have been allocated to those generating stations downstream. So, for example, the Limestone cost includes the cost of the generating station itself, plus the supporting infrastructure.

MR. ANTOINE HACAULT: But I just want to get a sense, on the left-hand side is that the depreciated value, or is it the starting value of those assets which you've just described, Mr. Cormie? Or anybody else on the panel.

MR. DAVID CORMIE: It's not clear, Mr. Hacault, but I believe this is the -- is the book value of the asset.

MR. ANTOINE HACAULT: Okay. And you can do that, subject to check. I just wanted to have an idea of whether we're looking at, you know, a depreciated value or a starting value. So thank you. We can go with that, subject to check.

So, as you described, the Limestone Project included not only the generating facility, but to some transmission facilities. And remind us again when Limestone was put into service.

MR. DAVID CORMIE: I think it was fully in service by 1993.

MR. ANTOINE HACAULT: Okay. And I'm going to date myself. One of the first hearings I did, but on the side opposite was in the early '90s, and as I recall it people were up in arms at the cost of the power that was going to be generated out of that facility.

Can you explain to us -- and it can be anybody on -- on the panel -- when we talk about -- further down the table, I'm still on the Limestone line -- a total cost dollars per megawatt hours of twenty three dollars and ninety-seven ($23.97), what does that tell us with respect to that particular facility and related transmission?

MR. DAVID CORMIE: So these numbers were derived during a cost of service study, based on the assumptions that go into cost of service, which at that time was median generation at that station.

So the median generation for 2012/2013 for Limestone was 7,395 gigawatt hours. And then all the costs associated with that station are laid out in this table, the water rental costs, the M -- O&M costs. So that would be the, you know, all the people that work there and the maintenance work that's done. And then the other two (2) items are the depreciation and the interest.

And so we add all those dollars up, divided by the assumed generation for cost of service purposes, and -- and you get the average cost per -- per megawatt hour.

MR. ANTOINE HACAULT: And that's for people have residential bills. They would relate that not in dollars but in cents.

It would be two point three nine seven (2.397) cents per kilowatt?

MR. DAVID CORMIE: Yes.

MR. ANTOINE HACAULT: Yeah. And --

MR. DAVID CORMIE: And so for the system average for all energy costs, you'll see at the bottom of the table two (2) and a half cents of -- of -- as a system average cost per unit of production. And assuming your residential bill was -- your residential rate was, let's say at that time was six (6) cents, so about -- something less than a third of the cost would be the energy component. And then on top of that you have trans -- major transmission, distribution, and customer service costs that make up the -- the difference.

And -- and this was just looking at the -- the generation cost or the energy component of that -- of the -- to the total rate that we charge.

MR. ANTOINE HACAULT: Okay. And could you help us understand the next number which is under the heading, Total Cost Dollars Per Megawatt Hour," but on a dependable flow metric.

MR. DAVID CORMIE: So that -- so instead of using the generation that we would expect in the -- the median flow year, we would then use the generation that would occur under the lowest flow on record. And so for Limestone, instead of 3,000 -- or 7,395 gigawatt hours, dependable -- dependable output of Limestone is probably around 4,000 gigawatt hour.

So the -- the costs are the same, except -- except that the water rentals go down. But the -- the generation goes down, and that's -- and you do the -- you do the math based on -- on the generation you'd expect under that low water condition.

MR. ANTOINE HACAULT: And it's a function of mathematics then. You get lower generation, same costs, and it results in a higher number per megawatt hour?

MR. DAVID CORMIE: Right. And all the costs except the water rentals are fix.

MR. ANTOINE HACAULT: Understood. Thank you --

MR. DAVID CORMIE: And the -- and the --

MR. ANTOINE HACAULT: -- for that clarification.

MR. DAVID CORMIE: -- would vary there would be the water rentals.

MR. ANTOINE HACAULT: And could you explain the last column, which is the total cost under maximum flow situation.

MR. DAVID CORMIE: So maximum flow is the -- is the -- the rate that you would calculate if you used the highest generation that the station could produce.

And I think if you go back in the record, 2005 was probably our highest flow year, and in that year the generating station would've produced 11,000 gigawatt hours instead of the average of seven thousand three hundred and nine -- or the median of seven thousand three hundred and ninety-five (7,395).

And so you can see that the cost -- unit cost goes down to nineteen dollars ($19) a megawatt hour or one point nine (1.9) cents a kilowatt hour.

