MANITOBA PUBLIC UTILITIES BOARD

re:

MANITOBA HYDRO

2023/24 and 2024/25

GENERAL RATE APPLICATION

Hearing

Before Board Panel:

Robert Gabor, KC - Board Chairperson

Marilyn Kapitany - Board Vice Chair

Carol Bellringer - Board Member

Hamath Sy - Board Member

George Bass, KC - Board Member

HELD AT:

Public Utilities Board

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Odette Fernandes (np)	)
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Gwen Muirhead	)
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Carly Fox (np)	)Assembly of
Emily Guglielmin	)Manitoba Chiefs
Markus Buchart	) MKO
Thomas Reimer (np)	) GSS and GSM
Robert Walichnowski	) customer classes

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William Haight (np)	) Daymark Energy
Bradley McClelland (np)	) Advisors

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--- Upon commencing at 9:03 a.m.

THE CHAIRPERSON: Good morning, everyone. Mr. Peters...?

MR. BOB PETERS: Yes. Good morning, Chair. Good morning, Board members. Good morning to the Midgard witness panel, ladies and gentlemen present and those observing on the live stream.

I do have about four (4) or five (5) quick messages. I should perhaps first start by welcoming Ms. Dubois as our acting secretary to the Board today. She's making a cameo appearance, and we appreciate that.

Speaking of cameo appearances, I notice our friend Mr. Ghikas has come in and welcome him here. I have to confess to the Board that I'm not familiar with the Law Society of British Columbia rules, but there may be a rule -- I'm not saying there is, but there may be -- that Vancouver-based witnesses have to be questioned by a Vancouver-based lawyer. But we'll -- we'll let Mr. Ghikas fill us in on that. Welcoming him here.

We are continuing today, Mr. Chair, and Board members, with the Midgard witness panel. We should thank the Consumers Coalition for advancing

their clients' direct testimony to yesterday afternoon as that will relieve some time pressures today.

I will in a minute suggest we turn it over to Mr. Williams as he had a few matters to address, but I also should invite my friends, Mr. Czarnecki and Ms. Muirhead, as to whether or not there were any undertakings to be filed or matters at this time.

Indicating none at this time, Mr. Chair, then I would suggest we turn it over to Mr. Williams who had a couple of matters that he wanted to address before the panel was turned over for cross-examination.

THE CHAIRPERSON: Certainly. Sorry. Mr. Williams...?

DR. BYRON WILLIAMS: Thank you, Mr. Chair, and good morning, Mr. Chair and members of the Panel.

Just -- I had prematurely asked to close our direct. I just have a couple of questions with the Board's permission.

THE CHAIRPERSON: Certainly. Go ahead.

CONTINUED CONSUMED COALITION PANEL:

CHRISTOPHER OAKLEY, Resumed

PETER HELLAND, Resumed

CONTINUED EXAMINATION-IN-CHIEF BY DR. BYRON WILLIAMS:

DR. BYRON WILLIAMS: And I'd -- I'd just ask Ms. Schubert to bring up Manitoba Hydro Coalition 1-13, and then the letter attached to it, page 2 of that -- that letter.

And this is -- and, Ms. Schubert, if you could scroll up a bit, we could catch the bullets -- or scroll down a bit, we'll catch the bullets on both pages, or perhaps we...

Mr. Oakley and -- and Mr. Helland, when you were retained by the Consumers' Association, it would be accurate to say that, when you were retained, you were advised of your duty to the Board to provide evidence that is fair, objective, and non-partisan, is related only to matters that are within your areas of expertise, and to provide such additional assistance as the Public Utilities Board may reasonably require to determine an issue?

That was how you were retained?

MR. PETER HELLAND: Correct.

MR. CHRISTOPHER OAKLEY: Correct.

DR. BYRON WILLIAMS: Thank you. Mr. Chair, thank you to the panel. We'll close our direct examination. And I -- I would just have a request in terms of timing this morning. After we're done with our friends from AMC and GSSM and MIPUG, it might be helpful for our witnesses just to have a -- a brief adjournment before we start with Hydro. There's one (1) matter I just wish to canvass with them, sir.

