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

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Pages 6309 to 6674

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Corey Shefman (np)	) Manitoba Chiefs

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Daryl Ferguson	City of Winnipeg
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William Haight (np) William Gardner (np) Kimberley Gilson (np)	Independent Expert Witnesses

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66	City of Winnipeg to review the calculation of energy as a percentage of input presented by Dr. Yatchew, including the table in his evidence. The City of Winnipeg will reconcile that to the 1.71 percent for 2013 contained in its evidence at page 6, and the conclusion of 1.4 percent	6542

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67	City of Winnipeg to provide the remaining data for the summary of electricity tax revenue for 2017, including the months of October, November, and December, assuming it is available to the City	6544
68	City of Winnipeg to provide a demonstration that calculates the rate increase incorporated into the chart in their evidence	6551
69	AMC provide advice in the event that there are for future steps related to bill assistance directed by the Board on appropriate mechanisms for engagement with First Nations and First Nation political organizations.	6651
70	Mr. Raphals to provide, in reference to the Ontario energy and property tax credit, written elaboration on efforts to improve accessibility for First Nations persons on reserve	6662

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71	AMC/MKO is to provide OC-2003-347 and the Electrical Power and Control Act of the of the statutes of Newfoundland and Labrador	6673

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

THE CHAIRPERSON: Good morning, everyone. Mr. Hacault, I understand you have something to put on the record. I don't know, Mr. Ghikas, maybe I should call on you first.

MIPUG PANEL

PATRICK BOWMAN, Previously Sworn

CAMERON OSLER, Previously Sworn

GERALD FORREST, Previously Sworn

MR. ANTOINE HACAULT: Yes. Yes, thank you, Mr. Chairman. Yesterday I had notified the panel that we would be reviewing the transcript because Mr. Forrest thought he maybe needed to make a correction to one of us statements yesterday.

He has reviewed the transcript and specifically at page 6048, and the sentence in issue was that he had stated:

"The PUB saw on one hand to, when the wellness of the Corporation's started to improve so did their O&M expense improve dramatically."

And it's with respect to the statement

"their O&M expense improved dramatically" that he wanted to make a comment and correction.

MR. GERALD FORREST: Thank you, Mr. Hacault. Yes, Mr. Chairman, Board members, I meant to say and I misspoke that line 7 should be improve -- "so did their own O&M expense increase." Thank you.

THE CHAIRPERSON: Thank you very much. That's it?

MR. ANTOINE HACAULT: That's it.

THE CHAIRPERSON: Mr. Ghikas -- oh, sorry, Ms. Steinfeld's going to take us through the day.

MS. DAYNA STEINFELD: Thank you, Mr. Chair. We will be continuing with this witness panel from the Manitoba Industrial Power Users Group through the morning until the lunch hour. After lunch, we will have the City of Winnipeg's witness Mr. Tyler Markowsky.

And after cross-examination of Mr. Markowsky, we will start the testimony of the Assembly of Manitoba Chiefs MKO witness in direct and should we be running ahead of schedule, I would leave it in the Board's discretion as to whether or not we would continue into cross-examination of that witness at that time. Thank you.

THE CHAIRPERSON: Thank you. Now, Mr. Ghikas.

CONTINUED CROSS-EXAMINATION BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: Thank you. Last but not least, of course. Mr. Chairman, good morning, members. Good morning, panel. I wanted to resume with Mr. Bowman this morning starting off at your presentation deck slide 30, please.

Now, in -- in slide 30, Mr. Bowman, do you have that there?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And slide 30 you have presented net costs, correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And your point was to emphasize how close the net costs remain under the orange dashed line which is IFF16 with interim and update to the other lines that represent NFAT scenarios; correct?

MR. PATRICK BOWMAN: Represent either NFAT scenarios or previous IFFs --

MR. MATTHEW GHIKAS: Thank you.

MR. PATRICK BOWMAN: That's correct.

MR. MATTHEW GHIKAS: Thank you for

that clarification, yes. And is -- is it your evidence, Mr. Bowman, that this is the fairest way to -- to depict a cost comparison between these forecasts by using net costs?

MR. PATRICK BOWMAN: Mr. Ghikas, as I -- as I reviewed yesterday with Commissioner Kapitany, there's many ways to compare -- to forecast about what has gotten better or worse, or the like. And so I think each one needs to be understood for the -- what it's saying, the benefits it provides.

I think it -- in terms of this forecast, it has certain benefits of portraying the items this way. It also has -- has some other considerations that it omits. For example, I know your client would want to focus on maximum debt. This doesn't tell you anything about what the maximum debt is.

This tells you something that has an interest rate built in, so it has -- it has the debt effect but it also has the interest rate effect built into it. So if you wanted to see maximum debt you'd have to look elsewhere.

It also doesn't have the loads built in, for example --

MR. MATTHEW GHIKAS: Right.

MR. PATRICK BOWMAN: -- instead of looking at the cost overall.

MR. MATTHEW GHIKAS: Right. And that -- that really is what I'm -- I'm getting at, sir. This doesn't account -- this doesn't account for the fact that the load has declined as -- the forecast load has declined as among all of these forecasts, does it?

MR. PATRICK BOWMAN: No, Mr. Ghikas, and -- and I'll just give an example. The -- for example, when you do a DSM test you'll -- if you look at the back of Hydro's DSM book, it will also give a series of tests, some of which will say, what is the overall cost? It's called like a total -- a resource cost test or the like, and then some of which will say, oh, but we also have to consider we lost load or revenue and those would be like a rate impact measured test.

So you can use different tests. This would be more akin to that out of the pockets of Manitobans overall how much to repay. It's not a rate impact, it's a -- it's more like a total bills impact.

MR. MATTHEW GHIKAS: So with the -- if we were to consider the fact that the load forecast has declined, that would mean that those net costs, that are shown there, are now being spread over less load, right?

MR. PATRICK BOWMAN: That's correct.

MR. MATTHEW GHIKAS: And the IFF16, it reflects a materially lower load forecast than the others, doesn't it?

MR. PATRICK BOWMAN: It -- it does have a load -- lower load forecast, Mr. Ghikas. We -- you put a question to me, subject to check, yesterday about the fact that the load forecast was down as a 2026/'27 and I'll just say we're -- we're almost done our -- our crosscheck on that. But, you know, the load is lower, but -- but the extent to which that's being caused by different factors is -- is important to consider.

For example, the load is lower in part because the rate increases are assumed to be higher. So some of that is not just extraneous, that is a built-in assumption of the -- of the model -- of the load forecast model.

MR. MATTHEW GHIKAS: The orange dashed line that you've depicted here is 3.95 percent rate trajectory, isn't it?

MR. PATRICK BOWMAN: Correct.

MR. MATTHEW GHIKAS: Right. So with a

3.95 rate trajectory, the load forecast is still down, isn't it?

MR. PATRICK BOWMAN: Well, that's the piece that I'm going -- I think we're -- we're finishing the subject to check from -- from yesterday and I -- I suspect we'll have something for that for you soon. To just -- because we took it to -- to make sure we're confirmed.

My understanding is the load forecast is down but, like I said, I just want to get the numbers to -- comparing to the -- the reference you gave to confirm to the NFAT. It is definitely down in the graphs that have been shown compared to the previous IFFs.

MR. MATTHEW GHIKAS: Yeah and, Mr. Bowman, and just to confirm for you, I think I left that that you didn't need to go do that. So you -- you won't need to go confirm that.

I think as long as we're in agreement that the load forecast has declined, I think we're there, right?

MR. PATRICK BOWMAN: Well, Mr. Ghikas, I -- I -- I feel it's important to note that the load forecast is, in part, something that happens to a Utility and it's in part something driven by the

Utility's actions and if all we want to say is the load forecast matters arise as to whether you're talking about the load forecast given a 3.95 percent scenario versus the load forecast given a 7.95 percent scenario.

And so, if we're going to get into has declined. I -- I think the question implies, has it declined in terms of things that have happened to Hydro, not the things that Hydro has caused by imposing 7.9 percent --

MR. MATTHEW GHIKAS: Sir --

MR. PATRICK BOWMAN: -- and that's where -- that's where I just want to be -- be clear that --

MR. MATTHEW GHIKAS: Sir, I know you want to be clear about that but I think you're making this, with respect, a little bit too difficult.

We're looking at slide 30, is there a rate trajectory on here for 7.9 percent?

MR. PATRICK BOWMAN: No, but it -- I -- I was trying to explain that this -- because this is not a rate calculation, this is a cost calculation. To the extent there is a 7.9 percent, it won't change the depreciation. It won't change the O&M. It won't change the export revenues. The only thing that will change a little bit is it will change a little bit less load so you have more -- more export revenue because you've reduced Manitoba load and it will change the interest expense, to some extent, because you've paid on the debt quicker.

But otherwise this -- this graph won't move much for 7.9, because it's at a cost level.

MR. MATTHEW GHIKAS: I understand that and what I'm suggesting to you is that if you were to factor in a decline in load at 3.95 percent, the unit cost comparison would look different to this, right?

MR. PATRICK BOWMAN: Directionally that's true, yes.

MR. MATTHEW GHIKAS: Okay. And at 3.95 percent, the issues about the increased elasticity response with respect to a 7.9 percent rate increase doesn't arise, does it?

MR. PATRICK BOWMAN: If you have a load forecast that has the elasticities associated with 3.95 percent, then those issues would not arise.

MR. MATTHEW GHIKAS: Right. Thank you.

MR. PATRICK BOWMAN: I may have said 3.9, 3.95.

MR. MATTHEW GHIKAS: Now, did you --

did you decide to -- I mean, you'll recall, not everybody in the room will -- will know this, but you recall that on Tuesday Manitoba Hydro indicated through counsel that they had identified what appeared to be an error in the unit cost calculations of your report, correct?

MR. PATRICK BOWMAN: That's correct. The unit cost calculations are two (2) pages later in the background paper, and Hyd -- yes, Hydro indicated that they had identified an error.

MR. MATTHEW GHIKAS: Okay. And did -- did your decision to not include a unit cost calculation take that into account? The unit cost calculation in your presentation, was that in response to that issue?

MR. PATRICK BOWMAN: No. It was actually in response to the question we were asked by the PUB during the round of IRs. The PUB looked at this -- the graph, two (2) pages later, which we calculate a -- a unit cost and noted that we had not used the updated load forecast and asked us to do it with an updated load forecast.

So we -- so we did that in response, but we -- in that response, we noted the concern you and I were just talking about, which is, we can use an updated load forecast and model a unit cost, but we -- there's a -- concerns about the internal consistency of saying, I'm going to look at my costs, assuming a 3.95, but I'm going to divide by lower loads assuming people getting hit with 7.9.

Those two (2) are internally inconsistent and the PUB's response in -- in -- in -- deals with this and -- and by the time I was done drafting the PUB's response, it struck me that I had a lot more confidence in this graph than in the second one for that reason.

MR. MATTHEW GHIKAS: Okay. Well, to the extent, again, just to nail this down, to the extent that a unit cost comparison, if we leave aside the 7.9 line, if we're using 3.95 rate increases, that issue about elasticity falls aside, right?

MR. PATRICK BOWMAN: Yeah, it would. I -- I -- that's why I'm saying, I don't think I have a load forecast using 3.95 percent. I don't believe anyone has ever been put on the record.

MR. MATTHEW GHIKAS: Okay. So let's now turn to your -- the main part of your report, this is page 1-4. Okay.

Now, we'll see at line 20, that paragraph there, you're saying -- you're referring to unit costs in that paragraph of your -- of your executive summary, correct? Do you see in line 20 -- line 21?

MR. PATRICK BOWMAN: Yes. As I noted, this was prepared at the time of the submission. And I -- I used the unit cost graph in the submission. It was during IRs from the PUB that -- looking at it, I -- I realized I had more confidence in the previous step than the step that moves on to unit cost.

MR. MATTHEW GHIKAS: Okay. And if we -- if we were to go through this report itself, nowhere in this report would we see the depiction of net costs that you included in your slide deck, right? It's just in the background paper?

MR. PATRICK BOWMAN: No, that's what I was noting. I -- the -- the report used the unit costs, which at the time I was doing the calculations as shown, and -- and with the PUB's IR I -- I realized, in retrospect, that -- that it's probably less contentious to use at the cost level where I don't believe there's any -- any debate that the unit cost level, I think there's different ways of looking at it.

MR. MATTHEW GHIKAS: Okay. And so here you've said, your conclusion was that, the unit costs they will face moderately higher unit costs under the IFF16 with update than as compared to the reference case from the NFAT but still well within the range of the low and high sensitivity scenarios considered at the time.

So that -- that is -- that is one of the conclusions you drew from the -- from the analysis you did at that time, correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And -- and secondly, you say:

> "A significant part of the deterioration from the ref case arises from Hydro's failure to properly implement the Board's directives on depreciation and integrated resource planning, see below."

Do you see that?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And so that was -- that was your conclusion at the time as to what a significant part of the deterioration since the NFAT was caused by?

MR. PATRICK BOWMAN: That is -- yes.

Yes.

MR. MATTHEW GHIKAS: So I want to explore both of those concepts about what it means to be "have moderately higher costs," and what it means when you say "a significant part of the deterioration arises from the depreciation treatment."

So let's -- let's, first of all, if we can turn to page 52 of your report. We'll focus on the "moderately higher unit costs."

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: All right, it's actually depicted in table -- sorry on the -- on 5-3, but you'll see the description there on line 5, figure 1,

> "Hydro's costs that must be covered by domestic ratepayers: All regulatory accounting costs, less export and other revenues on a unit basis; average cent per domestic kilowatt hours sold in that year."

Do you see that?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: So that's --

that's what -- the first of the key financial criteria that you identify as a point of comparison back to the NFAT correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And so on the next page we have figure 5.1?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And just as that -- from that passage that we just referred to, so this -- this is a unit cost comparison; just so we're all on the same page.

That's the unit costs being Manitoba Hydro's costs that must be covered by domestic ratepayers expressed on a unit basis, average cents per kilowatt hour?

MR. PATRICK BOWMAN: Right. And as I explained yesterday, we were -- at each level of this it's a decision about how far you go into the analysis.

At this point what we did was we used the -- the largest number out of the -- the load forecast. So this isn't at a metre. This is not a sales level. This is at -- at the generator terminals. It's every kilowatt hour produced to -- to ultimately serve as Manitoba load.

MR. MATTHEW GHIKAS: Right. And if so, if we -- if we go up -- we'll come back to that -- that point in a minute, but if we just scroll up to the previous page, please, Kristen.

So if we look at that line, line 6 there, when you're saying "on a unit basis average cents per domestic kilowatt hour sold in that year," you weren't actually -- based on your correction, it's not actually kilowatt hours sold, you're using gross energy produced at the generator, right?

MR. PATRICK BOWMAN: I -- I think probably "produced" would have been more accurate word.

MR. MATTHEW GHIKAS: Okay. All right, we'll come back to that point. So in --in 5-1, if we look at that and we were to mentally -- we don't physically have to do this -- but if we were to go mentally go back to slide 30 of your report, these lines are a lot more separated than the net costs lines, correct?

MR. PATRICK BOWMAN: Correct. And that's the -- that's the load effect that you're talking about.

MR. MATTHEW GHIKAS: Right.

MR. PATRICK BOWMAN: And -- and I

note, again, the load with the -- with the 7.9 percent elasticity, because we don't have a 3.95 load scenario.

MR. MATTHEW GHIKAS: And this, as you alluded to, the -- the PUB asked an IR asking you to restate the graph based on the 2017 load forecast.

So this -- this depiction in your report was actually revised to reflect the most recent load data which you had inadvertently not used here; correct?

MR. PATRICK BOWMAN: Correct, that was PUB-MIPUG-1.

MR. MATTHEW GHIKAS: Okay. So maybe we'll -- let's just -- let's just go to that so that we're dealing with the proper one, but just -- just so that everybody's clear, that one in the report we shouldn't be using, correct?

MR. PATRICK BOWMAN: That -- that's correct. It was -- but -- although as I - as I'm saying, I wouldn't want to overuse either one in -- you know, they're -- they're a sort of screening type of -- of test for our, as I said, with -- within the ranges considered at NFAT; that -- that was the simple purpose and so I wouldn't want to overuse either one, but if you're going to use one, us the one in PUB-

MIPUG-1.

MR. MATTHEW GHIKAS: So he used to be a key measure, but it's not anymore?

MR. PATRICK BOWMAN: Yeah, I -- I noted as -- in -- in retrospect, I would focus on one step back.

MR. MATTHEW GHIKAS: Okay. And if -- so, if we're looking now at PUB-MIPUG-1-17, we have the restated graph and using the 2017 load figures, we see greater separation. Now the orange line has moved up relative to the others, correct?

MR. PATRICK BOWMAN: Right and -- but, please, remember that there is a page of cautions before getting to this about the load forecast and the -- the elasticity issue you and I discussed.

MR. MATTHEW GHIKAS: Yes, I think you've -- you've noted that.

And one (1) of the -- one -- what this -- what this figure is -- is showing is that the costs to which ratepayers are exposed now under IFF16 Update with interim is higher than been expected under the NFAT conditions through to the end of the IFF period; right?

MR. PATRICK BOWMAN: From the -- there's a point where it crosses over and is higher.

MR. MATTHEW GHIKAS: And --

MR. PATRICK BOWMAN: I guess to clarify, higher than the NFAT reference.

MR. MATTHEW GHIKAS: And so it -- it -- you say it crosses over, it's crossing over the NFAT plan 5 base case and the others right at the point at which Keeyask goes into service, basically?

MR. PATRICK BOWMAN: Yes, absolutely. You see the huge jumps. The first one's Bipole, the second one's Keeyask and the third one is the assumptions on -- on the contract with Minnesota not been renewed.

MR. MATTHEW GHIKAS: Okay.

MR. PATRICK BOWMAN: If -- if you -- if I want to keep it simple, those are the -- the three jumps.

MR. MATTHEW GHIKAS: Right. And now the orange is still in the grey, which was one of the reasons you -- you depicted the grey is to show that it was still in the range of scenarios on the -- the plan 5 sensitivity analysis from the NFAT, right/

MR. PATRICK BOWMAN: Well, it's in the range following 2020. It's below the range for much of the period up to then. During the period we were building high retained earnings than expected.

MR. MATTHEW GHIKAS: Right. But part of your point, the reason you put the shading on there was to show that it is within the range?

MR. PATRICK BOWMAN: Yes, absolutely.

MR. MATTHEW GHIKAS: That it's below the top of that range, effectively, that was your point?

MR. PATRICK BOWMAN: Well -- sorry. You can focus on the parts of the graph you think are important. I think it conveys a number of things. It conveys the importance of the period we've had when we were below the range; meaning our costs have been down and we've been able to put aside more retained earnings.

I think it shows the impact of bringing on a Bipole and Keeyask, and why when that's happening to your cost side before you talk about reserves, when that's happened to your cost side is not the time to say, I've got to rush on and put in 3 1/2 billion extra in -- in reserves.

And it also shows what happens when you look at the scenarios going out; that there isn't necessarily a whole bunch of incline. Once we've absorbed these projects, the costs stay pretty level, and we have the ability to then get on and do the things that -- that Mr. Osler was talking about, you do in between major capital developments; like set financial targets to rebuild.

MR. MATTHEW GHIKAS: Okay, so you -- you've put the range on there but the blue solid line, that's the P50 scenario from the NFAT, right?

MR. PATRICK BOWMAN: It's the base scenario from NFAT. I think P50 was a little bit different, but I -- I won't quibble, but it was the base case.

MR. MATTHEW GHIKAS: Okay. And the upper end of the shading, that is the very worst case of the twenty-seven (27) sensitivity analysis, correct?

MR. PATRICK BOWMAN: Correct.

MR. MATTHEW GHIKAS: And -- and so it -- and effectively you've chose to define your range from P1 to P100, as it were, that's the probabilities that you used --

MR. PATRICK BOWMAN: Well --

MR. MATTHEW GHIKAS: -- and you selected for your range?

MR. PATRICK BOWMAN: I -- I will say, I defined the range from the worst of the twenty-seven (27) to the best of the twenty-seven (27) and in any given year it's not even necessarily the same scenarios. It is, look at all twenty-seven (27) and pick the best and the worst model.

I'm really hesitant to say you put -- you take a modelling of only twenty-seven (27) cases and then you suggest that there is a probability with them. Because I think people at NFAT were very clear, it could go outside that range.

MR. MATTHEW GHIKAS: Okay.

MR. PATRICK BOWMAN: This was a range of twenty-seven (27) that were -- that were projected but nobody said that -- that that's the only amount we could get to. Nobody ascribed, to my knowledge, 'P' values to any type of range like this, or to any of the - the bounds and how far out you'd have to go to get to a P1.

MR. MATTHEW GHIKAS: Okay. But --

MR. PATRICK BOWMAN: So I -- I just don't want to go too far in saying there's probabilities built into that.

MR. MATTHEW GHIKAS: Okay. It's the worst of the twenty-seven (27) scenarios, right?

MR. PATRICK BOWMAN: Correct.

MR. MATTHEW GHIKAS: Sorry, "yes?"

MR. PATRICK BOWMAN: Yes, yes. So

we're moving together now.

MR. MATTHEW GHIKAS: And that would be high -- high construction costs, right?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Lower export revenues?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And high economic inputs like interest and escalation, correct?

MR. PATRICK BOWMAN: Yeah, and inflation and all -- all the economic inputs moved as one but yes. I think there was, if I'm not mistaken, there may have been US dollar exchange included in that bundle as well.

MR. MATTHEW GHIKAS: Right. So if we're comparing the orange dash line which is the IFF16 with interim at 3.95, we'd be comparing an expected case to the very worst case, if we were to compare that to the top of the shading, right, the very worst-case scenario --

MR. PATRICK BOWMAN: Well --

MR. MATTHEW GHIKAS: -- that was tested at the NFAT, right?

MR. PATRICK BOWMAN: Well, the worst of the twenty-seven (27) modelled by Hydro, you know, we had evidence, for example, from the construction cost people who said, you know, Keeyask could be a -- a couple hundred million higher than Hydro's high range, and there were some other people talking about outside ranges, but of the twenty-seven (27) model by Hydro that was the worst one.

MR. MATTHEW GHIKAS: It wasn't the plan at NFAT for Manitoba Hydro to come in at the top of that grey shading, was it?

MR. PATRICK BOWMAN: It -- I think the -- the base case means what base case means. When you're doing with a plan, I think there are reasons you look at lows and highs and it's not that you're trying to achieve them, it's trying to make sure that your system is robust enough to handle them.

So it -- what was the plan? The plan, I presume, was -- was best represented by the base, but I -- I don't think you could say it wasn't the plan for those. I think those were scenarios that Hydro tested against and said, if that were to arise, you know, we could handle it.

MR. MATTHEW GHIKAS: If we were to put the same scenarios or similar twenty-seven (27) worst-case scenarios around that orange line, we'd probably find a range that went about that grey shading;

wouldn't we?

MR. PATRICK BOWMAN: You know, I -- I don't know that we would because one (1) of the things that that range is dealing with is, you know, for example, changes in interest rates that affect the entire cost of Keeyask. We know that no future interest rate in the timeframe we're talking about can affect many of the costs of Keeyask because they've been spent and borrow. That -- that dealt with certain types of changes in -- in other economic conditions and other export conditions that are -- are now behind us.

So I think we -- that's -- that's why if you're going to -- I don't want to suggest over using this type of image. We have the uncertainty analysis. Now, we can put the uncertainty analysis around it, and it considers go forward. I think that's the best -- best image we have of a cone today.

And the other thing, I guess, worth noting is this never considered water. This always was -- had -- had each of those twenty-seven (27) runs was at average water. This doesn't consider droughts and floods at all. NFAT was not designed that way.

MR. MATTHEW GHIKAS: Now, yesterday, counsel, My Friend Mr. Hacault, asked you whether you had any corrections you needed to make and one (1) of the corrections that you indicated you needed to make was on table 5.1.

And rather than going back to table 5.1 from your evidence, that was the supporting data for figure 5.1, which has now been updated in this IR, correct?

MR. PATRICK BOWMAN: Right, and the correction was to note that what was labelled there implied I was dealing with the load forecast sales at the metre, and I wanted to make it clear I was doing the load forecast gross load value.

MR. MATTHEW GHIKAS: Okay. So let's -- let's just -- if we can scroll down one (1) page in this MIPUG IR response. So this is the updated table 5.1. Correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And although in response to M. Hacault's question, you didn't make a change to this IR response. The same change would apply to this table as well, correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And that -- that change being that if we look at the top grouping of -- the top grouping of numbers here, in the -- in the line where the cursor is floating "domestic sales net of DSM," that would be gross firm energy out of DSM, correct?

MR. PATRICK BOWMAN: Right. And just so that everyone understands what that is. When Hydro runs a load forecast, they build up from the customer usage. They add on to that customer usage things they know they need to commit to, like, construction power and -- and station service. They calculate line losses associated with that load so they can figure out how many kilowatt hours are being produced at the generators.

And then from that, they define a surplus that they can consider for -- for export purposes or contracting. That surplus could also bring with that more line losses. So this isn't all of their line losses and gross load. It's effectively the component that ties to the domestic -- the domestic load.

MR. MATTHEW GHIKAS: Okay. So just to carry on with what I was saying here, so in the second part of this table there is -- it's -- the second part of the table's dealing with MH16 Update with interim and the same entry -- same line appears there that also would read "gross firm energy, net of DSM," correct?

MR. PATRICK BOWMAN: It -- it would and -- and again, if I was seeking precision, I would probably say, you know, at the 7.9 percent scenario to emphasize that it's -- it's misaligned with the costs above.

MR. MATTHEW GHIKAS: And just to build on that point that you've just made, sir, that gross firm energy is, essentially, measured at the generator, correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And when the electricity is transmitted through the transmission lines from the generator to someone's house, there are line losses, correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And the -- there are, as you indicated, there's also own use electricity that goes into, essentially, powering the station and the like?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And so in order to get the amount that's actually sold to customers, we need to deduct those line losses, and various other amounts for own use, et cetera, from the

-- the gross firm energy, correct?

MR. PATRICK BOWMAN: Right, and that would throw one (1) more variable -- like a further step on -- on to this, yes.

MR. MATTHEW GHIKAS: Right. And the difference between "gross firm energy" and -- and the amount that is actually measured at the metre is quite significant, isn't it?

MR. PATRICK BOWMAN: The losses are -- are quite large, you know, construction power's not -- not -- you know, not nearly as large.

MR. MATTHEW GHIKAS: The figure I've heard is that it is approximately 14 percent. Does that sound about right to you?

MR. PATRICK BOWMAN: It sounds about right. It's going to -- one -- one of the -- one of the reasons I would look to the generator level is because as soon as you add on the line -- average line losses you come up with sort of this average that -- that is a mishmash of transmission and distribution losses. For some customer classes they don't use distribution, so instead of fourteen (14) residentials they'd have more commercials that have less.

So whenever you -- as -- as you take a unit cost and try to move closer and closer to the metre, people start to think they're getting closer and closer to the rate but they really aren't. There's still so many steps between that and the rate. So it's -- it's one of the reasons to -- to keep a bit of that noise out of the analysis.

MR. MATTHEW GHIKAS: Okay. And just for the record, there's a calculation PUB-MFR-65 that shows the deductions from gross firm energy to general consumer sales.

Now, when -- I have to say, Mr. Bowman. I was actually very surprised when you answered the question that Mr. Hacault posed to you about the correction here; that your answer was that the wording "domestic sales net of DSM" was the error rather than the data line -- rather than you having used the wrong data to present domestic sales net of DSM.

But your evidence is that you had intended to use "gross firm energy, net of DSM;" is that right?

MR. PATRICK BOWMAN: Yes, absolutely, and to emphasize that, when we prepared the exhibits, you know, the -- the -- one will run their tables in the -- in Excel and then go ahead and generate the graphs and if you see the -- take a look at the graphs you'll note that on the side, I -- I went to some

length to not say that this was a rate or this was a -
- it was net unit cost to Hydro's domestic system
implying that it was needing to buy the entire system,
including -- including the -- the losses.

It's when we finally go back and paste in what we did in the Excel sheet that sometimes the row of labels are -- are not gone over as carefully as they need to and I -- do apologize for that.

MR. MATTHEW GHIKAS: Okay. And I'm not -- I'm not criticizing you for making a mistake. These things are -- are complicated. I'm just more interested in -- in which is the right number to be using. And we'll come back to this in a moment, but it -- it -- let's -- maybe I can just go to your report at page 5-4 for a moment or 5-2, I should say.

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: So we already looked at this, but you indicated that in line 6, when you're explaining what that graph is supposed to be, we shouldn't be reading that as domestic kilowatt hours sold. We should be reading that as average cents per unit per kilowatt hour gross firm energy at generation, correct?

MR. PATRICK BOWMAN: I believe we earlier agreed on the word 'produced', which -- but either is fine.

MR. MATTHEW GHIKAS: Okay. And just to make sure we're absolutely clear about where the changes are, in -- in the page 5.4, line 7, when you're explaining this, what table 5.1 is doing, and you're saying, Adding up all of the costs of Hydro's income statement less the export revenues to help pay for these costs and dividing by domestic sales, see table 5-1 before, you should be saying, dividing by gross firm energy at generation or energy produced. Is that right?

MR. PATRICK BOWMAN: Yeah, that would be clearer.

MR. MATTHEW GHIKAS: Okay. And if we go to your background paper on page B7, and we look at the last line, this is talking about figure B -- or the figure above B2. That's this -- the net costs paid by domestic ratepayers, the one in your slide, and then you say, But the picture looking at the -- looking to average rates to be paid, divided by total sales is provided in B3.

Again, that should say, divided by gross firm energy and not sales. Is that right?

MR. PATRICK BOWMAN: That would be clearer.

MR. MATTHEW GHIKAS: Okay. Now, I'd suggest to you, sir, that when -- that the -- the choice here between doing gross firm sales at generation and doing it at the meter has a different impact on the lines on the graph. On each of those lines in the graph, the impact is going to be diff -- there's going to be a change in the relative position among those lines if you were to use the net meter rather than -- or the sales rather than generation?

MR. PATRICK BOWMAN: So if we start with the number in the denominator that is costs on which there is no dispute, the issue becomes -- or sorry, in the numerator, the issue becomes, in the denominator, the sales number you divided by. And if your suggestion is if you use one (1) type of number in the -- in the denominator, you'll get one (1) value, and if you use a number that's 14 percent lower, you'll get another value, that is true.

Your axis will change, but the -- the ordering of the lines and the relative positions of the lines shouldn't change if they're all being adjusted by the same -- same losses, the same 14 percent, unless there's something that's happening in

Hydro's losses between NFAT and now, but it -- that was --

MR. MATTHEW GHIKAS: You're -- you're taking --

MR. PATRICK BOWMAN: -- beyond the level of analysis.

MR. MATTHEW GHIKAS: You're taking 14 percent of a larger number in one (1) case, and 14 percent of a smaller number, and you're subtracting it?

MR. PATRICK BOWMAN: Right, but let's be very clear, we did exactly the same thing for NFAT scenarios as we did for a fourteen (14), as we did for a fifteen (15), as we did for a sixteen (16). So all -- if you want to adjust them, you will have changed the sales level in all of them by 14 percent.

MR. MATTHEW GHIKAS: I -- I understand that, but that -- the -- the starting number is different. And so when you take 14 percent of a larger number, you get a different line loss number than 14 percent of a smaller number?

MR. PATRICK BOWMAN: You get a different absolute value, a different -- a different numerical value. But we're -- we're -- this is not plotting of a value. This is plotting a ratio, a ratio between costs and load. So if you change the load on each of those lines, but you always change it by the same percentage, your ratios will change, but they will all change in same direction, the same way.

MR. MATTHEW GHIKAS: The relative size of your denominator is changing, isn't it?

MR. PATRICK BOWMAN: Yes, always by the same percentage. So you could -- you could do what you're talking about by taking the -- the vertical axis and shifting it by 14 percent.

MR. MATTHEW GHIKAS: All right. Well, I've -- I've -- I think I've bored people enough with mathematics here. Let's -- let's turn to why I said I was surprised. We can agree to disagree on the -- on that point, Mr. Bowman, but in terms of what I was surprised, let's -- you're -- you're trying to determine the cost borne by ratepayers for each kilowatt hour. That's the purpose of this unit cost comparison, right?

MR. PATRICK BOWMAN: Well, the purpose of the unit cost was to take the -- the overall cost picture for -- that shows that costs today are almost -- in their IFF16, are almost the same as projected in the base case at NFAT, before you do the necessary adjustments for IFF16 for the things that you and I discussed and I understand is coming. But that -- and to try to take that one (1) more step and say, But we also have this reduction in -- in domestic load forecast, and what does that do to us? So it's -- it's trying to add one (1) more step and turn it into a -- a, like I say, a unit cost.

MR. MATTHEW GHIKAS: Does Manitoba Hydro recover its costs over its sales at the meter or at the gross firm energy at generation?

MR. PATRICK BOWMAN: It recovers its costs over -- over sales.

MR. MATTHEW GHIKAS: And now if we back up and think about your calculation for a moment, the numerator in your calculation, here, of your unit costs, that is domestic costs, right?

MR. PATRICK BOWMAN: That is domestic -- that is domestic costs, correct.

MR. MATTHEW GHIKAS: And you calculate that by taking Manitoba Hydro costs and backing out export revenues, right?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And it's --

MR. PATRICK BOWMAN: And it's shown on the table.

MR. MATTHEW GHIKAS: And -- and I'd

suggest you that export revenues are calculated based on energy after accounting for line losses on Manitoba Hydro's systems, sir?

MR. PATRICK BOWMAN: Well, export revenues, they are measured in dollar terms, not a kilowatt hour term, so it -- it's the dollars received.

MR. MATTHEW GHIKAS: Right, the dollars received at the point of receipt?

MR. PATRICK BOWMAN: The -- the dollars received at -- at the point of -- I'm not sure where the dollars are received, but Hydro's paid a certain amount for exporting energy. That's the amount they're paid.

MR. MATTHEW GHIKAS: And the -- the amount of export -- the amount of energy exported doesn't include all of the energy that's been lost transmitting at energy across Manitoba Hydro's system, does it?

MR. PATRICK BOWMAN: No, and it doesn't include the energy that will be lost by Minnesota's transporting it over their system. It's -- it's -- there's a -- the point of delivery, and Hydro is -- is paid for delivering energy.

MR. MATTHEW GHIKAS: So your -- your

numerator is explicitly -- or implicitly, I should say, assuming line losses have occurred with the exports, but you're intending not to do the same thing with the denominator. Is that correct?

MR. PATRICK BOWMAN: I'm -- I'm not sure how to understand that question. The exports is a dollar value received. It's measured in dollars. It has no kilowatt hours built into it whatsoever. It's straight off the income statement.

MR. MATTHEW GHIKAS: And is the -- is the person buying the exported energy in Minnesota? Are they buying -- are they paying for -- for kilowatt hours that they didn't receive because they were lost on Manitoba Hydro's system?

MR. PATRICK BOWMAN: No, and -- and there -- but no dollars are built in for that. The dollars are simply dollars, just dollars received.

MR. MATTHEW GHIKAS: All right. If we can go to Manitoba Hydro's rebuttal evidence for a moment. That is Manitoba Hydro Exhibit 52, on page 3, 3 of 78. Sorry, the hard -- the hard copy 3. Right.

So Manitoba Hydro, in its rebuttal evidence, re-created your graph. And you'll see -- you'll see on line 3 on page 3 there's a footnote that it's been reproduced using domestic sales net of DSM as measured at the meter under the same basis that energy and DSM savings are expressed.

Do you see that?

MR. PATRICK BOWMAN: I see a note.

MR. MATTHEW GHIKAS: Okay. Did you -- did you have occasion to confirm the calculations on this table?

MR. PATRICK BOWMAN: I -- I don't have calculation on a table. I just have a -- a picture, Mr. Ghikas. I did note that the -- the picture, in what it's attempting to convey.

MR. MATTHEW GHIKAS: Right. And that -- that -- one (1) of the things it's -- it's showing is that -- that the red line is up near the top of the shading, correct?

MR. PATRICK BOWMAN: Right. And it's because Hydro's used a different scenario than I have.

MR. MATTHEW GHIKAS: So you -- you haven't done -- you haven't verified any calculations that went into this table or anything like that?

MR. PATRICK BOWMAN: I don't know how I -- I don't see the calculations that -- that go into the -- the table, sir, and -- and I -- so I haven't gone off and tried to -- tried to do it myself. As I noted, one (1) of -- one (1) of the separate issues why sales would have been difficult to use is because you always have to take a load forecast and adjust for DSM, and we don't always have, in every year, Hydro's consistent load forecast and DSM forecast measured in a way that you can calculate the sales.

So even when I went to go do it, and -- and your team had sent us the -- the updated data yesterday or the day before, Tuesday, it had to reference documents from multiple GRA to try to find all the numbers for -- for -- that I would have had to go hunting for to try to reproduce something like this. And some of them were from cost of service filings and the like. I don't have a quick reference to a hundred thousand pages, and I believe some of them may not even have been available.

But the key to this graph, as I understood it, is to cut off at 2027, ignore everything before 2018, and change the scenario to focus on 2021. That's why the -- the line is different.

MR. MATTHEW GHIKAS: All right, Mr. Bowman, let's -- back on -- let's change gears slightly, here, and talk about -- you'll recall when we -- we were -- when you're looking at page 1-4 of your report, the -- one (1) of the things that you had cited was -- as a -- as a cause for the difference in the original five point one (5.1) between the three point nine-five (3.95) currently, the orange line versus the NFAT lines, was accounting treatment, right?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And you'll see that if we can turn to your report, page 5-4 --

MR. PATRICK BOWMAN: Actually, give -- can I just have a moment to read that section that you just had before me?

(BRIEF PAUSE)

MR. PATRICK BOWMAN: My -- my phrase is:

> "A significant part of the deterioration from the ref case arises from Hydro's failure to properly implement the Board's directives on depreciation and integrated resources planning."

MR. MATTHEW GHIKAS: Right. And -- and if we -- if we go to 5-4, and you've listed -- you've said, actually, line 23, here, "absent these two (2) factors" -- and you're referring to the depreciation in one (1), and the changes to the DSM, the IFF scenarios in the future would more closely resemble the costs under the NFAT reference conditions. Do you see that?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Now --

MR. PATRICK BOWMAN: Probably in -- in retrospect, I could have added the other accounting changes as well. The -- the way treat -- Hydro is treating the overheads, although that's not as big a dollar value.

MR. MATTHEW GHIKAS: Okay. Did -- did you read BC -- or BC -- did you read Manitoba Hydro's rebuttal evidence regarding the actual impact of the accounting measures in the higher DSM?

MR. PATRICK BOWMAN: I did.

MR. MATTHEW GHIKAS: Okay. And would you agree with me, sir, that the impact of the lower export revenues, lower domestic demand, and higher capital costs dwarf the impact of the depreciation treatment?

MR. PATRICK BOWMAN: No, I wouldn't.

MR. MATTHEW GHIKAS: The -- okay, we can come back to that. The -- and would you agree with me that -- would you agree with Manitoba Hydro that the impact of those things dwarf the impact of -- of higher DSM?

MR. PATRICK BOWMAN: No.

MR. MATTHEW GHIKAS: They've characterized it as negligible impact and imperceptible?

MR. PATRICK BOWMAN: They have, and -- and incompletely inconsistent with what Boston told them, as well.

MR. MATTHEW GHIKAS: All right. In your opening presentation, sir, you -- you had an -- a discussion about the weighted average term to maturity being overstated as an issue, because the total impact of it was .015 percent per year over -- over the period, right?

MR. PATRICK BOWMAN: That's correct.

MR. MATTHEW GHIKAS: Okay. And you referenced -- you referenced a response to an undertaking follow-up in your -- in your slide deck, and I'd suggest to you that the impact associated with the accounting treatment that you're discussing was exactly the same size, point zero-one-six (.016) instead of point zero-one-five (.015)?