MR. ANTOINE HACAULT: And just to give us a sense of the comparative generating power between Keeyask and Limestone, would you be able to explain a bit of that. How -- how does it compare, for example, on -- the gigawatt hours, is at seven thousand three hundred and ninety-four (7,394)? Or what's the number that's expected out of the Keeyask facility?

MR. DAVID CORMIE: The -- the average for Keeyask is 4,500 gigawatt hours, Mr. Hacault. I'm not sure if that's the median number, but I would expect that they're probably pretty close to each.

MR. ANTOINE HACAULT: Okay. And that's the facility that we're talking in today's dollars, having a control budget somewhere in the range of $8.7 billion?

MR. DAVID CORMIE: Yes. But that will be in -- in twenty/twenty-two dollars (20/$22). And this is in 2013 dollars, so you have to be careful not to mix your -- your years up here.

MR. ANTOINE HACAULT: Thank you. But am I right in understanding -- and that's why I started the questioning; to understand what the first number was immediately after the word "Limestone".

If I would dig in to previous costs of service data, I would continue to see the $1.446 billion, correct?

MR. DAVID CORMIE: Yes. I think that's -- that's what the table says. It's -- that was the capital cost, including all the supporting infrastructure.

MR. ANTOINE HACAULT: And, in fairness, there may be capital improvements done to any facility, and those capital improvements would be added to the capital costs of that particular facility, is I understand how the Corporation --

MR. DAVID CORMIE: And -- and that's best indicated by Pointe du Bois. It says 97 million; they only spent 2 million to build the plant, so there's been some addition since that time.

MR. ANTOINE HACAULT: Perhaps, I don't know, Mr. Barnlund, do you have anything to add on that? Because you were in the cost of service, you have an idea of what those initial numbers were. I just want to make sure the record's accurate.

MR. DAVID CORMIE: Initial numbers for which?

MR. ANTOINE HACAULT: Of -- in the column, the first column which it just says, "capital cost."

Are you -- can you provide any insight on the conversation I'm having with Mr. Cormie, as to whether we're right in proceeding the way we are on defining those costs?

MR. GREG BARNLUND: I think that those would represent the -- the original cost of the plant as entered into the books. However, I would note, the date of this analysis goes back to 2013 and, therefore, any improvements or any capital additions that have been made since that time would not be reflected in here. And Pointe du Bois is a good example of that because of the spillway work that would not be reflected in the numbers for Pointe du Bois.

And as far as the remainder of the analysis is concerned, there's also -- when you look at Wuskwatim, Wuskwatim was only in service for part of the year. And so that's not a complete picture for Wuskwatim either.

But -- so this was a snapshot taken at of -- in time, reflective of I think probably twen -- late 2012/early 2013, in terms of what we have for information.

MR. ANTOINE HACAULT: Thank you for that clarification. And to be clear for the record, I wasn't intending on focusing on specific numbers. I was looking to provide some general direction and general ins -- illustration of the comparative costs of facilities at one point in time, to give some general understanding of the economics of a plant and how they come to their own as time progresses.

So, for example, the next facility, Long Spruce, and the next one, Kettle, would those be facilities that were installed in the 1970s?

MR. DAVID CORMIE: Long Spruce was fully in service in 1979, and Kettle was fully in service in 197 --

MR. ANTOINE HACAULT: Four (4), I think.

MR. DAVID CORMIE: Yeah, the -- it was -- it was put in service in two (2) phases, the last unit at Kettle was probably put in 1974.

MR. ANTOINE HACAULT: Thank you. And each of those two (2) plants have a capacity which is greater than the forty-five hundred (4,500) number that you had quoted for Keeyask.

Am I right there? Do you see that --

MR. DAVID CORMIE: Yes, they -- they have a -- about 50 percent more head at Kettle and at Long Spruce than they -- than we have it Keeyask. So, the same -- essentially the same flow but different head, so they have different potential energy output.

MR. ANTOINE HACAULT: And so if we go to the total cost column, in this snapshot -- and I appreciate it's just a snapshot -- for Kettle, we have a total cost of a 1974 facility at fifteen dollars and seventy-five ($15.75) cents per megawatt hour.

And am I reading that table correctly?

MR. DAVID CORMIE: Yes, that's correct.