(BRIEF PAUSE)

THE CHAIRPERSON: Certainly. Before we move forward, I just want to correct the record. It appears I made a mistake yesterday, which isn't the first and it won't be the last. There was -- I made a comment in relation to Site C that I just want to correct, and I -- the comment was that the expenditures were not on the balance sheet.

And in fact, I understand the expenditures to date for Site C are on the balance sheet. They're just not on the income statement. So I -- I misspoke yesterday. I just wanted to make sure the record was -- was corrected on that.

Ms. Guglielmin, you're up.

CROSS-EXAMINATION BY MS. EMILY GUGLIELMIN:

MS. EMILY GUGLIELMIN: Thank you, Mr. Chair. Hi. My name is Emily Guglielmin. And I'm legal counsel for the Assembly of Manitoba Chiefs. I just have a few questions, and I'm going to address them to the Panel generally.

I think first, if we could turn to Exhibit MIPUG 8-5(e) on page 19 of the whole document.

(BRIEF PAUSE)

MS. EMILY GUGLIELMIN: There we go. So, in this response, you note that residential and industrial customers typically have different expectations with respect to acceptable levels of reliability and power quality.

And industrials with sensitive processes generally require better power quality and more reliable service than residential ratepayers.

Is that correct?

MR. CHRISTOPHER OAKLEY: Yeah. From a sensitivity to interruptions basis, yeah, it can affect industrials much more significantly than a typical residential.

MS. EMILY GUGLIELMIN: And in your

opinion, does the plan filed for this Hearing indicate that these general differing interests between industrial and residential customers were considered by Manitoba Hydro when preparing its Asset Management Plan?

(BRIEF PAUSE)

MR. CHRISTOPHER OAKLEY: I say it than when I repeat it. So, we understand that Manitoba Hydro is aware of differences between the different ratepayer classes and their -- their -- the needs and desires.

However, when we looked at the evidence, we didn't -- from an asset management perspective, we didn't see evidence, or particularly strong evidence, describing how the investment decisions were different for those groups and allocated between those groups in a clear and transparent way.

MS. EMILY GUGLIELMIN: And within the residential customer class, do you agree that there are multiple subcategories of ratepayers that also have distinct interests in relation -- in relation to asset management?

MR. CHRISTOPHER OAKLEY: The -- the residential ratepayer group as a whole is -- is heterogenous. There are many different residential ratepayers with different income levels, locations throughout the province.

So, yes, it's a heterogenous group.

MS. EMILY GUGLIELMIN: So, for example, remote versus urban ratepayers might have different interests and First Nations on reserve ratepayers might have different interests?

MR. CHRISTOPHER OAKLEY: Yes, that's reasonable.

MS. EMILY GUGLIELMIN: Do you agree that it is also important for Manitoba Hydro to understand the varying needs and interests of remote ratepayers compared to urban?

MR. CHRISTOPHER OAKLEY: Because they have different interests, understanding those differences is -- is an input -- or would be an input to an asset management system, yes.

MS. EMILY GUGLIELMIN: And I'm not sure if you have a lot of background of understanding First Nations' issues, but would the unique circumstances of First Nations ratepayers living on reserve, do you agree that it is also important to

understand the needs and interests of those ratepayers regarding the tradeoffs between rates and reliability?

MR. CHRISTOPHER OAKLEY: I -- I think I would -- all -- all ratepayers -- all ratepayers have unique interests, and those unique interests, you know, can be considered depending how large or small the groups are.

Sometimes it's large -- larger groups are easier to identify and -- and address. Very small groups with unique needs can be a bit more challenging, but it's often worthy of consideration.

I don't want to seem weaselly here. I just -- it's sometimes difficult if the groups are too small to identify.

MR. PETER HELLAND: It's -- it's difficult when you're trying to gather residential input. And -- and we know this from other -- other jurisdictions, that it's hard to get residential customers to actually feedback and tell you what they want and what they expect, so you have to really work at -- at getting that information out of them and be creative in how you survey it because typically, people are doing lots of things, and answering a survey about how your power's doing isn't on the top of their list.