MR. PATRICK BOWMAN: I -- I'm not sure

-- I -- I'm sorry, I -- I -- perhaps I'm still hung up on the previous answer. I had referenced the point one-five (.15) and said that it was small, but I also noted that that was because since that number was calculated, half of it has also gone away from the way that the market had evolved. That was in Hydro's rebuttal evidence, so I -- I apologize.

I may have -- I -- I think your updated question was about accounting treat -- treatment, but I -- I realized I should complete the -- the previous answer, that the directive dealt with both the point one-five (.15) as of MH-16, and the fact that -- that half of that had -- had since collapsed.

MR. MATTHEW GHIKAS: Okay, so -- so if we had made it point three (.3) instead of point one-six (.16), it would have been significant, but now it's -- or instead of point one-five (.15). It's -- it's -- it would have been significant now at -- at point one-five (.15); it -- it isn't. Is that right?

MR. PATRICK BOWMAN: No, actually, the point one-five (.15) is based on the MH-16. So it's now up, presumably if it's half that, point-o-seven-five (.075). It's -- it's -- it changes the rate increase that one would otherwise use if you consistently use the -- the longer-term outlooks. It changes it by a less than one tenth (1/10) of 1 percent.

MR. MATTHEW GHIKAS: Okay.

MR. PATRICK BOWMAN: That -- that would be my understanding. Again, we haven't had updated scenarios run that update Hydro's treasury assumptions since then, because, you know, further, that's debating twelve (12) versus twenty (20), and we've heard that Hydro actually used eighteen (18).

So the -- there are -- there are room for updates. The long-term -- when we saw from their initial presentation, the long-term debt has come down since -- since those initial assumptions were done, and that they've -- they've, as a result, gone to a -- a longer weighted average term in this year. So I think the -- the update values are not available.

MR. MATTHEW GHIKAS: Okay. Well, let's --

MR. PATRICK BOWMAN: Now, you were talking about accounting changes, though.

MR. MATTHEW GHIKAS: All right. Accounting changes, sir, you'd agree with me, they have no impact on actual cash flow, right?

MR. PATRICK BOWMAN: Accounting changes do not generally have impact on cash flow, correct.

MR. MATTHEW GHIKAS: All right. Now, one (1) of the analyses that you did in section 5 was to compare absolute levels of debt relative to the NFAT, correct?

MR. PATRICK BOWMAN: That's correct.

MR. MATTHEW GHIKAS: And you presented that information in figure 5-3 of your report on page 5-8, correct?

MR. PATRICK BOWMAN: I -- I did. I actually -- I'm afraid that when I went back a question, I missed a question between where you put to me a -- an impact of accounting changes, and my recollection is, you had put to me a small number that I don't believe was supported by the -- the exhibit you had put out. The exhibit you had -- had pointed me to showed that the change was more as it -- in the range of half a percent, but if you want to go through that, I'm happy to, but we can move on to the topic you're on now, if you --

MR. MATTHEW GHIKAS: Are -- are you looking at that -- are you looking at that document, or are you doing that by memory?

MR. PATRICK BOWMAN: It -- it was one (1) that we put into our book of documents of reference materials, and if you -- if you were -- were to look at the back of that document -- I don't -- don't know that you need to, but if you were to look at the back, it is the -- the undertaking that you had referenced me to --

MR. MATTHEW GHIKAS: It's Manitoba Hydro Exhibit 93?

MR. PATRICK BOWMAN: 93, right. And if you look at the difference between the Coalition MH-19-2 scenarios, which were the -- the ones were run with -- without accounting changes and some other factors, they were in the range of the low fours (4s), four point one-four (4.14) with a -- with a -- a given WATM, and four point three-four (4.34) with the -- the alternative twenty (20) year WATM. But if you went down to the scenarios where we put in accounting changes, you'll see that that drops into the mid three (3) -- three point five-seven (3.57), in fact.

MR. MATTHEW GHIKAS: If you go to the previous page, though, sir, you'll see the -- of MH-93, page 13 of 14, MIPUG's accounting changes the even annual rate impact is noted as 0.16 percent rate above the debt terming impact, being 0.15 percent, which is the figure that you cited in your slide?

MR. PATRICK BOWMAN: Right. And this

is the part we haven't been able to confirm, but the -- the only critical assumption here is that the deadline had changed and the -- the accounting changes had changed.

But if you wanted to talk about the depreciation, which I understood was your point, I had put in the -- in the direct evidence that this is in excess of -- of $352 million over the first ten (10) years, and that ongoing over the rest -- remaining of the twenty (20) years, it was $80 million a year. So that would be another 800 or so million. So it's well over a billion dollars by the end of the period.

MR. MATTHEW GHIKAS: And the debt terming, sir, was 500 million more than the three hundred and fifteen (315) you just cited?

MR. PATRICK BOWMAN: The debt terming doesn't continue. The debt terming -- the -- the -- I'm happy to go over that as well, but the debt term -- the thing with the debt terming is it's this transient period. You get to capture that. It crosses over. If you'll remember the -- the graphs in the initial presentation that I was a little short on time and I may not have spent as much time on it as we needed, but --

MR. MATTHEW GHIKAS: Okay. Mr.

Bowman, let's -- let's rein this in. I want to get back to your report, absolute levels of data, okay?

MR. PATRICK BOWMAN: All right.

MR. MATTHEW GHIKAS: Let's move this along. Figure 5-3 on page 5-8 of your main report. So this is one (1) of your significant analyses in your section 5, right?

MR. PATRICK BOWMAN: It is one (1) of the comparisons we did, correct.

MR. MATTHEW GHIKAS: And it featured in slide 32 of your presentation -- and for good measure, it also featured on slide 11 of Mr. Osler's, right?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And it's included in your supplementary papers, paper A, the whole paper is called 'Manitoba Hydro Debt Levels'?

MR. PATRICK BOWMAN: Yes, we -- when we came into this GRA, and -- and Hydro's opening sentences are -- are about, you know, effectively, Gosh, our debt is so high. It sort of shocked some of us who were at NFAT and watched these type of numbers be shown. So we wanted to put it into context.

MR. MATTHEW GHIKAS: And one (1) of your points that you indicated in -- on -- on page 5-8 at line 11, was that you say the IFF16 update with interim three nine-five (3.95) was still topping out near the same maximum at the worst of the risk range from NFAT. That -- so that was your point, right?

MR. PATRICK BOWMAN: That's right. The highest point of the line there with the, gosh, orange -- the dash -- the longer dashed lines which is marked MH-16 with interim three point nine-five (3.95) is, you know, approximately the same range, although it happen -- it occurs later in the -- in the NFAT numbers.

MR. MATTHEW GHIKAS: So if we look at that figure that you're pointing to, it's already above the shaded range, which you're referring to as the worst of the risk range from now until 2032, correct?

MR. PATRICK BOWMAN: Correct.

MR. MATTHEW GHIKAS: So that's twelve (12) years in a row of being worse than the worst of the risk range at NFAT. Is that correct?

MR. PATRICK BOWMAN: Right.

MR. MATTHEW GHIKAS: In the NFAT, worst of the risk range was only at that level for one (1) or two (2) years?

MR. PATRICK BOWMAN: It was, and it's

-- it's part of the -- yes, that -- it was at that level when there was some back-end investment.

MR. MATTHEW GHIKAS: Now, when making a comparison like this, sir, between the financial forecast, you'd agree with me it's important to present each line on an apples-to-apples basis?

MR. PATRICK BOWMAN: I -- I would, and I -- but I think apples-to-apples might be a little trite. It -- it depends on what you're trying to show as to what -- which of the apples.

MR. MATTHEW GHIKAS: Okay.

MR. PATRICK BOWMAN: What you're trying to assess, I guess, is more accurate.

MR. MATTHEW GHIKAS: All right. Well, let me -- let me break it down, then. If it -- if that's too trite, let's go into the detail.

The heading of this is 'Manitoba Hydro Net Debt Under NFAT Scenarios and the Updated IFF Scenarios'. Do you see that?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. Net debt, sir, you'd agree with me, is the debt net of sinking funds and cash?

MR. PATRICK BOWMAN: Okay, yes.

MR. MATTHEW GHIKAS: And --

MR. PATRICK BOWMAN: And -- and inclusive of -- of current portions, which are not normally reported as part of the debt, yes.

MR. MATTHEW GHIKAS: And the reason we would net out the cash in the sinking funds is because those resources are actually available to pay for debt if necessary, correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And the sinking fund is essentially an amount that's held in anticipation of debt maturity, right?

MR. PATRICK BOWMAN: Right. They're pretty small, though. That's -- just remember that the -- the --

MR. MATTHEW GHIKAS: Well --

MR. PATRICK BOWMAN: -- it's not like Hydro has huge sinking funds it could -- in relation to the size of its debt.

MR. MATTHEW GHIKAS: On a forecast basis, sir, they get up to the 1 billion range, don't they?

MR. PATRICK BOWMAN: Yeah, but I don't think -- they're not in the tens (10s) is the -- the key thing that -- I don't want the record to show that somehow, there's a sinking fund. This -- this is real

-- this is -- these are the big numbers. The sinking funds are not offsetting this in a big way.

MR. MATTHEW GHIKAS: Well -- well, let's see about that. You used net debt for the IFF16 update of three point nine-five (3.95), right?

MR. PATRICK BOWMAN: I used net debt for the IFF16 that Hydro prepared with interim three point nine-five (3.95).

MR. MATTHEW GHIKAS: Okay. And --

MR. PATRICK BOWMAN: You know --

MR. MATTHEW GHIKAS: -- and you did the same with seven point nine (7.9), right?

MR. PATRICK BOWMAN: I -- I did, although I -- I just want to be clear on that, there are numbers that go into the calculation of net debt, and -- and Hydro made a big point of that with regard to the exhibit we were just looking at, that are not available to people who are not within Hydro. They're -- in the IFF, it rolls some of those up, for example, current liabilities includes the current portion of debt, but it mixes it in with other types of current liabilities.

So if you're not within Hydro, you don't have those type of -- of calculations, and you can't run them on every scenario.

MR. MATTHEW GHIKAS: So you -- you just ignore them? Is that correct, sir?

MR. PATRICK BOWMAN: No, we put in -- in -- we -- we put in a consistent estimate for them that we've used through many different areas.

MR. MATTHEW GHIKAS: Okay. Let's -- let's see about that. When it came to the actuals, the NFAT lines and the shading, sir, I'd suggest you that you neglected to net out the sinking funds and the cash. Is -- is that correct? You -- are you aware that you did that?

MR. PATRICK BOWMAN: Well, we would take the -- the long-term debt off of Hydro's balance sheet, and we would add to that an amount of 500 million, which is a -- a normally estimated amount for all of the other adjustments that we talk about, like current portions and -- and the like.

MR. MATTHEW GHIKAS: So you took -- you took long-term debt, you added 500 million. We'll come to that. You've added 500 million for the current portion of the long-term debt. Where's the netting happening when you did it for the NFAT lines, the shading and the actuals? What's net about adding two (2) things together?

MR. PATRICK BOWMAN: Well, the -- I'd

have to go back and look at the -- the numbers. The only thing we do an adjustment to is to add 500 million. It's consistent with the way we've done it through a number of these hearings, and it -- and -- and it's intended to deal with the remainder of the adjustments, and it -- it usually is -- leads to a number that's fairly close to Hydro's. That's all I can say. We don't have numbers beyond that.

MR. MATTHEW GHIKAS: Okay. Well, you -- you referenced PUB/MFR-15 as the source for some of the actual data. So maybe we can look at that quickly.

(BRIEF PAUSE)

MR. PATRICK BOWMAN: Is this in -- in your book?

MR. MATTHEW GHIKAS: No, it is not. MFR-15, please. So if we look at the numbers you used for the actuals, you're referring to the total debt line, correct? The total debt column, that's what you used?

MR. PATRICK BOWMAN: Off of this page, that's the reference.

MR. MATTHEW GHIKAS: And footnote 2 at

the bottom is electric total gross debt, which includes long-term and -- debt and short-term debt, correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. Not net debt, right?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And one (1) of the other footnotes that you use is MIPUG/MH-1 dash -- sort of -- Round 1-2(g) as a source for your actuals. And maybe we could look at that. Page 3 of 3.

(BRIEF PAUSE)

MR. PATRICK BOWMAN: I -- I don't have that IR. I'm sorry.

MR. MATTHEW GHIKAS: It's coming up.

MR. PATRICK BOWMAN: Yeah, okay.

MR. MATTHEW GHIKAS: It's coming up, yeah. And so this one you cited as a source for actuals. And you'd agree with me that the IR here asked for long-term debt, and that's total long-term debt is what's provided in the second to last column?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Not net debt?

MR. PATRICK BOWMAN: It's -- it's less the total long-term debt. I can't see what it asks for. If you move -- go back --

MR. MATTHEW GHIKAS: If you go up one (1) page, you can see -- two (2) pages. Right at the bottom, (g).

So you see your request was for long-term debt?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And in footnote 105, you also referred to an NFAT exhibit, Manitoba Hydro-104-12-3 update, and that is an epic run of data at the -- and so we can -- we can go there, if you like, sir, but you'd agree with me it might be easier -- this is -- for the -- for the record, it starts -- this was what you used to get the information for the base case, right?

MR. PATRICK BOWMAN: Not this sheet. This is an income statement.

MR. MATTHEW GHIKAS: One (1) down.

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And you used that long-term debt line --

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: -- that's highlighted? Okay. Not net debt?

MR. PATRICK BOWMAN: I'm -- I'm reminded that the -- that to deal with the current portion, we've put in an estimate of five hundred (500).

MR. MATTHEW GHIKAS: Right. So you've added to it, but you haven't netted anything out?

MR. PATRICK BOWMAN: No. No, no. It's -- that's --

MR. MATTHEW GHIKAS: Okay.

MR. PATRICK BOWMAN: -- that's -- that's meant to capture the -- the adjustments, as I said, the traditional range of adjustments.

MR. MATTHEW GHIKAS: And for the shading, you took a similar data for the shading on your graph, correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. Now, you've referenced that you added to it, 500 million to represent the current portion of long-term debt, right?

MR. PATRICK BOWMAN: Well, we don't have -- as -- as you'll see on this sheet, the -- there's a row called 'current and other liabilities', which includes a -- a great range of other things that isn't normally broken out for us.

MR. MATTHEW GHIKAS: Okay. Let's --

MR. PATRICK BOWMAN: This -- and -- and I'll just say, Mr. Ghikas, I think all this is set out in the footnote below the chart, and -- and to the best of my knowledge, these are done -- that -- that all the scenarios are done consistently.

MR. MATTHEW GHIKAS: Okay. The -- the current ones, though, sir, you'd agree with me that IFF16 scenarios, those are done on the basis of net debt, aren't they?

MR. PATRICK BOWMAN: Yes, that -- that's possible. Yes.

MR. MATTHEW GHIKAS: Okay. It's -- it's more than possible. That is how they were prepared, wasn't it?

MR. PATRICK BOWMAN: Well, I'm looking at the references.

MR. MATTHEW GHIKAS: All right. And you --

MR. PATRICK BOWMAN: Give me a moment to read the footnote.

(BRIEF PAUSE)

MR. PATRICK BOWMAN: Their -- their -- my understanding is they come from the IFF. I would have to go back and review the file.

MR. MATTHEW GHIKAS: Okay. Well, if -- if you determine that you did use something other than net debt for your IFF16 runs in that figure, you can let us know through My Friend Mr. Hacault. Now...

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: Mr. -- it's -- if Mr. Bowman wants to do that, he's welcome to do it. I'm not going to leave it with him as an undertaking. Page --

THE CHAIRPERSON: Sorry, could we -- I'd be interested to get his response, though, if --

MR. MATTHEW GHIKAS: Okay.

THE CHAIRPERSON: -- if he's planning to do it.

THE CHAIRPERSON: I mean, he's -- he's looking at numbers and calculating numbers.

MR. MATTHEW GHIKAS: Okay.

THE CHAIRPERSON: We don't know if it's an informal request or if it's an undertaking, but either -- either way we don't have a response from him.

MR. MATTHEW GHIKAS: All right. That's fine.

CONTINUED BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: Will you accept, subject to check, sir, that you used net debt for the IFF6 runs?

MR. PATRICK BOWMAN: Yes, and I -- and I will check it. I -- I do recall that when -- when we received the rebuttal of the issues that Hydro raised, we did go through and -- and double check and I -- I just can't recall if this was an issue Hydro raised in the rebuttal or not. But -- but I will make -- make a point of checking.

MR. MATTHEW GHIKAS: Okay. With respect to adding 500 million as a proxy for the current portion of the long-term debt in this figure, sir, you -- and if you go to MIPUG/MH-1-2(g), page 3 of 3, this is one (1) f the IRs you si -- you cited. You can see the current portion of the long-term debt is listed there in the middle column.

You see that?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: It's -- it's

listed back to 1980.

MR. PATRICK BOWMAN: I'm sorry, my mic wasn't on. Yes, I see it there, although that wasn't the reference we used. It was -- the -- the reference we used was in the footnote.

MR. MATTHEW GHIKAS: Yes, I -- I know you didn't use it, sir. And -- and I'm just wanting you to confirm for me, subject to check, that there have only been five (5) years since 1980 when the current portion of the long-term debt has been anywhere as high as 500 million.

You'd accept that? Five (5) years out of thirty-seven (37)?

(BRIEF PAUSE)

MR. PATRICK BOWMAN: Mr. Ghikas, I just was clarifying one (1) thing. The -- I -- I can't see the -- I'm not sure I'm seeing the entire page. But when we use 500 million, it's a -- it's a more updated number, and it's only applied to the scenarios for which we don't have a net debt. And it's possible it's high as -- as you show in that graph. And if anything, that would have a tendency to skew the -- the NFAT type scenarios where we don't have a net debt number upward of the...

MR. MATTHEW GHIKAS: Mr. Bowman, switching gears here.

MR. PATRICK BOWMAN: I would -- I should say, though, I -- with the -- the size of the current portion varies with the size of the overall portfolio in a sense. So that's why the more updated values we use from 2017 to '22 should be more representative, I believe, than looking back at what it was in -- in, you know, '95 or something.

MR. MATTHEW GHIKAS: Mr. Bowman, switching gears here. Would you agree -- if we could go to MFR-14 for a moment. And if we can scroll down to the financial information there. So we have this -- this information. It presents -- toward just to the right of centre you've got a column with retained earnings there.

And would you agree with me, sir, that 2.1 billion of the retained earnings on Manitoba Hydro's books today was from before 2009, subject to check?

MR. PATRICK BOWMAN: I'm sorry, it's hard to read across the rows, but I assume you're referring to two-zero-seven-six (2,076) in the 2000 -- that the 2009 row?

MR. MATTHEW GHIKAS: Yes.

MR. PATRICK BOWMAN: Yes, two thousand (2,000) -- yes.

MR. MATTHEW GHIKAS: It's about 75 percent of today's retained earnings?

MR. PATRICK BOWMAN: Yes, on -- and -- well, today's retained earnings are -- are -- well, 2016 is reported there at two-point-eight-two-eight (2.828), so I'm not sure that's 75 percent.

MR. MATTHEW GHIKAS: Okay. All right. And 2.5 billion predated 2012?

MR. PATRICK BOWMAN: That's what that shows, yeah.

MR. MATTHEW GHIKAS: Okay.

MR. PATRICK BOWMAN: If I'm -- again, I think that says two (2) -- oh, sorry. Two-five-four-two (2,542), I believe, is the row 2013. Or were you referring to two-four-five-o (2,450) in row 2012?

MR. MATTHEW GHIKAS: Two-four-five-o (2,450). If you want to call it two-four-five-o (2,450) --

MR. PATRICK BOWMAN: So two-four-five-o (2,450) was 2012. Correct.

MR. MATTHEW GHIKAS: Okay. And that's about 90 percent at today's level?

MR. PATRICK BOWMAN: Yes, yes.

MR. MATTHEW GHIKAS: Okay.

MR. PATRICK BOWMAN: That -- that's the idea of building up the retained earnings during the periods where you're doing lesser capital, although this has Wuskwatim in it, of course. But, yes.

MR. MATTHEW GHIKAS: And so that means 90 percent is from more than five (5) years ago; right?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And Manitoba Hydro has had fourteen (14) straight years of above-average water levels?

MR. PATRICK BOWMAN: Well, the drought was 2004. So I don't know if that's fourteen (14), it's in that order.

MR. MATTHEW GHIKAS: Okay. Retained earnings, or the equity on the books, that's not cash; as it, sir?

MR. PATRICK BOWMAN: It's -- it's reported off the balance sheet. It's not -- it's not trying to represent cash.

MR. MATTHEW GHIKAS: Right. It's not a fund that's sitting there waiting to be invested, for example?

MR. PATRICK BOWMAN: No.

MR. MATTHEW GHIKAS: It's -- essentially, it's a voided debt; correct? It's the sum of the net income over all of the years, less any dividends paid out. It's a voided debt. A voided debt makes you -- makes you -- you say it sound a lot more like cash. It's the -- it's the sum of the retained earnings.

MR. MATTHEW GHIKAS: Okay. You haven't considered the extent to which further debt financing during a drought would jeopardize Manitoba Hydro's self-supporting status; have you? You didn't -- that wasn't part of your retainer?

MR. PATRICK BOWMAN: There is no specific reference to debt financing during a drought. I was -- I was here through the 2004 drought and testified. And I was here for many hearings since then, where we looked extensively at Hydro's risks and the fact that if they have a drought they would need to finance significant amounts of debt.

And I was here when Hydro's witnesses testified at length about how those were -- were transient effects and -- and that markets understood that. But I -- I wasn't -- there's no -- no new analysis done as part of this hearing.

MR. MATTHEW GHIKAS: Now, maybe I can switch to you, Mr. Osler for a morning -- a moment here. One (1) of the themes that came up was comparing back to the time of Limestone. And MFR-14 here has some historical information on it.

Just in terms of the debt levels at the time of Limestone based on -- on MFR-14 here, Manitoba Hydro had about $4.5 billion in debt?

(BRIEF PAUSE)

MR. CAMERON OSLER: Yes, 4.5 billion in 1993, and Limestone is on the system by then.

MR. MATTHEW GHIKAS: It's around that time; correct? And today it has about 18.6 billion?

MR. CAMERON OSLER: Sorry, I didn't hear you?

MR. MATTHEW GHIKAS: And today Manitoba Hydro has about $18.6 billion in debt?

MR. CAMERON OSLER: That's not on this graph.

MR. MATTHEW GHIKAS: You'd agree with me that's -- that's about right, Mr. Bowman?

MR. CAMERON OSLER: I'll accept that

and --

MR. MATTHEW GHIKAS: Okay.

MR. CAMERON OSLER: -- Mr. Bowman is on top of those numbers. I'm not.

MR. MATTHEW GHIKAS: Okay.

MR. PATRICK BOWMAN: I'm actually not on top of memorizing the numbers from -- from month to month, if you like. But, you know, the -- the debt graph is as we showed it.

MR. MATTHEW GHIKAS: Okay. It's around $18.6 billion, Mr. Bowman; right?

MR. PATRICK BOWMAN: Or in that order.

MR. MATTHEW GHIKAS: We don't have to make this difficult. It's around that level.

MR. PATRICK BOWMAN: No, no, no. I just want to testify to things that are within my knowledge at -- at hand.

MR. MATTHEW GHIKAS: Okay. And that would be about 4.400 percent higher than 4.5 billion?

MR. CAMERON OSLER: Sure, yes.

MR. MATTHEW GHIKAS: And following the 3.95 percent rate path, by 2024 Manitoba Hydro would have approximately $25 billion in debt, Mr. Bowman?

MR. PATRICK BOWMAN: Twe -- twenty (20) -- you know, around twenty-five (25) is the type numbers we were -- we were looking at. Twenty-four (24), some -- somewhere in there. I have -- again, I have that -- that scenario. But again, that's based on the -- the IFF with all the issues we talked about in the IFF, like -- like, conservatism in -- in export price forecasting and the like.

MR. MATTHEW GHIKAS: And 25 billion would be about 500 percent higher than the debt at the time of Limestone; correct?

MR. PATRICK BOWMAN: Well, it's -- it's higher on an absolute basis. Absolute basis doesn't tell you anything about what it means for rates. For that you need to look at the interest costs, which we dealt with at page A11 of the background papers.

MR. MATTHEW GHIKAS: Okay. And the debt -- or this --

MR. PATRICK BOWMAN: The debt -- the debt rates were different at Lime -- at the time of Limestone.

MR. MATTHEW GHIKAS: Interest rates were higher then; right?

MR. PATRICK BOWMAN: Yes. And as a result, we -- we looked at the -- in terms of what Hydro is paying its external lenders -- actually if we go to page A11 of the background papers it may be helpful. It's what Hydro pays externally to get its debt for now compared -- they we are. Scroll down. This is -- this is the -- the amount Hydro pays for debt in relation to the capability of its system.

And it shows inflation going back to 1994 when we came out of Limestone and what we're -- what -- what we've got now with the -- the inflation imposed in terms of cost of debt for every kilowatt hour produced regardless of who its serving. That's before government charges.

MR. MATTHEW GHIKAS: And they're -- and they're 14 percent higher in real terms?

MR. PATRICK BOWMAN: That -- that's right. It takes us about -- about six (6) or seven (7) years for the -- and for them to -- for inflation to catch up, if you like.

MR. MATTHEW GHIKAS: And if you -- you're very -- when you add the -- if we were to go to page -- MIPUG/Bowman-23-- MIPUG/Bowman-23, yes, and figure 2 on that slide. Sorry, MIPUG/Bowman-23. It's an IR response.

(BRIEF PAUSE)

MR. PATRICK BOWMAN: These -- these -- are these the IRs that were asked of us by Manitoba Hydro?

MR. MATTHEW GHIKAS: That's right. Sorry, Manitoba Hydro's IR to MIPUG, yeah. And -- and figure 2 in that response. So this -- you reference that this is before -- this is before this -- the dates -- the starting date is different.

So the inflation starts from 2010, but the black is the impact of the of the guarantee fee; correct?

MR. PATRICK BOWMAN: Right. And the graph starts in 2010. So it's saying, you know -- you see our costs go up when add a plant. Yeah.

MR. MATTHEW GHIKAS: Yeah. So the -- this -- the change in real terms, even if you go back to the same date that you had used, 1994, the time of Limestone, if you add in those guarantee fees the increase in real dollars has increased -- increased significantly more than 14 percent; correct?

MR. PATRICK BOWMAN: Well, actually if we go back to background paper A, and the graph we were at --

MR. MATTHEW GHIKAS: Inclusive --

MR. PATRICK BOWMAN: -- and -- and

move down two (2) pages, it's got the graph with the -- with the debt guarantee fees in it.

MR. MATTHEW GHIKAS: Okay. Thank you.

MR. PATRICK BOWMAN: And you see what -- what's happened on the -- on the cost of debt side. And this -- we -- we were specific about 1994, so that we could show the impacts of a capital planning cycle, about how one (1) absorbs costs in the early years, and then has -- has the -- the years where it can -- it can deal with -- with building up the reserves in between. And then the costs go up when you at the plant.

But this was also to emphasize the extent to which interest and the debt is not necessarily the biggest driving factor. It's the government charges that have been added on, and how back in the day of Limestone when we were busy trying to integrate a very large plant, there was not a pile-on with government charges. And one (1) of the biggest problems we have today is trying to integrate this giant plant --

MR. MATTHEW GHIKAS: Sir, I'd suggest --

MR. PATRICK BOWMAN: -- with the government charges.

MR. MATTHEW GHIKAS: -- I'd suggest to you that's a bit misleading because the amount of debt has increased in absolute terms, and the guarantee fee is a function of the amount of debt; isn't it?

MR. PATRICK BOWMAN: Yes, but it's measured in -- the guarantee fee is measured in dollars. The dollars actually leave the Corporation.

MR. MATTHEW GHIKAS: All right. So --

MR. PATRICK BOWMAN: I don't -- I don't think it's misleading. I think it is -- it is measured in, you know, as a percentage of the overall debt. And as the interest rates have dropped Hydro's more and more paying a greater and greater percentage of what it pays on the dollars it borrows to the provincial government, not to the lender itself.

MR. MATTHEW GHIKAS: Okay. Mr. Osler, at the time of Limestone, over that period 1994, growth in domestic -- I should say between 1994 and the forecast going forward, domestic load has not kept pace with the debt levels; has it?

MR. CAMERON OSLER: Sorry, let's be clear. What -- between 1994 and when?

MR. MATTHEW GHIKAS: And the forecast for 2024, let's say. Debt's growing faster and --

MR. CAMERON OSLER: You're going

through a major period of capital expansion. It -- it always is growing faster than your loan unless you're unusually lucky.

MR. MATTHEW GHIKAS: All right. If we -- if we were to -- let's see here. And during -- during that period in the 1990s interest rates were falling; correct?

MR. CAMERON OSLER: I think Mr. Forrest went through the degree to which interest rates declined from the period in the 80s going into the mid-90s. I think by the time it got to about the mid-90s, they were -- I don't remember whether they changed a lot from the mid-90s to the late 90s.

MR. MATTHEW GHIKAS: Right. They -- their -- the Manitoba ten (10) year bond is -- is dropping from early 1990s up at 10 percent, and it's dropping since then; right?

MR. CAMERON OSLER: Mr. Forrest --

MR. MATTHEW GHIKAS: Mr. Forrest...?

MR. GERALD FORREST: Yes, you're correct.

MR. MATTHEW GHIKAS: Thank you. And today with interest rates we're close to historic lows; correct?

MR. GERALD FORREST: Yes.

MR. MATTHEW GHIKAS: And, Mr. Forrest, interest rate risk is asymmetrical when you're at historic lows? There's greater risk -- greater likelihood of increases relative to further decreases; correct?

MR. GERALD FORREST: Well, that's a difficult question to answer with any degree of certainty. The trend wouldn't appear to go in that direction, but I've lived long enough to recognize that sometimes you forecast into the future and your forecasts are not right.

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: Okay. And the Bank of Canada has been raising its benchmark rates, Mr. Forrest, in recent months?

MR. GERALD FORREST: Yes.

MR. MATTHEW GHIKAS: And now if we look -- I'm sorry to be jumping around. This is back to the MFR-14 that we were looking at previously.

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: MFR-14. Thank

you. And if we look at the net income, Manitoba Hydro earned 1.2 billion in net income between 1994 and 2003, subject to check?

MR. GERALD FORREST: You asking me?

MR. MATTHEW GHIKAS: Sure, Mr. Forrest.

MR. GERALD FORREST: Yes. Yes.

MR. MATTHEW GHIKAS: Okay. And Manitoba Hydro is expected to lose 400 million over the next ten (10) years at a rate trajectory of 3.95 percent?

MR. GERALD FORREST: I don't -- I -- I would refer to Patrick -- or Mr. Bowman.

MR. PATRICK BOWMAN: The exhibit that sets out the -- the one (1) that we would consider the best forecast of the -- of the twenty (20) year rate path is actually the -- my -- MH-93 that we had. And it has, as shown in the diagram, a 418 million net losses over six (6) years. That's -- that's the last page of the -- of the book of documents we handed out, which I wrote down as MIPUG-27, but I may have that wrong.

MR. MATTHEW GHIKAS: All right.

MR. PATRICK BOWMAN: If you scroll to the bottom of that, the MIPUG scenario put there.

That's the one (1) that goes across and shows that there is six (6) years of -- of losses in the total sequence. They total $418 million, and that this is still not doing the -- many of the adjustments we talked about.

For example, it's based on a load forecast with 7.9 percent. It doesn't have -- it had -- doesn't have the contract pricing adjustments that Daymark mentioned. And you can see at the top of the page how that compares to the assumptions that Hydro proposed when it came in and said it wanted to proceed with major development, which had 638 million in eight (8) years.

MR. MATTHEW GHIKAS: All right. Mr. Bowman, one (1) of the measures that you've cited in your report as a key measure is the capital coverage ratio; correct?

MR. PATRICK BOWMAN: I -- I may have set it as a key measure, just like many of the things you talk about I cited as key measures in order to assess Hydro's claims Starting from a blank slate -- blank slate, I have similar to maximum net debt, they would not be things that I spend as much time on as -- as some other targets. But in this hearing, because of the claims Hydro started out with, I said the capital coverage measure was important. I also said -- looked at it in the previous GRA.

MR. MATTHEW GHIKAS: Okay. I -- I'm quoting your words. You say:

"This -- this 1.0 level is a key measure during the early consolidation following the in-service of major plant."

I'm referring to page 511 of your evidence.

MR. PATRICK BOWMAN: 5 -- 511? Let me get that.

MR. MATTHEW GHIKAS: Yeah. You cited it as a key measure, Mr. Bowman; right?

(BRIEF PAUSE)

MR. PATRICK BOWMAN: I'm sure I did. I wouldn't take any issue with calling it a key measure. I'm just -- if you want me to confirm that it was in the document, I'll -- give me a moment to read the document.

MR. MATTHEW GHIKAS: I didn't think this needed to be so hard, Mr. Bowman, but you're making --

MR. PATRICK BOWMAN: Well --

MR. MATTHEW GHIKAS: -- you're making me work for it this morning, so there we go.

MR. PATRICK BOWMAN: Mr. Ghikas, I'm happy to say the capital coverage measure is an important ratio.

MR. MATTHEW GHIKAS: Thank you. And you'd -- you'd be -- you're aware, obviously, that Morrison Park Advisors, Mr. Colaiacovo, had a view of the capital coverage metric that was -- he didn't believe it was -- it was a useful metric; correct?

MR. PATRICK BOWMAN: Well, yes. And I did address this in an -- in an interrogatory. Mr. Colaiacovo is suggesting that Hydro's capital coverage measure won't be useful in the context of the materials he was reviewing, which is things like credit rating agencies who are looking at the overall mix of Hydro.

I'm suggesting to you that the capital coverage ratio is relevant for the same reasons as the quote I read yesterday from -- from Ms. Wray, Hydro's controller at the time, for the purposes of a regulatory assessment because the capital coverage ratio applies as the normal revelatory standard of used and useful assets. It looks as to whether the cash generated by Hydro's current business in this year is sufficient to pay for all of the capital spending occurring in this year, excluding major developments. That's what it's trying to measure.

Now, there may be some things -- I know that your -- your client take issue with some of the definitions. And I'm not sure I'm -- I'm adverse to their position on including a few more items in it. But as a measure, the idea that what's in rates today should be tested to see if it generates enough cash to fund the capital today is informative. What you do with it is another thing, but it's informative.

MR. MATTHEW GHIKAS: Okay. And so just -- I know you -- you just alluded to some of the things it doesn't capture. So let's see if we can go through those quickly, Mr. Bowman. It doesn't include capitalized interest on funds borrowed to finance reliability and sustainment projects; correct?

MR. PATRICK BOWMAN: It doesn't include capitalized interest on -- on projects still being constructed. So -- so under construction, not yet in service. Not -- not used and useful in the regular definition.

MR. MATTHEW GHIKAS: And it doesn't include mitigation and development costs; correct?

MR. PATRICK BOWMAN: Yeah, that one (1), actually, I have to admit I hadn't ever heard before. And I guess if those are appropriately cash payments by Hydro that are not otherwise accounted for anywhere on the income statement, which surprises me, but if they're not otherwise accounted for anywhere on the income statement or other variables that feed into the capital coverage, I would suggest they ought to be there.

MR. MATTHEW GHIKAS: Okay. And this --

MR. PATRICK BOWMAN: It is a cash commitment.

MR. MATTHEW GHIKAS: And the same -- same thing with the payments -- annual payments to the City of Winnipeg, I assume?

MR. PATRICK BOWMAN: Right. And -- and I -- I think that if -- if Hydro was to go forward to propose a revision to the definitions to that target to include those cash commitments, I don't see why anyone would oppose them if they're actual cash outlays in that year. Assuming that they're meant to be -- they're cash outlays in that year, and they're not in the nature of -- of payments being made to someone for a future development. If they're payments related to Keeyask, then -- then they ought not be considered in service. But if they're payments related to the existing Churchill river diversion or something, then -- then, yes, they should be considered cash outlays.

MR. MATTHEW GHIKAS: Mr. Chairman, I just wanted to check in with you. I know my time -- things have gone a little slower today than I -- I thought.

THE CHAIRPERSON: Yeah, well, we've got you down for another fifteen (15) minutes.

MR. MATTHEW GHIKAS: Okay.

THE CHAIRPERSON: If you could --

MR. MATTHEW GHIKAS: Okay.

THE CHAIRPERSON: That's -- that's fine, we'll take a break after that.

MR. MATTHEW GHIKAS: Okay.

CONTINUED BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: Now, one (1) of the things...

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: Okay. Mr. Bowman, I just wanted to go through a few of the tables and just see here what -- just to understand what's being presented in a couple of these tables. And I'm hoping we can move through this fairly quickly, Mr. Bowman. This is in your report at figure 5.7.

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: It's on page 5-19. So just -- can you just confirm for me on this one (1), this doesn't -- this isn't based on updated with interim; correct? This is just based on MH-16.

MR. PATRICK BOWMAN: Would it help if I took that subject to check? I'm happy to look at the reference, but -- but if we -- and I know your time is limited, so I'm happy to take it subject to check if we can keep moving.

MR. MATTHEW GHIKAS: That would be fine. Okay. And the -- if we can go over then to page 5-16 of your evidence. This is figure 5-6. You've included a purple line on there, "cash available for 2035 for -- for debt retirement."

And can you just confirm that the cash potentially available to 2035, that's assuming 7.9 percent for six (6) years, and then 4.54 percent, and then 2 percent thereafter all the way until 2035; correct?

MR. PATRICK BOWMAN: Well, this is -- it's Hydro's graph, so I don't own the purple line. But this says, "MH update with interim," and that is the sequence of increases with MH-16 update -- update with interim. But as I didn't prepare the graph, I assume that's in there.

MR. MATTHEW GHIKAS: Right. And -- and so you're -- are you under the impression that Manitoba Hydro is -- is advocating, based on -- based on the information they presented, that they're advocating reaching an equity ratio of 64 percent?

MR. PATRICK BOWMAN: Mr. Ghikas, I -- I've -- I've seen a number of plans put out and a number of scenarios put out for all the -- all the wonderful things that happen after year 11, but I haven't seen one (1) that Hydro actually advocates as to what they're going to do.

MR. MATTHEW GHIKAS: Okay.

MR. PATRICK BOWMAN: Some have rate incre -- decreases. Some have paying down debt.

MR. MATTHEW GHIKAS: All right. And if we look at page -- or table 5-2 on page 5-17. Right. So you presented this showing -- the purpose of this was to show the surplus cash, really, growing in the 2030s; correct?

MR. PATRICK BOWMAN: Well, this is -- again, this is just copying in Hydro's table, but the purpose of it was to put in the table that Hydro provided, which was the backup data for the chart that Hydro provided.

MR. MATTHEW GHIKAS: But the point that you're underscoring when you're discussing this table, sir, is the availability of surplus cash under 7.9 percent; correct?

MR. PATRICK BOWMAN: I'm underscoring what the purple line is doing that Hydro drew. But, yes, it has lots of surplus cash and if you didn't do the term you would even more surplus cash.

MR. MATTHEW GHIKAS: Right. And it's -- in the 2030s there it's assuming -- it's assuming rate increases that go -- that continue even after 25 percent equity is reached; correct?

MR. PATRICK BOWMAN: I didn't prepare the graph, Mr. Ghikas. It says MH-16 update with interim, which is Hydro's forecast.

MR. MATTHEW GHIKAS: Okay. In your report at page 4-14, you are -- this -- these are your words here in line 18. You're discussing -- you're discussing here retained earnings exceeding the 6.5 billion levels?