MR. ANTOINE HACAULT: And as we move to the Long Spruce facility, which came in service some five (5) years later, it may be just coincidence, but the total cost per megawatt hour is up slightly, not that much, but up to seventeen dollars and thirteen ($17.13) cents in this snapshot.

MR. DAVID CORMIE: That's correct.

MR. ANTOINE HACAULT: And then the 1992 facility is showing a greater cost, comparatively speaking, about a third higher than the previous two (2). If we divide seventeen (17) or fifteen (15) by three (3) we get another five ($5) dollars per megawatt hour. So it's coming in at about a 30 percent increase costs at twenty-three point ninety-seven dollars ($23.97) per megawatt hour.

MR. DAVID CORMIE: That's correct.

MR. ANTOINE HACAULT: Okay. And, understanding fully Mr. Barnlund's caveat, that Wuskwatim, in this table, was just a partial analysis and you have -- it has to be read in that light, if we go across the way, firstly, Wuskwatim is a smaller facility than Keeyask at 1,337 gigawatt hours?

MR. DAVID CORMIE: That -- that's correct. And -- and for 2012/1213, we show generation of 970 gigawatt hours, which is a partial year. In a -- in an average or a median year it's more like twelve hundred and fifty (1,250).

So the cot -- the unit cost per energy is probably a third to great because of that. So it's it's something less than the eighty-one dollars ($81), which gives --

MR. ANTOINE HACAULT: So do you --

MR. DAVID CORMIE: -- the higher generation.

MR. ANTOINE HACAULT: Mr. Barnlund or Mr. Cormie, do you have any sense of what the total cost per megawatt hour would be, roughly? Is it around sixty dollars ($60) per megawatt hour using these metrics?

MR. GREG BARNLUND: I would -- I would not have -- we -- we have not updated this particular analysis at all.

MR. ANTOINE HACAULT: But is there something else that you can point us to, even the more recent one, as to what that range might be? I just need a sense. I -- yeah, it can be plus or ten dollars ($10), if that's all you can give me.

MR. GREG BARNLUND: I -- I wouldn't have that information, no. I'm sorry.

MR. DAVID CORMIE: Mr. Hacault, it -- it's more than just adjusting for the generation, there are -- because the -- the units came in through the year. There's only a partial year depreciation, interest expenses, and so, you know, we -- we don't have the data here to quickly calculate what that would be.

MR. ANTOINE HACAULT: But can you say with some certainty that it comes at a higher total cost per megawatt hour than either Kettle, Long Spruce or Limestone?

MR. DAVID CORMIE: Yes, I think that's -- that -- that would be obvious because these are

2012 dollars as opposed to Kettle which was built with 1970 dollars. So, it's, you know, it's a different era, different costs.

MR. ANTOINE HACAULT: And we had fairly lengthy discussions and -- about the reality of those economics for plants that may last over a hundred (100) years, which are inflation protected as far as the capital costs go; correct?

MR. DAVID CORMIE: Yes. And I guess the example of Pointe du Bois is -- is quite illustrative here where we have a problem with this kind of analysis because it -- capital costs is now not ninety-seven (97), it's probably more like five hundred and ninety-seven (597) and the generating stations are not producing any more electricity, the station was fully depreciated and we got to recover that revenue now.

So these numbers aren't really useful in the -- in the context of -- of looking forward.

MR. ANTOINE HACAULT: But am I right calling that Pointe du Bois as a facility that's over a hundred (100) years old, and that's why it's been fully depreciated?

MR. DAVID CORMIE: Yes.

MR. ANTOINE HACAULT: So over the last

hundred years prior to these recent capital improvements that facility provided decades of power at a relatively low cost because of its initial $2 million cost to build.

Is that correct?

MR. DAVID CORMIE: Yes, that's correct.

MR. ANTOINE HACAULT: It doesn't -- apart from the water rentals cost you more to put water through a $2 million facility than it does to a facility that's called -- cost -- cost multiples of that in later years, does it?

MR. DAVID CORMIE: I'm sorry, I didn't catch the question.

MR. ANTOINE HACAULT: It doesn't cost more apart -- because we have to pay water rentals to put water through an older facility or a newer facility?

MR. DAVID CORMIE: No, but my -- my point was, is that the total cost in this study showed Pointe du Bois at 4.86 cents per kilowatt hour. That's nowhere close to what that cost would be if we did the math today once we added in the 500 million that we've invested in the spillway.