So, it can be challenging, but it's still necessary to do. You need to find out because that's the people you're building the system for. And -- and certainly, the groups you've identified would have unique needs and interests, and typically are remote from the core of the system, too, so serving those people is also challenging.

And -- and the utility has to balance the desires of the people being served with the reality of practically how do you do that, which is why a lot of times, you'll see a diesel generator backup in a lot of remote communities even if they are on grid, because the line would be very long, radial line. And if something takes it out, people are just without power until that line gets restored, which can take some time when it's a hundred kilometres to -- to town.

So -- so, there will often be a diesel backup, which is typically the -- the lowest cost way to provide redundancy for those kind of communities.

MS. EMILY GUGLIELMIN: Thank you. That actually leads into my next set of questions, which is, are you aware of whether remote customers on a general level have historically experienced different reliabilities than -- sorry, reliability

levels than Manitoba Hydro customers located in urban centres?

MR. PETER HELLAND: I don't think we could speak particularly to the Manitoba experience. But generally about rural customers, they get used to different power quality than people in town.

And it's -- it's not unheard of when people move from cities into more -- or rural areas that they have to learn how to be a rural customer. They'll have to buy, you know, appliances and light bulbs that can actually handle bigger voltage deviations because the voltage will swing appreciably a long way down a radial feeder than in -- in a tightly connected downtown area, and -- and the power will go off more.

And I had particular experience when a VP of a company that I used to work for moved to the rural area. And he knew what he was going into, but his neighbours complained to him all the time, why does our power go off so much now? And he actually had us clear more trees along the line that feed that group. So -- because he was getting continuously bothered by his neighbours.

MS. EMILY GUGLIELMIN: So does Manitoba Hydro's Asset Management Plan or asset

information systems, can they assess any gaps in reliability between these groups of customers?

MR. CHRISTOPHER OAKLEY: I don't think their asset management system would do that. I think they would have data collection systems that would -- would inform them of what the interruption patterns look like.

Those are inputs to the asset management analysis. But they would -- they're not tracked typically by the asset management software itself. Those are separate collection systems. And they'll be different for residential customers and large industrials, typically. And -- and depending on the customer class you're dealing with.

MS. EMILY GUGLIELMIN: Thank you. And do you agree that more remote customers, including many First Nations customers in Manitoba, will have an interest in ensuring stable electrical services in the case of extreme weather events?

MR. PETER HELLAND: Yes. And to -- further to what Chris said, for example, my experience in -- in the Yukon is that customers at the end of long radial lines, they often have other ways of dealing with the less reliable electricity.

So they have -- they love being

connected to the electrical grid and all the benefits it brings. You can go out, engage in hunting and fishing, fill your freezer, and the electricity keeps that freezer cold. And as long as the electricity doesn't go out for too long when it goes out, your -- your meat stays frozen and -- and ready to it.

So the really long duration is significantly more problematic for -- for those rural customers who rely on it for things like food.

But they would also have other adaptions. So for example, a wood stove would be much more common out in the rural communities because they are more accustomed to losing their power more regularly for -- maybe not, you know, days at a time, but hours at a time. Where, in an urban setting, you would expect a shorter restoration period.

MS. EMILY GUGLIELMIN: Thank you. Ms. Schubert, could we turn to Manitoba Hydro Exhibit 24, which is the rebuttal evidence, at page 99.

Manitoba Hydro states here that you've incorrectly assumed that asset management investment decision making is only about asset condition. And Manitoba Hydro points to the concept that investments can be used to mitigate the impact of external events.

I believe it's lower. Yeah. There we

go.

And do you see where that is?

MR. PETER HELLAND: Yes.

MS. EMILY GUGLIELMIN: Do you agree that capital investments can be made that will mitigate the risk of external events to Manitoba Hydro infrastructure?