MR. PATRICK BOWMAN: I'm -- yes. I don't have appendix 3.8 in front of me. I can dig it out if you'd like. But I'm referencing the fact that by 2026/'27, which is the ten (10) year target date, Hydro would have retained earnings exceeding six-point-five (6.5).

MR. MATTHEW GHIKAS: And in -- in footnote 87 you're referring to the equity ratio reaching 64 percent?

MR. PATRICK BOWMAN: I -- I now have pulled out Hydro's appendix 3.8. So let me just keep up with you now. I -- I'm referring in the footnote, you say, to equity ratios reaching 64 percent. Yes, that is shown in Hydro's appendix 3.8.

MR. MATTHEW GHIKAS: Right. Mr. --

MR. PATRICK BOWMAN: I -- I should suggest that, just for clarity, the graphs that I'm referencing here also are from Hydro's debt management plan. It's not something that -- a scenarios that some Intervenor asked them to run that they don't advocate it. It's their plan.

MR. MATTHEW GHIKAS: Mr. -- Mr. Bowman, though, when you prepared your evidence had you read Manitoba Hydro's IR responses?

MR. PATRICK BOWMAN: I have read many of Hydro's IR responses.

MR. MATTHEW GHIKAS: Yeah.

MR. PATRICK BOWMAN: I'm not sure I have the fortitude to -- to --

MR. MATTHEW GHIKAS: All right. Well, I've -- I've included some in the book of documents at tab 6. And had you re -- had you reviewed those?

MR. PATRICK BOWMAN: My book of documents at tab 6 is a transcript.

MR. MATTHEW GHIKAS: Tab 9, sorry.

(BRIEF PAUSE)

MR. PATRICK BOWMAN: Well, I definitely reviewed the first one (1). It's a MIPUG IR. Matter of fact, I think we've cited it in places.

MR. MATTHEW GHIKAS: Okay. Well, I'd suggest to you that each one (1) of those IRs discusses that after the first ten (10) years that the information that Manitoba Hydro has presented is -- is really just -- just based on a simplifying assumption of 2 percent rate increases per year.

MR. PATRICK BOWMAN: Except that, Mr.

Ghikas, I don't believe the evidence supports that. There are two (2) different scenarios Hydro presents of its own initiative, not because someone asked them. One (1) that has 2 percent rate increases going to the future, showing how much debt they're able to pay down, including their own internal debt management plan. And one (1) that shows the 23 percent rate decrease they can implement in -- in year 11, including one (1) of the IRs Hydro included as its key documents in this hearing and the presentation made by president and by its chairman the week before.

So, you know, are they speculative? I -- I read Hydro presenting more than one (1) future, which is at least a high degree of uncertainty as to what they actually think will happen after year 11.

MR. MATTHEW GHIKAS: So you chose to read those responses as suggesting that Manitoba Hydro could well reach 64 percent equity.

Is that what you're saying?

MR. PATRICK BOWMAN: In this section I'm using Hydro's debt management plan and the approaches they use internally.

MR. MATTHEW GHIKAS: Okay. All right. Mr. -- changing gears, again, this is a response that you've referred to. This is MH/MIPUG/Bowman-12. If you could turn there, please. This response is one (1) that you referred to in the context of our earlier exchange about the capital coverage ratio. And Mr. Colaiacovo's views on the capital coverage ratio were put to you in this response.

Do you recall that one (1)?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. I want to turn to the paragraph, if you can scroll down a little bit. The paragraph that begins, "Mr. Bowman is not suggesting." There we go. At the top of the page there. So you say in three (3) lines down:

> "On a normal basis rate setting for regulated utilities should be set with the primary focus being on the income statement and the net income sufficiency, not capital coverage which is a cash flow test."

Do you see that?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. So -- and then you say:

> "Rates should be looking at costs and revenues as portrayed on an income statement."

Correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And you say, "This is the normal regulatory basis;" correct?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: And you say:

"The best metric used by Manitoba Hydro to measure this is the previous EBIT to interest coverage ratio."

Do you see that?

MR. PATRICK BOWMAN: Yes.

MR. MATTHEW GHIKAS: Okay. And:

"So achieving an EBIT interest coverage ratio of one-point-zero (1.0) means the debt cost for the year can be funded from the revenues for the year."

And that's -- that's your view; is it?

MR. PATRICK BOWMAN: Yeah, as -- as they are measured on the income statement.

MR. MATTHEW GHIKAS: Right. And --

MR. PATRICK BOWMAN: It's not a cash test.

MR. MATTHEW GHIKAS: Right. And --

and your view is, sir, is that it's the best test; correct?

MR. PATRICK BOWMAN: It's the -- it's my view, it's been the view -- this is my 11th time testifying here and interest coverage ratio has always been the first ratio presented, and it's the one (1) that I would say has as much spilled milk as any. We have talked about a long-term test, but we also talk about the interest coverage ratio as a short-term test.

MR. MATTHEW GHIKAS: Okay. And --

MR. PATRICK BOWMAN: Capital coverage is usually the one (1) given a bit of short shrift.

MR. MATTHEW GHIKAS: When you -- when you wrote that, and you described it as the "best metric" had you actually calculated the EBIT to interest coverage that results from the 3.95 percent rate trajectory, Mr. Bowman?

MR. PATRICK BOWMAN: No. Well, I don't believe anybody has provided a -- a calculation of any of the metrics on a IFF that I would consider repre -- the best forecast of Hydro's future at this point. But it had been calculated in -- in certain places. I have not -- I -- I can't point you to them quickly, but I know that the metric calculated on the previous rules is calculated in some of the -- in the interrogatories.

MR. MATTHEW GHIKAS: Okay. Well, let's -- let's go to Manitoba Hydro's rebuttal evidence, if we could, Kristen. Sorry to jump around. This is Manitoba Hydro Exhibit 52, and it's at page 20.

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: All right. And so figure 1.13, Manitoba Hydro here has calculated the EBIT interest coverage ratio under 3.95 percent rate path with twenty (20) year terming.

And you'd agree with me that based on those parameters the EBIT to interest coverage is -- is never met over that period to 2027? The one-point-two (1.2) is never met?

MR. PATRICK BOWMAN: Well, Mr. Ghikas, I'll make two (2) comments. I agree that the numbers that are shown there show the interest coverage not being met. The thing about the previous EBIT interest coverage test is that it is very similar to a measure of net income, and that's entirely consistent with the idea that Hydro will have a number of years of net income as it absorbs Keeyask in, just as was planned and -- and projected by Hydro at NFAT.

And I'd further note that this is under this scenario with the 3.95 percent rate path that builds in the twenty (20) year WATM, and doesn't build in the -- following the Board's directives on depreciation accounting and -- and the export price adjustments and many of the other matters that we've talked about.

MR. MATTHEW GHIKAS: I see. So for -- for ten (10) years it's not achieving one-point-two (1.2). And -- and you believe that that's not an issue now.

Is that correct?

MR. PATRICK BOWMAN: I -- I said that the best measure was achieving an EBIT to interest coverage ratio above one (1). That means the debt cost for the year can be funded from revenues for the year. The target was one-point-two (1.2), but I think, Mr. Ghikas --

MR. MATTHEW GHIKAS: And remain -- you'd agree with me, Mr. Bowman, it remains below one (1) for the years 2023 to 2027?

MR. PATRICK BOWMAN: Right, which is effectively saying that Hydro has net income in the --

or negative net income in those years, which is the -- the table we just went to.

MR. MATTHEW GHIKAS: Right, which is effectively saying, in your words, debt cost for the year can't be funded from the revenues for the year; right?

MR. PATRICK BOWMAN: That's what negative net income is -- is associated with when you're dealing with the income statement.

MR. MATTHEW GHIKAS: Okay. And so that's half the ten (10) year period?

MR. PATRICK BOWMAN: It's -- well, you're -- you're looking at ten (10). I'm looking at the -- the twenty (20) years and it's actually six (6) years of the -- of the twenty (20) year period compared with eight (8) when we were at NFAT.

MR. MATTHEW GHIKAS: And --

MR. PATRICK BOWMAN: I think the idea -- the other word that needs a focus here, is we've talked about target. And people get very caught up on what the number in a target is, 75 percent or one-point-two (1.2). The target, though, always has the words around it that say, Things will proceed towards, consistent with rate stability, and a bunch of other words, that everyone wants to ignore the words and just focus on the number. So be a bit careful about that.

MR. MATTHEW GHIKAS: And the EBIT to interest coverage, it wouldn't pick up the mitigation payments and the City of Winnipeg payments either; right?

MR. PATRICK BOWMAN: It's not a cash flow test. The capital coverage test is the cash flow test, and that one (1) is still reported -- and, as a matter fact, if you want to go to Exhibit MH-93, which is the one (1) in our book of documents, it shows -- it reports the capital coverage ratio there. And it shows that it's above one (1) every year.

MR. MATTHEW GHIKAS: Thank you, Mr. Bowman. Thank you, Mr. Osler and Mr. Forrest. Those are my questions. Thank you, Mr. Chairman.

THE CHAIRPERSON: Thank you, Mr. Ghikas. We'll break until eleven o'clock. Thank you.

--- Upon recessing at 10:44 a.m.

--- Upon resuming at 11:02 a.m.

THE CHAIRPERSON: If we could resume. Ms. Steinfeld...?

CROSS-EXAMINATION BY MS. DAYNA STEINFELD:

MS. DAYNA STEINFELD: Thank you, Mr. Chair and good morning to this witness panel. I'll say at the outset that I will likely be addressing my questions either to Mr. Bowman or Mr. Osler and Mr. Forrest but feel free to decide who's best to answer the question amongst yourselves.

Mr. Bowman, your recommendation is that the two (2) interim 3.36 percent rate increases awarded for August 1st, 2016 and August 1st, 2017 be approved as final; correct?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And do you recall that MIPUG's position at the interim rate hearing was that the Board should grant an inflationary increase and direct all revenues from the increase to the Bipole III deferral account?

MR. PATRICK BOWMAN: That sounds correct.

MS. DAYNA STEINFELD: And I believe the discussion, at that time, was that that level of rate increase would be in the neighbourhood of 1.6 percent to 2 percent.

Is that your recollection?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And given that you're now recommending that the two (2) 3.36 percent rate increases be granted, in your opinion, has the evidence in the full General Rate Application proceeding to date sufficiently demonstrated a need for the interim rate increases?

MR. PATRICK BOWMAN: Yes, and -- and the go-forward rate increases, which are all in that range.

And -- and I will just draw the distinction that the recommended -- the submissions on the inflationary didn't have our evidence behind them, it had a -- we were involved in discussions, but I believe Mr. Hacault was responsible for submitting those.

MS. DAYNA STEINFELD: And so just so that I'm clear, what you're telling the Board is that now that you've had the -- the full evidence put before you, and you've been able to do your own analysis, you've determined that rate increases around that level of 3.36 or 3.57 going forward are -- are appropriate?

MR. PATRICK BOWMAN: I -- I think that they're appropriate. I -- yes, and the -- the twelve (12) month interval, the Board had proposed is also appropriate to maintain.

MS. DAYNA STEINFELD: Thank you, Mr. Bowman. Ms. Schubert, if we could please bring up MIPUG-26, slide 15.

And, Mr. Bowman, you'll see the third square bullet from the bottom references taking a patient and calm approach rather than a sharp rate change response.

Do you see that there?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And I would just like to follow up a bit on the discussion you had yesterday or it may have been Mr. Osler with -- with Mr. Monnin but to you, Mr. Bowman, when should future ratepayers start to pay for long-lived assets?

MR. PATRICK BOWMAN: Well, I guess my first comment is a little on the technical side, which is, ratepayers don't pay for an asset per se they pay for an entire system and it includes many assets, some of which get cheaper over time, some of which get more expensive. So the first thing is you should look at an overall revenue requirement.

My second comment is that in looking overall revenue requirement, there are some important regulatory principles that help guide that and among them are the concepts of -- of used and useful assets that you don't normally include items into the revenue requirement before they're actually providing service to the customer.

The idea being, once that asset is in service and it's generating revenues or serving loads, over that -- that future life, that's the period where it could be paid for. It's not as -- as the quote I read in from Ms. Wray. It's -- it's not being built for customers today, it's -- or who are on those system today. It's not being -- the legendary little old lady on Agnes Street that was often referred to, it -- it's being built for a future era even if it's a number of years in advance of -- of customers and that's when you would bring them into rates.

Now having said all of that, that would -- that would be more where my response would end when I'm dealing with most Utilities who have a -- a strict revenue requirement. When you're dealing with Manitoba Hydro, as I noted, we don't always deal with rates in a strict revenue requirement sense where one must recover the rates in this year and -- and rate stability or long-term trends are less of a concern.

Here, those become much more of a concern, I say to the -- to the good of ratepayers, to the good of -- of this type of system and it means you should look over -- over the longer horizon and make sure that -- that the plan can overall bring on -- bring on those projects without having to shock customers when you bring them on.

And sometimes that means that you might bend on the principle of something like used and useful by doing something like the Bipole III deferral account where we -- we already have customers paying somewhere between 11 and 12 percent towards the Bipole project even though it's not in service. The first time I heard the idea, I wasn't favourable to it. I think in hindsight it was a very wise move by this Board and it's help phase that in and, as a result, when Bipole comes into service there's very little more impact into rates that's isn't already built in.

So that's an example of how you can do that. The other is you look at the long term as to whether the -- you manage that shock and you -- and you deal with it -- you deal with accepting as -- as the scenarios of NFAT did or as the scenarios that I was referencing do, accepting a few years of losses before the asset is -- is into full flight and being paid down. That's the -- that's the benefits of Manitoba Hydro's form of regulation.

As Mr. Osler referenced when we're in Yukon, who doesn't have that type of regulation, who has a revenue that has to be set every year, we -- we've instead had to go to things like financial instruments with the government that have -- have that -- that that same type of flexibility because you don't want to end up shocking people when the assets come in.

But here -- here that -- that could be beneficial, but it's not -- it's not absolutely the same imperative because we don't have that strict annual revenue requirement type of consideration and -- and it's possible others will need -- want to add.

MS. DAYNA STEINFELD: Mine sense is that you've covered it off fairly well, Mr. Bowman, but -- but just to summarize one part of that, the Bipole III deferral account would be one example of how there is smoothing of the impacts of a, what we might call a, lumpy asset coming in to service; is that correct?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And, Mr. Bowman, we can bring up the report, but in your evidence you quote from the NFAT transcript and the quote is that:

"Retained earnings are for

customers."

Do you recall that?

MR. PATRICK BOWMAN: I -- I don't recall it, but I -- I accept that that's a...

MS. DAYNA STEINFELD: And -- and can you just assist the Board by briefly explaining what, in your view, the purpose of retained earnings is?

MR. PATRICK BOWMAN: Well, I -- I'm going to -- hopefully, I'm going to avoid the debate between reserves, retained earnings, equity and the like. If you need me to get into that I'd -- I'd be fine doing that. But if I can ask the question without that, let me go about it that way.

When you look at the structure of this type of Utility and similar ways that -- similarly structured Utilities have been -- had been dealt with in the past, the idea is Hydro's cost recovery operation. It's going to recover its costs from -- from customers. So, it can do that every year and -- and pay its bills. But, in the interests of rate stability, to the benefit of customers, it can be better for customers to pay a certain amount earlier on to build up the reserve so that they buy themselves future rate stability. And I think that's the -- the clearest trade-off is -- is the -- the retained earnings or the reserves are for customers because they're amounts that the customers paid up to help buy themselves future stable rates.

MS. DAYNA STEINFELD: And subject to check, Mr. Bowman, under Manitoba Hydro's rate plan and the indicative rate forecast in this proceeding, Manitoba Hydro will have retained earnings exceeding 6.5 billion by 2026/'27?

MR. PATRICK BOWMAN: Un -- under Hydro's plan and -- and without dealing with the other factors we've talked about, like, how conservative aspects of that plan -- of the forecast are.

MS. DAYNA STEINFELD: Now, Mr. Osler and Mr. Forrest, just picking up on that point, in your evidence you discussed a minimum retained earnings target.

And is it fair to say that that target is a short term goal that you recommend the Utility should be setting?

MR. CAMERON OSLER: Yes, it is intended to reflect, historically, the assessment that the Corporation has made and the regulator has agreed of its most severe risk that you should be prudently planning for so that you have a reserve to cushion it.

So it's -- when we say "short-term,"

it's something that ideally you'd like to have in place, absent a drought, in order to protect for a drought.

We went through a historical time period when the Board was first dealing with it where we never met that target and yes, at the same time, we kept rates constrained to not exceed inflation. So, the point of a target and the rate that may be implied by it, was amply demonstrated for about six (6) years of experience there.

But we still think that the history of this Company, the history of the regulation of it, the way it's been translated since then, the way the Corporation still talks about five (5) and seven (7) year and does all the tests, we think it's very important and very material that the forecast that you're looking at at the current proceeding, you're able to meet that because if you couldn't meet that, I think we'd have another level of conversation entirely.

MS. DAYNA STEINFELD: And do you know, Mr. Osler or Mr. Forrest, when Manitoba Hydro last set or used a minimum retained earnings target? And if you don't, that's okay.

MR. CAMERON OSLER: I don't recall

them in -- I wasn't around during the time period so Mr. Bowman will have to comment. They certainly used it during the time periods that we were there. It was central but then they went away for a long time because they had lots of reserves. Did you ever hear about it?

MR. PATRICK BOWMAN: We had moved beyond it by the time of the 2002 status update.

MS. DAYNA STEINFELD: Thank you, Mr. Bowman. And maybe just to pick up on your last point, Mr. Osler, we can go briefly to slide 17.

And I right in understanding your evidence to be that the Board should consider looking at a minimum retained earnings target that would corporate the risks of either a five (5) year or a seven (7) year drought; is that fair?

MR. CAMERON OSLER: Yes. And perhaps also an updated provision for self-insurance as they had before, if that -- if the Board thought that was still relevant.

MS. DAYNA STEINFELD: And Mr. Bowman, does the 3.95 percent rate path that you've looked at past a minimum retained earnings target for either or both a five (5) year and seven (7) year drought?

MR. PATRICK BOWMAN: Well, I guess,

yes, in spades when we look at the projections of drought today, as I put in the -- in the presentation, they're -- they are well below the types of levels of retained earnings. We're talking about today retained earnings on the order of -- of 3 billion and the -- the drought costs are -- have been quoted -- well, I could take you to -- to an IR that goes through it. It's one you're familiar with from Mr. Colaiacovo's testimony. But, I also have it in the slide in our original presentation rather than -- at 1.2 billion.

So we're already at 3 billion, the -- if droughts are -- are projected the five (5) year at 1.2 billion, and the 3.95 scenario maintains that historically high level of retained earnings and, in fact, by the end of the -- the period it actually grows it. So, it's -- it's -- it's far beyond, far beyond.

MR. CAMERON OSLER: And for the record, the Board asked us a question PUB-MIPUG-14 where we went through it and to your -- the Board's counsel went through this very well I thought with Mr. Colaiacovo.

MR. PATRICK BOWMAN: Can I just add that, while I mentioned that in 2002 the Board stopped using the language of minimum retained earnings target and we've more used the language of 25 percent equity. One (1) of the things we looked at in every hearing is what does a five (5) year drought cost.

And I think you'll find for at least a decade, if not more, the two (2) numbers were very similar. So notionally, at least in my mind, the idea that you had a link between the equity we're targeting and the cost of a drought were linked. We've been so far beyond that that the link is -- is -- is no longer supported.

MS. DAYNA STEINFELD: And we've just discussed the minimum retained earnings target as a -- as a short-term target or goal.

Mr. Osler, is it appropriate to combine that short-term target or goal with a longer-term target like a 75/25 percent debt/equity ratio?

MR. CAMERON OSLER: Yes, but, you want to think about how you would explain it to somebody else who isn't used to it all the time. In other words, we used this term "short-term and long-term" and I was a little bit cautious about short-term, as you noted. And then the long-term, you know, what are you really talking about.

The history that we went through demonstrated that even though we weren't meeting that one term -- one test in the short-term, that we didn't accelerate rates faster than inflation. And that once we got our house in order, everything took off. So we met the short-term. We've met the medium-term, and met the long-term faster than you could say anything. And faster than anybody expected.

So, what I take away from that is, yes, you -- the Board has encouraged the Utility, and the Board of Directors of the Utility has encouraged everybody, to have these targets and I don't dispute their value in terms of trying to be clear to everybody.

But, when we say 25 percent equity ratio, we happened to have been there five (5) years out of the last umpteen decades. Does that mean to an ordinary person that we have to get back there right away? Obviously it meant that to somebody who came into this job, you know, and -- and tried to deal with -- I will assume responsibly with their obligations. And they were shocked.

But from a regulatory point of view that target -- I never interpreted it to mean that type of thing. So there's a communication problem here. That target is there to give a valid basis for building up reserves to that level without reducing rates. And I fully support it for that reason, as long as the rates that we're talking about that are being used to build it up are less than inflation and certainly not more than inflation.

Once you get above inflation, my perspective is, we're into another game and we have to be very careful about justifying that game based on hard targets that are called long-term.

MS. DAYNA STEINFELD: Yes, Mr. Forrest?

MR. GERALD FORREST: Sorry, to interrupt. I guess, I'm going back from my experience as a Chair of the Board. The reason why the minimum retained earnings target was so important to us is we wanted to, in the long-term, protect the Utility, on one hand, but we also wanted to protect the ratepayer on the hand. So, we didn't want incidents such as drought or any other expected event occur that we immediately had to go back to the ratepayers with a significant rate change. So we were trying to balance that.

Today, from my experience, and certainly in my practice, debt equity is an important target for all because the common -- the common word that we use in the financial markets is the strength of the Corporation is debt equity. And while that is important, it is just one (1) of the financial metrics that you should be really looking at inside the Corporation to ensure that you're moving those metrics in a positive direction.

But when we have a situation like we have in Manitoba where you have such a significant capital program, the debt/equity question is really -- is it really relevant in that sense of the word? And so from my particular point of view, we need to still make sure that the Utility's financially self-sufficient. It is one that protects the ratepayer in the long term and whatever target you -- you develop, the minute -- minimum retained earning target insures, at the end of the day, the customer is protected and that's really what we were trying to do at the Board at that particular time because we knew when Limestone came into play, and it would significantly alter the financial statement, we knew at that time that it would -- the debt/equity target would take a hit and as the debt/equity target is going to take a hit here. The question is, then you take that circumstance and you're trying to build a plan that in over the long term you get back to where you were or where you need to be.

MS. DAYNA STEINFELD: Thank you for that, Mr. Forrest. If we could, Ms. Schubert, turn to slide 21, please.

And, Mr. Bowman, just to clarify a point that you've made on this slide, you've supported the idea of having refined ratesetting mechanisms as raised by Mr. Colaiacovo, but you say that "specific proposal -- proposals are not yet developed and need work."

So is your recommendation to this Board that it move in this direction perhaps by ordering a next steps such as a technical conference; is that what you're suggesting?

MR. PATRICK BOWMAN: That would be one practical way. I -- I set out a bit more detail in the -- background paper 'C' and -- and an IR on this matter of -- of what some of these things might look like. But yes, I think that's one way.

MS. DAYNA STEINFELD: And if we just move forward to slide 23. In terms of taking next steps in this regard, does the uncertainty analysis that's set out here is this something that might help form the basis for the Board to -- to set those kinds of refined ratesetting mechanisms?

MR. PATRICK BOWMAN: The analysis

behind that slide is the tool that is, I will say, well thought out and -- and rather elegant. Taking it to the next step would involve -- this isn't the slide I would use, this is just a -- how bad does it get at some point. There's a different sort of set of cone type of analysis.

But the -- the step in evolution is being able to say, how do I -- rather than if I do something stubbornly at 1 percent rate increase, how bad does it get? What you should do is say, If I look at the condition to each year and -- and have a rule for how I might change my rate increases and not rate shock people, how bad does it get?

In other words, not what does it look if I do 3.95. It'd be -- my suggestion is the next step you test, as you say, what if it -- what does it look like if I start at 3 but if things are going downhill, I'm prepared to do 5 and if they're going uphill, I'm prepared to 2. And then have a model that adapts that way and see how tight you pull in that range.

And if you -- when you -- once you pull in that range, your -- your P5 or something of that nature is still keeping your retained earnings way above of Mr. Osler's measure of minimum retained earnings, and I think you have some comfort that you have a regime that, you know, you can start with that rate increase 3 percent. You've communicated to people that if things go bad I'm going to go to 5. No one's sitting there thinking you're going to go to 12. And -- and you've shown how -- how that will avoid the bottom, and you're not going to drive this Utility into ruin.

I thinks that's the type of communication that this tool can do if it's developed to -- to its level. It's not quite there yet.

MS. DAYNA STEINFELD: All right. I'll -- I'll take that as a suggestion that you should be invited if -- if there should be a technical conference on this matter and I think we can move on from that. Thank you, Mr. Bowman.

Mr. Osler, Mr. Forrest, your proposal -- or one (1) of your proposals to this Board is that the Board recommend to the provincial government that the province forgive provincial charges on Manitoba Hydro's -- related to Manitoba Hydro's capital assets, Keeyask and Bipole III; is that correct?

MR. CAMERON OSLER: Yes.

MS. DAYNA STEINFELD: And before I -- I get into any details there, yesterday there was a discussion of a special payment that was made to -- to government in the 2003/2004 fiscal year.

And subject to check, would you accept that that payment was in the amount of $203 million?

MR. GERALD FORREST: I think the amount of the payment was $288 million; that's the information I have. It was made over a three (3) year period, which was financed.

MR. PATRICK BOWMAN: It's Mr. Bowman here. I'll just add that the -- the payment was -- was targeted at the level Mr. -- Mr. Forrest notes, once time actually evolved, the final year payment to the government was -- was capped because it brought us into the drought period where Hydro's finances were not as expected, and the final payment was curtailed

MS. DAYNA STEINFELD: Thank you for that clarification, Mr. Bowman.

And perhaps just for --

THE CHAIRPERSON: Sorry, for clarification, it was curtailed but do we know what the final amount was?

MR. PATRICK BOWMAN: I -- I believe that's accurate, what -- what Ms. Steinfeld put to us.

THE CHAIRPERSON: Okay, thank you.

CONTINUED BY MS. DAYNA STEINFELD:

MS. DAYNA STEINFELD: And you can take that subject to check, Mr. Bowman and if that's -- if that's not the final number you can advise.

Perhaps, Ms. Schubert, if we can just put up on the screen, Manitoba Hydro Exhibit Number 86, which is a response to an MKO undertaking. And I don't need to -- if we can just scroll down.

I don't need to go into any detail on this but is your understanding of this -- perhaps Mr. Osler or Mr. Bowman, that this illustrates a scenario where there are different levels of payments to government on these -- on the two (2) capital projects?

And we can actually maybe scroll back up to page 1 just to show the -- the question.

MR. PATRICK BOWMAN: Yes, that was the undertaking, and it does curtail the payments to government.

I would -- I would address that it was an odd sequence of payments to government that were curtailed but the -- but it does curtail.

MS. DAYNA STEINFELD: Thank you, Mr. Bowman. And we can of this if we need it for any further assistance but, Ms. Schubert, if you could please go to PUB-MIPUG-16.

And I think this -- this could be anyone on the panel but are -- are you aware of circumstances in other jurisdictions where this kind of approach has been taken, where payments to government have been curtailed in some way?

MR. CAMERON OSLER: Yes. And the answer -- and the IR you've called up, we elaborated a bit on some of those references such as site C in BC and Mr. Bowman's more familiar with the exact -- the comparison of the type of amount that that type of cutback in charges would compare to the type of numbers that we looked at using PUB-21 to get an estimate in our presentation of the impact of our recommendation.

MR. PATRICK BOWMAN: I was just going to note that I -- I did take the time to do the math quickly and when the government of British Columbia announced that they were going to cut their -- their levies and their policies on hydro to reduce the cost of site C, they quoted it as reducing the cost of site C by 2.6 cents per kilowatt hour, 2.6 cents.

The charges on Keeyask are in the order of $140 million a year at peak on about 4.4 terrawatt hours which is about 3.3 cents per kilowatt hour. So if someone was comparing a sort of similar action here, it would be that, you know, a vast majority of charges on Keeyask would similarly be cut back.

MS. DAYNA STEINFELD: And perhaps we'll just scroll or go ahead to page 11 of this document, Ms. Schubert. No, we've lost... That's fine, we can stay at the bottom of this page.

So, Mr. Bowman, this is what you were just discussing here, the last paragraph discusses the British Columbia example?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And I believe your response to this Information Request also discussed an example from Newfoundland.

Do you recall that?

MR. PATRICK BOWMAN: The example from Newfoundland is -- is a little bit different because it involves the federal government, but it's a federal guarantee on the Muskrat Falls generating station where there is -- is no debt guarantee fee charged on the vast majority of the guarantee. There's a small guarantee fee on the -- on the final tranche that they added.

MS. DAYNA STEINFELD: And is it correct that Hydro Quebec is another example of a --

of a Utility that pays charges to the provincial government?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And have there been similar examples of forgiveness or curtailment of those charges?

MR. PATRICK BOWMAN: I'm not aware of Hydro Quebec having curtailed charges in past years, but it was, you know, quite some time ago now that they changed the structure of Hydro Quebec so that the -- the generating side, which is the critical one that we're talking here, is effectively not under regulation.

It's effectively an asset owned by government that sells power to fixed price to -- to the customer. So in the event the government levied large charges on a new development, it would only take it out of its own other pocket where it would've earned the returns on that project so.

MR. CAMERON OSLER: And -- and if -- I think it's a caution. Every time we get into these types of things in different jurisdictions and we have to do a review, it's amazing how much you have to understand of the complexities of each jurisdiction in order to make your comparisons.

Mr. Colaiacovo made the point that, among other unique elements of this jurisdiction is the extent to which the ratepayers are on the hook for the exports. And what Mr. Bowman was just saying, in Quebec, they rearranged that system so that the ratepayers aren't going to have to worry about all of those things.

The fact that they repealed -- repealed MEFA was very good for this Corporation and ratepayers when we had the period of big surge in export prices. Today, the issue of lower export prices is -- is cluttering up all sorts of forecasts. Ratepayers are on the hook in this jurisdiction, and that is very unusual at the moment in this country that that's the case. Ratepayers have benefitted in certain time periods, and now they're -- they're a bit more exposed for that reason.

But how that whole structure is created varies a lot within Canada, and if you were the government of the day in any one (1) jurisdiction, you could afford to look at options as to how you might want to deal with the modern reality versus the old one, and all the options you might have to do that so that it worked.

MS. DAYNA STEINFELD: Thank you, Mr.

Osler. And just to clarify, you had a conversation yesterday, I believe, with Mr. Orle. And just so the Board understands, your proposal in terms of curtailing or forgiving payments to government does not include water rentals?

MR. CAMERON OSLER: We didn't include water rentals. We're not saying you shouldn't think about it, but they weren't a material number because of the delay in bringing on the, you know, as I went through, I can answer the question. The numbers are relatively small, so we just didn't clutter our thinking with that. We were focused on the issue of capital and the government is making -- all these overruns of capital are leading to more money to the government and more charges to the ratepayers. So, I mean, we were focused very much on that -- that string.

MS. DAYNA STEINFELD: And with some trepidation, I'm going to look at this from an economic perspective. Would it be right in thinking about water rentals from an economic perspective that reduce charges for water rights, would act as a subsidy by the Manitoba government to the Utility, perhaps below the appropriate economic level for a water rental?

MR. CAMERON OSLER: It's -- Mr. Forrest, I think, would like to make a few comments. But as an economist, the concept of economic rent, and -- and stuff, you could go through a number of different -- of thought processes. It could be argued, as you just put your question, that reducing it for a new facility when you haven't reduced it for the old ones is some form of a subsidy.

It could also be argued that it's a -- a prudent approach to phasing in new assets, and -- and also looking at the export market where the price -- how much does this affect our pricing or ability to sell in the export market, and who gets the benefit of those sales, the government or the ratepayers? Those are -- those are practical things you might think about.

MR. GERALD FORREST: The -- the issue for -- for me, certainly, in this -- proceeding on this matter, is there is a distinction between the taxpayer and the ratepayer. In this instance, the ratepayer is the one that carries all the risks, and is carrying all the costs.

If you back up a minute and refer to a press release that was released by the Chair of Manitoba Hydro Board, he criticized past governments, and he criticized the Corporation for making the decision. So when I look at that, and look at it in the sense of the little old lady on Agnes Street who is now going to carry the risk, and she's going to carry the cost for a decision she wasn't involved in, and was done without her encouragement, in any event.

So when I look at it, then, who is the person who should be carrying some of this risk and the costs associated with some of that risk? And I think what Mr. Osler and Mr. Bowman have indicated in this proceeding, the debt guarantee fee is one (1) way they could provide some relief on it, and certainly the capital tax is another one where they could provide some relief. It isn't revenue they're now getting. It is revenue that they might get in the future, but it would assist the ratepayer.

If you don't do that, that -- all that risk, and all that responsibility, and all the rate impacts are going to be associated with the ratepayer alone. And from my particular point of view, I'm not sure that's fair.

MS. DAYNA STEINFELD: Mr. Bowman, did you have something to add to that, perhaps briefly?

MR. PATRICK BOWMAN: It will be brief. I would just note for those who were here at NFAT, I gave some evidence in that hearing about the future of -- and the role of -- of government charges, and the conclusion we made when we went through it was Keeyask, as a project, as projected, had benefits, and for every dollar of benefits, somewhere in the order of sixty (0.60) to seventy cents ($0.70) went to the government, and thirty (0.30) to forty cents ($0.40) went to ratepayers.

Conawapa as a project actually had benefits too. The thing that killed the modelling of Conawapa was that for every dollar of benefits, about a dollar ten ($1.10) went to the government and negative ten cents (-$0.10) went to ratepayers. And those numbers would have moved as a result of some of the things we're -- we're talking about here. And the ratepayer part, not only was it smaller, it occurred in years, like, twenty (20) to forty (40). It was not on the front end. So I just thought for context, it's not the -- a new thought.

MS. DAYNA STEINFELD: Thank you, Mr. Bowman. I'm going to move on to I think what are going to be a series of what Dr. Williams would call short snappers. So I'm going to be moving fairly quickly through some different topics. Hopefully, it's not too all over the place.

So Mr. Bowman, turning to a discussion you had yesterday with Mr. Monnin about O&M costs, you'll accept that Manitoba Hydro is in the process of reducing its workforce by nine hundred (900) positions? Is that correct?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And your evidence is that there should be additional O&M reductions, correct?

MR. PATRICK BOWMAN: My evidence is that we should be cautious about assuming that is -- once -- once a first round of -- of that is done, that -- that everything is -- is peachy keen. My evidence is that you need a -- a proper assessment at that time, and don't assume there wouldn't be more --

MS. DAYNA STEINFELD: And which --

MR. PATRICK BOWMAN: -- there wouldn't be other places one could find some savings. And there might not actually be other savings that actually show up as part of that, because you have a complement that's nine hundred (900) people smaller.

MS. DAYNA STEINFELD: And should that be an assessment that's done by the Utility in the context of maintaining service level and -- and safety standards?

MR. PATRICK BOWMAN: It -- those should be considerations in assessing what the appropriate level of O&M is. I think it should be an assessment that is made part of the Utility's responsibilities when it comes back here and asks for rates the next time. They should have to justify their O&M levels.

This time, they don't have the backup and detail normally needed to do that, but they're moving the right direction, so -- so I think the -- the rea -- we can relax the criteria for which they need to justify the cost, but by -- by the next round, I think they should be able to bring in something that shows that they're -- they're operating efficiently.

MS. DAYNA STEINFELD: And Ms. Schubert, if we could please put up MIPUG-26, slide 38. And here, Mr. Bowman, you -- we have your -- or part of your discussion around the capitalization of overheads, correct?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And this relates to an issue in terms of the amount of operating -- or OM&A costs that are attributable to ongoing capital projects and are therefore capitalized, correct?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And as we see on the slide, the -- the direction from the Board was that the amount should be $20 million, correct?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: By the time Keeyask comes into service, Mr. Bowman, the costs related to both Bipole III and Keeyask will be moved onto the statement and no longer capitalized, correct?

MR. PATRICK BOWMAN: Correct.

MS. DAYNA STEINFELD: At that point in time, is $20 million still the appropriate amount to capitalize for overheads?

MR. PATRICK BOWMAN: Well, the large number you see at the top of the page is the 120 million that -- that Hydro previously put as capital, and over time has -- has changed its accounting policies to try to put into current year expenses. That number is derived out of a table that if you go to, you'll see when those different changes occurred, and what was the nature of those changes, and the values that are there predate Bipoles and Keeyask.

So I don't think the 20 million is derived, you know, it's the Board's number, but my understanding of it is it's not derived assuming that it's some special extra amount while Bipole and

Keeyask are being built. My understanding is it would be derived from the -- the logic behind the table, which shows that these changes have -- have dribbled in, I think, starting probably 2008 or so, and -- and had -- had come to place even before the -- the major capital was being built out.

MS. DAYNA STEINFELD: So you're -- what you're telling the Board is that even when these large assets are no longer being capitalized themselves, $20 million continues to be the appropriate amount?

MR. PATRICK BOWMAN: I -- I, you know, I -- I would suggest an amount ought to be capitalized. I am not taking issue with the twenty (20). I -- I actually suggested that it should be higher, frankly. But the -- the -- I'm not taking issue with the twenty (20), but I don't see the reason why it would stop, given the number was derived from periods before those projects even were started.

MS. DAYNA STEINFELD: And you also recommend that -- that $20 million should be continued indefinitely, correct?

MR. PATRICK BOWMAN: Right -- right. It's -- it's a way of recognizing that things like your -- your safety department, when they're working directly on a job, their costs are capitalized, but when they have indirect costs associated with that, they should also be capitalized. It's basic full-cost accounting, if you like.

The -- the accounting standards Hydro brought in were moving toward some of the -- the IFRS type standards, which -- which move in many ways away from that type of -- of full-cost accounting, and I -- my suggestion, which I think was taken by the Board, is that some degree of those -- of that -- that old full-cost accounting should -- should be retained for the purpose of setting rates, that we should call the safety manual capital just as much as the safety officer is capital.

MS. DAYNA STEINFELD: Now, Mr. Bowman, I believe you told Mr. Ghikas this morning that, in your view, Manitoba Hydro Exhibit 93 is the Integrated Financial Forecast run you feel best fits what the Board should direct in this hearing. Is that -- is that fair?

MR. PATRICK BOWMAN: So MH-93 has a run, and it has a table at the back that summarizes, but the -- the bottom row of that table, which is part of that run, at -- at this time, and in my view, is the -- is the best scenario that the Board has before it. I think it still has a few issues, but it's the best scenario the Board has before it.

MS. DAYNA STEINFELD: And so you -- you've identified that this run still has a few issues. Are there adjustments that you would suggest the Board ask Manitoba Hydro to run?

MR. PATRICK BOWMAN: There are a few. The first is that -- and -- and I'll suggest that some of them may be impractical, and some of them, I may not have inf -- enough information about, because they're related to CSI.

But the first is that I think there was interesting information provided by Daymark on export price forecasts about the way Hydro is doing future export price forecasts. I believe Hydro's response to that, to the extent it had a strong response, was, A lot of that stuff won't hit us in the first ten (10) years, but it will hit you in the second two hund -- ten -- ten (10) years, and this approach to response relies heavily on that second ten (10) years.

So if -- if there was a change to be made, one (1) may be for Hydro to do an export price forecast more along the lines of recommended by Daymark in their export review. Now, how much does that matter? I -- I don't know, because I'm not in the CSI session.

A second that -- that may be worthwhile is the -- is making sure that you have a load forecast that's consistent with the -- the rest of the IFF. And as I reviewed this morning with Mr. Ghikas, he referenced, and I have had the opportunity to check, that the load forecast is down 7 percent since NFAT and when you go out to a -- a given year, where he referenced me, but almost six (6) of that, or somewhere between five (5) and six (6) of that is elasticity effect due to the seven point nines (7.9s). So if you were to put in a -- a load forecast that consistently represents the same rate increases that you're running for the rest of the financial model, you know, that -- that, I think, would be a -- a possible further piece.