MR. ANTOINE HACAULT: And that's why

the Corporation quite wisely does decisions on resource planning to decide where the money is best spent; correct?

MR. DAVID CORMIE: That's correct. We do not use this table to make resource planning decisions. We look at the value and we look at cost of alternatives rather than the unit cost of -- of production.

MR. ANTOINE HACAULT: Thank you very much, Mr. Cormie. I'll move on to the next subject which is at tab 9 of our book of documents, and it's -- starts --

MS. PATTI RAMAGE: Could I just jump in only to say Mr. Cormie has an appointment and Mr. Hacault is aware of that. Are -- you're --

MR. ANTOINE HACAULT: I'm okay with him leaving if --

THE CHAIRPERSON: That's fine.

MR. ANTOINE HACAULT: Yes.

THE CHAIRPERSON: Thank you, Mr. Cormie.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: it's at tab -- page 83. Just to explain this first page we'll come back to at the end. It's not a table that's found in any particular document. It's a -- a summary of some key numbers and items which I'll be going through which are found in the subsequent documents, so that hopefully there's no typing errors. And if there are we'll correct them. But all the numbers come from the documents that immediately follow this particular table.

The reason I'll be going through this with the panel is we've heard that the situation has changed quite a bit, so I'd like to explore by actually looking at some of the documents the Corporation has prepared to give us a sense of that change, and understand it a bit better.

Now, if I've understood Ms. Carriere correctly, there were a couple things that -- that keep on being brought up by the Corporation. Firstly, that since NFAT and IFF14, we've experienced higher capital costs. Is that one (1) of the items?

MS. LIZ CARRIERE: Yes, that's correct.

MR. ANTOINE HACAULT: And another item is that we have experienced in our forecasting lower export prices; correct?

MS. LIZ CARRIERE: Yes, that's

correct.

MR. ANTOINE HACAULT: And another major item which has been brought to our attention is that there's now a revised lower load forecast; is that correct?

MS. LIZ CARRIERE: Yes, that's true.

MR. ANTOINE HACAULT: Now, prior to starting with all of these different sheets being the NFAT plan which was based on -- was it IFF12?

(BRIEF PAUSE)

MS. LIZ CARRIERE: I can say that they started out with IFF12.

(BRIEF PAUSE)

MS. LIZ CARRIERE: So I believe when we -- the main submission in August of 2013 was something we called IFF12 and a half. It was, essentially, IFF12 but with an update for export prices.

The tables we were looking at earlier today, the blue tables with a lot of tiny data on it, I can for sure that -- say that the Exhibit 104-12-6 had been updated to 2013, but I can't be sure about the other one that was submitted in April; that may not have been updated to 2000 -- no, I'm going to change -- I correct that. That was based on 2013. So we're dealing with a bunch of different assumptions at that time, somewhere between '12 and '13.

MR. ANTOINE HACAULT: Okay. Thank you, that's helpful. And before I start, in each of the IFF13 then, Manitoba Hydro 14 and Manitoba Hydro 15, there was a focus on reaching a target of 75/25 debt equity ratio within twenty (20) years; is that correct?

MS. LIZ CARRIERE: Well -- yeah, we can see the -- there was targeting to goal seek to -- where NFAT there was -- we were seeking to achieve a 75/25 in '31/'32 which would have been consistent with the previous forecasts that they saw but I would say MH14 wasn't necessarily a goal seek scenario, it was simply applying the -- the rate trajectory from the previous plan.

MR. ANTOINE HACAULT: And that would have resulted in a 75/25 debt equity ratio by a little bit later, being 2033/'34, as compared to the previous plan; correct?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: Okay. Now, what I propose to do is to go to the -- what I understand to be the Manitoba Hydro 16 Update, but modified run in the Coalition second round interrogatory 19, which is at page 86 of this book.

Now, as I understand this particular run of the integrated financial forecast, we were forcing the model to tell us what kind of rate increases we needed to achieve a 25 percent equity ratio in the twenty (20) year time frame or approximately that.

Is that your understanding also?

MS. LIZ CARRIERE: I'm sorry, can you repeat that?

MR. ANTOINE HACAULT: We were looking to force the model to give us a back calculation of what we needed as far as rate increases to hit a 25 percent debt equity issue by 2034?

MS. LIZ CARRIERE: Yes, that's what Coalition requested in the IR.