MR. PETER HELLAND: So similar to what Chris said, for example -- and I'm going to draw more on my Yukon experience. Long radial lines will often had diesel generators at the end. So in the Yukon, for example, the long radial line out to Dawson, they have diesel generation in Dawson so when the radial line goes down, they have local backup to provide power to that community. And that's a method that they use to address other types of outages to provide -- I think where this is driving possibly is resiliency.

MS. EMILY GUGLIELMIN: So mitigation like this, it could ultimately reduce the cost to ratepayers overall by reducing the cost of replacement when an external event occurs or delays in returning service?

MR. CHRISTOPHER OAKLEY: I think it's really important to -- if you're going to harden the

system to be resilient to all possible events -- and let's be clear that no system will ever be resilient to all events. I can always give you an event that will take the system out.

But -- but there's an incredible cost to generically increasing the standards of the entire system to be resilient to all events, which is why a lot of utilities will economically choose to put a diesel generator at the far end for a radial line.

Because the cost of actually hardening that line to be really resilient to, for example, tornados, forest fires, whatever might occur, is really extreme. It doesn't just slightly increase the cost of the line, it could double or triple or quadruple the cost of the line to make it truly resilient at all points.

Because these -- these facilities are spread across thousands of kilometers. And -- and a tornado, for example, will go through at one point. If you can -- made the entire line able to withstand that tornado going through, and frankly, you know, you're talking a four hundred (400) or five hundred (500) kilometer an hour wind front at the tornado interface with -- with a structure, it would have to be so robust that it would be, you know, ten (10),

twenty (20) times more expensive to build the line.

And it would just make simply building the system uneconomical. You -- you couldn't do it. So, you put a diesel generator at the far end for those, again, rare occasions and -- and it may seem like they're frequent when you're out on a radial line, but on those rare occasions that you're -- you're losing your power, you've still probably got 95 to 99 percent reliability out -- out at the end of the line. Then you turn the diesel on.

You know, there's -- there's a fuel cost to it and there's noise and -- and nobody really likes living around a diesel and I've done it and -- and, you know, it's nice when the thing shuts off.

But -- but that's the economical way to deal with the problem right now. We don't have a better way to turn all of those distribution poles or those long radial transmission lines into a just a super hardened facility.

MS. EMILY GUGLIELMIN: A -- a tornado, as your example, might be pretty different than say hardening those lines to withstand extreme cold in the north.

MR. CHRISTOPHER OAKLEY: My experience with lines is that, unless they're strung wrong, or

there's -- there's a weakness in the -- in the actual splices, the -- the cold doesn't effect lines. They'll set up quite happily in super cold temperatures.

I have heard of -- of splices and dead ends pulling apart when they were strung too tight and -- and super cold happened so at fifty-five (55) below or something like that. But that's a very rare event.

The conductors themselves are perfectly happy. They'll, you know, they'll take whatever temperature you put -- they actually get more efficient at colder temperatures. And they also get better clearance from the ground at colder temperatures. So, we don't tend to see, you know, calm, cold outages tend to be quite rare.

But, ice storms are a problem. Again, but you could be like Quebec recently, who -- who during the '90s they experienced a long duration of outage in Montreal. They hardened their structures incredibly. They really upgraded their standards, because of -- they knew they were kind of sensitive to this and they didn't want to subject the city of Montreal to another, you know, ten (10) day, two (2) week outage.

And then -- yet, recently they just had

another outage like that, even with these hardened structures. So, at what point do you draw the line and say at some point we have to build the system so it we'll fall down.

At some point, if your system didn't fall down, you over designed it. And -- and -- and I know that seems like an odd thing to say, but -- but engineering is always a balance between some performance and some cost. And -- and, you -- you -- you could spend infinite dollars and still never make it perfect.

MS. EMILY GUGLIELMIN: Okay, and regardless, my question for you is: Based on your review of Manitoba Hydro's Asset Management Plan, is there a budget to continue any kind of upgrading or mitigation work on distribution lines or in remote areas on assets?

MR. PETER HELLAND: I -- I don't think that the evidence differentiated particularly that way. I mean we -- we made some commentary about the distribution system and the need to pay attention to it because that's where it actually load gets delivered to most customers, is off of the distribution system.