Now, I'm not -- also not getting into what happens to the normal capital spending, which we're going to have -- have consideration of whether that's been -- been properly benchmarked in efficiency. And -- and, of course, this also includes DSM at the high levels. And I haven't -- I haven't seen Hydro put in a -- a DSM plan that -- or DSM spending commitment that -- that one could benchmark to a lower level. I think that might just end up being a footnote, if you like, that this has the high levels of DSM, and that needs to be reconsidered in light of the changes in -- in marginal cost.

MS. DAYNA STEINFELD: And just to close the door on this, Mr. Bowman, did you also suggest to Mr. Ghikas that another adjustments that might be made to the MH-93 run would be to do it with an eighteen (18) year, or perhaps a twenty (20) year WATM?

MR. PATRICK BOWMAN: I wouldn't suggest doing a twenty (20) year WATM. We already know that for -- for all sorts of reasons, Hydro wouldn't be doing that with the facts that were available to us a couple of months ago. I -- my suggestion on the interest rates is that they have moved a lot. It's kind of like the O&M suggestion. They've moved a lot. There -- I think there's a reasonable chance they will move a lot, and I think it's -- it's a bit too clever to try to be precise about which -- which -- within that range of about .1 or .2 percent, which WATM you're going to use and how you're going to come up with it.

So I -- I do not have discomfort with this run. I would note that this run is -- so this run is based on interest rates as of MH-16 update with interim. We know factually that for some period long-term rates were below that. We also know the Government of Canada has been raising rates, so short-term rates have come up somewhat from that.

And -- and I -- I think it would be -- in my submission, it's probably a -- it's probably a step too far to say, Let's update the interest rate forecast. If the Board wanted to do that, that's fine. I think they should do it with their best -- and -- and with their best treasury assumptions. But I think that might be one (1) -- one (1) step of refinement farther than I would -- than I would suggest just because, similar to O&M, I think we'll get the information every year. We'll check up on it as we go, and -- and interest rates are just of that nature.

MS. DAYNA STEINFELD: And so what -- what you're saying is you're comfortable with the twelve (12) year WATM that's built into the MH-93 run?

MR. PATRICK BOWMAN: I am.

MS. DAYNA STEINFELD: Okay. Thank you, Mr. Bowman.

MR. PATRICK BOWMAN: And -- and I'm also comfortable with the fact that it uses higher long-term rates than Hydro is actually borrowing at this year.

MS. DAYNA STEINFELD: And moving to some very short snappers, if I have the Board's indulgence to go a few moments over my time. I'd like to very briefly just touch on some of the evidence you've already given on the heading of cost of service study and the C10 allocator.

And, Mr. Bowman, do you recall that in his oral evi -- oral testimony Mr. Barnlund discussed the customer service allocators with both myself and Mr. Hacault?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: Are you satisfied, as Mr. Barnlund is, that there is no double counting of the costs that are included in the C10 category and the C23 category?

MR. PATRICK BOWMAN: Double counting has a certain type of meaning. I'm satisfied that the -- that the costs are really included in the cost of study once. To be clear, I'm not suggesting there's a padding. The question is, have -- have we allocated general service large customers a cost for services through their direct client category, as well as to the general client category.

And I -- I don't think the issue is the

double counting. I don't think the issue is -- is that the general service client representatives provide them these services. I think the issue is they generally don't use these services. These services are vastly distribution level services. And so if you're moving a house and you have to move distribution lines, that's fine.

If it was -- if Hydro was three (3) utilities, like many jurisdictions, the distribution utility would have those costs. You don't build them into the generation side of the of the ledger, or -- or for customers only using generation and transmission. I think that's -- that's the main issue. It's not a double counting, per se.

MS. DAYNA STEINFELD: So what you're saying, Mr. Bowman, is that there are costs being allocated to all classes, including the industrial classes using the C10 allocator that have no cost causal basis to be allocated to the industrial class?

MR. PATRICK BOWMAN: Right.

MS. DAYNA STEINFELD: And, Mr. Bowman, if the Board does not accept that view, do you accept that these costs should be allocated on the basis of class revenues?

MR. PATRICK BOWMAN: I think if the

Board doesn't accept the view, I think the -- the next best alternative is that they be included as distribution function costs. Rather than lumping them in customer service and pretending they're for everyone, I think that these cars should be re-analyzed for which service they're providing.

And if they are transmission level, then put them in a transmission function. If they're a distribution level, put them in a distribution function. And then it doesn't get into dollars for allocating. It would be part of a functional use of the system.

MS. DAYNA STEINFELD: Okay. But let's say the Board does not accept that view, on what basis should the costs be allocated? Are -- are you comfortable with the class revenues approach, or would you prefer to see a weighted or unweighted customer count?

MR. PATRICK BOWMAN: I think -- if -- if you're telling me that the -- you're trying to find the fairest way to allocate cost to a customer that doesn't incur those costs, I would suggest you use the one (1) that leads to the lowest result. But that -- that would be as a result of customer numbers or class of customer. I think don't think there's anything about the bills that they pay that justifies how much of bill -- moving distribution lines for moving STAR homes, or whichever they were referencing. I don't see any linkage.

MS. DAYNA STEINFELD: And moving on to your evidence on differentiated rates. Mr. Bowman, it's -- it's your recommendation that the increase for the fiscal year 2018/'19, not be implemented as an across-the-board increase.

Is that correct?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: And it's your recommendations that the GSL classes should be given a rate increase 1 to 2 percent lower than the average?

MR. PATRICK BOWMAN: Yes. And I think just -- just as not -- general service small non-demand is the same thing. My recommendation is rooted in the results of the study, if the study leads to the same conclusion for general service small non-demand.

MS. DAYNA STEINFELD: And, Ms. Schubert, if we could please put side 45 on the screen.

(BRIEF PAUSE)

MS. DAYNA STEINFELD: The second blue bullet here, Mr. Bowman, discusses that the GSL 30 to 100 kV and greater than 100 kV classes have been well above the zone of reasonableness for a very long time, with perpetual claims that adjustments were not appropriate since the cost of service study was in flux or needed review.

Do you see that there?

MR. PATRICK BOWMAN: Yes.

MS. DAYNA STEINFELD: You'll accept though, Mr. Bowman, that there has previously been an adjustment coming out of the cost of service study for the industrial classes?

MR. PATRICK BOWMAN: Are you referring to 2003?

MS. DAYNA STEINFELD: I am.

MR. PATRICK BOWMAN: Yes, I was -- that was my first hearing testifying here. I remember it well.

MS. DAYNA STEINFELD: And that adjustment was made on a basis that was not revenue neutral to the utility? Or -- or put another way, another class didn't have to cover that adjustment. It instead came out of net income?

MR. PATRICK BOWMAN: Precisely.

MS. DAYNA STEINFELD: And is that what you're recommending in this proceeding, that there be a 1 to 2 percent adjustment for these classes that does not keep the utility whole?

MR. PATRICK BOWMAN: No, not necessarily. But, you know -- because we're also talking about adjustments to the overall rate increase. If we'd been saying we support 7.9 but just give this class 6.9 or 5.9, then that would've come out of Hydro's net income.

But if the claim is come up with a level of overall rate increase, use three-point-five-seven (3.57), that could still be three-point-nine (3.9) for some classes and -- and lower for others. That -- that would be revenue neutral to Hydro compared to the benchmark the Board made its decision on.

MS. DAYNA STEINFELD: And does the 1 to 2 percent number that you've arrived at include if the rate is granted that a 7.9 percent level, and not the level that you're recommending in the 3.5 percent range?

MR. PATRICK BOWMAN: Yes. And in that I'm -- the reason I'm saying that is I think between the changes coming on the system and the general nature of gradualism, even though the customers are overpaying by 10 percent or more, I don't think in -- in Manitoba we should be doing dramatic moves, just like I don't think you should be doing on the revenue requirement side.

MS. DAYNA STEINFELD: And, Mr. Bowman, have you calculated how a 1 to 2 percent reduction for the industrial customer classes and, I suppose, also the GSS non-demand rate increases would change those classes' revenue to cost coverage ratios?

MR. PATRICK BOWMAN: No, the -- for the classes you're talking about they would change by approximately the rate increase -- the rate change that you're talking about. So if you're at one-ten (110) and you take 1 percent out of the revenues, you'd go down to one-o-nine (109). Mostly.

There is a very small effect, if you don't change anything else in the cost of service study, that Hydro's net income overall goes down, and that actually reduces the -- the -- Hydro's costs. And as a result, every customer's costs actually look a little smaller and oth -- and other -- other people's rev -- RCCs would also move a small amount. But they're -- they're very small.

MS. DAYNA STEINFELD: Thank you, Mr.

Bowman. And just moving into the -- the last area of my questions. If we can go one (1) slide forward, please, Ms. Schubert, to slide 46. Mr. Bowman, I'd just like to confirm your position on -- on time of use rates.

Are you still recommending an optional time of use rate, or is your position now that due to the changes in Manitoba Hydro's marginal costs that further analysis is required before an optional time of use rate is implemented?

MR. PATRICK BOWMAN: Well, I -- I had never designed a rate that I put to this Board to say, You should approve these numbers. So in all cases I'm suggesting that -- that Hydro has to do its work. And that's part of their business and their job and their expertise is to design that.

I am -- I'm saying that -- that the -- when they go through that analysis one (1) of the things they'll have to take into account is the updated marginal cost numbers. And, in particular, the -- the spreads on marginal cost between on peak and off-peak, which I -- I don't have access to. But I know the overall levels have dropped. And as a result, when -- I think when people sit down to do it they'd come up with different numbers than they have in the past.

MS. DAYNA STEINFELD: And so, Mr. Bowman, just to be clear, what are you proposing to the Board in terms of a next step on time of use rates?

MR. PATRICK BOWMAN: My -- my suggestion to the Board is that it -- t indicate to Hydro that -- that work should be done on an -- creating a new rate schedule available to at least the largest two (2) classes of customers. And that that rate schedule should be one (1) that customers can opt into, but need not be required to move into. That rate schedule would not change the fact that they're in the overall class for the purpose of setting RCCs, so if there is less revenue it would affect the -- it would affect the class in the cost of service study.

And that -- and that as part of that design they should consider marginal cost, so that they can design a rate that gives customers more recognition of their ability to use off-peak power at lower prices and to cut back their use of -- of on peak power if -- if possible and receive a greater bill benefit from doing so.

MS. DAYNA STEINFELD: And is the timeline for completion of the analysis that you suggest the next General Rate Application?

MR. PATRICK BOWMAN: I -- I think that's practical. I -- I'd only say that -- that as long as that provides enough time for consultation with customers that -- which would be a normal part of -- of looking at a rate design like this. It's not like you have a hundred thousand customers to consult with. So as long as it had -- provided time for that, the General Rate Application is appropriate.

MS. DAYNA STEINFELD: Thank you, Mr. Bowman. And -- and thank you to Mr. Osler and Mr. Forrest. Those are my questions for this panel, Mr. Chair.

THE CHAIRPERSON: I'll ask the panel if they have any questions. Dr. Grant...?

BOARD MEMBER GRANT: Sir, I'd just like to revisit this issue about the relationship between the utility and governments or ratepayers and taxpayers. And, specifically, could I actually look at Board counsels' volume 4, page 322.

(BRIEF PAUSE)

BOARD MEMBER GRANT: I'm -- I'm wondering if it would be possible to ask for an undertaking. But I would rely upon your judgement to know how much time would be involved in this. I find this table quite informative in terms of the amount of revenue being received, in terms of sort of various provincial levies, if you can put it that way.

And particularly the -- I'm most interested in the second column and the last column. The one (1) issue that, Mr. Osler, you raised sort of indirectly when you mentioned economic grants. And I worry about the role of the provincial government as the custodian of natural resources in the province, and perhaps not setting water rentals high enough. Or perhaps they're too high. But, you know -- I mean, if we were in another situation, we might be talking about royalty rates in Alberta or stumpage rates in various forestry areas. And so I'm just concerned about those water rentals.

The undertaking then would be, would it be possible to provide a simple comparison between -- or get similar data for Quebec and British Columbia on -- I'm just thinking of the two (2) other sort of major hydro, and potentially Newfoundland and Labrador.

But how much work would be involved in sort of generating a reasonable comparison?

MR. CAMERON OSLER: And you're -- you're -- generally speaking, I'm being told very -- pretty easy to do. but to be precise, you're looking for the comparison of the -- THE current water rental regimes and maybe how they've evolved in the last few years or what?

BOARD MEMBER GRANT: I guess my primary concern would be just how much sort of wiggle room is there in this relationship between governments and the utility. So if you compared, say, the major four (4) hydro utilities. Some -- perhaps look at the last column here, "provincial payments as a percentage of gross revenue." Some sort of rough indicator.

So does the Province of Manitoba tend to collect a lot more revenue than, say, British Columbia or Quebec or Newfoundland? Or -- or, in fact, are they not collecting very much at all? Is it possible to give us some perspective on that?

MR. CAMERON OSLER: And you're looking at all of the items, not just water rentals?

BOARD MEMBER GRANT: I'd leave that to your judgement. I mean, it's really that last column.

MR. CAMERON OSLER: Yeah.

BOARD MEMBER GRANT: How we got there -- I'd be particularly interested in -- in knowing the water rights levy --

MR. CAMERON OSLER: The majority of the costs right now are probably not just water rentals anymore. So --

BOARD MEMBER GRANT: And sorry, just to --

MR. CAMERON OSLER: Subject to my colleagues, we think that -- that is informa -- we'll undertake to put together quickly what is readily available.

BOARD MEMBER GRANT: And just --

MR. CAMERON OSLER: And -- but the caution that I would give you, if you're interested, is that these things have evolved a lot in my lifetime. If I'm up in Yukon and people are really worried about rates, there's no water rental.

BOARD MEMBER GRANT: Yeah.

MR. CAMERON OSLER: There's no government guarantee charge in the context of what we're talking about, because the politicians would hear about it. In the context of the "jurisdictions with low rates," there's been all sorts of movement in my lifetime across the board. My colleagues have pointed out to me that a guarantee fee that looked pretty reasonable when we had interest rates of 7 or

10 percent doesn't look as good when the interest rate is a lot lower. It's suddenly a charge that if you went to your banker, you'd say, I'm not paying that charge for -- for -- so.

And my final comment would be when I'm working in jurisdictions where people are working together to address some of these issues between the government and the utility, with a new assets versus old assets, we would pay attention to the best way to phase in the new assets and not get too carried away about inconsistencies with the old assets.

Because the ratepayers and the customers would appreciate it. And the government of the day wants the asset developed. The -- the ratepayers would like to see that. Why do we have to get into this big problem of a massive rate increase because it's a brand-new asset and a bunch of economists and regulators tell me we have to have a bump in the first year. And we've come up with some interesting solutions to that when people put their brains to it, if they're committed to try to solve that problem.

BOARD MEMBER GRANT: Okay. Fair enough. Is -- just to clarify the undertaking. I don't need a projection to 2036 --

MR. CAMERON OSLER: No.

BOARD MEMBER GRANT: Just sort of one (1) year -- or, you know, a recent years showing -- and it's really addressing the issues you're raising is in terms of how much wiggle room is there in some of this.

THE CHAIRPERSON: I'm going to ask Ms. Steinfeld to put the undertaking on the record, because we need something --

MS. DAYNA STEINFELD: I'll allow Mr. Hacault to confirm that this is an appropriate undertaking. But I believe the undertaking would be for the witnesses to provide the Board with a table similar to that set out at Board counsel book of documents, which is Exhibit PUB-42-4, page 322 to provide a recent year or two (2) of the witnesses' selection showing the water rentals paid for BC Hydro; and another showing the water rentals paid for Hydro Quebec.

And, Dr. Grant, did you also want that year to show the provincial payments as a percentage of gross revenue?

BOARD MEMBER GRANT: That would be fine. Some sort of -- yes.

MS. DAYNA STEINFELD: And including

the -- for the year selected provincial payments as a percentage of gross revenue.

Is that acceptable?

MR. CAMERON OSLER: It's acceptable that we'll get what we can for those utilities in that scope, assuming you want it quickly.

--- UNDERTAKING NO. 65: MIPUG to provide a table similar to Board counsel book of documents Exhibit PUB-42-4, page 322, depicting one (1) to two (2) year water rentals paid for BC Hydro; as well as a table showing water rentals paid for Hydro Quebec, to include for the time period selected provincial payments as a percentage of gross revenue

THE CHAIRPERSON: I have a question for Mr. Forrest, who raised the interesting -- the issue of the woman on Agnes Street. I don't know if

Mr. Forrest Mr. Osler did that. I've never met her. And the distinction between taxpayers and ratepayers.

We have evidence in this hearing by way of a letter, which can be interpreted to be a direction from the Government of Manitoba to the Board of Manitoba Hydro as to changing the location of Bipole III from the East side of Lake Winnipeg to the west side of Lake Winnipeg. we have information from the Boston Consulting Group that the additional cost of that was $900 million. There was a discussion between Board counsel and counsel for Manitoba Hydro as to the amount, I'm not sure. We're going to get an updated number, but if the number is $900 million, so be it.

The question I have for you, Mr. Forrest, bringing -- dragging you back kicking and screaming onto this side of the table, is that a taxpayer cost or a ratepayer cost in your mind?

MR. GERALD FORREST: Great question, Mr. Chair. Certainly one (1) that I've thought of over the period of time. And, fortunately for me, I was Chair of the Interdepartmental Planning Board of government that vetted the east side route. So I'm reasonably familiar with it.

Certainly at the time the west side

route was in change, I'm not sure at that time whether the -- the economic analysis that was undertaken as a result of it set out clearly the additional costs that would be addressed as a result of it.

It is a very significant question and it's a difficult question for your Board to deal with, because it is not a matter that you had any say over. And certainly from my particular perspective, if you're looking at it on a fair and just approach as what is -- what would be reasonable under that circumstance, I would say that the ratepayer shouldn't be paying for all of that cost. Certainly the taxpayer, since it was a taxpayer decision that was forced in on -- forced on the utility and forced on the ratepayer, that there shouldn't be some sharing of the cost.

The practical reality is we are sitting in economic circumstances at the provincial level here that they have operating deficits that they're trying to curb and add additional cost to it. And, indeed, when we looked at even the water rental and the provincial guarantee and that -- are sensitive because the realistic -- you can make whatever recommendations you'd like to make, but for them to be accepted they've got to fit the overall economic profile that were trying to deal with in the long term.

So I think you're right, they should be -- to deal with it in a just and reasonable basis. But the practical reality, I don't think that it's ever going to be possible.

THE CHAIRPERSON: Thank you. Mr. Hacault, any re-examination?

MR. ANTOINE HACAULT: I've got to three (3) questions --

THE CHAIRPERSON: Certainly.

MR. ANTOINE HACAULT: -- noted.

RE-DIRECT EXAMINATION BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: One (1) is more something that Mr. Bowman had taken under advisement, was with respect to the Bipole III costs that were referenced in NFAT. And I think he was able to get some information as to how those estimates evolved or developed.

MR. PATRICK BOWMAN: Yes, just to ensure the record was clear, Mr. Chair. I don't have the transcript so I -- the numbers were put to me fairly fast and furious. But at the time of NFAT we were basing our information on the capital expenditure forecast 12 and 13, which had 3.28 billion as the

Bipole expense.

I see at the time of the NFAT hearing, at some point in that hearing Hydro would've learned that there was almost a billion dollars more cost due to the technology side, but that was not built into any NFAT forecast and that information was not provided to the Board. But I was asked to compare that to the current estimate and -- and that information is already in the record.

MR. ANTOINE HACAULT: Thank you. The second question relates to figure 5-1, which Mr. Ghikas took you through. The issue which he raised in cross-examination was the first time that issue was raised. It wasn't raised in rebuttal evidence with respect to the impact of any -- of doing the same runs, but with line losses.

Would you be able to do the run which you referenced in that cross-examination?

MR. PATRICK BOWMAN: Well, Mr. Ghikas put to me -- this is -- this is the exhibit that is unit costs. And Mr. Ghikas put to me that if you took 14 percent out of the denominator would the -- would the size or the -- the numbering of the lines change. And I suggested that -- although it changes the axis. But if it's helpful to do the math to show that, I'm -

- I'm prepared to do that.

MR. ANTOINE HACAULT: Is that acceptable, members of the Board?

THE CHAIRPERSON: Yes. Sorry. Yes, it is. Thank you.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: The last question arises -- and -- and maybe my perception was incorrect, but there were a number of exchanges between counsel on questioning of these witnesses by other Intervenors. And I just wanted to clarify for the record the independence of each of these witnesses.

The inference by Mr. Ghikas's comments was that these were softballs and somehow these witnesses were in the pockets of other Intervenors in this province. I request specific understandings and specific issues with respect to their role as independent experts, and would like each of them to confirm their understanding of their role.

THE CHAIRPERSON: I was going to say, Mr. Hacault, I don't think we need a submission from you. If you want to put questions to the witnesses as re-examination, you can do it.

MR. ANTOINE HACAULT: But -- but that was just background to see why I was asking the question.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Mr. Bowman, and consecutively Mr. Osler and Mr. Forrest, what's your understanding of your role in this proceeding as an expert witness?

MR. PATRICK BOWMAN: Mr. Hacault, I have in front of me a document that you've put to me for this hearing, and you've put to me in every hearing we've been involved in together, which you provided from the Ontario Municipal Board to remind us early on in the assignment that the duty is to provide opinion evidence that is fair, objective, and nonpartisan. And to provide assistance to the Board in -- in any issue which it may reasonably require.

MR. CAMERON OSLER: I've signed the same document and through my career that's the obligation I have. And I -- our job is to assist the Board.

MR. GERALD FORREST: And clearly from my particular point of view I'm here to assist the Board and no one else.

MR. MATTHEW GHIKAS: And, Mr. Chairman, if I may speak just on that point. I think that my intent in objecting to questions that were friendly cross was not aimed at the witness so much as at the question. So if that's what my friend Mr. Hacault is -- is suggesting that I was aiming those objections at the questions -- at the -- the answer. My -- my problem was with the questions, not the answers.

THE CHAIRPERSON: Thank you. Any more re-examination?

MR. ANTOINE HACAULT: No. Those were the three (3) questions I had, members of the panel and Chair.

THE CHAIRPERSON: Well, on behalf of this panel, we thank that panel for your attendance yesterday and today and your assistance to this panel in -- in helping us move toward our deliberations at -- once the hearing is over. Thank you.

We're going to adjourn. I'm actually -- we're going to try and come back at 12:45 so that we can keep to the schedule. I'm sorr -- sorry for the short break, but the we're -- we're -- my schedule shows that we're getting the City of Winnipeg on for 12:45. Thank you.

(PANEL STANDS DOWN)

--- Upon recessing at 12:10 p.m.
--- Upon resuming at 12:56 p.m.

THE CHAIRPERSON: Good afternoon. Mr. Simonsen, if we could swear in the witness.

MS. MARLA BOYD: Excuse me, Mr. Chair, if I could just have a minute before you begin?

THE CHAIRPERSON: Oh, I'm sorry, certainly.

MS. MARLA BOYD: Thank you. Good afternoon --

THE CHAIRPERSON: Oh, we have more.

MS. MARLA BOYD: -- I have been provided with three (3) undertakings that I'd like to file if you're prepared to receive them?

THE CHAIRPERSON: Certainly.

MS. MARLA BOYD: The first one is Manitoba Hydro's response to Undertaking Number 54 taken from transcript page 5647. I would propose that it be marked as Manitoba Hydro Exhibit 125.

--- EXHIBIT NO. MH-125: Response to Undertaking

Number 54 taken from
transcript page 5647.

MS. MARLA BOYD: The second is Manitoba Hydro Undertaking Number 58 taken at transcript page 5781. It was taken under advisement. Manitoba Hydro has provided a response and I would propose that that be marked as Exhibit Manitoba Hydro 126.

--- EXHIBIT NO. MH-126: Response to Undertaking
Number 58 taken from
transcript page 5781.

MS. MARLA BOYD: And finally, the response to Undertaking Number 59 which is taken at transcript page 5837, and I would propose that that be marked as Manitoba Hydro Exhibit 127.

--- EXHIBIT NO. MH-127: Response to Undertaking
Number 59 taken from
transcript page 5837.

THE CHAIRPERSON: Thank you.

MS. MARLA BOYD: Thank you.

MR. KURT SIMONSEN: Thank you.

CITY OF WINNIPEG PANEL:

TYLER MARKOWSKY, Sworn

THE CHAIRPERSON: Please proceed.

EXAMINATION-IN-CHIEF BY MR. DARYL FERGUSON:

MR. DARYL FERGUSON: Good afternoon, Mr. Chair, and members of the -- the Board. Just to remind you, my name is Daryl Ferguson. I'm one of the City of Winnipeg's lawyers and I'm here today with the Tyler Markowsky who will be providing you with the City's presentation of its evidence concerning the impacts of the proposed Hydro rate increases on the City of Winnipeg and, by extension, the residents and businesses in the City of Winnipeg.

I would like at the outset to, first, begin by acknowledging on behalf of the City that we are in Treaty 1 territory and the traditional homeland of the Metis Nation.

You should have before you a copy of a PowerPoint presentation of the City of Winnipeg and Mr. Markowsky will primarily be using that to guide you through his evidence this afternoon. For your reference, there are a number of other documents that may or may not be referred to in the course of his evidence. There is, of course, the City of Winnipeg report dated October 31, 2017 which sets out in more detail the City of Winnipeg's evidence on the impacts of the proposed rate increases on the City.

The PowerPoint presentation is -- is -- is a form of a precis of the information contained in that report. The other documents that may come up, there is a City of Winnipeg response to an Information Request of the Public Utility Board. It is a -- a spreadsheet, and it provides the background data that goes into various of the charts that are contained in both Mr. -- in both the City's report and the PowerPoint presentation that Mr. Markowsky will take you through today.

And then finally, in Mr. Markowsky's -- in the City's report there is reference to Coalition-MH-1-120 (b) to (d) and we will make reference to that very briefly at the outset, as we take you through the -- through the PowerPoint.

So with that background, what I would propose to do is to quickly take you through Mr. Markowsky's background and education. There's a more detailed CV of his that has been provided in response to an Information Request of Manitoba Hydro. I don't propose to go through that in any detail in order to preserve some time. So I'll quickly take you through his qualifications, background and -- and then we'll turn to the PowerPoint.

So, Mr. Markowsky is a City economist with the City of Winnipeg. He's had that position since 2016. In that capacity, he carries out major macro and microeconomic policy analysis as it affects the City's finances and economy.

Prior to that from 2011 to 2016, he was a senior economists at Manitoba Hydro where he was involved in, amongst other things, macro economic financial analysis. And he had experience in and involvement in the NFAT process, and various other forecasting analyses undertaken by Hydro while he was in their employ.

He has a Bachelor of Arts, with a major in Economics from the University of Manitoba in 2008. He has undertaken Master's course work in advanced micro and macroeconomics at the University of Manitoba and has been an occasional student at the MBA program at the University of Manitoba.

And if I could just ask Mr. Markowsky

to confirm that I've correctly summarized his -- his background?

MR. TYLER MARKOWSKY: I confirm that.

MR. DARYL FERGUSON: So if I could ask you to turn to the PowerPoint presentation and, Mr. Markowsky, is going to take you largely through the PowerPoint.

I thought I would speak briefly to the first slide of the PowerPoint, which sets out in a number of bullet points, the nature of the rate application that is before you, and the projected rate increases that Manitoba Hydro has provided over -- over seven (7) years, followed by 2 percent rate increases thereafter.

The rate increases apply to all components of the rates for all customer classes and we've set out at the -- in the last bullet point a couple of quotes from parts of the opening statements of Manitoba Hydro's counsel and Manitoba Hydro's president and CEO from December 4th.

And I just want to be fair to Manitoba Hydro that while these quotes say what they do say in the transcript, obviously, the transcript goes on where Manitoba Hydro, in their opening statements, set out their justification for why they're seeking what they describe as exceptional rate increases larger than any previous rate increase ever sought.

And I want to focus just very quickly for a moment on the -- the last quote from Manitoba Hydro's president and CEO where he recognized that the rate increases would not be without consequence. And it's there that I would like to turn to the Coalition-MH-1-120 (b) through (d) because I think it ties into the rationale for what we're hoping to present to -- to you today.

And in this document, Manitoba Hydro was asked, particularly in sub (d), for copies of analysis and reports of the impact of any proposed rate increases on the Manitoba economy. And their answer -- if you down to (d) -- is they confirmed that they had not undertaken any specific analysis to determine the impact of the proposed rate increases on the Manitoba Hyd -- on the Manitoba economy or the referenced groups.

And so what we're hoping to present to you today is part of that picture which is the impact of the proposed rate increases on the City of Winnipeg and -- and -- and as I say, by extension, the residents and businesses of -- of Winnipeg.

So with that introduction, I would turn

the matter over to Mr. Markowsky to take you through the presentation and the City's presentation on what those impacts are.

The next page of the presentation sets out -- of the PowerPoint, sorry, sets out in -- in broad terms four (4) material ways in which the City of Winnipeg says that the proposed rate increases, if approved, would have impacts on the City.

And I'll turn it over to Mr. Markowsky. Thank you.

MR. TYLER MARKOWSKY: So the approach that I took to study the consequences to the City of Winnipeg and the economy of Winnipeg was to take a look at the -- the direct potential impact on -- on our own bills, essentially.

I also wanted to look at the indirect impact that would be passed on through our customers and -- and the goods and services that we purchase from them, as well as the impact from our electricity tax revenues which we receive from Manitoba Hydro. And then the -- the GDP to -- to Winnipeg.

Next slide. So the City of Winnipeg is the capital of the province of Manitoba. We are the largest city municipality in Manitoba with a population of approximately 750,000 people which is about 59 percent of the population in Manitoba.

The municipal corporation pursuant to the City of Winnipeg Charter Act, the purpose of the City is set out in section 5.1. The purposes of the City are: (a) To provide good government for the City; (b) To provide services, facilities or other things that council considers to be necessary or desirable for all or part of the City; (c) To develop and maintain safe, orderly, viable and sustainable communities; and (d) To promote and maintain the health, safety and welfare of the inhabitants.

The City carries out this mandate through a provision of goods and services to individuals and businesses of Winnipeg; and, part of this is accomplished through annual budgeting process, both through an operating and capital budget.

Both the City direct electricity costs and on -- sorry, am I on the wrong page? Thanks.

The operating budget, it's a -- it's an annual estimate of the City's cost expenditures, together with the revenue sources to fund those costs. It's governed by Section 285 of the Winnipeg Charter Act. 285(1):

"Every operating budget of the City for a fiscal year shall include estimates of (a) all operating revenue for that year, including all (I) amounts that under this or any other Act are required to be raised in the year by imposing taxes; and (ii) transfers from the previous year's surplus or reserve fund. (b) All operating expenditures for the year, including all amounts, (I) to be transferred in the year to be -- to the capital budget or a reserve fund; (ii) needed to eliminate any deficit incurred in respect of the previous fiscal year; and (iii) needed to defray the cost of collection of taxes, the abatement of and discounts on taxes and taxes considered by council to be uncontrollable; and (c), all amounts required to pay principal and interest payments falling due within the year on any debt of the City. Expenditures are not to exceed revenues."

And section 285(2) just to -- just to

highlight:

"When adopting an operating budget, council must ensure that the estimated expenditures for a fiscal year do not exceed the estimated revenue for the year."

So therefore, an operating budget at the City is a zero-sum process. Revenues must equal expenditures. And by way of example, the 2018 preliminary operating budget saw revenues of $1.08 billion and expenditures of $1.08 billion.

Both City direct electricity costs and City indirect costs or the cost of goods and services purchased by the City, are a part of our annual operating expenditures. City operating revenues generally split between taxation, property and business taxes, fees and charges and grants from other levels of government.

For the City in the 2018 preliminary budget, property and business taxes represent approximately 60 percent of the total revenue. For the '18 preliminary budget, government grants represent approximately 12 percent of total revenues. The annual amount of government grants are not guaranteed; rather, they are funding decisions made at the other -- at other levels of government. By way of example, the recent provincial government decision to eliminate its commitment to cover 50 percent of operating costs for municipal transit systems.

The City operating expenditures cover a broad range of goods and services. For example, police, fire and paramedic service, contributions to Winnipeg transit, debt financing charges, community services, and many others. Certain expenditures afford little or no room to cut, such as, police services, fire and paramedic services and debt and financing charges.

Capital budget provides financing for minor and major capital budgets, our projects. Governed by Section 286 of the City of Winnipeg Charter Act, the capital budget of the City for each fiscal year, and each five (5) year capital forecast of the City shall include estimates of (a) the amount needed to acquire or construct each of the works proposed in the budget or forecast; and (b) the anticipated sources of the amount needed for each of these works.

Examples recently are the SW. Rapid Transit Way, purchase of Winnipeg transit fleet, purchase of police, fire, paramedic fleet. Financing is raised through contributions of federal, provincial governments, developer contributions in some cases and the City of Winnipeg contributions.

The City of Winnipeg contribute -- contributions are generally financed through debt and interest payable on debt forms part of the operating budget expense.

Budgetary challenges. Quote:

"The City's tax supported budget has a structural deficit, sustainable revenue streams do not cover required expenditures."

And that's from the 2018 preliminary budget. As of October 31, 2017 the City was facing a operating budget structural deficit of approximately $89 million. In order to balance the 2018 budget, cuts to service departments and cash expenditures to capital were made. As set out below, the current '19 and '20 operating budget projections show deficits of approximately 85.9 million and 101.3 million, respectively. And there is a chart below that that provides a high level of that.

Next. Going forward through 2028, it is projected that the operating budget deficit will continue to grow. And I just want to just draw your attention to that -- that chart that's there, that is -- the blue line is the -- is the projected total expenditures of the operating budget over the next several years, and the -- the current total revenues that the City has -- or the current structure for total revenues the City has in its plans. And so that's how the -- the estimate is -- is arrived at the structural deficit.

As of -- as at 2028, the projected operating budget deficit is approximately $350 million. This does not include the projected capital budget infrastructure deficit which is recently estimated at approximately $7 billion.

If these project -- sorry, these projections do not include any increased electricity costs the City would incur if Manitoba Hydro's proposed rate increases are approved.

In 2016 City of Winnipeg paid approximately $29 million for electricity, which accounted for approximately 2.2 percent of all direct expenses. Historically, the City of Winnipeg electricity expenses have grown at an average compound rate of 3.7 percent per year. Adjusting for past electricity price increase, the City of Winnipeg real electricity consumption has historically grown by approximately 0.5 percent per year. The following chart demonstrates to the City -- demonstrates to City direct the impact to direct electricity expenses, if Manitoba Hydro's proposed rate increases are approved. And the counterfactual I used in this analysis was the 3.95 percent.

The total comm --

MR. DARYL FERGUSON: If I might just pause there for a moment, Mr. Chair. I note that the PowerPoint that is up on the monitor doesn't have that chart, although I believe the version that you have does have that chart.

So, for the benefit of those that are following along on the PowerPoint, the chart that -- that should be there on the one (1) that is on the monitor is actually contained in -- and so the chart that isn't showing up on the monitor, but is in the copy that I believe the Panel has. So, for the benefit of those following along on the monitor, the -- the chart that should be there can be found on page 5 of the City of Winnipeg's October 31, 2017 report and we'll make sure to distribute to all counsel versions of the PowerPoint that do, in fact, have the chart.

I believe from recent discussions I had

with Mr. Peters, that their -- when the PowerPoint was sent to the PUB, the underlying data that was received somehow didn't all go through, but the version that was later sent to the Manitoba Hydro did have that and that's the version that is before.

THE CHAIRPERSON: Sorry, can I ask, does counsel have -- you don't have a copy with the chart? Is everybody just following off the monitor? Okay. So Kristen, can you -- sorry. Okay, okay, good.

I just want to make sure that counsel can --

MR. DARYL FERGUSON: Yeah, and now I see that through the miracle of technology it's now showing up on the monitor.

THE CHAIRPERSON: Through the miracle of Ms. Schubert, actually.

MR. DARYL FERGUSON: My apologies, Mr. Chair.

MR. TYLER MARKOWSKY: So if you take the difference between the direct and the -- the direct based on the proposed rate increases and the counterfactual of 3.95, the total cumulative increase in direct electricity costs over the period 2017 to '38 amounts to 162,349,160.

Electricity, indirect costs. The City of Winnipeg has approximately twenty-one thousand (21,000) suppliers who have approved status in our Accounts Payable system. Of these, approximately nine thousand (9000) are uniquely identified as having payable addresses in Manitoba.

THE VICE-CHAIRPERSON: Can I just ask a question on -- there aren't page numbers on here but going back to the chart that you had with electricity direct costs.

MR. TYLER MARKOWSKY: Absolutely, yeah.

THE VICE-CHAIRPERSON: And you say the following chart demonstrates to City direct electricity expenses if Manitoba Hydro's proposed rate increases are approved.

MR. TYLER MARKOWSKY: Yes.

THE VICE-CHAIRPERSON: So are you talking just about the two (2) years of the interim 3.36 and the one year of the 7.9 percent?

MR. TYLER MARKOWSKY: Sorry, pardon me?

THE VICE-CHAIRPERSON: Are you speaking only of the rates that are before this Board right now? So the two (2) years of the 3.36 percent interim rates and the one year of the 7.9 percent increase?

MR. TYLER MARKOWSKY: No, it's the overall projection.

THE VICE-CHAIRPERSON: So you're aware that this Board looks at each application as it comes in and makes decisions only on the evidence before us at the time of that application?

MR. TYLER MARKOWSKY: I am, yes. Thank you.

MR. DARYL FERGUSON: If -- if I might just speak to that. We are aware of -- of the application that is before the Board, but built into Manitoba Hydro's rationale for the 7.9 percent increases is a longer-term projection of rates that are needed to bring their balance sheet into alignment with certain accounting principles.

And a -- so that -- so that just on the period two (2) years factor that is before the Board, even on Manitoba Hydro's evidence at 7.9 percent, that does not bring them into alignment of those accounting principles and so, their projections are relevant to the overall picture because their -- the basis of their seeking 7.9 percent is premised on the broader picture of -- of after ten (10) years getting themselves into alignment with -- with those account -- accounting fundamentals that formed the basis of the -- the underlying basis of their application.

THE VICE-CHAIRPERSON: Yeah, I hear what you're saying but what you say here is if Manitoba Hydro's proposed rate increases are improved -- approved and there's actually three (3) years before the Board right now, and that's all at t his point. The rest is a rate path or a rate trajectory.

So I just wanted to be sure that we were all clear on what we're talking about here.

MR. DARYL FERGUSON: Yeah. And -- and -- and so you're probably correct, it shouldn't say -- when it says "are approved," we're actually talking about the -- the broader picture. And so that's probably the wrong nomenclature that was used in that sentence.

THE CHAIRPERSON: But I want to make sure we're talking about -- what we're talking about.

Are we talking about the forecast or rate path that they put forward over ten (10) years of the 7.9 percent; for six (6) years the 4.54 percent; and then the 2 percent for the balance?

MR. DARYL FERGUSON: Yes.

THE CHAIRPERSON: Is that what we're

talking about?

MR. DARYL FERGUSON: Yes, yes, that's -- and so that's reflected in the --

THE CHAIRPERSON: In that chart.

MR. DARYL FERGUSON: In the chart, the -- the -- the brown line and the blue line reflects what the costs would be if rate increases at 3.95 percent, which was the rate in the NFAT study, were carried forward over that same period of time.

THE CHAIRPERSON: Okay.

MR. TYLER MARKOWSKY: Just flipping back to the indirect costs. So the same -- the same methodology was used for -- for all of the -- the assumptions in these -- in these charts.