MR. ANTOINE HACAULT: And with the put and takes of everything that's happened over the years, including the three (3) major concerns that I have addressed in starting this part of the examination, the model turns out equal annual increases of 4.14 percent. Is that correct?

MS. LIZ CARRIERE: Yes, that's mathematically what it turns out to be.

MR. ANTOINE HACAULT: And we can see that result if we go to the next page 86 -- or sorry, 87 that by 2034 -- and I've highlighted it so hopefully it's easier for people to follow -- that we do hit that 25 percent debt equity in the year 2034 under this particular modelling of rates; correct?

MS. LIZ CARRIERE: Yes, that's -- that's what I see in this book, yes.

MR. ANTOINE HACAULT: Okay. And the modelling then assumes that for the next two (2) years we'll revert back to 2 percent increases.

Am I writing -- reading that table?

MS. LIZ CARRIERE: That's correct.

MR. ANTOINE HACAULT: And if we go immediately above on the 2034 column, we see that this model is telling us that in 2034 we would be just short of $1 billion of net income; is that correct?

It would be at 965 million.

MS. LIZ CARRIERE: Income attributable to Manitoba Hydro would be nine hundred and fifty-one (951).

MR. ANTOINE HACAULT: Okay. That's

the number a bit below because there's some adjustments that need to be made because of the partnerships?

MS. LIZ CARRIERE: That's correct. That would represent the portion of income in the Waskwatim project that would be taken out of because we record all of Waskwatim's revenues and costs. The portion of the 33 percent that's owned by Nisichawayasihk Cree Nation gets taken out of the overall revenues and expenses and gets recorded on their own income statement.

MR. ANTOINE HACAULT: So thank you for that clarification on the right number we should -- we should be paying attention to is not the highlighted one, but the one immediately under it because -- which is 951 million because we've got to give $14 million to a third party; correct?

MS. LIZ CARRIERE: Well, it's $14 million of the net revenue and expenses and the nine hundred and fifty-one is -- the number itself is bolded. So, that's the number we should be looking at.

MR. JAMES MCCALLUM: That -- just for clarity, that's the number that gets added to our retained earnings each year is the nine fifty-one

(951) or, you know, the net income attributable to Manitoba Hydro.

MR. ANTOINE HACAULT: So if we follow that line in 2035, this modelling is telling us that even only having 2 percent increase, which hopefully is still inflation at that time, there would be over $1 billion being put in the retained earnings in 2035; correct?

MS. LIZ CARRIERE: Assuming all other assumptions remain the same or constant, yes.

MR. ANTOINE HACAULT: And that further increases in 2036 to $1.144 billion of net income, correct?

MS. LIZ CARRIERE: Correct.

MR. ANTOINE HACAULT: Now, if we go back to the previous page what's happening in this modelling of forcing the computer to tell us what does it take to get to 75/25 by the year 2034, we see highlighted that there will be four (4) years of projected negative income or some might say losses in '24 -- 2024, 2025, 2026 and 2027.

Am I reading that table correctly? This is on page 86 of our book of documents. The numbers are highlighted on the screen.

MS. LIZ CARRIERE: Yes, that's

correct.

MR. ANTOINE HACAULT: And the other metric that we've been following, as I said, apart from the 25 percent debt equity ratio, this modelling shows us that we end up going down in 2026 to a 12 percent debt equity ratio and that's highlighted at the bottom right-hand side. Do you see that?

MS. LIZ CARRIERE: Yes. So 12 percent by 2026. And we don't see recovery beginning until 2028.

MR. JAMES MCCALLUM: And I'll -- I apologize if I just interrupted you, Mr. Hacault. I think it's important to recognize when we have differences in assumptions between, you know, things we're looking at here.

This scenario that's been prepared assumes this twelve (12) year weighted average term to maturity, which we've talked about being kind of a $500 million enhancement that we wouldn't pursue if we were contemplating, you know, a -- a future of -- of, really, de minimis net income.

So I just -- that 12 percent starts to look more like 10 percent if you adjust for that, and I just wanted to be -- to be clear.

MR. ANTOINE HACAULT: Okay. And we'll

have a little bit of a discussion about the weighted maturing terms later, but just -- if you could clarify the record, you've mentioned the half a billion dollars, but I thought the Corporation had updated that number, and saying that, based on what was happening in the flattening of the curve, it was now down to a $250 million number, not a $500 million number. Has that number changed now, sir?