The City of Winnipeg has approximately twenty-one thousand (21,000) suppliers who have approve status; of these, approximately nine thousand (9000) are uniquely identified as having payable addresses Manitoba.

In 2016 the City of Winnipeg issued payment of -- to these approximately nine thousand (9000) local businesses approximately $600 million, not including PST or GST. It is generally accepted that these businesses use electricity in providing their services and products. And they will pass this expense, plus a margin on to the City Winnipeg in order to achieve their desired return on investment.

Based on Stats Canada use tables, average use of electricity as an input is approximately 1.4 percent, therefore, of the 600 million in billings, the elects -- electricity costs would mean in 2016 8.4 million in billings related to electricity costs of City suppliers.

Assuming a conservative profit margin of around 5 percent, the pure Hydro amount is approximately 5 million.

The next chart, there, yes. If Manitoba Hydro increases its rate by the proposed rate increases, the following chart demonstrates what would occur to City's indirect electricity costs. The total increase in indirect electricity costs 2017 to 2038 amounts to 40 -- approximately $46 million.

The next chart. City tax revenues from electricity. Section 441 to 450 of the City of Winnipeg Charter Act gives the City authority to charge tax on the consumption of electricity for nonheating purposes within the City limits. For 2017 the total electricity tax revenues of the City of Winnipeg were approximately $17 million.

If Manitoba Hydro increases its rates

by the proposed rate schedule, City of Winnipeg electricity revenues will increase. The following chart demonstrates what would occur with the City of Winnipeg electricity revenues if Manitoba Hydro rate increases is approved. The total increase in City electricity tax revenue over the period 2017 to 2038 amounts to approximately $99 million.

The net cumulative effect on City of Winnipeg finances of the estimated direct and indirect cost increases, as well as the expected increases in revenue from the electricity tax amounts to an additional cost of approximately $109 million. On a net present value basis, assuming 6 percent discount rate, this amounts to approximately $51 million.

To put this in perspective, the NPV of the additional costs of the proposed Hydro rate increases constitutes an additional 58 percent to the $89 million operating budget deficit the City was faced with as of October 31st, 2017.

Assuming the proposed Manitoba Hydro -- Hydro rate increases are approved and given the City's statutory obligation to have a balanced operating budget each year, the additional cost to City finances will have to be addressed in the annual budgetary process through either increases in taxation, property and business taxes, and/or fees and charges and/or a reduction in operating expenditures.

Continuing. Given the projected operating budget challenges the City already faces due to its structural deficit, reality is while some cost reductions may be achieved not all will, therefore, one (1) option might be a reduction of capital spending. Any reduction in capital spending would be difficult given the City currently faces an infrastructure deficit of approximately $7 billion.

Furthermore, any additional cuts to infrastructure spending would have significant long-term impact on the City's ability to deliver important services to Winnipeg.

And just on the impact to the -- the gross domestic product. So there were -- there were two (2) -- there were two (2) components to this that I looked at, the first was we -- we retain the Conference Board of Canada as a -- as the supplier of -- of some of our economic -- macroeconomic information and, in my report, I -- I cited some analysis that they had provided on the potential impact, that includes Manitoba Hydro's rate increases.

I've also looked at the information that Professor Simpson and Compton did. So, the overall importance to the economy of Winnipeg, to the economy Manitoba, can be measured as a percentage of the GDP that is made up of the City of Winnipeg's GDP.

The City of Winnipeg GDP constitutes approximately 67 percent of Manitoba's GDP. The effect of the proposed Hydro rate increase on Manitoba's economy was estimated by Professors Simpson and Compton to be between 2.1 percent and a 3.6 percent compounded effect over -- over their -- over their analysis.

Applying these percentages declines to the City of Winnipeg by the end of the period from 2019 to '25, the dollar value declined the City of Winnipeg will be on the order of a billion to a billion and a half dollars, assuming those -- assuming those declines.

This conclusion is consistent with the most recent Conference Board of Canada Metropolitan Outlook for the City of Winnipeg, which demonstrates the percent change in retail sales in Manitoba taking into account Manitoba Hydro's proposed rate increases would drop from a 5.2 percent increase in 2017 to only a 1.3 percent increase in 2021.

The president and CEO of Manitoba Hydro was correct in his opening remarks where he stated that:

"The Hydro rate increases being asked for will not be without consequence."

For the City Winnipeg that consequence will be a significant negative one.

1. There is no question the City of Winnipeg's direct electricity expenses will increase. This represents a negative impact on the City's operating budget.

2. There is no question, the City Winnipeg's indirect costs or the increased price of goods and services purchased by Winnipeg will increase. This represents a negative impact on the City's operating budget.

3. While city electricity taxes -- revenues will increase, the increase does not come even close to offsetting the negative impact on the City's direct and indirect costs. And

4. There is no question the economy of the City of Winnipeg and -- and as -- as measured by the GDP, will be significant impacted.

As stated by the Chairperson, the Board's mandate is to set just and reasonable rates that are in the public interest. The City submits that the exceptional rate increase, which is larger than any previous increase sought by -- from the Public Utilities Board by Manitoba Hydro, is neither just, nor reasonable, nor in public interest.

THE CHAIRPERSON: Thank you, sir. We'll have some questions. Dr. Williams, do you have any questions?

DR. BYRON WILLIAMS: Sorry, members of the panel. I had indicated to Board counsel that while we very much appreciate Manitoba -- the City of Winnipeg's evidence, we do not have any questions.

THE CHAIRPERSON: Thank you.

BOARD MEMBER GRANT: Can I indulge my --

THE CHAIRPERSON: Certainly.

BOARD MEMBER GRANT: There'll be no undertakings.

THE CHAIRPERSON: That's for sure.

BOARD MEMBER GRANT: This -- I want to put this in perspective and sort of follow up on Board member Kapitany's view, that if we could just deal with a one (1) year increase, I think I have a better chance of putting this in perspective.

What struck me on reading the report is that how little the City of Winnipeg spends on electricity. It's only 2.2 percent of your budget, and I think that's even less than those residential consumers. So if my arithmetic's right, a 7.9 percent increase on 2.2 percent of your budget is a fifth (1/5) of 1 percent of increase in your budget, and I think it comes out to about $2 million a year. Does that sound about right?

MR. TYLER MARKOWSKY: Yeah. So it -- it depends on the year, of course.

BOARD MEMBER GRANT: Yes.

MR. TYLER MARKOWSKY: So the -- the spreadsheet I provided, there's a -- there's a cash flow of the estimate. You know, in -- in the -- in the years right up in front of us, it's -- it's less than a million, and, you know, pushing out a few years, it -- it approaches close to 5 or $6 million.

But I -- I just -- I wanted to just draw your attention to magnitude. So this year, our operating budget was, I -- I think, 1.08 billion or -- or something like that. It increased by about $13 million. So that's the growth in our total operating budget.

So I -- I get that, you know, a hundred and fifty thousand (150,000), $2 million, $3 million may not sound like a big deal for the City. But given that's the prevailing growth that we see in our revenues, and in -- in the face of all the other expense pressures that we have from all the other things that -- that the City faces, it -- it is a big piece of -- a -- a big impact.

MR. BOB PETERS: Mr. Chair --

BOARD MEMBER GRANT: I just think the --

MR. BOB PETERS: Sorry. Sorry, Board member -- Dr. Grant. I would wonder -- if it assists Dr. Grant if I could ask Kristen to pull up PUB/City of Winnipeg number 12, and there was an Excel attachment to that. And I think that's what that Mr. Markowsky was referring to, and if I am correct, I'll just sit back and apologize again for interrupting, but I thought this might help Dr. Grant.

MR. TYLER MARKOWSKY: Exactly. If you scroll all the way to the right, you know, so this is -- this is the spreadsheet I used to do all my analysis. And on the far right-hand side, so you can say -- see the net incremental cost, and then in column 'S', there is a -- a rough -- a rough guide to what a property tax impli -- implication would be. A 1 percent increase in our property tax yields approximately $5.4 million. So you can see 2.7

million, you know, 7.29 million. My -- my goal in this was to just give you a sense of scale to -- to the -- for -- for the City of Winnipeg.

BOARD MEMBER GRANT: I understand that, but to put it in the sense of scale, I think dealing within the next year, and not worrying about net present values and stuff, because that really does, to me, confuse the matter. And -- and comparing the relative hurt that different ratepayers may face, you -- you -- first of all, you tax electricity. You have the ability to increase -- you can tax people, and that's something that most, you know, most residential consumers have to worry about, Will my income go up or not? You don't have that much control over it.

And you also have fairly robust revenue projections. If I -- if I look at the 2016 City of Winnipeg forecast, you've got pretty decent population growth, pretty good household formation. So even without any change in the mill rate, then presumably, your -- your revenue is going to increase pretty steadily.

So I'm just trying -- I'm kind of missing that revenue side to put this in perspective. It's easy to say, I've got to come up with $2 million to pay --

MR. TYLER MARKOWSKY: M-hm.

BOARD MEMBER GRANT: -- but you've got some built-in escalators in your revenues. So that was my one (1) concern.

The other one, I was going to say about your indirect costs. If I have to consider Mr. Monnin's clients, I -- I like your chances in terms of their ability to pass costs onto you. You're a -- you're a major buyer. You've got monopsony power, and so I'm not sure how much sort of small commercial retail sectors, or your suppliers are going to be able to pass those costs onto you.

MR. TYLER MARKOWSKY: M-hm.

BOARD MEMBER GRANT: So --

MR. TYLER MARKOWSKY: Well, I -- just -- just on -- on the -- on the revenue, you know, the -- the growth and -- and the ability for the City of Winnipeg to -- to respond to unpredicted cost increases, absolutely. You know, one (1) thing that that is -- that I'm observing from this -- this hearing is, you know, the -- the pessimism over load. And -- and I know that load is a function of many things more than just population, but we are seeing historic population growths right now. The City of

Winnipeg is growing at -- at the facet it has -- it has in -- in -- easily since the -- the Baby Boom era.

So we are growing very, very fast, but those -- so the -- the big things a city provides, you know, its -- its infrastructure for citizens, to their houses, to the places of work, those are very, very expensive. So for us to be able to provide infrastructure is -- is, you know, it's -- it's very expensive, just like it is for -- for Manitoba Hydro.

The other thing that -- that I wanted to draw is, you know, again, the -- the ease of which to increase the mill rate, for example. You know, as evidence to the -- the change in the mill rate, the property tax in the City of Winnipeg from -- and -- and subject to check, so don't hold me to the exact years, but let's say 1999 to 2016 increased 9 percent. So compare that to other cities, it's -- it's increased on the order of 140 to 150 percent.

So those are decisions that happen every single year by -- by council. And -- and those decisions, you know, every year, they have to deal with that. But the ability for the City to react to unforeseen costs, it isn't necessarily as -- as black and white as perhaps you are characteri -- if -- if I understood you correctly.

BOARD MEMBER GRANT: Okay. The -- I -- I actually do have a question. I don't want to talk about price elasticities, but if you did have -- if you did respond to a higher price increase, and -- and were forced to cut back, how -- how, in fact, do you think the City would cut back on the electricity bills? I mean, what -- do you keeps the pools at a lower heat, or do you turn the streetlights out earlier? I mean, what are the options you have?

MR. TYLER MARKOWSKY: So there is -- there is a -- a multitude of things that, I'm sure -- the -- the City is a very complex organism. There's lots of different pieces to it, pools, libraries, police, fire, all kinds of stuff. But it costs money, so you -- you're either -- you're either going to spend money to, for example -- pardon me -- install insulation, or replace an old boiler, or -- or something more efficient, put in new windows. It's not free.

Or, if we can't afford to, and we do actually want to cut costs to respond to that price, we would reduce either the heat, or, you know, some sort of reduction in -- in service. And -- and just as -- just as an example, the City has done stuff like that where we have deferred -- deferred maintenance on expensive things that could reduce our -- our consumption of energy, boilers and old pools, East Kildonan Pool, Sherbrook Pool, which results in emergency closures in the year.

So it -- it isn't -- it's not a, you know, one (1) thing that -- that strikes me when I'm looking at some of the analysis done on elasticity, it -- it's not free, you know. It does cost money, and there may be rebates, but it does cost money. Or, if it doesn't cost money, you're cutting something.

THE CHAIRPERSON: Thank you. Mr. Hacault, do you have any questions?

CROSS-EXAMINATION BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Yes, I do have a couple questions.

Good afternoon, Mr. Markowsky. My name's Antoine Hacault. I am counsel to the Manitoba Industrial Power Users Group. I just have a couple questions.

Firstly, in your paper, you reference that you were a senior economist at Manitoba Hydro from 2011 to 2016, correct?

MR. TYLER MARKOWSKY: I'm sorry, I was getting some help, there. Can please repeat your --

your question?

MR. ANTOINE HACAULT: Not a problem. And if I'm speaking too quickly, or you need me to clarify anything, let me know.

I was -- I saw in your paper, and it's actually in front of us right now, that you were a senior economist at Manitoba Hydro from 2011 to 2016, correct?

MR. TYLER MARKOWSKY: Yes. You know what, I'm just going to clarify that, actually. So my -- my title was eco -- senior economic analyst, I believe, for maybe a year and a half, or two (2) years, and then the incumbent senior economist retired, and I -- I took that -- that position. But -- but I was senior economist when I -- when I left Manitoba Hydro.

MR. ANTOINE HACAULT: So how many -- when you say "senior," that implies to me that there might be other economists at Manitoba Hydro.

MR. TYLER MARKOWSKY: Yes, there were -- it's changed over time, and -- and there were some individuals who retired. And I -- I can't speak to how many exactly are there right now, but at the time -- and do you -- are you asking me to estimate how many economists there were in the economic analysis department?

MR. ANTOINE HACAULT: Yes.

MR. TYLER MARKOWSKY: Okay. Subject to, you know, my memory, on the order of five (5) -- five (5) economists in the economic analysis department. There were, I'm sure, economists in other areas of the firm.

MR. ANTOINE HACAULT: And would any of those economists have the ability to do macroeconomic analysis of the impacts on the Manitoba economy?

MR. TYLER MARKOWSKY: There were individuals who, I would say, to -- to a certain degree. It -- it depends on the -- the scope of the work that was expected. You know, for example, in -- in some cases, that was outsourced to the Manitoba Bureau of Statistics for input/output modelling. But, you know, this -- this report that I did is a -- is a rough macroeconomic analysis, and certainly, the economists in that department could do that work.

MR. ANTOINE HACAULT: So what you're telling me is that to the extent that those economists wouldn't have been able to do it themselves, they certainly would have been able to direct such a study to determine the economic impact of the rate request, firstly, and of any plan that Manitoba Hydro may put going forward?

MR. TYLER MARKOWSKY: That -- I mean -- they -- I'm -- it's kind of an odd position to be put in to -- to speak to what -- what decisions could have been done, but, you know, if the department was directed to conduct a macroeconomic analysis, or an impact analysis of -- of something, I am sure that, you know, a decision would have been -- been made to determine if that could be done in-house or -- or whether it would -- needed to be outsourced. And -- and those kind of requests did -- did come.

MR. ANTOINE HACAULT: Thank you. With respect to your slide number 5, at least that's what I have, they're not numbered, but it says "City of Winnipeg background continued," and it talks about operating budget. Could you provide us a little bit of explanation of what the City of Winnipeg budget cycle is? In other words, when do you need to have your inputs to be able to determine how you're going to determine, amongst other things, mill rates for property taxes?

MR. TYLER MARKOWSKY: Just one (1) second.

(BRIEF PAUSE)

MR. TYLER MARKOWSKY: I apologize. I -- I just don't know the exact dates, but, you know, we are going through year-end right now, and they're collecting information from departments, and compiling the budgets, and the -- the estimates.

And then, you know, through the rest of the year, they -- they put together the overall operating and capital budgets, and -- and the -- the end of when -- that -- the -- this -- the end of that cycle is a function of -- of the availability and decisions made by council.

MR. ANTOINE HACAULT: Okay. So I'll maybe try to parse it down a little bit more. For your 2019, that's next year -- sorry, I'll back up a little bit. 2018, when are the mill rates set, and when do you need to know what your expenditures are?

MR. TYLER MARKOWSKY: You know what, I'm -- I'm sorry. I don't know the -- the date of when -- when exactly mill rates are set.

MR. ANTOINE HACAULT: Okay. I guess we can go -- look in the legislation. I don't want to testify. I do enough of this property tax that I could give you some suggestions, but -- and you're also not able to tell us when you need to know what your expenditures are going to be for the 2019 budget, then?

MR. TYLER MARKOWSKY: Not -- not the exact date. I'm -- I'm sorry.

MR. ANTOINE HACAULT: Okay. But you need to have those inputs to know what your mill rate is going to be, correct?

MR. TYLER MARKOWSKY: Absolutely, yes.

MR. ANTOINE HACAULT: And if you only know those numbers after you've set the mill rate, you have no method to adjust your mill rates retroactively, correct?

MR. TYLER MARKOWSKY: That's my understanding, yes.

MR. ANTOINE HACAULT: So in that way, you're not dissimilar to businesses. You need to budget, and you need to know your expenses. And at one (1) point in time, you don't even have the flexibility to do retroactive charges to all the taxpayers and property taxpayers in the City of Winnipeg, correct?

MR. TYLER MARKOWSKY: That's my understanding.

MR. ANTOINE HACAULT: Okay. Now, slide 16 of your slide deck. My understanding -- in your testimony, you were explaining in the first bullet various options that the City might undertake to deal with increased expenses, correct?

MR. TYLER MARKOWSKY: That is correct, yes.

MR. ANTOINE HACAULT: And one (1) of those things, I guess not dissimilar to Manitoba Hydro, and we've been having that discussion, is that the City of Winnipeg as a corporation might have to reduce capital spending. That could be an option?

MR. TYLER MARKOWSKY: Correct. Absolutely.

MR. ANTOINE HACAULT: And the City would have to decide whether or not, as you've explained, to maintain a boiler, or some kind of a facility, and then that might end up resulting in an emergency closure, as you indicated, of a pool, correct?

MR. TYLER MARKOWSKY: That's correct.

MR. ANTOINE HACAULT: So the capital decisions that you're going to be forced to make might have impacts on the services for the City of Winnipeg residents? Am I understanding you correct?

MR. TYLER MARKOWSKY: That's correct. That's the -- the decisions that -- that council are faced with are on a year-by-year basis, and they're balancing a very, very, very tight budget. And, you know, if capital -- if there is an ability to defer certain things, you know, for example, maintenance, in some cases, that is taken, and -- and it will have, depending on what that is, an impact on the services provided by the City of Winnipeg.

I used the example of pools, but that could be any number of services, including libraries, and in parks, and access to services like, you know, 311, other key services at the City of Winnipeg. It's a function of the year.

MR. ANTOINE HACAULT: Now, sir, you've acknowledged in questioning, I think from Board member Grant that one (1) of the options the City has is to pass on those costs in the form of property taxes, correct?

MR. TYLER MARKOWSKY: Correct.

MR. ANTOINE HACAULT: Now, sir, might there be a difference between a property tax method of collecting one dollar ($1), a Hydro rate method of collecting one dollar ($1), and an income tax method of in -- collecting one dollar ($1)?

MR. TYLER MARKOWSKY: I'm sorry, can -- can you repeat or rephrase your -- your question?

MR. ANTOINE HACAULT: Yes. Sure.

Let's go through each of them.

So property tax is based on the value of the property occupied by a person without regard to the income of that person, correct?

MR. TYLER MARKOWSKY: That's my understanding.

MR. ANTOINE HACAULT: And property tax is collected from an individual irrespective of how much that individual may be spending on hydroelectric rates, correct?

MR. TYLER MARKOWSKY: Correct.

MR. ANTOINE HACAULT: So there might be an energy-intensive building that uses a lot of electricity and pays a lot of Hydro, but may not pay very many property taxes, correct?

MR. TYLER MARKOWSKY: I'm sure there's a -- there -- there's a possibility or scenario for that.

MR. ANTOINE HACAULT: And if we move to rates, if we collect a dollar ($1) out of rates being paid on Hydro, conversely, that person might consume not very much electricity, but pay a lot of property taxes, for example, some expensive commercial class A property in the City of Winnipeg?

MR. TYLER MARKOWSKY: That's a

possibility.

MR. ANTOINE HACAULT: And finally, if you're collecting the dollar out of somebody who's paying income tax, the type of home that that person stays in really has no correlation to the income earned by that person as, for example, a retired person might not make much income, but a professional saying in the same home might make a lot more income, correct?

MR. TYLER MARKOWSKY: I'd be careful by saying there is no correlation, because I'm sure there is some correlation between income and -- and the value of a home, but it certainly is not necess -- necessarily sufficient for that. There could be an individual who has little to no income who -- who lives in a highly valued home.

MR. ANTOINE HACAULT: And the last question, sir, have you had a chance to listen to some of the evidence, and has that changed your conclusions in your October 31, 2017 report? And I say "conclusions," all of the conclusions, including those in the summary?

MR. TYLER MARKOWSKY: Just one (1) second.

(BRIEF PAUSE)

MR. TYLER MARKOWSKY: No, my conclusions haven't changed.

MR. ANTOINE HACAULT: Thank you very much, sir, for doing your best to answer my questions. I really appreciate it.

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

MR. CHRISTIAN MONNIN: Thank you, Mr. Chair. I can advise that based on the evidence that I've heard from the cross-examination from My Friends at MIPUG, I have no questions to ask of -- of this witness. Thank you.

THE CHAIRPERSON: Thank you. Manitoba Hydro...?

MR. BOB PETERS: Mr. Chair, it's Bob Peters interrupting again.

THE CHAIRPERSON: Sure.

MR. BOB PETERS: It's probably a mistake that I'm close to the mic, sir. I notice in the hearing room, there are counsel who are not on the schedule, and that I just thought maybe, out of an abundance of caution, we could check with Mr. Orle to see if he had any questions, and also with Mr. Luk as to whether he had any questions --

THE CHAIRPERSON: I was --

MR. BOB PETERS: -- before -- before Manitoba Hydro got to the microphone.

THE CHAIRPERSON: Okay. Sorry, Mr. --

MR. GEORGE ORLE: Well, Mr. Chair, I have no questions.

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

MR. SENWUNG LUK: Mr. Chair, I can confirm that I have no questions.

THE CHAIRPERSON: Thank you. Manitoba Hydro...?

CROSS-EXAMINATION BY MS. MARLA BOYD:

MS. MARLA BOYD: Thank you, Mr. Chair. Good afternoon, Mr. Markowsky. I want to begin briefly by reviewing your qualifications, please. Do I understand correctly that you have a Bachelor of Arts degree?

MR. TYLER MARKOWSKY: Correct.

MS. MARLA BOYD: And I understand from your resume that you are presently working towards an MBA at the University of Manitoba?

MR. TYLER MARKOWSKY: I am an

occasional student in the -- the Masters program of business.

MS. MARLA BOYD: You do not --

MR. TYLER MARKOWSKY: -- I -- I stopped it because we had a kid, and I'm not -- I'm just waiting a few months. Can't -- can't do right now.

MS. MARLA BOYD: You do not currently have a postgraduate degree, do you?

MR. TYLER MARKOWSKY: No, no postgraduate degree.

MS. MARLA BOYD: You began your professional employment in 2008 for a company called Compugen, correct?

MR. TYLER MARKOWSKY: Correct.

MS. MARLA BOYD: And you were an information security practice lead?

MR. TYLER MARKOWSKY: I was the practice lead for an information security consultancy across Canada, yes.

MS. MARLA BOYD: Compugen is not a regulated utility, is it?

MR. TYLER MARKOWSKY: No. It's a -- it's a private IT company.

MS. MARLA BOYD: And you took a job as

an analyst for Manitoba Hydro in 2011?

MR. TYLER MARKOWSKY: Correct.

MS. MARLA BOYD: You indicated on your resume that you, and I quote:

"Reported externally to the PUB and Intervenors on population, the Provincial Nominee Program, forecast variance, and demographic trends."

Do you recall that?

MR. TYLER MARKOWSKY: Yeah. So what I meant by that was, you know, under a number of situations, I was having to reply to interrogatories, prepare information, specifically on population, and Provincial Nominee Program, there was a lot of interest in the Provincial Nominee Program, and I -- I couldn't catch the last bit there you said.

MS. MARLA BOYD: Forecast variance and demographic trends.

MR. TYLER MARKOWSKY: Yeah. So what I meant by variance was errors -- errors in the forecast that -- that comes up fairly regularly.

MS. MARLA BOYD: And by reporting to the -- to -- or preparing interrogatories, you meant that you assisted in the preparation of those IR responses, correct?

MR. TYLER MARKOWSKY: Absolutely, yeah.

MS. MARLA BOYD: You didn't testify on behalf of Manitoba Hydro at the PUB?

MR. TYLER MARKOWSKY: No.

MS. MARLA BOYD: And to date, have you given evidence in any other regulatory proceeding?

MR. TYLER MARKOWSKY: No.

MS. MARLA BOYD: And this would be the first occasion on which you'd produced evidence in your name?

MR. TYLER MARKOWSKY: Correct.

MS. MARLA BOYD: I'd like to turn to --

MR. TYLER MARKOWSKY: Actually -- I'm sorry. There's -- there was one (1) day during NFAT, just to -- just to -- where I sat -- I think it was next to you during -- I'm -- I'm sorry. This is my claim to fame. It was -- it was on -- it was on the load forecast during NFAT. I think -- I think Louis (phonetic) wasn't around, and -- and I -- I did sit during NFAT with you. But I was -- I was here --

MS. MARLA BOYD: Sorry, let's be clear.

MR. TYLER MARKOWSKY: -- most of the time.

MS. MARLA BOYD: You did not testify at NFAT?

MR. TYLER MARKOWSKY: I did not testify.

MS. MARLA BOYD: Could we turn to your spreadsheet, please, 'Financial Analysis of Manitoba Hydro Rate Increase'.

MR. TYLER MARKOWSKY: Sure.

MS. MARLA BOYD: I believe it's attachment A to the Public Utilities Board/City of Winnipeg-2.

Is it fair to say, Mr. Markowsky, that that spreadsheet contains a number of assumptions?

MR. TYLER MARKOWSKY: Absolutely, as do any analyses that are conducted by most anyone, including Manitoba Hydro.

MS. MARLA BOYD: You assumed no price elasticity in your analysis?

MR. TYLER MARKOWSKY: That's correct.

MS. MARLA BOYD: And that analysis is all done based on the dollar amount paid by the City to Manitoba Hydro, correct?

MR. TYLER MARKOWSKY: That's correct, yeah.

MS. MARLA BOYD: There's no analysis

of the actual consumption of electricity?

MR. TYLER MARKOWSKY: So the -- on the elasticity issue, I -- I didn't include elasticity for a specific reason. The reason was because, like I was explaining to -- to Professor Grant, it costs the City money to do some of those things. And it -- it's not just a 0.2 percent increase for a 1 percent increase. For me to be able to fairly estimate the reduction in potential load, as well as the associated cost to that was not something that I was able to do, I thought, fairly in the time that I had to prepare this.

As far as the direct cost, those are the billings. That's -- that's right out of our -- our billing system from the City of -- of Winnipeg.

MS. MARLA BOYD: There is no analysis of the consumption in a kilowatt hour format, correct?

MR. TYLER MARKOWSKY: So this was based on the actual dollar amounts that the City spends on electricity. It's not unitized based on the, you know, the -- the actual quantum of electricity that the City purchases.

The reason I didn't do that is because the City has some -- something on the order of four hundred (400) bills per month, and almost none of those bills -- I went through them -- have that actually listed in there. And so what I did was I took the total amount that we spent on electricity, and I deflated it based on the past electricity increases. So it's not a perfect measure of the real growth that would be seen if you were to use a actual measure of the quantity of electricity, but it's a -- it's a good estimate of the real growth in -- in my view

MS. MARLA BOYD: You didn't consider the rate class through which the consumption was billed?

MR. TYLER MARKOWSKY: No. This is a -- a lump sum.

MS. MARLA BOYD: And you didn't account for demand charges that would have formed part of the total bill?

MR. TYLER MARKOWSKY: I didn't.

MS. MARLA BOYD: And you didn't make any accounting for the basic monthly charge, which would form part of that bill not based on consumption, correct?

MR. TYLER MARKOWSKY: I didn't.

MS. MARLA BOYD: And although Manitoba Hydro requested that you provide it, you were not able to provide consumption information, correct?

MR. TYLER MARKOWSKY: Manitoba Hydro requested it, and my response was that this was well within the ability of Manitoba Hydro to produce their own bills to us. Like I said, I went into those bills, into the purchasing system, and I tried to find that information, and it just wasn't there. So what I did was deflated it based on the past electricity rates that we've seen. You can see there's a tab that says, "determination of real." It -- everything in this spreadsheet is how I did -- did the work.

I thought it was a fair representation of real growth, and -- and regardless of whether or not there is, you know, there is error in -- in that, it's not a -- a perfectly precise analysis. It still is ordinal and directional. And those are some of the principles I learned when I was studying economics to show a sense of scale and direction and ordinality of an impact.

MS. MARLA BOYD: So you looked at those bills, but you didn't provide them to Hydro when we requested them?

MR. TYLER MARKOWSKY: I -- No. I -- we -- we said that that was well within your ability to -- to provide those.

MS. MARLA BOYD: When I asked the city

to reconsider that request, we were advised that the information wasn't -- and I quote:

"Readily or at all accessible. None of it was relied upon or foundational to your conclusions."

Were you aware of that?

MR. TYLER MARKOWSKY: So I remember -- yeah, of course, I remember that. I think that maybe -- maybe the request -- maybe I misinterpreted the request to see the actual bills or to see the -- my interpretation of the request was to see the actual rate classes and the -- the estimates, or sorry, not the estimate, the -- the amount of consumed electricity. And, you know, if we could pull up those requests that -- it might -- might make it easier just -- I can't remember the exact wording, but I said no because we didn't -- it wasn't readily available.

MS. MARLA BOYD: I don't think that's necessary at this point. Do I understand that the starting point for your calculation was the amount paid by the city in 2009?

MR. TYLER MARKOWSKY: The starting point -- if we go -- if we go to click on the determination of real, just to confirm. So, yeah. So what I did is I took the -- the payments in 2009, and

I divided it by the Hydro rates to come up with the real growth. So that's correct. The beginning is 2009.

MS. MARLA BOYD: And then you compared that to the amounts that were paid by the City in 2016; correct?

MR. TYLER MARKOWSKY: Compared -- sorry, can -- can you re -- ask that again?

MS. MARLA BOYD: I understood that your calculation of real growth was based on a comparison of the 2009 rates to the 2016 rates.

Is that correct?

MR. TYLER MARKOWSKY: Yeah. So what I did is, I deflated it and then I calculated the compound annual growth rate between those two (2) periods of 0.55 percent.

MS. MARLA BOYD: Did you make any inquiries to satisfy itself that those amounts are for electric accounts only and don't include any natural gas charges?

MR. TYLER MARKOWSKY: Yes, I went through the billing system and I was -- that was one (1) thing that I was being careful about.

MS. MARLA BOYD: And did you make any inquiries to satisfy yourself that those amounts don't include charges or fees for licenses or miscellaneous billings?

MR. TYLER MARKOWSKY: That I did not do.

MS. MARLA BOYD: The nominal electric payments that are included for the intervening years 2010 to 2015 are hardcoded into that spreadsheet; correct?

MR. TYLER MARKOWSKY: Sorry, can you repeat that question?

MS. MARLA BOYD: Yeah. The payments that we see under the headings "nominal electricity payments" for 2010 -- in fact, for all of the years, particularly I'm focusing on 2010 through 2015, are hardcoded. They're not a formula. They're not a calculation. They're numbers that were inserted into that sheet?

MR. TYLER MARKOWSKY: I'm pretty -- I'm -- I'm pretty sure. I'd have to click on the cell right now to verify, but I'm pretty sure that was a copy and paste.

MS. MARLA BOYD: My question for you is: Are they all based on the actual billings?

MR. TYLER MARKOWSKY: To the best of my -- my knowledge, that was the sum of billings for that year from Manitoba Hydro.

MS. MARLA BOYD: And those figures aren't weather adjusted; correct?

MR. TYLER MARKOWSKY: No, they're not.

MS. MARLA BOYD: And when you deflated the amounts for the rate increase did you take into account the fact that the area -- are and roadway lighting class had no rate increases between 2008 and 2011?

MR. TYLER MARKOWSKY: I am aware that there are different rate classes. I am aware that there is area and -- and roadway lighting, which makes up, I think, on the order of 47 percent of that total bill. And I am aware of -- of weather. As I said earlier, you know, the -- the intent that I took in preparing this was to provide just -- just an awareness that -- that there will be a direct indirect impact on the City of Winnipeg's electricity costs, that -- that will have an impact on our ability to provide services.

And so there -- there certainly are assumptions that could be more refined. Absolutely. But it still will not change the truism that that impact -- that there will be an impact, and that will have an impact on citizens and businesses of the City of Winnipeg.

MS. MARLA BOYD: You didn't answer my question, Mr. Markowsky.

MR. TYLER MARKOWSKY: Sorry.

MS. MARLA BOYD: My question was: Did you take into account when you deflated those payments the fact that there had been no rate increase in the area and roadway lighting class from 2008 til 2011?

MR. TYLER MARKOWSKY: No. So 2008 would have been beyond my -- beyond this -- this calculation. And the increases between '9 and '11 for area and roadway lighting, I did go back through -- I have it right here -- for all of our expenses for street -- street lighting. And the bill has gone up. And so I was comfortable by -- by using that -- that guide in my analysis.

MS. MARLA BOYD: What's the guide?

MR. TYLER MARKOWSKY: That the -- that there is a general increase and that general increase plus the Hydro rate increase will have an impact on our direct and indirect electricity costs. And -- and over the long run there is going to be -- or there has been undulation because of, you know, no charges in area roadway lighting, or because of weather adjustment. But it has increased quite considerably over time.

MS. MARLA BOYD: The fact that you didn't take into account the rate being held constant for area and roadway lighting comprising 47 percent of your billings would have an impact on your calculation, wouldn't it?

MR. TYLER MARKOWSKY: Not necessarily. If you can see that my compound annual growth rate goes from '09 to '16, so really it's a interpolation between '9 and '16 to come up with that 0.55 percent. So, in fact, there could have been no changes in those years, and it still would hold true that the growth between 22 million and 23 million is 0.55 percent.

MS. MARLA BOYD: You took that resulting .55 percent real load growth and applied it in your financial analysis in each year from 2017 to 2038.

Is that right?

MR. TYLER MARKOWSKY: That's correct. I held that constant.

MS. MARLA BOYD: So you were assuming that the conditions that drove the calculation of growth in the City from 2009 to 2016 would be representative of the conditions from 2017 to '38?

MR. TYLER MARKOWSKY: Yes.

MS. MARLA BOYD: And I gather you're aware that the street lights in the City of Winnipeg are being replaced with LED bulbs?

MR. TYLER MARKOWSKY: I am aware of that.

MS. MARLA BOYD: And that change in consumption as a result of the change to LED bulbs is not taken into account in that analysis, is it?

MR. TYLER MARKOWSKY: So the -- the -- am I allowed to ask a question?

MS. MARLA BOYD: Not of me.

MR. TYLER MARKOWSKY: Probably not. I'm sorry. So that has been going on for some time. And I would assume that that impact in a -- to a degree would be captured in the numbers that we see right there. And so while it's not a hardcoded assumption in this, it's a -- it's a sense of scale that I was trying to shoot for here.

I don't think we can get away from the fact that if Hydro rates increase, and even if it wasn't -- if -- if 50 -- 50 percent of it was held constant while the other 50 percent increased at the projected rates, it would still increase at quite a considerable clip, which would then, therefore, have a direct and indirect impact on our finances.

MS. MARLA BOYD: You're aware that the area and roadway lighting class includes different rates for various types of lighting?

MR. TYLER MARKOWSKY: I'm aware of that.

MS. MARLA BOYD: Did you look at that or consider that in your analysis?

MR. TYLER MARKOWSKY: No. This -- this analysis was using the total bills that the City of Winnipeg receives from Manitoba Hydro.

MS. MARLA BOYD: And you'd acknowledge that the number of lights in each category would change from year to year?

MR. TYLER MARKOWSKY: I can't -- I can't comment on the number of lights that would change year over year, because I don't know. But I would assume that -- that the number would change year over year.

MS. MARLA BOYD: Are you aware that the City has participated in and continues to participate in a number of energy efficiency programs?

MR. TYLER MARKOWSKY: I am aware of that, yes.

MS. MARLA BOYD: And you're aware that -- that the City has received a number of incentives pursuant to those programs?

MR. TYLER MARKOWSKY: I am aware that the City has pursued energy efficiency programs. I am aware that -- and I am -- I'm sure that the City has received some support for that. But I'm also aware that it still costs us a lot of money to -- to do -- pardon me -- to undertake some or all of those programs. And not all those programs -- programs will be eligible for the support -- or not, sorry, not -- not all of the energy con -- conservation type projects that the City would undertake would be necessarily eligible.

MS. MARLA BOYD: Did your analysis take into account the impacts on consumption of Power Smart programs?

MR. TYLER MARKOWSKY: If there were Power Smart consumption programs that occurred between the year 2009 and 2016, and that was inside of -- that the -- that the impact of those programs would have an impact on our real electricity consumption, then -- then it's implicit in the number that you're seeing right there.

MS. MARLA BOYD: And from it then follows that you're assuming that the same Power Smart level of involvement and same implicit result will continue from 2018 to 2038?

MR. TYLER MARKOWSKY: Not necessarily. It's a -- it is -- it's a fraction. So it would be growing as the size of number increases.

MS. MARLA BOYD: But you didn't adjust for it? You assumed it would be --

MR. TYLER MARKOWSKY: No, it's the --

MS. MARLA BOYD: -- it would be --

MR. TYLER MARKOWSKY: -- the fraction is held constant.

MS. MARLA BOYD: The City from time to time renovates its buildings; correct?

MR. TYLER MARKOWSKY: From time to time, but not the one that I'm in.

MS. MARLA BOYD: Fair to say the City would comply with the current building codes when it undertook its reso -- renovations?

MR. TYLER MARKOWSKY: I think that's fair to say, but I -- I can't -- I can't attest to that.

MS. MARLA BOYD: Improved building code would enhance the energy efficiency of a building as well, wouldn't it?

MR. TYLER MARKOWSKY: Depending on the building code, yes.

MS. MARLA BOYD: And your analysis didn't take into account any of those adjustments?

MR. TYLER MARKOWSKY: No, I wouldn't agree with that. Like I said, that if that had occurred between '09 and '16 then that would be implicit of the number.

MS. MARLA BOYD: And again, that would be the same assumption that the same amount of renovation and the same derived deficiencies would follow?

MR. TYLER MARKOWSKY: Absolutely. It's held constant.

MS. MARLA BOYD: If we can look at the analysis page of your spreadsheet, please. And I also would like to look at slide 8 from your presentation today.

(BRIEF PAUSE)

MS. MARLA BOYD: We need a split screen at this moment. According to your slide presentation, the 2019 projection for the -- thank you very much -- the projection for the City of Winnipeg's budget expenditures for 2019 is 1.18 billion; correct?

MR. TYLER MARKOWSKY: For -- for 2019,

I see that the total expenditures is projected to be 1.18 billion. That's what I see.

MS. MARLA BOYD: Thank you. And if we look at the net incremental cost in your analysis for 2019 over on the far side. Yes, in column R. Thank you. We see there an impact of seven hundred and twelve (712) -- sorry, seven hundred and twenty-one thousand dollars ($721,000); correct?

MR. TYLER MARKOWSKY: Correct.

MS. MARLA BOYD: By my calculation, that's .06 percent of the projected budget expenditures?

MR. TYLER MARKOWSKY: Yeah. You know, like I said to -- to Board Member Grant, it's a -- it's a small fraction. But when you're looking at the absolute -- I'll back up. When you're looking at the -- the size of our operating budget being $1.18 billion. It's a -- that's a huge number and seven hundred thousand (700,000) bucks is a small number on top of that. But you have to look at the variance between the years. And, for example, this year our total operating budget increased by around $13 million. So that is something that needs to be taken into consideration.

The other thing is that's a projection.

So that -- that still can change. So the 2018 preliminary budget only increased by $13 million. So $13 million, you know, that's around a 5 percent hit, or -- or around that for -- for the City of Winnipeg.

MS. MARLA BOYD: Turning to your indirect costs. Your evidence is based on the assumption that all twenty-one thousand (21,000) suppliers to the City of Winnipeg will pass on 100 percent of the increase in rates plus a profit margin; correct?

MR. TYLER MARKOWSKY: I -- I assumed that there would be a pass on, yes, of the rate increases plus a profit margin.

MS. MARLA BOYD: You'll find that on page 6 of your evidence, the second paragraph?

MR. TYLER MARKOWSKY: Yes. Yes.

MS. MARLA BOYD: You're aware of the analysis of Doctors Compton and Simpton -- Simpson, which suggested that businesses will respond to a rate increase by either passing on a rate increase, reducing their spending on other inputs, or reducing profits?

MR. TYLER MARKOWSKY: I -- I hadn't -- I hadn't read that, but -- but I understand that.

MS. MARLA BOYD: Certainly it would

seem reasonable to expect that businesses will respond in a variety of ways to the rate increase; correct?

MR. TYLER MARKOWSKY: Yes.

MS. MARLA BOYD: And your calculation of the portion of payments made to suppliers, which represents their electricity costs is derived from the Stats Canada supply and use tables.

Is that right?

MR. TYLER MARKOWSKY: That is correct. I use the electricity as a -- as an input from the Statistics Canada supply use tables. And what I did is, I took the -- I took -- I took our direct billings and -- and I just took a fraction of that and came up with an assumption that it was on the order of $8 million.

MS. MARLA BOYD: Could we pull up the evidence of Dr. Yatchew filed in this proceeding, please. It's Exhibit AY-1.

(BRIEF PAUSE)

MS. MARLA BOYD: On page 49, Dr. Yatchew discovered -- discusses the share of electricity costs in various segments of the Manitoba economy. And he notes near the bottom of the page --

yes, paragraph 137 that:

"Service sector aggregated over a broad range of services and comprising 71 percent of GDP has an electricity input share of .75 percent."

Do you see that?

MR. TYLER MARKOWSKY: Just -- sorry, lines 22 and 23?

MS. MARLA BOYD: That's right.

(BRIEF PAUSE)

MR. TYLER MARKOWSKY: Okay. Yeah.

MS. MARLA BOYD: If we could go over to page 50. He reproduces a portion of the same tables that you referenced using electricity shares by major GDP sector.

Is that right?

MR. TYLER MARKOWSKY: Yeah.

MS. MARLA BOYD: And am I correct in assuming that neither mining or agriculture would form a significant, if any, part of the services that are purchased by the City?

MR. TYLER MARKOWSKY: That's not

necessarily true. The City -- the City renders services from, well, nine thousand (9,000) different firms, and I don't know what all of them do. I did use an average. But, for example, when we are looking to receive services from construction firms and I know that says zero-point-zero-five (0.05), they're -- they're pulling material from -- from sources which may have a higher consumption of energy in the construction of our roads. And that's the largest share of our -- of our capital. There is a variety -- there's a multitude of -- of potential electricity as a share of inputs.

MS. MARLA BOYD: When I take a weighted average, and I had a little help from Ms. Carriere, but when I take a weighted average of that number I see that the electricity as a share of inputs for all of those services in manufacturing, construction, agriculture, utilities, and mining is .68 percent.

Would you accept that subject to check?

MR. TYLER MARKOWSKY: Subject to check.

MS. MARLA BOYD: And in either case, whether you use Dr. Yatchew's .75 or Ms. Carriere's weighted average of .68, the electricity costs incurred by suppliers providing to the City is essentially half of what you calculated; correct?

MR. TYLER MARKOWSKY: So if that were the case, and our indirect electricity costs were on the order of $4 million, which you are indicating, instead of $8 million, which is what I used in my analysis, it still wouldn't change the truth, the fact that that cost is going to be passed on to the City of Winnipeg indirectly in some way or another. And that will, in turn, have an impact on our ability to provide services to the citizens and businesses of Winnipeg. It's still going to be a cost.

MS. MARLA BOYD: That's understood, Mr. Markowsky.

But could -- could you actually focus on the question, please? Do I need to repeat it?

MR. TYLER MARKOWSKY: Your question was, subject to check, it's about half the cost? Yes.

MS. MARLA BOYD: And although you say you took an average, as you look down that column, none of those are as high as the input you suggested of 1.4 percent, are they?

MR. TYLER MARKOWSKY: You know, I -- when I -- when I did my analysis to come up with the electricity as a share of input -- I'm -- I'm -- I don't think I'm going to necessarily roll over on this one (1) because I -- I didn't just make that number up. It did come from somewhere.

So if -- if I'm willing to provide the Board or -- or yourselves with the actual calculation where I came up with that number than I'd like to do that. Because, you know, yes, there are variances there. I don't know where Professor Yatchew came up with his figures, but I got mine from Stats Canada and --

MS. MARLA BOYD: Actually, if we can scroll down I can help you with the answer to that one (1).

MR. TYLER MARKOWSKY: Okay.

MS. MARLA BOYD: Either on the bottom of this page or on the bottom of the page -- there you go. There is Mr. Yatchew's source of information.

MR. TYLER MARKOWSKY: Right.

MS. MARLA BOYD: It's based on 2013 data, the most recently posted data in table 381-0033.

MR. TYLER MARKOWSKY: Right. Yeah, so like I said, I'm just -- I'm -- I'm liking -- I would like to go back and verify that number.

MS. MARLA BOYD: I'd appreciate if you would. I might also point you to page 6 of your evidence in that you indicated that the number you pulled post for 2013 was 1.71 percent.

MR. TYLER MARKOWSKY: Okay.

MS. MARLA BOYD: And so perhaps you can reconcile those in that undertaking if that's acceptable to your counsel. Certainly. I'll leave it to Mr. Ferguson to confirm along with me, but Mr. Markowsky of the City of Winnipeg has undertaken to review the calculation of energy as a percentage of input presented by Mr. Yatchew, including the table in his evidence, and to reconcile that to the 1.71 percent for 2013 contained in his evidence at page 6, and his conclusion of 1.4 percent.

MR. DARYL FERGUSON: Yes, we'll do that.

MS. MARLA BOYD: Thank you.

--- UNDERTAKING NO. 66: City of Winnipeg to review the calculation of energy as a percentage of input presented by Dr. Yatchew, including the table in his evidence. The City of Winnipeg will reconcile that to the 1.71 percent

for 2013 contained in its
evidence at page 6, and
the conclusion of 1.4
percent

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: I would like to spend on a minute on the electricity tax revenue. You indicated on page 8 of your evidence, a table, which included the revenue for 2017?

MR. TYLER MARKOWSKY: Yes.

MS. MARLA BOYD: Do you have a more complete number for the year 2017, at this point?

(BRIEF PAUSE)

MR. TYLER MARKOWSKY: Subject to check, I think we do have the data up to the end of the 2017.

MS. MARLA BOYD: Would you be able to point me to that?

MR. DARYL FERGUSON: Again, subject to checking that we have that we'll provide that.

MS. MARLA BOYD: Thank you. Would you expect it to be in the order of $17 million?

MR. TYLER MARKOWSKY: I would expect that.

MS. MARLA BOYD: And when you compare that -- yes, thank you. The undertaking is to provide the remaining data for the summary of electricity tax revenue for 2017, including the months of October, November, and December, assuming that it's available to the City.

MR. DARYL FERGUSON: Yes, that's fine.

--- UNDERTAKING NO. 67: City of Winnipeg to provide the remaining data for the summary of electricity tax revenue for 2017, including the months of October, November, and December, assuming it is available to the City

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: So your dir -- direct electricity billings are in the order of $30 million for 2017?

MR. TYLER MARKOWSKY: Subject to

check, yes. Sorry, I just don't have the number right in front of me.

MS. MARLA BOYD: We can pull up your spreadsheet if you want to see it. My point simply, though, is that that's more than 50 percent offset by the electricity tax revenue; correct?

MR. TYLER MARKOWSKY: I haven't done that calculation, but it is -- it is absolutely a large share. And it -- it amounts to a big -- excuse me -- it amounts to a big offset, yes.

MS. MARLA BOYD: And that revenue stream is not available to other customers, is it?

MR. TYLER MARKOWSKY: I'm not aware of that, no.

MS. MARLA BOYD: The Conference Board of Canada outlook referenced in your evidence forecast housing starts in the City of Winnipeg to continue at a rate of between four thousand two hundred and seventy (4,270) and four thousand six hundred and ten (4,610) new dwellings per year between 2017 and 2021; correct?

MR. TYLER MARKOWSKY: I don't have it in front of me, but I'll take your word for it.

MS. MARLA BOYD: Thank you. Each of those new housing starts will result in a new electricity account being billed; correct?

MR. TYLER MARKOWSKY: I -- I would assume so, yes.

MS. MARLA BOYD: And those electricity bills would include a basic monthly charge?

MR. TYLER MARKOWSKY: I would assume so, yes.

MS. MARLA BOYD: And those new sources of revenue are not included in your calculation of forecast electricity tax revenue, are they?

(BRIEF PAUSE)

MR. TYLER MARKOWSKY: Not -- not -- I'm -- I'm not going to say no to that necessarily, so -- so in the same vein that the treatment of the real growth in electricity costs. There are a lot of -- there are a lot of things implicit inside of that. And so the growth in electricity revenue, I was using assumed load growth from Manitoba Hydro. And load growth is a function of the number of homes that are coming.

And so I would -- I would say implicit inside of that number, there is the potential for that to be in that number. The exact magnitude of that, I

-- I didn't calculate, but for the purposes of this analysis, which was to provide a sense of scale, I felt that was sufficient.

MS. MARLA BOYD: Your evidence suggested your calculation was based on the energy consumption, the gross energy consumption.

Is that -- you're telling me something different today?

MR. TYLER MARKOWSKY: Are you talking about my costs? Pardon me? Sorry?

MS. MARLA BOYD: Your forecast of electricity -- electric tax revenue.

MR. TYLER MARKOWSKY: The electric tax revenue, if we can go back to my spreadsheet. I apologize. Okay. So we go over to the total revenue. So I have total revenue growing. If we click on the tab for total revenue --

(BRIEF PAUSE)

MR. TYLER MARKOWSKY: -- yeah, revenue at either three-point-nine-five (3.95) or seven (7) point -- if you click on the -- the cells just to see the formulas, but it is growing based on -- sorry. You know what? This is going to take a bit of time, but the total costs that the City are -- that I expect the City to grow at is based on an assumed real growth that the City of Winnipeg has witnessed. And revenue was growing based on the assumed load growth that I pulled from Manitoba Hydro. And those were then multiplied by the expected price increases.

MS. MARLA BOYD: So when you say you pulled that from Manitoba Hydro, that's from Manitoba Hydro's domestic load forecast at generation?

MR. TYLER MARKOWSKY: I believe so, subject to check.

MS. MARLA BOYD: And that would only be energy; correct?

MR. TYLER MARKOWSKY: I -- I believe, so.

MS. MARLA BOYD: So it wouldn't include the basic monthly charge?

MR. TYLER MARKOWSKY: I believe so.

MS. MARLA BOYD: Could we pull up slide 9 from your presentation today, please. You indicate down on the bottom there that:

"These projections do not include any rate increased electricity costs the City would incur if Manitoba Hydro's proposed rate increases were approved."

Do you see that?

MR. TYLER MARKOWSKY: I do see that.

MS. MARLA BOYD: Your response, however, to PUB/City of Winnipeg-2 says -- and perhaps we can pull that up so you can read along.

(BRIEF PAUSE)

MS. MARLA BOYD: Thank you. It says:

"The 2022 operating deficit includes electric -- electricity rate increases based on a moving average of past increases at a departmental level."

MR. TYLER MARKOWSKY: Yes. Yeah. So I apologize. That slide is -- is misrepresenting. The -- the way that the operating budget deficit is estimated uses a rolling weighted average of the past from several departments. So that assumes the 3.95 percent increase. And if Hydro were to see the proposed rate increases, that -- that blue line would shift up.

MS. MARLA BOYD: So it's a rolling average from the departments, but it's based on the

3.95 percent increases?

MR. TYLER MARKOWSKY: So what -- what it is, is it's -- it's based on an assumption of the past rate increases.

MS. MARLA BOYD: You're going to have to help me with that.

MR. TYLER MARKOWSKY: So --

MS. MARLA BOYD: The past ones or 3.95?

MR. TYLER MARKOWSKY: So it's based on -- it includes the 3.95 and it includes a rolling average based on the past. I don't -- I don't have the exact number of years. That's why I'm hesitating with this. But what I can say is, it does not include the projected rate increases that -- that the Manitoba Hydro is proposing.

MS. MARLA BOYD: Perhaps, Mr. Markowsky, we could ask you to undertake to provide us with a -- a demonstration that calculates the rate increase incorporated into that chart.

MR. TYLER MARKOWSKY: I'm not sure -- I will -- I will -- just -- just one (1) second.

(BRIEF PAUSE)

MR. TYLER MARKOWSKY: You know what? It's -- it's absolutely fair. And I will -- I'll undertake to see if it's -- if it's possible to pull that out.

MS. MARLA BOYD: Thank you.

--- UNDERTAKING NO. 68: City of Winnipeg to provide a demonstration that calculates the rate increase incorporated into the chart in their evidence

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: On page 4 of your evidence, you indicated that the City is by law required to, and I'm quoting:

"Close its revenues and expenditures to not incur any debt for operating."

Do you recall that?

MR. TYLER MARKOWSKY: I do recall that, yes.

MS. MARLA BOYD: And yet at page 10 of your evidence you indicate that the City, again quoting:

"Has an unsustainable deficit in its operating budget, currently 89 million."

And by your evidence it's projected to be 207 million in 2022, without taking into account Hydro rate increases.

MR. TYLER MARKOWSKY: So at the time I wrote that report that was true. It's -- it's one (1) year in further and those numbers have changed a bit.

MS. MARLA BOYD: Well, how do you reconcile the statement that you need to have a zero operating budget and that you have an unsustainable deficit in your operating budget?

MR. TYLER MARKOWSKY: So it's -- it's not -- it's a funny one (1). But the City of Winnipeg by law needs to -- needs to make sure that our operating budget -- our expenses equal our revenues every single year. The -- the growth rate that we have seen in our costs over the last -- well, for -- for as many -- as many years as are on that chart are exceeding the projected revenue that we have at the City of Winnipeg, which is primarily driven by the 2.33 percent property tax increase that was determined by Council.

That 2.33 percent, none of that actually goes to the operating budget. So, in fact, all of that is going to capital. So the growth in our operating budget is -- is quite -- is quite marginal. And -- and as I would just -- just remind you, I've used the example this past year our operating budget increase by $13 million.

So it's -- what it is, is a projection of what costs are that the depar -- departments put forward. And then every year decisions are made to reconcile the money that we have available in that year. But because we are expecting our costs to grow faster than our revenues have every single year, we make choices to -- to delay our costs as much is possible.

And in the case of this year, there has been reductions in -- in capital spending. There has been reductions in cash to capital. And -- and, you know, Council makes very, very difficult decisions every single year to try to reconcile that number. So I recognize that it's a -- it's a funny or it's an interesting statement. The fact is, we cannot take on debt for our operating budget. But based on the projections we have it's going to be growing at a much faster rate than our revenue.

MS. MARLA BOYD: So that would suggest that even before you take into account any proposed rate increases from Manitoba Hydro that property taxes will have to increase to accommodate other expenses of the City; correct?

MR. TYLER MARKOWSKY: Not necessarily. Property taxes haven't -- have -- have increased by 9 percent since -- and again, subject to check, since 1999. And -- and so those are decisions that are made -- that are set by, well, most recently Mayor Bowman campaigned on 2.33 percent going entirely to the capital budget. So none of that growth has gone to the operating budget. And, you know, this upcoming election and with decisions by Mayor and Council, they may not increased property taxes. That's a decision by them.

THE CHAIRPERSON: Ms. Boyd, you're almost out of time.

CONTINUED BY MS. MARLA BOYD:

MS. MARLA BOYD: Thank you. I'll turn to my next area, which is your evidence on page 12. You provided a graph of forecasted declining increases in retail sales in Manitoba; correct?

MR. TYLER MARKOWSKY: Correct.

MS. MARLA BOYD: Is there a reason that you chose the numbers for Manitoba as opposed to the numbers for Winnipeg?

MR. TYLER MARKOWSKY: I chose the Manitoba ones because the -- the scale of the impact that the proposed rate increases by Manitoba Hydro would be impacting the Province of Manitoba, number 1. And number 2, I was -- I was careful and -- and selective in what I chose to put in this report.

The Conference Board of -- of Canada, the report that I've -- that I've submitted makes some pretty explicit statements about the potential impact from Manitoba Hydro. Gross domestic growth in gross domestic product is -- or, sorry, was projected at the time of their report to decline very, very sharply, and to be sustained in a -- in a very low rate over the next several years. And in almost the entire breakdown of those major accounts you saw major incre -- major decreases, including with retail sales.

MS. MARLA BOYD: Retail sales for Winnipeg are 2.7 percent for 2018; correct?

MR. TYLER MARKOWSKY: I don't have that number in front of me. But -- but subject -- I -- I agree with you. The impact that the Conference Board of Canada articulated, I can't pull out the number exactly that is because of Manitoba Hydro. They don't allow me to open up their dynamic stochastic general equilibrium model. But they specifically state in the body of the text that these are because of ballooning costs from Manitoba Hydro that will have an impact on household disposable income, which then the impacts retail sales because consumption would decline.

MS. MARLA BOYD: Would you be able to point me to the spot in the --

MR. TYLER MARKOWSKY: Sure. If I can --

MS. MARLA BOYD: -- the Conference Board report that states that, please?

(BRIEF PAUSE)

MR. TYLER MARKOWSKY: The -- the Conference Board of Canada report on page --

MS. MARLA BOYD: Maybe just for the --

MR. TYLER MARKOWSKY: -- on page 105 of that -- of that report, and --

MS. MARLA BOYD: Yeah, perhaps we can just have that brought up. It'll make it a little bit easier. It's attachment 1 to exhibit CC-27, Coalition/City of Winnipeg.

MR. TYLER MARKOWSKY: Thank you.

(BRIEF PAUSE)

MS. MARLA BOYD: While we're waiting for that, Mr. Markowsky, you can see in 2015 there's a decline from four (4) -- an increase of 4.4 percent to an increase of 1.6 percent. You wouldn't attribute that to Manitoba Hydro, would you?

MR. TYLER MARKOWSKY: For -- sorry. Pardon me. Which -- which indicator are we talking about? Oh, right here. Yes.

(BRIEF PAUSE)

MR. TYLER MARKOWSKY: That I -- I can't say that it is or isn't directly attributable to -- to Manitoba Hydro.

MS. MARLA BOYD: You can't say any of these are directly attributable to Manitoba Hydro, can you?

MR. TYLER MARKOWSKY: Not the sense of scale, no. But that was why I was trying to be careful with the language that I chose. And I thought

I was being fair in saying that there is -- if we go back to the re -- you know, what? Let's -- we'll stay on this. We'll go down to the -- I think it's page 120. Or, 105, I'm sorry. Pardon me. Okay. So, right there.

So this -- this was published by the Conference Board of Canada. And right on their -- their first page in their -- their forecast it says "a current state." There are mine closures in the -- in the -- that they're expecting in Manitoba. There is to be increases in the residential sector. And a forecast risk --

> "A cost of balloon by Manitoba Hydro's multibillion-dollar projects and will likely be paid for by rate hikes from -- for households in Manitoba dampening their purchasing power."

And -- and so what I did is, I took the retail sales -- and if you go back to my report, I'm pretty sure that was the language that I used.

MS. MARLA BOYD: That nowhere says that -- that forecast risk will be manifested in the retail sales entirely as a result of Manitoba Hydro, does it?

MR. TYLER MARKOWSKY: No, it doesn't. And -- and that level of detail I can't get access to. I did phone the Conference Board and asked them about that, and confirmed that that was one (1) of the largest variables. The way I read this, and of course, this is a forecast. It -- it may not be true, depending on the decisions by the Board.

But what I -- what I saw was that there is a highly reputable and respected firm that has produced an analysis using the assumptions that Manitoba Hydro will get their rate increases. And they produced the forecast that includes those assumptions. They explicitly stated that it would be pa -- likely be paid for by rate hikes for households, dampening their purchasing power.

So while I can't point to the exact number, the Conference Board of Canada has done an analysis with their modelling and has come up with a very significant reduction in the growth of several of the indicators in the economy of Manitoba. And to me that was what struck me in this report, and why I cited it.

MS. MARLA BOYD: Did you compare that to the changes in the retail sales in other provinces?

MR. TYLER MARKOWSKY: I did not

compare that against the other provinces, no.

MS. MARLA BOYD: So would it surprise you to learn that you will see the same pattern of a decrease between 2017 and 2021 in Canada and in each province?

MR. TYLER MARKOWSKY: That I would have to -- I would have to look at that and I would have to look at every single province or the cities to -- to determine the particular characteristics.

But that still doesn't -- that still doesn't mean that Hydro's impact isn't going to be felt by households, dampening their purchasing power. And across Canada, as far as I'm concerned, for the purpose of this we're looking at the impact to our province. And so I would focus on the information right there, regardless.

(BRIEF PAUSE)

MS. MARLA BOYD: You summarize that as being a significant negative impact on the Winnipeg and Mani -- and Manitoba; correct?

MR. TYLER MARKOWSKY: Yes.

MS. MARLA BOYD: That -- that -- when you said you were being fair, that was what you did?

MR. TYLER MARKOWSKY: I think that's a significant negative impact, yes. Considering --

MS. MARLA BOYD: So can we pull up slide --

MR. TYLER MARKOWSKY: -- that household income is growing on the order of two thousand (2,000) -- two thousand dollars ($2,000) a month. When you adjust for inflation, it's virtually not increasing. And so when you're facing -- when households are facing an increase of their Hydro electricity bills, they're going to have to make significant trade-offs. And that is a significant impact, depending on the income of the household.

MS. MARLA BOYD: Can we go to slide 17 of your presentation today, please. You indicated an impact there of -- in the order of a billion to a billion and a half dollars on the City of Winnipeg?

MR. TYLER MARKOWSKY: That was an estimate based on the calculations provided by Professors Simpson and Compton. And I used -- this is a -- this is an estimate. It's on the order of -- so the GDP of Manitoba is on the order of $40 billion in those years. And I took the cumulative effect of that impact to give a sense of scale to the potential impact from Manitoba Hydro's rate increases.

MS. MARLA BOYD: And if were to by -- to divide those numbers by the population of Winnipeg, which you noted to be seven hundred and fifty thousand (750,000) in your presentation --

MR. TYLER MARKOWSKY: Yes.

MS. MARLA BOYD: -- that would amount to a dollar -- a dollar seventy-five ($1.75) to two dollars ($2) per person?

MR. TYLER MARKOWSKY: Approximately.

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

THE CHAIRPERSON: Thank you. We'll take fifteen (15) minutes break.

--- Upon recessing at 2:47 p.m.

--- Upon resuming at 3:04 p.m.

THE CHAIRPERSON: If we could resume. Mr. Peter...?

MR. BOB PETERS: Yes, thank you, sir.

CROSS-EXAMINATION BY MR. BOB PETERS:

MR. PATRICK BOWMAN: Mr. Markowsky, you haven't been asked about the end of your evidence where you indicated that one (1) of the last projects you worked on at Manitoba Hydro was a 2015 financial targets review; correct.

MR. TYLER MARKOWSKY: I haven't been asked about that, no.

MR. BOB PETERS: And this is the report appearing in front of you is appendix 4.2 in these proceedings, and this is the document that you were referring to?

MR. TYLER MARKOWSKY: That is the document I was referring to.

MR. BOB PETERS: All right. And maybe just provide the Board with a bit of background as to your direct involvement and who else was involved that you recall?

MR. TYLER MARKOWSKY: Sure. So when I was at Manitoba Hydro I was in the economic analysis department and the economic analysis department's job is to, among other things, put together the interest rate forecast.

The department no longer exists now, but that -- that still happens. So I -- I didn't -- I -- I'm not the one -- who was assigned the job of doing the consensus forecast of all the banks and things like that. My specialty that I started to develop at Hydro was on -- on uncertainty and error and variance in the interest rate forecasts.

So when this project was being undertaken and -- and -- and correct me if I'm wrong -- I guess you guys can't speak, but it's primarily being done by the -- by the financial planning folks. And so they -- they -- they brought on different individuals from the different departments, so they had people from resource planning involved. They had from my -- the department that I was in to help out with interest rates.

And -- and -- and ultimately, they're the ones that -- that put everything together and -- and wrote the report that you see in front of you. I -- I didn't write this report. There's a word in there that came from me, but I helped out with some of the interest rate uncertainty analysis with the financial planning department.

And also we retained, I believe it was, Berkeley Research Group to assist in converting some of the interest rates.

MR. BOB PETERS: All right. If we turn to page 1 of the actual report as opposed to the executive summary. I wanted to go -- maybe I'll just read into the record the paragraph that says:

"In setting financial targets, it

was recognized that the targets may
not be obtained during years of
major investments in the generation
and transmission system, but that it
would be necessary for Manitoba
Hydro to demonstrate to credit
rating agencies and other
stakeholders, that progress towards
attaining the targets would occur
over the long-term after the major
capital system expansion program."

I read that correctly?

MR. TYLER MARKOWSKY: You read that correctly.

MR. BOB PETERS: And is that -- was that understood at the time you were doing your analysis in terms of what these financial targets were going to be or be used for?

MR. TYLER MARKOWSKY: That is my understanding of -- of the purpose of the analysis.

MR. BOB PETERS: All right. Let's cut to the page 12 and figure -- well, let's start on page -- I guess it's 11, please. And we'll look at the box and whisker plot. Here it is in a generic form.

So just to orient this Board, Mr.

Markowsky, the whiskers at the bottom represent the P5 value or 5 percent chance the value will be less than this value. And at the top end of the whisker, it's the P95, meaning that, there's a 95 percent chance the value will be less than the -- than the level indicated; correct?

MR. TYLER MARKOWSKY: That's -- that's what's on that chart.

MR. BOB PETERS: All right. And -- and the reason that you use box and whiskers is to provide a wide range of probabilities of outcomes; correct?

MR. TYLER MARKOWSKY: That is correct.

MR. BOB PETERS: And we see in the very centre a P50 which this Board has heard of in this hearing, that there's a 50 perch -- 50 percent chance that the value will be less than or greater than this value and that's your understanding as well?

MR. TYLER MARKOWSKY: That's my understanding, yeah.

MR. BOB PETERS: All right. If we turn to the next page to figure 4.1. This page provides equity ratios using that box and whisker calibration and it does so over a variety of scenarios.

Are you aware of that?

MR. TYLER MARKOWSKY: I'm aware of that.

MR. BOB PETERS: And in these scenarios, you have indicated that you had certain involvement but you didn't have involvement in the 102 flow records years, did you?

MR. TYLER MARKOWSKY: No. No, my involvement was pretty boxed in with respect to the interest rate component.

MR. BOB PETERS: Was that an attempt at a pun. I'll let it go.

MR. TYLER MARKOWSKY: I'm not that fast right now, no.

MR. BOB PETERS: Okay. Mr. Markowsky, the -- likewise your involvement was with the fifty (50) interest rate scenarios that were studied with the Manitoba Hydro IFF15 rate trajectory of 3.95 percent?

MR. TYLER MARKOWSKY: I was involved in that to a degree, yes.

MR. BOB PETERS: And you weren't involved with the export prices on the high and low forecast for exports?

MR. TYLER MARKOWSKY: No, I was not,

no.

MR. BOB PETERS: And assisting Manitoba Hydro on the interest rate, you've indicated was the Berkeley Research Group that was contracted to help?

MR. TYLER MARKOWSKY: That's correct.

MR. BOB PETERS: In terms of the results that we see on figure 4.14 or 4-1 -- before I go there. I read in your evidence on the very last page of your report that, in summary, the report concludes that:

> "After having run all of these various modellings where risk factors were varied that the long-term financial viability of Manitoba Hydro was acceptable and sustainable under the -- under the assumed rate scenario of 3.95 percent."

Correct?

MR. TYLER MARKOWSKY: This report concludes that after having run all these various modelling where risk factors were varied, that the long-term financial viability of Manitoba Hydro was acceptable and sustainable under the assumed scenario.

MR. BOB PETERS: And when you say it

was -- was "sustainable and acceptable," acceptable to whom?

MR. TYLER MARKOWSKY: To the -- at the time this report was being prepared for -- for the management and executive, I -- you know, I'm hesitating because I wasn't in front of them when they were accepting this, but that -- that this report concluded that it was acceptable under all of those scenarios.

So I can't -- I can't put words in the mouth of the senior executive.

MR. BOB PETERS: No and I'm not asking you to do that. I just want you to identify who -- who you understood was satisfied or accept -- who accepted the report.

This report was prepared 2015, correct?

MR. TYLER MARKOWSKY: That's the correct.

MR. BOB PETERS: And in what years was the data gathered to prepare this report?

MR. TYLER MARKOWSKY: The information would have been collecting at that time. I can't -- I can't put my finger on and I can't speak to all of the information, all of the data, but with respect to the interest rates, that data was collected at that time.

MR. BOB PETERS: "That time" being the year 2015?

MR. TYLER MARKOWSKY: Yes.

MR. BOB PETERS: All right. And you haven't conducted or been part of or aware of this table being updated with current values that Manitoba Hydro has provided in this rate application?

MR. TYLER MARKOWSKY: I haven't looked at any of the subsequent analysis that -- that this -- that may have been updated on this particular ratio.

MR. BOB PETERS: Mr. Chair, I'd like to thank Mr. Markowsky for answering my questions. Those conclude my questions of this witness.

THE CHAIRPERSON: Thank you. Does the panel of any questions?

Mr. Markowsky, I've got a question. Can you pull up -- Kristen, can pull up the slide which was the Conference Board of Canada screen that we looked at. I really don't know the number. It was the page -- there was the screen we were looking at where Mr. Markowsky had made reference to -- there was a comment about -- about the forecast and...

Yeah, no, it was earlier. That one, sorry.

(BRIEF PAUSE)

THE CHAIRPERSON: Can you scroll down a little. You made the comment in relation to forecast risk about dampening the purchasing power of households in Manitoba, correct?

MR. TYLER MARKOWSKY: Correct.

THE CHAIRPERSON: Any -- any increase -- any increase cost to residents would dampen their household power. correct?

MR. TYLER MARKOWSKY: It would be a function of their income growth as well, but, you know, assuming that there was no -- no real growth in income then -- then certainly, you know, all else held equal, then yes.

THE CHAIRPERSON: That would include things like user fees, that would reduce purchasing power or more that people have to pay to buy services?

MR. TYLER MARKOWSKY: All else held equal, if an individual's income was not increasing then, yes.

THE CHAIRPERSON: Property taxes?

MR. TYLER MARKOWSKY: Property taxes can, all else held equal, property taxes could have that impact.

THE CHAIRPERSON: It has an impact if any -- any fees, any costs, anything goes -- goes up; whether it's Manitoba Hydro or Manitoba Public Insurance or anybody --

MR. TYLER MARKOWSKY: Yes.

THE CHAIRPERSON: -- isn't that the case?

MR. TYLER MARKOWSKY: Yes.

THE CHAIRPERSON: Including the water rates set by the City of Winnipeg as well?

MR. TYLER MARKOWSKY: Yes.

THE CHAIRPERSON: Okay. Thank you, Mr. Markowsky. Thank you for appearing before us and provide -- sorry, my apologies, re-examination, Mr. Ferguson?

MR. DARYL FERGUSON: No, I have no -- no re-examine.

THE CHAIRPERSON: Thank you. Thank you, Mr. Markowsky, it's very helpful.

MR. TYLER MARKOWSKY: Thank you for your time.

(BRIEF PAUSE)

THE CHAIRPERSON: Mr. Luk, if you --

MR. SENWUNG LUK: Mr. Chair and Mr. Raphals has indicated to me he'd depreciate five (5) minutes to --

THE CHAIRPERSON: Oh, certainly. That's fine. We'll wait.

MR. SENWUNG LUK: -- reposition himself. Thank you.

THE CHAIRPERSON: Yes.

(BRIEF PAUSE)

THE CHAIRPERSON: Mr. Luk...?

MR. SENWUNG LUK: Thank you, Mr. Chair, and good afternoon Panel members. I'm pleased to present Mr. Phil Raphals to the Board as a witness for direct examination. Mr. Raphals has indicated to me he wishes to affirm.

AMC/MKO PANEL:

PHILLIP RAPHALS, Affirmed

EXAMINATION-IN-CHIEF BY MR. SENWUNG LUK:

MR. SENWUNG LUK: So, Mr. Raphals, I'd like to go through your qualifications to give evidence before the Board today.

Can you start off by telling us about your experience on energy matters?

MR. PHILLIP RAPHALS: Good afternoon, Mr. Chair, members of the Board. It's an honour to be here. Yes, I've been working on electricity issues since 1994, I guess that makes twenty-four (24) years now.

In 1994 I was engaged as Deputy Scientific Coordinator of the -- for the Joint Federal Provincial Cree Inuit environmental assessment process for the Great Whale Project, a 3000 megawatt hydro project in northern -- proposed in northern Quebec. In that process I was made responsible for the studies on justification of the project and I have, essentially, been working in electricity policy ever since.

When that wound down, when the project was withdrawn, I worked as an independent consultant for several years and then in 1997, cofounder the HELIOS Centre, together with Phillip Dunsky who I believe is known in these parts.

In 2004, Mr. Dunsky left to form his own consulting firm. And since then I've continued as executive director of the HELIOS Centric. The HELIOS Centre is set up as nonprofit organization and we provide -- we're entirely independent with very little, very small amounts of -- of grant funding but, essentially, funding that we earn in thin -- places like here, providing independent expertise over a broad range of energy issues, primarily, almost exclusively, in electricity policy.

I would say that our core clientele consists of environmental NGOs and First Nations, but we've also over the years carried out projects on behalf utilities, governments, industries, consumer groups, startups, and on a couple of occasions on our own behalf.

MR. SENWUNG LUK: Thank you, Mr. Raphals. Can you tell us whether you've ever given evidence before other regulators?

MR. PHILLIP RAPHALS: Yes, I have on many, many occasions. I've testified before the Quebec Energy Board, Regie de l'energie du Quebec dozens of times on a broad range of issues, which include: planning, rate design, transmission regulation, wind power integration, security of hydraulic supply, demand response, and other matters that have come up over the years.

I have testified on -- in the past, on two (2) occasions before the Newfoundland Labrador

PUB. In the first case in the reference to the Board on the Muskrat Falls project in 2012 I think it was, I'm not sure. That was on behalf of a citizens group, Grand Riverkeeper and also in the last GRA, an amended GRA 2013, on behalf of the Innu Nation.

I'm also an expert witness in the current GRA before the NL PUB on behalf of the Labrador Interconnect Customers which, essentially, consists of three (3) municipalities and a First Nation.

I've also testified before the Nova Scotia Utilities and Review Board; first on behalf of CanWEA, the -- the Wind Energy Association and in a later phase on behalf of the Nova Scotia Consult -- Consumer Group, excuse me, in the proceedings related to the proposed Maritime Link transmission project and, very recently, I testified before the British Columbia Utilities Commission in this inquiry on Site C.

MR. SENWUNG LUK: Can you just briefly describe for the Board a few of the projects -- other projects that you've worked on.

MR. PHILLIP RAPHALS: Sure, I'd be happy to. So maybe starting with the most recent with Site C. I was co-author of several studies that were presented to the BCUC on behalf of the University British Columbia's program on water governance. Most of the work I did was based on modelling that I had initially carried out on behalf -- in the joint review panel hearings for the environment assessment on behalf of the Treaty 8 Tribal Association.

And the approach I took was to model BC Hydro's supply demand balance under a number of varying scenarios; both of load and -- and of supply. And then to compute the differential present value of the -- present value of the differential costs from each scenario compared to a base case, which is -- essentially is the process used by BC Hydro in its IRP and makes it possible to compare economic outcomes over widely different situations.

We also addressed a wide number of policy issues that were -- that came up with respect to the -- the, essentially, the twenty (20) year plan that -- that underlied -- underlies the Site C project. And I can say that our work was quite essentially quoted by the BCUC in its final report.

In Quebec, as I said, I've worked on many issues, but most recently in the last few years, on several proceeding -- several proceedings. I've presented work focused on the treatment of short-term purchases. So without going into the details of Quebec's sort of bizarre structure, but on many cases, very frequently, especially during winter peaks, Hydro Quebec distribution purchases short-term power to meet its -- to meet its needs, both from Hydro Quebec production and from US markets. And it turns out that these short-term purchases, which in some years have exceeded $400 million, have virtually no regulatory oversight and it's extremely impenetrable to understand exactly what decisions were made when and if they were the right -- the optimal decisions.

So we've raised these issues in a number of proceedings, in rate cases, in the supply plan hearing, and most recently, in the ongoing process to install -- to establish performance-based regulation, with the intention of developing an indicator so that the performance of the short-term purchase program can be properly overseen and evaluated.

I would also perhaps mention the work I did in -- in Newfoundland in the 2013 GRA. In that case, in the original case that's filed, there was I believe more than 20 percent rate increase called for for the -- for consumers and Labrador and it turned out that the biggest chunk of that increase was due to

-- well, there were two (2) important parts actually. One was due to the rebuild of the distribution system in Lab city. I think I mentioned that in -- in one of my responses to -- to IR.

But the other was the allocation of the rural deficit, which is the deficit that results from the diesel systems, which in Newfoundland is quite a large chunk of money that's divided over a relatively small pool of -- or contributors. And it turned out that the method used for that allocation had been set in the early 1990s and hadn't been reviewed since and was rather strange, if I can put it that way.

So in my initial evidence, I -- I -- I pointed that out and suggested alternatives to it. Other Intervenors and other experts also addressed the same point, and as a result of this collective interest, actually, NLH withdrew its application just before the hearings and came back a year later approximately with an amended GRA with a very different approach to rural deficit.

MR. SENWUNG LUK: Thank you. Mr. Raphals, have you ever given evidence before the Manitoba PUB?

MR. PHILLIP RAPHALS: No, I have not.

MR. SENWUNG LUK: Do you understand

that your primary duty as a witness is to the PUB?

MR. PHILLIP RAPHALS: Yes, I do.

MR. SENWUNG LUK: Do you understand that you have a duty to give evidence that is fair, objective, and nonpartisan?

MR. PHILLIP RAPHALS: Absolutely.

MR. SENWUNG LUK: Thank you. I would ask that Mr. Raphals be qualified as an expert witness on Util -- electric utility rate-making and regulatory policy.

THE CHAIRPERSON: I don't have a problem with this. We -- we had the prehearing conference. I think he's already been qualified so I'm not sure we have to go through this again.

MR. SENWUNG LUK: Okay. That's great. Thank you, Mr. Chair.

Now, Mr. Raphals, you prepared the expert report entitled Implications of Manitoba Hydro's General Rate Application. And you -- you made revisions to this report in a -- in a version that was circulated to the parties yesterday; is that correct?

MR. PHILLIP RAPHALS: Yes, that's correct.

MR. SENWUNG LUK: If I could ask for that version to be marked as an exhibit.

MR. KURT SIMONSEN: That's 7-1 AMC.

MR. SENWUNG LUK: Thank you.