MR. JAMES MCCALLUM: No, no, it hasn't. This -- I'm just making the point that this model is run off of -- of the set of assumptions dating back to, call it July, which included that relationship between interest rates, which has now changed.

MR. ANTOINE HACAULT: Thank you for clearing that up. I -- I wasn't too sure if we had new facts and new details which brought us back up to a $500 million number as opposed to two hundred and fifty (250), and you've now clarified that we're really looking at two fifty (250) based on current -- current situation. Is that correct?

MR. JAMES MCCALLUM: Based on current situation, yes, that's right. At this -- this includes a savings of five hundred (500), and that's my point, is this includes a savings of five hundred

(500), and --

THE CHAIRPERSON: I think your point, Mr. McCallum, is that this is five hundred (500). The situation now is two fifty (250). So this is not accurate in terms of the -- the situation as of now.

MR. JAMES MCCALLUM: Correct.

THE CHAIRPERSON: It was -- it was run at a -- in a different time?

MR. JAMES MCCALLUM: Yeah. And I -- I -- also, it's -- it's -- whether it's five hundred (500) or two fifty (250), both include the assumption of terming, which is a different -- as a risk management issue. I don't want to belabour that, but...

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: And I don't want to direct -- detract from the current discussion, because we're ending up at four o'clock, but I will have a discussion with you about this terming issue so we better understand that.

So that if we go to page 87 of the book of documents, we'll -- sorry.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: We need to go to page 89. And subject to check, can you agree with me that under this particular run, with its assumptions, that long-term debt will hit a high number of 24 million nine hundred and seventy-two (972) -- or sorry, 24 billion. I always make mistakes on that, twenty-four (24) --

MR. JAMES MCCALLUM: I can -- I can confirm that number, although, I think we'd, from my point of view, be best served be -- focusing on the net debt number, which you see down below at $24.2 billion. There's -- there's components missing, long-term debt.

You'll see in -- in the line beneath current and other liabilities, you'll include current portion of long-term debt. That's the portion of debt that's coming due in the next year. And then up -- upstairs, in current and other assets, you'll see embedded in there cash and sinking fund investments. So when we think about our debt balance and the way we've presented throughout this evidence is on a net debt basis.

MR. ANTOINE HACAULT: I may be wrong, but I -- and we can look at the previous ones. I don't think everyone has net debt, and I understand your comments, and thank you for it. So maybe we can keep an eye on both of those, but they seem to top up, whether it's one (1) number or the other, in 2028. Are -- are we okay with that?

MR. JAMES MCCALLUM: I...

(BRIEF PAUSE)

MR. JAMES MCCALLUM: I -- I have this scenario topping out in 2023, at 24.5 billion of net debt.

(BRIEF PAUSE)

MR. JAMES MCCALLUM: If you flip up one (1) page, I believe, and scroll down just a little bit, you'll see 25 -- 24.506 under the 2023 column.

MR. ANTOINE HACAULT: Okay. So we may not be able to get the comparable numbers tonight. To the extent that the net debt numbers are not in the other financials, which I'll be going through, can Manitoba Hydro provide that line item for the IFF13, 14 and 15?

I'd request that as an undertaking, if that's the metrics that you think is the most useful.

(BRIEF PAUSE)

MR. JAMES MCCALLUM: Yeah, we could -- go ahead, Patti.

MS. PATTI RAMAGE: Just to confirm, Mr. Hacault, you're looking for revised numbers for the maximum debt column? Is that correct?

MR. ANTOINE HACAULT: Well, this witness has indicated that it's useful not only look -- to look at the long term debt number, he is saying that it would -- you -- be useful to have the line at the bottom of this particular graph, which is at page 88 of our book of documents number 2, being the net debt line.

My belief, subject to check, is that we don't have that equivalent number, and I'm trying to go through a comparison exercise so that if this witness believes it's useful for the Board to have that additional line, I'm asking for an undertaking to provide with respect to IFF13, IFF14, and IFF15, the equal metric shown in the net debt line on this particular page.

MS. PATTI RAMAGE: Yes, we can provide that. That was just clarification to make sure we provide the correct thing.