--- EXHIBIT NO. AMC-7-1: Presentation entitled Implications of Manitoba Hydro's General Rate Application

CONTINUED BY MR. SENWUNG LUK:

MR. SENWUNG LUK: And you also, Mr. Raphals, prepared the presentation slides entitled Affordability Implications of Manitoba Hydro's General Rate Application?

MR. PHILLIP RAPHALS: Yes.

MR. SENWUNG LUK: And if I could ask for that also to be marked as an exhibit.

MR. KURT SIMONSEN: That will be AMC-14.

--- EXHIBIT NO. AMC-14: Mr. Raphals' presentation slides entitled Affordability Implications of Manitoba Hydro's General Rate Application

CONTINUED BY MR. SENWUNG LUK?

MR. SENWUNG LUK: Mr. Raphals, was this material prepared under your direction and control?

MR. PHILLIP RAPHALS: Yes.

MR. SENWUNG LUK: To your knowledge is it accurate to the best of your knowledge and belief?

MR. PHILLIP RAPHALS: Yes, it is.

MR. SENWUNG LUK: And, Mr. Raphals, did you draft the responses to the Information Requests already in the record that were posed to you?

MR. PHILLIP RAPHALS: Yes, I did.

MR. SENWUNG LUK: And yesterday, did you make revisions to the Information Request entitled MH HELIOS round one, number 5?

MR. PHILLIP RAPHALS: Yes, I did.

MR. SENWUNG LUK: I'd just like to ask for that revised IR response to be entered into the record as MH-HELIOS-15 revised.

So, Mr. Raphals, I'd maybe like to -- before you go into your presentation, ask you to explain the revisions that you made to two (2) different documents. The first is the report entitled Implications of Manitoba Hydro's General Rate Application and, second, is the -- the Information

Request I just referred to.

MR. PHILLIP RAPHALS: Yes. So the revisions to my report all flow from an undertaking provided by Manitoba Hydro which I believe is MH-98, which changed some of the information on which -- on which my report was based. I think it will make most sense if I explain that to you when I get there in the presentation. But it's -- it's a very simple change that happens in many places, but it's important. So I felt the need to -- to revise the document.

With respect to the IR, perhaps if you could display the -- the very end of the IR which is where modification is. On -- on reviewing these preparing for the hearing, I -- I realized that it was somewhat misleading the way I had worded this.

Since the current cost of service study is an object of this hearing, and obviously it wasn't decided by Order 164/16 so I just added a few words to clarify that what I meant was that it was the methodology that was adopted and -- and not the current cost of service study.

MR. SENWUNG LUK: Thank you. And just before I let you -- ask you about your presentation today, I understand that you intend to refer to a report of the Senate of Canada entitled Housing On

First Nation Reserves, Challenges and Successes?

MR. PHILLIP RAPHALS: Yes, with the Board's permission I would like to refer -- refer to that document.

MR. SENWUNG LUK: And that this document is dated February 2015?

MR. PHILLIP RAPHALS: Yes.

MR. SENWUNG LUK: If I could ask for that to be marked then as -- as an exhibit, as well?

MR. KURT SIMONSEN: That will be AMC-15.

MR. SENWUNG LUK: Thank you.

--- EXHIBIT NO. AMC-15: Report of the Senate of Canada entitled Housing On First Nation Reserves, Challenges and Successes, dated February 2015

CONTINUED BY MR. SENWUNG LUK:

MR. SENWUNG LUK: Mr. Raphals, after -- after all that, I understand you have a presentation you'd like to share with everyone today?

MR. PHILLIP RAPHALS: I do. And thank you very much again for the opportunity to -- to share this with you.

So what I'll be doing -- if you can go to the next slide, please. I will, to a large extent, be -- be just reviewing and summarizing the -- the key points of my report that was filed earlier, and also explaining the modification that had to be made.

And then with respect to some of these issues, I will also comment on new information that -- that I've learned from -- mostly from reading transcripts and -- and documents that have been presented since it was filed. So, as you can see, the main topics I'll address are: The impacts of the proposed rate increases on energy poverty; the different possible affordability mitigation mechanisms; the question about who should bear the cost of those mechanisms; a quick review of what we know about energy poverty on First Nation reserves; and then some discussion of the concerns that all these matters raise, the possible trade-offs and potential solutions.

So the next slide, please. This slide just summarizes what was shown in my report based on data presented in one of the IRs of the propos -- of the expected evolution of average bill amounts under the current proposal. And we see that there's a rapid increase to 40 -- or 40 percent increase by 2024. And then after that, of course, the average bills increase essentially with inflation.

The next slide, please. Now, this graph actually brings together two (2) graphs that we've seen in the affordability working group report, appendix 10.5 I believe, which I will be referring to and talking about a great deal.

First, I should mention -- so the -- the -- the upper line, the one with the round markers, represents the percent of households that are LICO25 -- 125 and are above a 6 percent energy poverty threshold. And then the lower line, with the squares, represents those which are above a 10 percent energy policy threshold.

Energy policy -- the definition of energy policy by the way, I think it's important to recall it, that's presented on page 62 of appendix 10.5 reads as follows:

> "Energy poverty refers to circumstances in which a household is, or would be, required to make sacrifices or trade-offs that would be considered unacceptable by most Manitobans in order to procure

sufficient energy from Manitoba Hydro."

So as -- as you'll see, I've based most of my work directly on the outputs of the affordability working group and they chose to evaluate energy policy -- energy poverty under two (2) different thresholds, 6 percent and 10 percent without making a judgment as to which is the most -- the more appropriate definition.

So the -- the Y-axis label on this slide brings us to the modifications in my report, because this slide -- again, which conflates two (2) slides but -- but the original labelling in the -- in the working group report was percentage of LICO125 households that are above a 6 percent or a 10 percent threshold.

And I read the report carefully and I understood that what they were saying was that out of the low income subset of the population, these were the percentages that met the -- the threshold. But in MH-98, which is the response to undertakings given to Mr. Shefman, I believe -- in fact, a correction is made, an important direction, which has some implications.

So I think it would be good to bring up

that -- that undertaking, MH-98, page 3.

(BRIEF PAUSE)

MR. PHILLIP RAPHALS: Oh, excuse me, it's Exhibit -- yes, exhibit -- Manitoba Hydro Exhibit 98. I think is the right way to say it. So if you scroll down a bit further, please. No, I'm sorry, it's page -- it's the next page. Wait a second.

(BRIEF PAUSE)

MR. PHILLIP RAPHALS: No, I'm sorry, I -- forgive me, it was the previous page. So below the graph, in the text below the graph. One moment, please.

(BRIEF PAUSE)

MR. PHILLIP RAPHALS: Forgive me, it's the page before it. It's figure -- it's the text under figure 1, which is on page 2 of the PDF. Yes, exactly.

So, the second sentence. Note that I

have changed the axis label and caption to emphasize that these values indicate the percentage of all Manitoba households that are energy poor, not just the LICO125 households.

So the modification in my report is to simply change all the many, many times in which I said -- I refer to the percentage of LICO125 households to change it to the percentage of Manitoba households, which is in fact what the data is representing.

Maybe just to be clear, if we could -- if we could go to my revised report, that was just filed. On page...

(BRIEF PAUSE)

MR. PHILLIP RAPHALS: Sorry, I don't have the page number for you. One moment. Page 4, which is I believe page 7 of the PDF -- page 8 of the PDF. Yeah.

So here in the -- in the title to figure 1, I've changed the title so it now reads "Increase on Proportion of Manitoba Households." I couldn't change the -- the figure which is reproduced from the -- oh no, in this. Yes, I'm sorry, in this case I took the figure from the undertaking. In the next figure I couldn't do that because he didn't reproduce in the undertaking so there are footnotes explaining it.

But this is the only -- these are the only changes that are made in the report. And by the way, I should say that this -- this change which -- which is substantial also affects other elements of the original working group report and of the response AMC-MH-2-23 (a) to (c) which also bear the same error.

So if you can now go back to my presentation. So what we've now learned, thanks to the undertaking, is that the 16 percent of Manitoba households that are projected to be both LICO125 and energy poor at a 6 percent threshold in 2024 which should say the peak of the crest of -- of the upper curve, in fact, represents 60.5 percent of all LICO125 households; that's in figure 2 of the undertaking. And it represents almost 75,000 households.

So, this is -- we see that this is quite a substantial number of people which -- a fact of which I was not aware when I wrote the report.

So now -- I apologize for that long and confusing diversion, but I wanted to explain those modifications.

So in its initial working group report

in appendix 10.5, the working group presented analyses of three (3) different rate scenarios. But it turned out that none of those rate scenarios were the same as the one that's actually put forward in the application.

And so in an IR we requested that they update their information in order to -- so that they would match and we could really work with their results as a clear representation of what can be expected with the current proposal. And they very kindly did so in a -- in a very fulsome way and I really want to thank and complement Manitoba Hydro and PRA for the effort that was made. Frankly, with -- after my experience in other jurisdictions, I wasn't expecting such a complete response and it was really very much appreciated.

So we can go to the next slide. So in the next slide compares not the -- looks actually at the -- at the actual energy burdens of the energy poor populations as opposed to just the number of those people. And I prepared it by combining figures 9 and 10 from the response that's mentioned. And again -- and from here forwards, by the way, I'll only be looking at the results for scenario 4. I'm ignoring everything about scenario 1, 2 and 3 because they're no longer really relevant.

So what we see here is that -- so looking first on the left side of the graph, the 6 percent threshold and let's just jump to 2024. What it's doing is comparing the energy burden -- the additional energy burden resulting from the proposed rate increases, for the energy poor as opposed to the non-energy poor.

So looking at the -- the -- the orange bars are -- represent the energy burden impact of the proposed rate increases on the nonenergy poor, and we see that it's -- in 2024, on the left side, 3.2 percent and then it's relatively invariant hovering around 2 1/2 to 3 percent to 3 1/2 percent. But for the energy poor, we see the burdens increasing fairly dramatically. And so for the -- those who are energy poor under 6 percent threshold, their actual average energy burdens increase to 14.3 percent. And for those who are energy poor under a 10 percent threshold, their energy burdens increased to 24.3 percent, which I would submit are fairly substantial and dramatic numbers.

Next graph, please -- next slide, please. Now, obviously, as in a projection, there are lots of assumptions made and there were two (2) assumptions underlying PRA's work in this regard that I thought merited further examination. One is the assumption regarding future income growth and the other the assumption regarding tailing rate increases, that is to say, after 2026.

Of these, the income growth one is by far the more important. In this graph the lower curve is the same one that we saw before. It represents the percent of households that are energy poor based on a 6 percent threshold under the proposed rate scenario. And the blue dashed line -- and so, one of the assumptions is that household income will increase by 3 percent per year throughout this period. I found that to be a not necessarily a conservative assumption, in particular, with respect to low income households. And reading some transcripts, I saw that was a matter that was discussed earlier and I think that Mr. Mason indicated that 1.5 to 2 percent might be a more reasonable estimation.

But what I did here and in my report was -- so we -- we asked PRA to present the results of the analysis with different levels of income growth which, again, they very kindly did, for a full range and for purposes of illustration I presented the scenario where there is zero income growth. So the assumption that incomes simply do not increase over the -- over this period. I realize that's perhaps an extreme assumption as well. So you might think of -- of the base case and the zero growth as bookends and hope that the result might be somewhere in between; that would concord with Mr. Mason's comments about one and a half point two percent, (sic).

But, we do see that it makes a very big difference. And so looking at the blue dashed line, which again is the zero growth perc -- zero growth scenario with a 6 percent threshold the rate increases. Again, where in the base case, it had edged up to 15.2 percent and then gradually trailed down and here it -- by 2024 it's already 17 percent or so and continues to grow to reach over 20 percent in 2036.

And then the other case that I examined was with respect to the trailing rate increases. The base case assumption was that they would be with inflation, estimated 2 percent per year starting in 2026. And the -- the orange curve, orange dashed curve portrays the effect of a zero percent income growth combined with a 4 percent per year rate increase.

As we see, of course, it accentuates

the increase, not by very much, clearly demonstrating that the income assumption is by far the more -- the more important one here, but so together, they -- they would bring the rate to 21.6 percent.

Next slide, please. This graph does the same thing based on the 10 percent threshold and the -- the -- the shapes of the results are similar, again, with a 10 percent threshold there was much less growth in the base case. But again, we see there is very substantial growth in -- in the low income -- in the zero income growth case, resulting in a situation where 20 percent of Manitoba households would spent 10 percent of their income on energy after 2032.

So if we can go to the next slide, please. So just to summarize the working group -- affordably working group report, the PRA report, it reviewed in some detail implications of three (3) different affordability mitigation measures: the straight discount, a fixed charge waiver and Pipp, percentage of income payment plan.

And then it reviewed the impacts on energy poverty for each one. And as I said before, three (3) scenarios were presented, but the fourth one, which matches the current rate proposal, is the one we're interested in.

Next slide, please. So this is PRA's estimates of lost revenues resulting from the three (3) different options they looked at, again, under the two (2) different thresholds. So we see that with a fixed charge waiver the lost revenues range between perhaps 2 and $8 million, depending on the threshold, with a 25 percent discount. They ranged between around 9 and $25 million, based on threshold and with a Pipp between 15 and 38 million -- about 37 -- $36.4 million.

Next slide, please. PRA also evaluated the rate impacts that would result from sharing these lost revenues over other residential customers only, and by the way they -- I believe they also -- it's only lost revenues, there's no program costs accounted for here.

And their estimates were that the fixed -- as you see here, that the fixed charge waiver, again, is the least expensive. That Pipp is the most expensive. The 6 percent threshold is less expensive. The 10 percent -- sorry, the 10 percent threshold is less expensive because fewer people are -- meet it. The 6 percent threshold is much more expensive and that the -- the rate impacts would range from 0.4 cents per kilowatt hour, in one case, up to .7 cents a kilowatt hour.

And as I point out in my report, those amounts would be substantially lower about -- about 40 percent of these numbers, if the impacts were shared over all customers and not only over residential customers, which is an issue I will get to later.

The -- the magnitude of these impacts was mentioned in a number of Information Requests, both from the Board, and I believe from Manitoba Hydro and, indeed, the high end of it is a very significant impact. And I'm -- again, as I'll -- as I'll get into later, reducing the cost of a program like this and reducing the rate impacts is a very critical design element.

Next slide, please. So as you're well aware Mr. Chernick presented a different kind of a -- an affordability mechanism different from the three (3) that were studied by the working group, and which, in my opinion, is far superior to those three (3). And so I'm -- I've just summarized it here again for my benefit and yours so we could have it fresh in our minds.

The proposal is to create a reduced price first block which -- with the intent of being inframarginal in most cases. You produce a 4 percent discount for that first block and then the amounts of energy that would be -- the amount -- the size of that first block would vary under different scenarios.

For the low-income rate, it would be flat year-round. And he suggested 500 kilowatts hours a month. And for an electric space heating rate, it will vary by season, ranging from 100 -- zero in the summer, obviously, to 150 kilowatt hours in the spring and 500 in the winter.

And in Mr. Chernick's proposal the two (2) alternatives are additive. So one could put them both together -- and the next slide, please -- which is summarized here. This is his table. The only difference is -- I have changed the headings of the columns because I found them confusing. I hope that I am simply clarifying his thought. I have no intention of changing it, but I think this is what he was saying.

So as described here, the first column is the current rate proposal. The second column is the rate that would be offered to low income consumers. The third column is the rate that would be offered to electric space heating consumers. The fourth column is the rate that would be offered to low income consumers who use electric space heating. And the last column would be the rate offered to the rest of the residential class.

And his assumption was that -- that these rates -- that the revenue losses would be recovered from all of the customers. And he estimated them at point $0.22 a kilowatt hour for the low income proposal; $0.12 a kilowatt hour for the electric space heating composer -- proposal and I believe that those should also be added to -- additive, but I haven't really verified that, but I would suspect that the -- I don't remember if he addressed that in his testimony or not, but I would suspect that the combined would be at least similar to the sum of those two (2).

Next slide, please. So the reason that I think this proposal is so much better than the ones that were reviewed by the working group is -- is for two (2) reasons. One is that it avoid -- it maintains a price signal. It maintains the same price signal for everyone to whom it applies, which is not the case with the proposals that were -- the approaches that were studied. A straight discount of 25 percent reduces the pricing by 25 percent, so, the cost of adding an additional kilowatt hour or the benefit of saving the use of a kilowatt hour would be reduced by a quarter bring it significant farther from the marginal costs and diminishing the effectiveness of pricing.

Similarly, in the Pipp which I'm sure also has very significant administration challenges. But my understanding of it is that, essentially, for a given consumer the -- the total amount of their electric bill would be fixed in relation to -- determination based on their income. So obviously, if you're paying a fixed charge for your electricity, there is essentially no pricing them at all for the marginal kilowatt hour, which is not desirable.

And Mr. Chernick's proposal also offers a significant bill reduction which would not be the case of the fixed charge waiver which is really a very small reduction in -- for -- especially for electri -- electric heating customers where the fixed charge is only a small part of their total cost.

And the other great advantage of it is that it's extremely malleable in that the block sizes can be adjusted based on further analysis, perhaps based on a phase-in kind of approach. I believe he may have mentioned that where one could start small and see how it goes and see what the rate impacts are and progress over time.

So I'm not saying that it's not a --

you know, that it's the -- the end of the -- end of the -- you know, that it's the absolute best but it seems to be far superior to the other approaches that are on the table and should probably be adopted as sort of the default starting point for future reflections.

Next slide, please. So now we get to the sort of the summary of the facts, but now we get to the thornier questions about who should actually pay for all this because, obviously if you're going to be reducing electric bills for some consumers to make -- to meet the revenue requirement to maintain the expected revenues, somebody else has to pay more. So the first question is: Should these programs be done by the ratepayer or by the taxpayer? Should we be talking about this at all or is this really just a government responsibility?

It's my understanding that's, essentially, Manitoba Hydro's response; that this is a government problem. It's a social problem. It's a government responsibility and it's not ours to fix. There certainly are very strong arguments in favour of government support for affordability programs. Be supported by the progressive taxation system. It would be inserted into much larger systems of societal benefits and so on.

But obviously, the Public Utilities Board, the GRA is not a place where anyone can -- can set or create or modify a government affordability program. These kinds of situations arise all the time in -- in regulation, and I think the only reasonable way to proceed is to take government legislation, regulation, and policy as a given. It is what it is. And the -- the regulator and the Utility have to work within it and try to find the best solutions given what that is.

So, I don't think it -- it makes sense to try to pass the ball to the other court because I don't know if anyone is listening on the other side. But the question is rather given -- given what the legislation, regulations and policy are, is it appropriate for the Board to impose an affordability mechanism in this context.

There also -- it's also I think very reasonable to do so. I -- I think -- I didn't read in detail and I know that there's been some discussion of similar programs elsewhere. I have not reviewed that. I think I mentioned I did some work on these issues quite a long time ago for Hydro Quebec, and a -- and a consumer working group where I reviewed state programs and provincial programs, but I did not take the time to try to update all that research.

So I'm not offering you testimony about what is done elsewhere. But, I would say that cross subsidization as a principle is very well known. Is, in fact, unavoidable in Utility regulation. It's not a good thing. It's something that we generally try to minimize but that it's traded off among the many complex trade-offs that Utility Boards have to make, which leads us, finally, to the question of: Insofar as there will be such a mechanism. And again, of its -- of a -- of a scope and a cost to be determined, is that cost to be determined -- to be compensated through intro or interclass subsidization?

Next slide, please. And I think that the key question in -- or the key factor in approaching that kind of a question is: What is driving the cost that we're talking about? So I mentioned in a response to an IR, the case in Newfoundland where distribution costs, rate increases were very much dependent on distribution costs that resulted from, essentially, rebuilding an entire dissolution system at a higher voltage for the largest city in Labrador, which would lead to substantial rate increases for the inner reserve of Sheshatshiu which derive absolutely zero benefit from this.

So, the argument that I made was that despite the fact that it's a single rate class, and it normally -- distribution investments are cross subsidized within rate -- within our -- within a rate class that exceptions could be made and this might be an occasion for one. But since the driver of that increase was a distribution investment, it wouldn't have made a lot of sense to ask industrials to share in that because they don't use the distribution systems.

So this is a sense in which I think it's important to ask: What's driving the cost increases that we're -- that we're worried about in order to provide guidance as to who in the end should be asked to share the cost of it. And I'm new to Manitoba. There's a great deal that I don't know. I've read as much as I can and I'm ready to be corrected if -- if I'm misunderstanding things.

But it's my understanding that (a) that this -- this immediate rate creas -- rate increase, as well as the proposed multiyear rate increases, are largely being driven -- primarily being driven by the capital costs of two (2) large projects, Keeyask and Bipole III, and that those investments are, to a certain extent, which I will not endeavour to quantify, export related.

Again, if those -- if those costs had been simply a, you know, rebuilding the Winnipeg distribution system, I think it would be very clear that these are distribution costs and -- and that they belong in the -- in the people that use the distribution system.

But, as I understand your regulatory system, export revenues benefit all, export costs are shared by all allocated based on their use of generation, transmission, so -- so shared differently, but shared by a very clear structure. And -- so -- in so far as export related investments are creating an intolerable affordability problem for some subset of the Manitoba population, it seems to me appropriate that the -- that the cost of repairing that problem or mitigating that problem is a province-wide cost. It's a shared cost and not simply a residential class cost.

So, that's the reasoning that leads me to suggest that the appropriate allocation of the cost of whatever program is ultimately decided should be shared among -- among all customers.

Now, this thinking led into -- leads into the complicated discussions of the cost of service study, of the role of exports and the cost of service study, and Order 164/16, which I have read several times. On page 38 of that Order we find the paragraph that's quoted here.

"If the cost of service study methodology is driven by considerations other than cost causation, then the final results of the COSS are muddled. Subsidies within the COSS are challenging to disentangle at the rate-making stage. The Board is of the view that additional transparency is achieved with the COSS and the rate-making process if these -- a limit -- if these implicit or explicit subsidies are eliminated from the COSS."

I understand from that that what the Board is seeking is a COSS that very directly reflects cost causation and it will be an input into its reflections in the GRA, but that does not limit what it can do in the GRA and I think I've seen this said many times by different parties.

But it was a explicit choice to

separate these two (2) steps and to exclude from the first step anything that could be seen as muddling, that could be seen as departing from cost causation. Frankly, I haven't seen this done as explicitly in other jurisdictions, and I find it interesting and perhaps wise. I'm not in a position to judge. It is wisdom, I'll withdraw that.

But I was surprised then to read in Manitoba Hydro's rebuttal testimony on page 65 the following set -- the following sentence:

"The assignment of cost to exports and the sharing of the resulting net export revenue between customer classes only occurs within the realm of a cost of service study."

That's in the second last paragraph there. Again, as a newcomer to Manitoba, I am inclined to defer to, essentially, all other parties for their understanding of the regulatory system and the meaning of -- of past Orders.

So my initial -- my initial approach is -- is to say that it means, you know, that I'm not the authority to say what -- what this order means, but at the same time, I cannot reconcile the passage that's quoted here with the one that's in the rebuttal evidence. The passage quoted on my slide, I think is very clear that it says -- that it's saying that the Board wants to remove all implicit or explicit subsidies from the COSS and I think it can only mean in order to apply them if it so chooses to in the GRA.

So, I -- I don't -- reading -- trying to read 164/16 as a whole, I don't think its intention is to -- is to bind the hands of the Board in the GRA. I think it's simply to say to provide a clear tool that says exactly what it says and that allows judgments to made later.

So I stand to be corrected if I need to be corrected. But -- but my understanding is that -- well, it's been very explicit that the integration of equity and fairness and other rate-making factors is made at the GRA and not in a COSS. But my reading of this is that the Board also has the -- has given itself the -- the latitude should it choose to take it to in the GRAs deci -- make a decision about application of export revenues beyond what is expressed in the COSS.

Now, if we can go to the next slide, please. So as I say, I think the Order leaves open the possibility of reassigning costs at the rate-making stage, which doesn't mean that that should be done. It just means it could be done. So, should affordability mechanism costs be associated directly with export revenues? Manitoba Hydro also in its rebuttal on that same page said that:

"It considers it more pragmatic to reduce residential RCC in an expanded zone of reasonableness."

First, I would point out that this, I believe, implies that the cost would be shared among other rate classes as well because if all the costs remain within the residential class, its RCC wouldn't change. It would just be shifting dollars around within the residential class. But -- but I think their point that -- that one (1) way to do it is simply to not talk about export revenues and just set the rates the way you decide to set them, and if the RCC's changed the RCC's changed; that's definitely one (1) path forward.

I would just caution you that the danger of that is that -- I mean the residential RCC is already substantially lower than the other -- the other classes. And there are people -- I just don't remember who -- but I know that that has been brought to your attention and that that should be corrected.

And so if the -- if the -- if it's just

dumped into the RCC, it seems to me over the long term that creates pressure to undo it. It may still be the best choice, but I just want to bring that to your attention.

But there are other approaches that are also possible. One would be to explicitly allocate a portion of the lost revenues to each class, lost revenues and administrative costs. So whatever that -- whatever that pool of money that has to be recovered -- recovered could be by -- by a Board decision explicitly amount allocated to each class.

Another, and this is the one that edges into the grey zones of 164/16, but -- but I think it's worth mentioning. Is to treat these costs as export related, and deduc -- deduct them from gross export revenues within the COAs -- COSS. And again, the logic of that is -- well, in the Order you removed a number of things to which export revenues had been allocated. And we're very clear that the only costs that should be deducted from gross export revenues are those which are explicitly export related, which I believe included the export related portions of the water rental fees, the export related portions of -- I'm sorry, the -- another category that slips my mind, I apologize.

In other words, costs that can be explicitly tied to -- to exports. You also did leave in the Affordable Energy Fund, the AEF. My read of the Order is that you would have preferred not to, but that the legislation obliges it and so it has to stay there, but that the logic of the Order would've been to remove it; if I understand it correctly.

But, the affordability mitigation costs I think are in the zone -- for one -- for one thing, they're sort of structurally similar to the Affordable Energy Fund, which could be a justification but -- but more important, they do have a direct link to exports. And so, again repeating what I said before, I think it is plausible to make -- to deduct these costs from export revenues within the COSS which, of course, if that were to be your decision, then I would assume that would lead to a recalculation of certain -- certain columns in this COSS in a conformity filing, which would then be approved in the ordinary course of business.

But, at the end of the day, I think the real question is -- is a judgment call on -- of yours to make whether these costs -- who should bear these costs. And if your judgment is that they should be borne by all rate classes, there are a number of different mechanisms that can do that. And whichever one is most convenience and simplest and -- and fits best into your way of thinking about things would be the preferable. I don't mean to be perspect -- prescriptive in that regard.

Next slide, please. Would you excuse me a moment.

(BRIEF PAUSE)

MR. PHILLIP RAPHALS: So to briefly touch on what we know about energy poverty in First Nations reserves. First just to be clear, I have not done an exhaustive study of energy poverty in First Nations reserves. I have mentioned some publicly available materials that seem to me to be fairly eloquent and convincing. I gather that there is a fairly broad consensus here that there is a very significant problem of energy poverty in First Nations reserves.

So, some of the information that I highlighted in my report are information from the 2016 census to the effect that 96 percent of First Nations people on reserves are below the poverty line with a medium annual income of under twelve thousand dollars

($12,000) and from a Statistics Canada report that 44.2 percent live in dwellings needing major repair. I believe, subject to check, that these are across Canada figures.

Then, based on the residential energy use study data, a number of other deductions can be made. One is that average electricity consumption -- consumption for First Nations on reserve is 23 to 29 percent higher than for all electric space heating customers.

Another is that the average electricity consumption per unit dwelling area is 24 to 47 percent higher than for all electric space heating customers.

However, all of these -- both of these conclusions are -- must be -- must be weighed against the fact that the Rios (phonetic) clearly, and it's been acknowledged had very -- very insufficient sampling on reserves. And so the data basis on which these conclusions are made is not as strong as we wish it were, which by the way, it's a good time to -- to mention -- or another recommendation that was in my report, which I -- which I didn't put in the sides which is that, given all of these data lacunae, all of these missing data on First Nations and their importance to Manitoba and the importance of the problems around them that I think could be very helpful if the Board asked Manitoba Hydro to really carry out a careful study of energy use in First Nations reserves.

So next slide, please. So digging a little bit deeper into these comparisons that I've just presented to you, here, based on billing data presented by Manitoba Hydro. So first, what I call here (a) comparison of on reserve First Nation electric space heating customers to average residential space heating customers. And I wanted to show you where these numbers came from. If you could please put on the screen, AMC-MH-2-1, page 3.

So I just used two (2) numbers from this table, the -- so the -- the third column from the left is cumulative number of bills. So per strata -- per strata is the second column, but the third column is cumulative and so the very last number, a hundred and forty-one thousand and eleven (141,011) represents the total number of bills issued over twelve (12) months to First Nations residential heating customers.

And then going over to the right-hand half of it under Consumption. Again, we have per strata and cumulative. The last number in the cumulative column three hundred and sixty-eight (368) gigawatt hours represents the total consumption of this category of consumers.

So if you divide the consumption -- the annual consumption by -- sorry. Yeah, the total -- I'm sorry, the total cumulative annual consumption by the total cumulative number of bills, you get the average consumption per bill. If you multiply it by twelve (12) you get the average annual consumption. So that's where this number at thirty-one thousand three hundred and seventeen (31,317) comes from for on reserve First Nation electric heating customers.

And then the second number, the twenty-four thousand one (24,001) is exactly the same process from the Coalition IR, which is mentioned, I don't think we need to pull it up, mentioned just below it as well. So these are -- these are actual billing figures and we see that on reserve First Nation electric space heating customers bills are on average 29.4 percent higher than the average residential.

However, there is a conflicting or apparently conflicting data source which is exhibit MH-108, Undertaking Number 32, which presented a comparison of the consumption of on-reserve single detached electric space heating homes with all -- with off reserve electric single detached electric space heating homes. Certainly is a fair comparison.

And here the difference is much smaller, only 13.1 percent. We can go back to my presentation now.

So assuming that all of these figures are reliable, I think we can draw the following conclusions: that the difference described in section (a) is real, but approximately half of it is caused by the difference in housing types because apartment buildings will have lower average energy consumption than detached single family homes.

MR. SENWUNG LUK: If I could just interrupt briefly, I just spotted a reference error in this chart in -- under item 8. The reference cited as Coalition-MH-1-30(b) which is -- this is an error. I -- I think -- I think what Mr. Raphals intends to refer to is Coalition MH-1-130(b).

MR. PHILLIP RAPHALS: Thank -- thank you very much, that is exactly correct.

So in other words of the 29.4 percent difference that we saw in (a) that roughly half of it is caused by the difference in housing types and the remainder is probably due to some combination of climate, housing stock quality and perhaps other factors. So that 29.4 percent is -- well, it's not misleading in -- in terms of what people actually have to pay for. But, if we're looking for an indicator of -- of housing quality and of the -- of the -- of the difference in actual performance of the housing stock, a better indicator was probably going to be the difference between those two (2) figures.

Another point time, I'd like to make while we're on the subject. I know it's been mentioned that for various reasons that Manitoba Hydro's records on reserves as to who uses electric space heating and who doesn't are -- is -- is not necessary reliable. In looking at these documents, I think we can make an even stronger statement. If we could go back to, on screen please, AMC-MH-2-1, page 3. And if you could shrink it so we could see both the top and bottom of the page. Yeah.

So if we look at -- so the top of the page is electric space heating on reserve and the bottom is nonelectric spacing on reserve. And if we -- in each block the last three (3) rows are very high levels of energy -- electricity consumption, 4,000 to 5,000 and 5,000 to 6,000 and more than 6,000 kilowatt hours per month. I believe at one (1) point, we saw data that just had 4,000 or more, and we had requested a -- a deeper breakdown.

But the interesting thing is that the percent of bills in each one (1) of those strata is practically identical in the two (2) groups. So in the non-electric space heated -- non-electric heating customers, so the bottom half of the page, the percent of bills per strata of over 6,000 kilowatt hours per month is 4 percent, 5,000 to 6,000 is another 4 percent, and 4,000 to 5,000 is another 9 percent. It's hard to imagine those numbers in a home that doesn't have electric space heat. And in fact, they're practically identical to the -- to the distribution in the upper half, where it's nine (9), five (5), and four (4).

Subject to check, obviously, it's a further study, but it seems apparent to me that the vast majority of the customers that are included in that bottom graph, in fact, do use electric space heat, in fact, are not distinguishable from the ones above.

And so the -- the -- I suspect that this is an artifact of the lack of a -- of a clear basis for classification, and would suggest that one assume, going forward, until, of course, better information is actually made available, that it's reasonable to assume that virtually all of the on-reserve residences are, in fact, electrically space heating.

So back to my presentation, please. Now, I'd like to briefly mention the Senate report that was filed earlier, which I -- I wasn't aware of when preparing my report, but I think it confirms many of these same perceptions. Just one (1) quote for you here on page -- the next slide, please.

From page 17 of the Senate report:

> "As the committee outlined in its interim report on housing, there is widespread agreement that the funding amounts provided both by AAN -- AANDC and CMHC are insufficient to properly maintain, operate, and build housing on reserve."

And then on the next slide, I have -- I have two (2) quotes from that interim report. And maybe it would be good to display page 26 of the PDF of the interim report, which is just where these -- where these quotes come from, just so -- so you see -- so you see the context.

Yeah. So the second paragraph:

> "The committee -- the committee heard that the way that funding is

announced..."

I'm sorry, no. That's -- that's wrong.

(BRIEF PAUSE)

MR. PHILIP RAPHALS: Another one, please. Yeah, sorry. It's -- it's page 20 of the report. Yes. Yes.

The quote -- the -- the paragraph just below the -- the quotation -- excuse me:

"The committee has heard that housing on reserve deteriorates more quickly than housing off reserve for a number of reasons, including the use of poor quality building materials, lack of information among residents about how to maintain the housing, overcrowding, and insufficient funds to address maintenance problems. Several witnesses pointed out that overcrowding was a major contributor to the rapid deterioration of housing, and to the widespread problem of mould in First Nations housing."

And then on the next page, now if you scroll down a little bit, it's the paragraph below the quote again:

"First Nations leaders across the country want to address the maintenance needs of homes in the communities, but many are constrained from doing so by their financial capacity. While they are pressured by residents to complete much-needed repairs, the costs related to ongoing maintenance of housing can be significant. For example, Roxanne Harper of Turtle Island Associates told the committee that what First Nations very quickly begin to struggle with -- began to struggle with wasn't the construction cost, it was the actual cost of managing the asset, making sure the home was insured, making sure the home was repaired, maintained, and kept at a minimum standard. Despite these ongoing needs, the committee has consistently heard there is simply not enough money to properly maintain the housing. Similarly, a 2001 report of the Auditor General found that federal funding has not kept pace with the need for renovations of existing units."

We can go back to my presentation now. So this also -- this -- this sort of also brings up the importance of DSM on reserves. And -- which I wasn't planning to address in any detail today, but as I said my report, Manitoba Hydro has made very significant strides, and their insulation program is -- is commendable. I would just point out that insulation isn't the whole story.

If you're talking about housing that is really in poor quality, and poor condition, there are many ways to lose heat besides directly through the walls. You can lose heat through the windows. You can lose heat through the space between the -- the window frame and the wall. There are -- there are many potential problems.

And I would like to bring to your attention -- I'm sorry, I forgot to mention this to you earlier -- if we could look at AMC Round 2 -- AMC/MH Round 2-8. The last page.

(BRIEF PAUSE)

MR. PHILIP RAPHALS: So in -- in this response, response (j), Manitoba Hydro is describing the -- the Power Mart program -- Power Smart programs for existing building envelope. And the second paragraph points out that...

(BRIEF PAUSE)

MR. PHILIP RAPHALS:

"With the comprehensive insulation retrofit proposal that was highlighted in the AEP annual report, Manitoba Hydro is seeking to investigate whether a more detailed approach to an insulation retrofit that utilized bus -- building science awareness and attention to specific envelope system components, thermal bridging, airtightness, and overall quality installation would have an eager -- even greater impact on energy reduction. Due to the increased technical requirements of a comprehensive insulation retrofit, a higher level -- level of training would be required."

A data point that I think would be very interesting that I haven't seen -- I don't think it's in the file -- would be if there were some comparison of energy consumption on First Nation on reserve homes before and after these -- these insulation retrofits. I'm sure there's a significant improvement. But that would let us -- that would show us whether -- to what extent that is addressing the whole problem or part of the problem.

So if we could move to the next slide, approaching my conclusions.

(BRIEF PAUSE)

MR. PHILIP RAPHALS: So it's clearly important, very important to limit eligibility for an affordability rate or mechanism to those who need it the most. We've seen that energy poverty under some scenarios may climb to 20 percent or more of Manitoba households, which is a very large number, and the challenge of figuring out what mechanism to offer and how to decide who is eligible for it is a very big challenge, to which I'm not going to propose a solution for you.

We've heard a lot that LICO-125 is not really an ideal measure, and this is not my field of expertise, and I don't have a -- an opinion to make about it, to present you about it, although what I've read, certainly it -- it does appear convincing that a -- a made in Manitoba definition would be more appropriate.

One (1) aspect that I haven't seen mentioned -- perhaps it has been but missed it, but that -- that I'm aware from my experiences in remote communities in other Provinces is that the cost of food from -- from -- in communities that I visit, the cost of food is very much higher in remote comm -- communities than it is in urban areas.

In Quebec, I know -- I mean, I've -- I've spent time in the -- in the Cree communities in northern Quebec, and the cost of food in -- in the store -- there's usually just one (1) store -- and it's -- it's actually phenomenal what you have to pay for food. So if we're talking about creating a measure -- a made in Manitoba measure, I would urge that food costs be taken -- taken -- tended to as well.

Furthermore, I -- it does seem clear to me -- now, remember that Chernick presented two (2) different mechanisms, one (1) for low-income customers in general, one (1) for electric space heating, and one (1) for the combination. Given the -- the difficulties resulting from the cost of the -- of this kind of a mechanism, it's hard for me to see why there would be need for such a measure for low income families that do not use electric space heating. Unfortunately, we -- we haven't seen a breakdown of the energy poor, what percentage of them use electric space heating.

Given the dramatic amount of energy that's involved in space heating, I would be very surprised if most of them weren't, but even for those who are not electric space heating, to be energy poor -- maybe they heat with gas, and they're energy poor.

Again, I would suspect that their gas costs are a very big part of that energy poverty, because no matter how -- well, whatever form the joules are -- are delivered, we need a lot of heat to survive these winters. And so it's hard for me to see how a reduced electric rate would go very far to reducing the energy poverty of a household that heats with gas.

So I think the question can be simplified, and the costs reduced. And by the way, I'm open, you know, if -- if I'm wrong, and if the -- if the people who know these communities have evidence, you know, think that this is wrong, I'm -- I'm happy to -- to recognize that, but it certainly appears that the heart of the problem is with low income households that use electric space heating. And my suggestion going forward would be to think about a single mechanism that applies to low income households with electric space heating rather than a more complicated structure such as the one presented by Mr. Chernick.

Next slide, please. So the devil is in the details. Obviously, what's going to be really hard about this is to figure out a combination of eligibility criteria and administrative methods that allow -- that make it possible to determine whether, you know, who -- who is eligible who is not.

And there are trade-offs here. There are trade-offs between difficulty and accuracy. There is a risk of excluding eligible customers. There's a large risk of that. Indeed, it -- it -- especially at the beginning, because participation rates in most programs are not a hundred percent, which means that there are people who are eligible and won't benefit from the program. So it takes a very serious effort to make sure that that penetration -- partition rate -- participation rate is as high as possible.

But there's also corresponding risk of inc -- of including ineligible customers if the process is too simple and the -- and the criteria are too broad, one could well end up subsidizing households that do not really meet the criteria that -- that we're aimed at, and given the cost of -- of this kind of a measure, that is to be avoided as well.

So it's really a Scylla and Charybdis kind of situation. There's no -- there's no obvious right answer. It's a matter of -- of working together and trying to find the path that, first of all, to define the -- the class -- a subclass that for whom the measure is intended, to define -- to determine ways that -- that subclass can be defined based on verifiable criteria, which don't have too large a burden -- an application burden, which would exclude many people. So it -- it's a really difficult challenge, and I'm -- I'm -- I in no way want to minimize that.

And that fact -- well, the -- the risk, the non -- the -- the incomplete participation rate raises another challenge. Depending, of course, on how much of a -- of a rate penalty this would cause for non-participants, we have to worry about the low income electric space heating families that, in reality, are eligible for the program, but for whatever wan -- whatever reason, don't end up on it, and that those people should not end up paying the higher rate. In other words, that they should not be in the subsidizing class.

A possible solution, and adds a level of complexity. I'm aware that complexity is not our friend, but it's one that I think should be considered, is to create a third category, one which -- sort of a buffer category which is neither subsidized nor subsidizing.

In other words, if in exploring criteria and the different ways of determining it, if there were a very easily accessible measure of low income status, but that was not sufficiently precise for the mitigation mechanism we're looking for, that would be overly broad, but still -- still low income, but overly broad, perhaps that criterion could be used for that buffer zone.

So then -- I'll take an example. I don't -- I'm not trying to say this is the right example. Certain families are eligible for refunds of their GST if it were determined that the criteria for granting that eligibility was not sufficiently restrictive for the affordability mechanism, it would nevertheless be a way of circumscribing a larger low-income class, and it might be possible to use that larger definition for -- for a buffer rate, which would, in effect, be the currently proposed rate neither reduced nor increased, which would have the benefit of protecting those who should be on the rate, but for whatever reason, don't get there from that perverse consequence.

One (1) more wish list item, a maybe item. Obviously, heating costs vary dramatically based on where you live. I understand that the legislation does not allow rate zones, geographically defined rate zones. This is really just tossing out a thought that may be useful. If the block sizes -- again with the virtue of the -- one (1) of the virtues of the Chernick proposal is that the -- the actual magnitude of the benefit is fine-tuneable with the size of those first blocks.

And I assume their Environment Canada data, Manitoba Hydro probably has data on degree days, it may be possible to define zones based on average degree days per year, which would allow a greater benefit for those who are in a situation where more heating is required. Whether or not that is compatible with the legislation is far beyond my pay grade and I cannot -- cannot opine on it.

So to conclude, how do we go forwards? It's my understanding that this issue has been discussed for a long time here, and certainly, there is data that's missing. There's -- there are things we don't know, and the solution of asking Manitoba Hydro to create another working group, to -- to do more studies, and we'll talk about it in two (2) years at the next GRA, I think is not the right answer. I'm afraid that that's essentially the formula for continuing to talk about it and -- and not implement it.

But at the same time, I would caution you not to try to order implementation of a specific affordability mechanism with its parameters, you know, determined in your -- in your order. I think that it's not -- we're not ready for that. There's -- there's far too many uncertainties and -- and problems to be solved.

But I would suggest that a way forward might be -- well, and -- and then also, we're in the context where I think Manitoba Hydro has said clearly that, absent an order to do so, it does not think this kind of mechanism is something it should do, and it has no intention of presenting such a mechanism on its own, which leads me to suggest that a way forward would be for the Board, in its Order from this hearing, to instruct -- ask Manitoba Hydro to develop a real, fully worked out affordability mitigation mechanism. Working together with the working group, with expert support, with participation of the -- of the relevant communities, and to come back with a real proposal, which could be reviewed in a conformity filing on whatever schedule you decide is appropriate.

I would, of course, then, also have to include the -- the revenue recovery aspects, because other rates would change as well. So it would really be a -- a revised -- so on the one (1) hand, I'm saying don't -- don't make -- don't insist on it that has to be right now. Go ahead and make the -- the decisions that -- that flow from this hearing, but at the same time, to require by -- according to a calendar, that you determine the steps that should be taken leading to a revised -- leading to the -- a proposed affordability mitigation mechanism and whatever rate modifications flow from that, which would then, of course, be reviewed in a subsequent hearing.

So next slide. To -- to summarize my recommendations, I would urge you to move to develop as rapidly as possible a fully worked out affordability mitigation mechanism designed to help all those who really need it while minimizing rate impacts to others, which I suggest a this time would imply restricting eligibility to energy poor customers with electric space heat.

In terms of determining the eligibility criteria and the administrative policies that go with them, this will be the primary challenge, and it's a very difficult challenge for Manitoba Hydro and the working group they would convoke. I'm repeating myself, but I think it's worth doing, that the -- those criteria have to be strict to avoid over-inclusion. They have to be easy to apply to encourage participation, and they have to be easily verifiable to minimize administrative cost.

With respect to First Nations on reserve, I would submit to you that -- a possibility that it may be possible to skip many of these steps and offer a priority eligibility for those who pay their own energy bills. There is a precedent for that kind of approach. The Ontario energy and property tax credit does indeed allow that way in sort of avoid the unnecessary administrative steps on reserve, which I think we've heard are rather problematic.

And finally, next page, last page. Of course, there would be rate adjustments required to allow Manitoba Hydro to recover the administrative costs and the lost revenues. I suggest that those costs be shared among all rate classes, and that the rate designs -- the results should include effective price signals, as in Mr. Chernick's proposal.

That completes my presentation. I thank you very much for your attention and your patience.

THE CHAIRPERSON: Thank you very much, sir. Dr. Williams...?

DR. BYRON WILLIAMS: Yes, we have one (1) exhibit which we shared with our friends, and perhaps that can just be distributed.

THE CHAIRPERSON: I should just indicate for the record that Dr. Williams has been good enough to agree to go today. We -- we -- the schedule tomorrow is very tight and we need to finish by 4:30, so we've asked him to -- to proceed with his cross-examination today. Thank you.

DR. BYRON WILLIAMS: And I'll just indicate, from our client's perspective, both this witness and the -- the next witness are very important to a -- a number of parties, so we want to make sure there's as much time to ask questions of them.

Yeah, and I'm just going to get right to that. So what should be before the Board is from the British Columbia Utilities Commission, BC regulation 326 of 208, demand-side measures regulation, which we would -- subject to any correction by Mr. Simonsen, we would mark as Coalition-49.

--- EXHIBIT NO. COALITION-49: British Columbia Utilities Commission regulation 326 of 208, demand-side measures regulation

MR. KURT SIMONSEN: Thank you.

CROSS-EXAMINATION BY DR. BYRON WILLIAMS:

DR. BYRON WILLIAMS: And Mr. Raphals, I hope I'm saying your last name properly.

MR. PHILIP RAPHALS: Yes, you are, remarkably.

DR. BYRON WILLIAMS: Just on behalf of our client, we did want to thank you for sharing your observations, as well as the responsiveness of your observations to the evidence. So we'll -- we'll thank you for that.

Just at a high level, sir, would -- it would -- would it be fair to say that in your written evidence, you conclude that residents living on reserve in Manitoba are (a) disproportionately low income, (b) living in disproportionately poor housing, with among the worst housing conditions and child poverty rates and -- in Canada? Would that be fair, sir?

MR. PHILIP RAPHALS: Could I ask you what pages you're referring to, just to --

DR. BYRON WILLIAMS: Page 19 for the child poverty rates, and worst housing conditions is page 20, sir.

MR. PHILIP RAPHALS: These are the text pages?

DR. BYRON WILLIAMS: Yes, sir.

MR. PHILIP RAPHALS: Yes, that -- that's correct.

DR. BYRON WILLIAMS: And sir, again, in your written evidence, you emphasize that at a high level, the poor housing conditions coupled with Manitoba's cold climate have significant implications for the energy bills related to First Nation households upon res -- on reserve, agreed?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And that's especially the case for those communities that lack access to natural gas as an alternative?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And subject to check, I think you identified two (2) communities in your evidence that have access to natural gas by which -- by communities, I mean First Nations?

MR. PHILIP RAPHALS: That's right, but I don't actually know whether -- whether individual residences have access to gas or not.

DR. BYRON WILLIAMS: Sir, if -- if we could pull up -- and I didn't give Kristen warning of this, but Manitoba Hydro Exhibit 97, which is a response to Undertaking 29. And while she's looking for that -- oh my goodness, she's quick.

Mr. Raphals, we'll come to the exhibit in just a second, but one (1) of the questions you've asked both in your written evidence as well as in your oral comments today relates to the question -- and I'm not going to ask you to elaborate, but it's been a big theme through your evidence whether it's appropriate for programs that subsidize the cost of serving certain ratepayers to be supported by utilities, or must such programs be supported directly by government. That's been a major undercurring -- recurring theme, agreed?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And sir, instead of using the word 'subsidies', if I use the word 'transfers' you'll be okay with -- with me using that language?

MR. PHILIP RAPHALS: Sure. Yes.

DR. BYRON WILLIAMS: And sir, in Exhibit 97, you see an effort by -- by our client to try and get some incent -- insight into the -- going to the response, into the percentage of First Nation customers on reserve who hold a hundred percent -- who have a hundred percent of their bills covered by social assistance?

MR. PHILIP RAPHALS: Yes, I see that.

DR. BYRON WILLIAMS: As well as insight into the bills issued to customers receiving social assistance in terms of the percentage of the overall billing covered by social assistance, do you see that as the thrust of that undertaking, sir?

MR. PHILIP RAPHALS: Yes. M-hm.

DR. BYRON WILLIAMS: And if you'll just -- you said --

MR. PHILIP RAPHALS: Yes, I'm sorry.

DR. BYRON WILLIAMS: And again, sir, let's recognize that this is information from Hydro relating to one (1) specific month, being the month of June in a particular year, agreed?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And what it suggests, sir, you'll -- you'll read is that 32 percent of all residential First Nation customers had their bills paid a hundred percent by social assistance?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And of the bills issued to customers receiving social assistance, more than 80 percent of the bills -- bill amounts for that particular month were paid for by social assistance?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And sir, in terms of your research into this issue, have you looked into -- at depth, or to any degree into the relative percentage of households on reserve who have their bills paid for by -- by assistance as -- as compared to directly paying their bills?

MR. PHILIP RAPHALS: No, I have not.

DR. BYRON WILLIAMS: Recognizing, sir, again, that this is one (1) particular month, you would accept that there's evidence on the record suggesting that there is a sub -- substantial amount of households who -- who are having their bill paid in whole or part by Band assistance?

MR. PHILIP RAPHALS: By?

DR. BYRON WILLIAMS: By Band assistance, social assistance.

MR. PHILIP RAPHALS: Well, social assistance. I don't know. That seems to be what the -- what the document says, yes.

DR. BYRON WILLIAMS: And sir, perhaps we can go to slide 24 of your PowerPoint today.

MR. PHILIP RAPHALS: M-hm.

DR. BYRON WILLIAMS: Slide 24 of the AMC PowerPoint. And sir, I note that as a -- as a starting point, you're suggesting that the -- the transfer to alleviate energy poverty might be focused on First Nation residents on reserve who pay their own energy bills?

MR. PHILIP RAPHALS: Yes. And that was, in fact, in response -- I mean -- I mean, I -- I wrote that since with -- with this exhibit in mind. I was -- was not aware that such a large number of households in First Nations communities receive this -- this kind of assistance, but clearly, the -- if the bill is being paid by someone else, it doesn't need ratepayer assistance to pay it. I think that goes without saying.

DR. BYRON WILLIAMS: And just on -- on that point, sir, you actually got me to the point sooner than I -- I anticipated. Would it be your view, then, that to the extent that those costs are paid for already by government, you wouldn't see ratepayers assistance being substituted for -- for social assistance?

MR. PHILIP RAPHALS: In the cases where they're being paid for by government, definitely not.

(BRIEF PAUSE)

DR. BYRON WILLIAMS: Just recognizing from Exhibit 97, sir, that it -- it is only -- appears to be only from one (1) month, is there any particular or additional research with regard to who is paying what on reserve that -- that you would recommend, or is -- is this -- is there any more information that you would like to have in terms of designing a program or -- or you think that would assist the Board and others in designing a program?

MR. PHILIP RAPHALS: Well certainly, there's more information that's required. That goes without saying, which would obviously be on the -- on the to do list of the working group that I discussed earlier.

As I read this exhibit, the -- the relationship between the two (2) points is not entirely clear, so I -- I can't say I have a -- I have a very clear understanding of what is being said here. In the first one, we see that 32 percent of all residential customers had bills paid a hundred percent by social assistance, but then of the bills issued to customers receiving social assistance, more than 80 percent of the amounts were paid.

So maybe I'm missing it, or maybe it's not quite clear, but certainly, this is a tiny snapshot of a much larger situation. And it -- it -- given the magnitude of the numbers, it would certainly be important to understand that picture, that situation. And -- and yeah.

DR. BYRON WILLIAMS: And just -- just to -- in terms of understanding the situation, what more would you want to understand, just in -- in terms of, one were to walk down this path of -- of designing assistance? And if you want some time to think about it, sir --

MR. PHILIP RAPHALS: I -- I think -- I think that would be a good idea, and frankly, I think that my client knows a lot more about -- I mean, it raises all kinds of questions which are unknown to me, but that may well be known to you and to others in this room in terms of exactly what the different sources of support are that are available to First Nations.

So I think that I would -- speaking to -- for myself, I would simply say that it is clear that there is -- that -- that a more complete picture of the relationship of social assistance and bill payments is an important component. And if you're looking for detailed suggestions about how that question should be asked, I think my client would be better in a position to respond than I am.

DR. BYRON WILLIAMS: What I'm going to do, Mr. Chair, with your permission, is just recognizing we have some time sensitivities, I may approach My Learned Friend offline. I intend to finish my cross today, presum -- but -- and see -- rather than ask for an undertaking right now, I'd -- I'd rather make it more precise offline, if -- if I might.

THE CHAIRPERSON: Thank you.

CONTINUED BY DR. BYRON WILLIAMS:

DR. BYRON WILLIAMS: Going back to slide 24, again, you've -- you've talked about a eligibility criteria available to First Nation residence on reserve. And, sir, you'll agree in -- in your -- in your written evidence, you -- you note that Manitoba Hydro has acknowledged that there would be no technical impediment to using Indian status as an eligibility criteria for a bill affordability program?

MR. PHILIP RAPHALS: That's correct.

DR. BYRON WILLIAMS: So sir, I -- I want to take you soon off reserve to communities adjacent to reserve. And you are generally aware, sir, or subject to check, which you can confirm with your counsel right beside you, you'll accept that north of Winni -- Lake Winnipeg live the Pimicikamak people sometimes known as the Pimicikamak Cree Nation, or PCN, many of whom live on reserve, which, under the Indian Act, is known as the Cross Lake First Nation. You'll accept, that subject to check?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And sir, in the course of your research on energy poverty in Manitoba, has it come to your attention or have you been advised of the existence of the incorporated community of Cross Lake, formally known as the Cross Lake Community Council?

MR. PHILIP RAPHALS: No.

DR. BYRON WILLIAMS: And so it would be fair to say, sir, that you are not aware whether or not there is a community immediately adjacent to the reserve which includes Indigenous people who do not necessarily have Indian status?

MR. PHILIP RAPHALS: No, I don't have knowledge of that.

DR. BYRON WILLIAMS: Okay. And, sir, are you generally aware or are you prepared to accept, subject to check, of the Norway House Cree Nation situated on the confluence of the Nelson River and

Lake Winnipeg?

MR. PHILIP RAPHALS: I've heard the name Norway House, but I have no direct knowledge of the community.

DR. BYRON WILLIAMS: Okay. And sir, in the course of your research on energy poverty in Manitoba, has it come to your attention or have you been advised of the existence of a adjacent non-Treaty community of Norway House, sometimes known as the Norway House Community Council?

MR. PHILIP RAPHALS: No, I'm not aware of that.

DR. BYRON WILLIAMS: Would it be fair to say, sir, without meaning to be critical, that you have not explored whether there are Indigenous people living off reserve but immediately adjacent to reserve who may not necessarily have Indian status?

MR. PHILIP RAPHALS: No, I have not explored that question.

DR. BYRON WILLIAMS: And again, without being critical, you have not considered whether the issues of energy poverty which relate to these individuals and communities may be indeed as acute as for persons living on reserve?

MR. PHILIP RAPHALS: I'm afraid I

cannot enlighten you about that.

DR. BYRON WILLIAMS: Would you acknowledge the possibility, sir, that the potential for energy poverty issues extends to other Northern communities, including largely Indigenous communities living immediately adjacent to reserve?

MR. PHILIP RAPHALS: Yes, I think the problem extends far beyond reserves.

DR. BYRON WILLIAMS: And, Sir, I believe in your evidence at page 29, you make a recommendation that Manitoba Hydro carry out an in-depth study of electricity comp -- consumption and affordability on First Nation reserves in order to inform future decision making?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: Recognizing the potential for energy poverty, sir, to extend to other Northern communities, including Indigenous -- largely Indigenous communities living immediately adjacent to reserve, would you recommend that the study scope be expanded to include these communities?

MR. PHILIP RAPHALS: Let me just say that -- the -- this -- this recommendation came out of -- of a number of comments in the PRA report and -- and in the IRs to the -- specifically stating the lack of adequate data regarding the -- the First Nation reserves. And insofar as the communities you're mentioned -- that you're mentioning, if there is also an equivalent lack of data in their regard, I would certainly support pursuing that -- including that data as well.

DR. BYRON WILLIAMS: Mr. Raphals, I -- I want to turn now -- and -- and recognizing your recommendation for additional study in terms of electricity consumption and affordability on reserve, I -- I want to turn to the related issue of engagement with First Nation people and -- and political entities for the purposes of that -- of that study, okay, sir?

MR. PHILIP RAPHALS: Sure.

DR. BYRON WILLIAMS: And to the degrees, Mr. Raphals, that this -- the questions I ask might be better put to the Assembly of Manitoba Chiefs by -- by way of undertaking, and -- and the AMC is prepared to do that, you'll -- you'll advise me, okay?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: Sir, at -- at a high level, you're aware that the government of Canada has committed to achieving reconciliation with Indigenous people through a -- a renewed nation to nation relationship?

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And -- and would -- to the extent of your knowledge, sir -- sir, go to the reality that the federal government has a number of self-determination tables to explore ways of implementing the nation to nation relationship?

MR. PHILIP RAPHALS: I'm not, in particular, aware of that, but I suspect that's the AMC can.

DR. BYRON WILLIAMS: Okay. Would you be aware, sir, or accept that in Manitoba, under the Path to Reconciliation Act, the government of Manitoba has affirmed its commitment to reconciliation through legislation?

MR. PHILIP RAPHALS: I was not aware of that, no.

DR. BYRON WILLIAMS: Mr. Raphals, you were aware that there was a working group related to energy poverty initiated by a Public Utility Board Order and led by Manitoba Hydro in -- involving another -- a number of stakeholders?

MR. PHILLIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And would it be your understanding that AMC did not participate in that process?

MR. PHILLIP RAPHALS: That is my understanding.

DR. BYRON WILLIAMS: Would you, Mr. Raphals, or your client by way of undertaking have any suggestions on how the Public Utilities Board and Manitoba Hydro should engage with First Nations or First Nation political organizations such as the AMC on energy poverty issues and -- and just to be a little more concrete, sir, you have recommended an implementation plan.

You recall that?

MR. PHILLIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And so what my client is seeking is insight into whether either you or the AMC, by way of undertaking, could provide advice on -- on engagement, whether through a working group involving multiple stakeholders, direct engagement or some hybrid process, would you be willing to respond to that, sir?

MR. PHILLIP RAPHALS: I would suggest that an undertaking from the AMC would be the -- the best route to -- to respond to the question?

DR. BYRON WILLIAMS: And to AMC legal counsel? I'll frame it more properly.

We're asking, by way of undertaking,

that the AMC provide advice in the event that there are for future steps related to bill assistance directed by the Board on appropriate mechanisms for engagement with First Nations and First Nation political organizations.

MR. SENWUNG LUK: We can accept that undertaking.

--- UNDERTAKING NO. 69: AMC provide advice in the event that there are for future steps related to bill assistance directed by the Board on appropriate mechanisms for engagement with First Nations and First Nation political organizations.

CONTINUED BY DR. BYRON WILLIAMS:

DR. BYRON WILLIAMS: If we could turn to Coalition Exhibit 49, which is the BC regulation relating to demand-side measures, and specifically to page 6. And Kristen, given the small font size and my aging eyes... that's lovely. Thank you.

Now, Mr. Raphals, without asking you to

elaborate, both in your oral testimony and in your written evidence, you've noted the efforts of Manitoba Hydro to promote energy efficiency in First Nations?

MR. PHILLIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And you also have noted in your written evidence at page 34 that only a minority of households in First Nation communities have benefitted from these programs to date?

MR. PHILLIP RAPHALS: Yes. Although there was an undertaking or a comment, I think it was in testimony, I'm not sure what it was, there was an indication from Manitoba Hydro that the -- that the percentage of eligible households is considerably higher.

DR. BYRON WILLIAMS: Okay. Thank you for that. You'd agree that there may be substantial barriers to participation in energy efficiency programming for First Nation households, including but not limited to, income, and remoteness?

MR. PHILLIP RAPHALS: I suspect that there is.

DR. BYRON WILLIAMS: You also would agree that there are grounds for concerns that it may be more costly to deliver energy efficiency programs on reserve related to the geographic isolation of some communities?

MR. PHILLIP RAPHALS: I would expect that to be the case.

DR. BYRON WILLIAMS: And, sir, referring to Coalition 49. You were provided this document in advance of the hearing by your legal counsel?

MR. PHILLIP RAPHALS: Yes.

DR. BYRON WILLIAMS: You've had an opportunity to review and consider it, sir?

MR. PHILLIP RAPHALS: Yes, I have.

DR. BYRON WILLIAMS: And, sir, when you see under Adequacy reference to a Public Utility's planned portfolio, you would understand that to mean, or would accept, subject to check, that by "planned portfolio," it is meant the class of demand-side measures composed of all those demand-side measures proposed by a public Utility?

MR. PHILLIP RAPHALS: Yes, I think so.

DR. BYRON WILLIAMS: And you see under this regulation that demand-side measures are -- in terms of demonstrating their adequacy must include measures under (a)(I) to assist residents of low income households to reduce their energy consumption?

MR. PHILLIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And moving down a little bit, sir, you also see that for adequacy purposes, they must include measures to -- directed at -- at housing owned by the governing body of a First Nation?

MR. PHILLIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And specifically to reduce energy consumption, those hous -- that housing?

MR. PHILLIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And, sir, just for future reference just so that we don't have to ba -- flip back to that page, I'm going to just say that this is the measures delivered under Sections 3(1)(a) and (b).

MR. PHILLIP RAPHALS: Okay.

DR. BYRON WILLIAMS: I want to turn to page 7 under cost-effectiveness, sir.

MR. PHILLIP RAPHALS: Could I respond further?

DR. BYRON WILLIAMS: You can -- of course, sir.

MR. PHILLIP RAPHALS: What I found interesting in -- in my reading of this exhibit, the demand-side measures regulation, is the definition of low income household, which is on the bottom of page 2. Actually, what I thought you were going to ask me about.

Yeah. So -- low income household means a household whose residence receives services from a Utility and either (a) or (b). (a) is, have a household income equal to LICO multiplied by 1.3 or receives one or more of the following. And then there is a long list of -- of different governmental programs: Employment Assistance Act, Shelter Aid and so on.

And I found that an interesting example of ways in which a -- a laundry list of -- of can you check one of these boxes might, in fact, present a path towards -- toward eligibility.

DR. BYRON WILLIAMS: Thank you, Mr. Raphals, because I can stroke off some questions on my list. But let's go to page 7 under cost-effectiveness.

MR. PHILLIP RAPHALS: Yeah.

DR. BYRON WILLIAMS: And just generally, sir, and this is -- there's a lot of words on this page. But, generally, you can see that focusing on 4(1) (a) through (c) that in looking at the cost-effectiveness of a demand-side measure at a high level, the commission in question is to compare the costs and benefits of programming, whether of demand-side measures individually or -- or within a portfolio; agreed?

MR. PHILLIP RAPHALS: Yes, yes.

DR. BYRON WILLIAMS: And if we move a little bit farther down this page, under (b)(1) through -- and (2), you see reference to using the -- in -- in looking at cost, the long run marginal cost of acquiring electricity --

MR. PHILLIP RAPHALS: I'm sorry, I'm sorry, are you --

DR. BYRON WILLIAMS: I'm still on page 7, sir?

MR. PHILLIP RAPHALS: Page 7(b)(I) and (ii)?

DR. BYRON WILLIAMS: Yes. And I apologize for moving too quickly.

MR. PHILLIP RAPHALS: Okay, m-hm.

DR. BYRON WILLIAMS: In essence, though, I'll suggest to you, you see as a starting point, looking at the long run marginal cost of acquiring electricity from a clean or renewable source in BC?

MR. PHILLIP RAPHALS: Yes.

DR. BYRON WILLIAMS: Okay. Where I want to go, sir, is now to page 9, towards the bottom under 2(b). Do you see that, sir?

MR. PHILLIP RAPHALS: Just one (1) moment, please.

(BRIEF PAUSE)

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And what this ess -- essentially suggests, sir, is, in evaluating a program and employing the total resource costs for programs under 3-1A and 'B', the -- the low income programs, as well as the band housing programs, the -- in essence, get an increase value for the benefit -- for the purposes of the calc -- calculation by 40 percent.

Do you see that, sir?

MR. PHILIP RAPHALS: M-hm.

DR. BYRON WILLIAMS: And, sir, I'm not asking you to...

(BRIEF PAUSE)

MR. PHILIP RAPHALS: Yes. Yes.

DR. BYRON WILLIAMS: Sir, I'm not asking you to comment on this pe -- specific percentage calculation, obviously. But from the perspective, either of rate-making principles or social utility, I wonder if you can provide your views on giving extra value for the purposes of measuring cost-effectiveness of ener -- energy efficiency programs aimed at low-income persons on Indian -- Indian bands, similar to this top-up, if you have any thoughts on that, sir.

MR. PHILIP RAPHALS: Well, I -- I -- the regulation does not describe the justification or the reasoning behind that -- that top-up. I suspect it may have to do with externalities of one sort or another, but without really knowing why it's there, I would not be comfortable --

DR. BYRON WILLIAMS: Okay. And -- and, sir, just to remind you, it's not on the cost; it's on the benefit side. And I'll suggest to you that it's giving ranking additional value to those -- those --

MR. PHILIP RAPHALS: No, I -- I understand. Because in avoiding consumption, one is avoiding greenhouse gas emissions, or -- or, you know, is avoiding all kinds of things. But I suspect that there is analysis, prior to this regulation rate, that would explain what this is -- where this came from. And without having familiarized myself with that, I'm not very comfortable --

DR. BYRON WILLIAMS: Fair enough. I was going to suggest to you that might be aimed at -- at reducing barriers to participation as well, sir.

MR. PHILIP RAPHALS: It might be, but I really can't say.

DR. BYRON WILLIAMS: Okay. I wonder if we can go back to slide 22 of your PowerPoint presentation.

And -- and Mr. Raphals, I believe, in introducing this page, you -- the very first words out of your mouth where the -- were -- was that the devil is in the details.

Do you recall that, sir?

MR. PHILIP RAPHALS: Yes, I do.

DR. BYRON WILLIAMS: And you do flag the concern of excluding eligible customers? That's near the top of the page, sir.

MR. PHILIP RAPHALS: Yes.

DR. BYRON WILLIAMS: And, sir, in terms of bill assistance programs, akin to what is proposed by Mr. Chernick, are you able to identify a program in North America that has participation rates of over 50 percent?

MR. PHILIP RAPHALS: I have not done that research. I'm sure that I can't -- I cannot help you with that.

DR. BYRON WILLIAMS: That's fair enough.

Going to your around middle bullet on that page. Recognizing the risk of lower participation rates, and I think you use the word 'perverse impacts' on -- on those who might be eligible or -- or who might be energy poor, but don't -- are not participating.

That's the language you used, sir?

MR. PHILIP RAPHALS: Yes, I believe so.

DR. BYRON WILLIAMS: You talked about a potential solution being a third category that is protected from additional costs, which is neither subsidized nor subsidizing?

MR. PHILIP RAPHALS: That's correct.

DR. BYRON WILLIAMS: And, sir, presumably one would -- would still have to apply to participate in -- in that program as -- as well?

MR. PHILIP RAPHALS: The ideal thing

would be if it could be idmi -- administered in a way which does not require that. But whether or not that's possible, I don't know.

And let me just mention that in -- in Quebec, the student loan administration is done -- I mean it's government and government. But they go and find your tax return and they check what they need to check, and there's really nothing that you have to do other than, say, Please, check me out, to find out if you're eligible for it or not.

I don't know if anything like that is possible. I mean, I guess in Quebec we have both the -- the burden and the benefit of having a separate revenue agency. But certainly that would be the -- the most desirable situation, if the barriers to -- to access would be small or nonexistent.

DR. BYRON WILLIAMS: And just -- my last question to you, Mr. Raphals. I believe in your evidence you made reference to the Ontario Energy and Property Tax Credit Program, in terms of a relatively accessible program?

MR. PHILIP RAPHALS: Yes, in pro -- in particular to the -- to the feature of the easy access that offers to First Nations people on reserve.

DR. BYRON WILLIAMS: And -- and if

this is not too much work, sir, would you be able, by way of undertaking, just provide a bit more -- provide an elaboration on -- on your -- on your comment and -- and the mechanisms that are -- that are employed.

MR. PHILIP RAPHALS: Yes, I would be happy to.

MR. SENWUNG LUK: We would accept that undertaking.

DR. BYRON WILLIAMS: And it wasn't very well worded. It was perhaps my worst undertaking wording ever. But with reference to the Ontario energy and property tax credit, written elaboration on efforts to improve accessibility for First Nations persons on reserve.

MR. PHILIP RAPHALS: I have it in front of me.

DR. BYRON WILLIAMS: Oh, you have it?

MR. PHILIP RAPHALS: Well, two (2) pages from the Ontario website, which we can -- I think, will answer your questions, and we can submit that right away.

DR. BYRON WILLIAMS: That'd be great.

So it's still an undertaking, but we expected to be acted upon immediately.

MR. SENWUNG LUK: We'll -- we'll get

to it as soon as we can.

--- UNDERTAKING NO. 70: Mr. Raphals to provide, in reference to the Ontario energy and property tax credit, written elaboration on efforts to improve accessibility for First Nations persons on reserve

DR. BYRON WILLIAMS: Subject to the conversation that I -- I wish to have with My Learned Friend off-line, Mr. Chair, those are the questions of the Consumers Coalition.

THE CHAIRPERSON: Thank you, Dr. Williams. Can I just ask, after you have the conversation, and if you get material, will you be going back on the record tomorrow morning, first thing?

DR. BYRON WILLIAMS: I would, simply -- if -- if we feel like there's value in seeking that material, I'll go on just for -- for the purposes --

THE CHAIRPERSON: Purposes of putting it into the record.

DR. BYRON WILLIAMS: Yeah, I don't expect --

THE CHAIRPERSON: Yes.

DR. BYRON WILLIAMS: -- to -- to ask additional --

THE CHAIRPERSON: I appreciate that.

DR. BYRON WILLIAMS: -- questions, sir.

THE CHAIRPERSON: Okay. We're going to...

(BRIEF PAUSE)

THE CHAIRPERSON: That would be -- that would be most appreciated. Would -- sure.

Ten (10) minutes. Your time starts now.

MR. ANTOINE HACAULT: Yes. Yes, Mr. Chair.

THE CHAIRPERSON: It's about ten (10) and -- so, no, go ahead --

CROSS-EXAMINATION BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: In -- in your evidence, Dr. Raphals, you talk --

MR. PHILIP RAPHALS: It's Mr. -- Mr. Raphals.

MR. ANTOINE HACAULT: Mr. Raphals.

MR. PHILIP RAPHALS: Yeah.

MR. ANTOINE HACAULT: You mention a Newfoundland and Labrador program. And I just want to see if we can get some benefit of -- of what that province has done with respect to rural areas or electricity issues.

So we had asked you an interrogatory about that particular subject.

MR. PHILIP RAPHALS: M-hm.

MR. ANTOINE HACAULT: And it's -- our only interrogatory to you, sir. I don't know whether the document manager will be able to bring it up. Thank you, Ms. Schubert.

It's the Question A that I want to focus on. And I'll give you time to read that, and then I'll deal with your response. Just let me know when you've had a chance to read the question.

MR. PHILIP RAPHALS: Yes, I'm fine. Go ahead.

MR. ANTOINE HACAULT: Okay. So you had mentioned in your evidence that an example that we might use, or an illustration, in Manitoba, might be useful for Manitoba. It's a Newfoundland one.

Could you, by going to your response, let us know what Newfoundland does to deal with people who are in rural areas and have that extra cost of electricity.

MR. PHILIP RAPHALS: Newfoundland has a remarkably complicated, regulatory structure for -- for a small number of people. And I'm not sure I'm going to get it a hundred percent right from memory. There is a distinction -- they distinguish between -- there's a category they call 'rural customers', who are grid connected, and there are diesel customers.

There -- the distinguishing feature is that the number of diesel customers, as a proportion of the overall number of ratepayers, is very high compared to other provinces. And so the -- so that the rates -- Mr. Luk can probably help me, if I get this wrong.

Maybe I should clarify. The question you're asking me is about how the --

MR. ANTOINE HACAULT: Just how it's --

MR. PHILIP RAPHALS: Can you clarify the question --

MR. ANTOINE HACAULT: -- structured. And I don't think -- you may not need to go further than what your response was.

MR. PHILIP RAPHALS: Yeah.

MR. ANTOINE HACAULT: Your responses says your -- the cross-subsidization, which you've talked about, is based on geographical characteristics. And if we go on to page 2. Subject to the exceptions below, and they're not based on income, is my understanding correct that there's a legislative provision, in addition to this order in council, that excludes industrial customers from any of this rural cross-subsidization?

MR. PHILIP RAPHALS: If I may, before answering the question, I'd just like to go back to the word 'geographical' because I know it's -- it's an important concept here.

And while it's true that, in Newfoundland, if you live here, you have one (1) rate, and if you live there, you have a different rate. But the difference is not defined by latitudes, it's not defined by a map; it's simply defined by where your wires are connected to. If they're connected to a mini-grid with the diesel generator, then you have one (1) kind of a rate.

So it is geographical in a sense, in that you could draw a map and define people on one (1) or on another side of the line paying different rates, but it's not defined geographically. And that's, in a sense, what I was trying to get at with the notion that one could define things in climate terms, as opposed to in geographic terms. I just wanted to try to clarify that.

As for legislation, I -- I think that I've heard that's the case, but I'm not specifically familiar with it, so I would be reluctant to confirm your statement. But I could take an undertaking to do that, if you would -- if you'd like.

MR. ANTOINE HACAULT: Okay. Perhaps, you can just undertake because you've actually referenced the Newfoundland decision that references the Electrical Power Control Act --

MR. PHILIP RAPHALS: Yes.

MR. ANTOINE HACAULT: -- and it references Section 3 of that legislation.

If that's the applicable section that you intended to refer to us, could you just confirm that? It's the section that sets out the rate policy requirements for the Board.

MR. PHILIP RAPHALS: Yes, I...

MR. SENWUNG LUK: Could I -- maybe, could I -- could I intervene and ask for some clarity on Mr. Hac -- I wonder if Mr. Hacault is asking for an undertaking at this time, or --

MR. ANTOINE HACAULT: Well, his response, shown on the screen, reference -- references an order in council. But in his paper, he also references a public utility decision, which in turn references this particular piece of legislation. And what I'm trying to do is get the foundational documents that lead to his response on page 2.

And I believe it -- the foundation for that response starts with Section 3 of the legislation I just identified. I just want him to confirm that.

MR. SENWUNG LUK: And I -- I understand, Mr. Hacault, you're asking for the reference for a proposition. I guess my question is what the proposition is that you were look -- you -- you'd -- that you would like -- like for Mr. Raphals to cite? You know, what is -- what -- is it -- is it in relation to the industrial customers, or is it in relation to the cross of -- cross-subsidization regime in -- in Newfoundland and Labrador?

MR. ANTOINE HACAULT: I'll try to phrase my request for an undertaking as follows. In Response Number 1 to the MIPUG Interrogatory Round 1 on page 2, there is reference to Order in Council

2003-347, and some quotes that are made.

I'm asking this witness to confirm that the source legislation and applicable section, which leads to this quote, is Section 3 of that legislation.

And I can just put the actual words on record for now, so that it's easier for you to check. That section indicates:

> "3. It is declared to be the policy of the province that:"

And then there's a rate -- a subsection (a):

> "The rates to be charged either generally under specific contracts for the supply of power in the province should be such that industrial customer shall not be required to subsidize the cost of power provided to rural customers in the province. And those subsidies being paid by industrial customers on the date this Act comes into force shall be gradually reduced during the time period, prior to December 31, 1999."

And sub (v):

"Should promote the development of
industrial activity in Labrador."

So if that's the section that underpins this quote, I'd just like this witness to confirm that. And if he can do that, and that undertakings acceptable, my questioning is finished.

MR. PHILIP RAPHALS: Well, this is maybe more of a legal question than an -- than an expert one. But, generally, governments don't issue orders in council to -- that are redundant to their legislation, so I -- I don't know how I could affirm that that that provisional legislation underpins this order in council. To me, the order in council speaks for itself.

The fact is a legislative provision related to the same subject, that was adopted at a different date, I mean, there's no doubt a relationship, but I don't know that I'm going to be able to clarify any of this for you.

MR. SENWUNG LUK: I understand My Friend Mr. Hacault is trying to get at the -- the way that the Newfoundland system is structured, but I -- it's -- it strikes me that the undertaking is seeking a legal opinion of some sort.

THE CHAIRPERSON: Well, yeah, I -- I

think it is calling for a legal opinion. I'm just wondering if -- if production of the documents into evidence isn't sufficient for you. I mean, you can refer to the -- what the system is in Newfoundland by just referring to the documents themselves.

MR. ANTOINE HACAULT: Okay. Production of documents will be sufficient. I was just trying to understand the -- the source, and that's --

THE CHAIRPERSON: I'm just not --

MR. ANTOINE HACAULT: -- what I've been trying to do for the last ten (10) minutes. But if I can't --

THE CHAIRPERSON: I'm not -- I'm just not sure --

MR. ANTOINE HACAULT: -- that's okay.

MR. ANTOINE HACAULT: -- that Mr. Raphals is -- is the person to be looking at an order in council, and then relating how -- how it relates the legislation or if it's the basis of legislation or not. I think you'd need legislative counsel for Newfoundland.

MR. SENWUNG LUK: May -- maybe I can offer this as -- as a solution. We would be pleased to, if -- if the undertaking were asked, we -- we'd be pleased to put OC-2003-347 into the record. And we would be pleased also to produce the Electrical Power and Control Act of the -- of the statutes of Newfoundland and Labrador into the record, as well, if -- if that satisfies --

THE CHAIRPERSON: That's fine.

MR. SENWUNG LUK: -- My Friend.

THE CHAIRPERSON: Thank -- thank you--

MR. ANTOINE HACAULT: That would be satisfactory. Thank you very much.

--- UNDERTAKING NO. 71: AMC/MKO is to provide OC-2003-347 and the Electrical Power and Control Act of the of the statutes of Newfoundland and Labrador

THE CHAIRPERSON: Thank you all.

THE COURT REPORTER: Excuse me, is that an under -- is that an actual undertaking?

THE CHAIRPERSON: Yes.

MR. SENWUNG LUK: I believe so.

THE CHAIRPERSON: I think he used the words 'undertaking'.

So, thank you all. It's been a long day, and we will adjourn and reconvene at nine o'clock tomorrow morning. Thank you

(PANEL RETIRES)

--- Upon adjourning at 5:31 p.m.

Certified Correct,

____

Cheryl Lavigne, Ms.