MR. JAMES MCCALLUM: However, if you do want to make use of the time, I do have the numbers here, if you want to start your comparison. I can -- I can tell you what the net debt figure would have been. We've -- you know, it may not surprise you we've got that.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Maybe what I'll do, because we only got fifteen (15) minutes, is if that can be provided to us so we can kind of deal with that aspect of the comparison tomorrow morning, and we can go through the other aspects of the comparisons with the balance of our time. Is -- is that acceptable?

MR. JAMES MCCALLUM: It's acceptable to me, and -- and not to -- I -- my team has told me they'll get mad at me whenever I offer anything, but if it's of assistance to you, we could also rerun this coalition MH219 with the twenty (20) year weighted average to maturity, which might be a more indicative comparison.

MR. ANTOINE HACAULT: Maybe the easiest way to do this is on the table that's at page 83 of our book of documents, could Manitoba Hydro re-create that table, adding one (1) extra column, being a net debt column? So it would, for each of the four (4) plans shown on this table, add that column with an indication of the amount and year in which the maximum net debt is achieved.

MR. JAMES MCCALLUM: And that's fine.

MS. PATTI RAMAGE: That's fine. Cheryl, do you have that?

(BRIEF PAUSE)

MS. PATTI RAMAGE: One (1) undertaking. And it will be as per Mr. Hacault's -- the discussion between Mr. Hacault and Mr. McCallum regarding the -- page 83 of MIPUG's book of documents, and for Manitoba Hydro to revise to add the additional materials.

MR. JAMES MCCALLUM: Is that satisfactory, Mr. Hacault, or would you also like the --

MR. ANTOINE HACAULT: No, just the column --

MR. JAMES MCCALLUM: Just the column.

MR. ANTOINE HACAULT: -- with these particular financials.

MR. JAMES MCCALLUM: And do you want us to -- to add to this a 3.95 percent scenario? Just -- I mean, I want to make sure we're -- that -- that, you know, when you take 4.14 over 3.95, it doesn't seem like much, but you're generating another $200 million of -- of cash or less debt, so.

(BRIEF PAUSE)

MR. ANTOINE HACAULT: Let's perhaps have an off-the-record discussion after four o'clock, and then we can decide whether that's useful or not for the Board. I want to have whatever information is going to be useful for the Board --

MR. JAMES MCCALLUM: We're here to serve.

MR. ANTOINE HACAULT: -- but it's probably -- better not cluttering the record with -- with that discussion.

THE CHAIRPERSON: Can I --

MR. JAMES MCCALLUM: I believe the -- the undertaking is for Manitoba Hydro to reproduce page 83 inclusive of a column of net debt with the year of that net debt. I'm sorry -- sorry, the maximum net debt and the year of that maximum debt.

MR. ANTOINE HACAULT: Corr -- correct.

--- UNDERTAKING NO. 9: For Manitoba Hydro to
reproduce page 83 inclusive of
a column of maximum net debt
with the year of that maximum
net debt.

THE CHAIRPERSON: Can -- can I just ask a quick question? This will take ten (10) seconds. The table on 83 refers to High Keeyask.

Can you explain what that is -- is that -- in terms of either dollar amount or date?

MR. JAMES MCCALLUM: That -- that's a -- a dollar amount for the capital cost of Keeyask. This dates back to the NFAT, and I believe, subject to check or Ms. Carriere tackling me, the -- the number was $7.2 billion versus -- I think it was 6.3 billion, and that in the -- in the underlying scenario. So the -- the reference case was six point three (6.3), the high case was seven point two (7.2).

THE CHAIRPERSON: Okay. Thank you.

(BRIEF PAUSE)

THE CHAIRPERSON: Sorry, Ms. Carriere, I -- I'm just going by my memory, I remember reading is the seven point two (7.2) a P90? Because I thought it went from six point two (6.2) to six point five (6.5) at the end of the hearing, but that was the P50.

MS. LIZ CARRIERE: I'll have -- I'll have to double-check.

THE CHAIRPERSON: That -- that's fine. It's just that I thought McCallum was going to say it was six point five (6.5), and I was congratulating myself for my memory --

MS. LIZ CARRIERE: I think --

THE CHAIRPERSON: -- and --

MS. LIZ CARRIERE: Yeah. I think this -- the seven point two (7.2), we had the March update --

THE CHAIRPERSON: Okay.

MS. LIZ CARRIERE: At six and a half (6 1/2), and I think the seven point two (7.2) went from six and a half (6 1/2) to seven point two (7.2).

THE CHAIRPERSON: Okay. Thank you.

(BRIEF PAUSE)

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Now, perhaps in the last ten (10) minutes, I'll start by looking at the NFAT IFF run, which is at page 92 of our book of documents. And subject to clarification on the exact amount of this high cost Keeyask scenario, can we go through some items here, keeping in mind the immediately preceding run that we looked at, where we had four (4) years of negative income under this run of High Keeyask costs, we were actually projecting eight (8) years of negative income.

Am I right? And highlight from 2016 to and including 2023.

MS. LIZ CARRIERE: Yes, that was -- that's correct, under the main submission rate methodology, and I'll just confirm -- or clarify for Chairman Gabor, I have right in front of me NFAT Exhibit MH-104-12-1, and Mr. McCallum was correct. The Keeyask reference was $6.3 billion, and the Keeyask High capital cost was seven point two (7.2). And that was post the March of 2014 update.

MR. ANTOINE HACAULT: And realizing that there's puts and takes, including lower interest rates, this particular run at 3.99 percent recurring increases led us to a twenty-five (25) debt/equity ratio by 2032, if we go to the next -- or further down

-- further down the line.

Do you see that there's a number seventy-five (75) in the third column from the bottom, which is the debt/equity ratio column?

MS. LIZ CARRIERE: Yes, that was the goal-seeking exercise.

MR. ANTOINE HACAULT: And, most notably, though, compared to this immediately preceding run that we looked at, we've got a debt/equity ratio which deteriorates not only to 88/12, but down to 92/8, correct?

MS. LIZ CARRIERE: Yes, and that was the rate increase exer -- goal-seeking exercise in order to compare multiple development plans.

Breakeven during those years, I believe I said under the same case, the rates required from 2016 to '22 are -- are more in the order of 4.68 percent.

MR. ANTOINE HACAULT: And I've only got five (5) minutes, so I'll deal with some of the comments that you have perhaps tomorrow, but would you agree with me that the hockey stick effect shows up in 2033 because all of a sudden instead of having a 3.99 percent increase, the modelling is telling us that we would have to give all Manitoba consumers a 25.69

percent decrease in rates?

MS. LIZ CARRIERE: That's correct. When you defer the achievement of it -- of 75/25, it typically takes more rate increases than it would if you had higher upfront rate increases.

So in order to maintain the seven (7) -- roughly a one twenty (120) interest coverage ratio, or around 75/25 debt/equity you're cutting your cumulative rate increase in half at that point.

MR. ANTOINE HACAULT: And that's why in the NFAT we were exploring these alternative rate scenarios, because we saw that if we hit consumers with 3.99 percent increases over a twenty (20) year time period, on your twenty-one (21), the table was telling us we'd have to give them a reduction of nearly 25 percent if we kept that metric happening. That's why we were looking at monitorating (sic) rates, correct?

(BRIEF PAUSE)

MR. ANTOINE HACAULT: You seem to be confused. Do you see that number under 2023? Instead of 3.99 percent increase in 2032, the hockey stick effect is in 2033, where we have a 25 percent decrease in rates. Do you see that?

MS. LIZ CARRIERE: I can see, yes, the number, but I don't believe we would -- we had characterized it as -- as giving back 25 percent.

I think at the time that -- that this was so far out, we recognized the uncertainty, and that other circumstances would change, but I think we said overall that at that point, your -- I mean, again, we're comparing to other rate cases or other -- sorry, I keep confusing rate cases with the development plans. We are comparing other development plans, and so I'm not sure that you can characterize that at the time as giving rates back to customers.

MR. ANTOINE HACAULT: If I said giving rate -- rates back, I misspoke. I said a -- I said a decrease in rates of 25 percent. But just to confirm, this was based on IFF13. It was an Integrated Financial Forecast where the Company made its best efforts to forecast what was happening.

Isn't that correct?

MS. LIZ CARRIERE: Yes. All the assumptions that have gone into this are based on the Corporation's best estimates at the time.

MR. ANTOINE HACAULT: Thank you. I'd note the time, members of the Board, and I'll pursue my questioning tomorrow, if that's acceptable.

THE CHAIRPERSON: Thank you. We'll pick up again tomorrow, 9:00 a.m. Thank you. Have a good evening.

--- Upon adjourning at 4:00 p.m.

Certified Correct,

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Cheryl Lavigne, Ms.