And managing that in a way that if you

have chosen, again for economy purposes, to -- to allow some assets to run to failure, which is again an economical choice for some low risk assets, because you can replace them quickly.

As long as you are staffed and -- and prepared to do quick restorations in those cases, that can be, again, with proper business case analysis, the right thing to do. It could be the -- most economical solution with relatively minimal customer interruptions.

Even if you allow a, for example, a pole top transformer to fail, that happens once in a fifty (50) year life. So, sure, it's a -- a problem for an hour or two (2) while you get the cam replaced. It might -- might take four (4) hours in -- in -- in, you know, a bad situation. But -- but that's once in its fifty (50) year life.

And -- and so, okay, well I can live with that. There -- there were very few customers affected and they can be restored quickly when it happens.

Again, it's an economical choice. The -- the utility has to sort out what's the best balance between my operating costs, my -- my restoration of service and my capital investment.

Otherwise, customers don't get the full value of that transformer and there are a lot of them out there. If you lose a little bit of value on each transformer, that's a lot of money.

MS. EMILY GUGLIELMIN: But for very remote customers, especially in large groups, like First Nations reserves, that would not be a very quick response time, correct?

MR. CHRISTOPHER OAKLEY: It would depend where the service centre was rela -- relative to them. So, I -- they may have some local stores for -- for a community that's a long way off -- off grid. It would be sensible, probably, for the truck to actually have a -- you know, the standard cans in -- in the back of the truck.

And I can't say how Hydro deals with it, but that's one of the approaches that -- that utilities that serve remote communities will do. They'll actually keep something local with the standard things they're going to have to fix, so that it doesn't take a day to get out to -- to get to them.

MS. EMILY GUGLIELMIN: I think that those are all of my questions. Thank you.

MR. CHRISTOPHER OAKLEY: Thank you.

THE CHAIRPERSON: Thank you. Mr.

Walichnowski? Did you want to sit there or did you want to move to the front row?

MR. ROBERT WALICHNOWSKI. Yeah. I'll move. Thank you.

THE CHAIRPERSON: Yeah. Okay. Thank you.

CROSS-EXAMINATION BY MR. ROBERT WALICHNOWSKI:

MR. ROBERT WALICHNOWSKI: Morning, Mr. Chair, Madam Vice-Chair, Members of the Panel. Good morning, Mr. Oakley and Mr. Helland.

My name is Robert Walichnowski. I am one -- one of the co-counsel to the GSS-GSM customer class representatives and I'll -- I'll have a few questions for you this morning.

If I could just ask you to confirm that I -- as I -- and I'm correct in my understanding that asset management decision-making involves balancing the trade-offs between costs to the utility performance and risk.

MR. PETER HELLAND: That is correct.

MR. ROBERT WALICHNOWSKI: And -- and -- and that's -- that balance is necessary, am I correct, because Manitoba Hydro doesn't have unlimited resources?

MR. PETER HELLAND: That's one of the constraints. Yes.

MR. ROBERT WALICHNOWSKI: And -- and, because Manitoba Hydro doesn't have unlimited resources, it has to strike this right balance between preventative maintenance work and incurring the costs of doing that work.

MR. PETER HELLAND: Preventative maintenance is one of the things it balances. Yes, within those con -- resource constraints.

MR. ROBERT WALICHNOWSKI: And -- and, again, that all has to balance against the risk that flows from doing, for example, less preventative maintenance work.

MR. PETER HELLAND: Yeah. There's a - there's a trade-off. The -- the appropriate level of maintenance and -- and the risks that changing -- or changing different styles or approaches to maintenance entails and versus the potential costs savings or costs additions associated with those changes.

MR. ROBERT WALICHNOWSKI: Okay. Thank you. In -- in Midgard's view, am I correct that when Manitoba Hydro is considering how to balance those trade-offs between costs, performance, and risk, it's appropriate for Manitoba Hydro to consider its

customers' opinions on where that balance should be?

MR. PETER HELLAND: Yes.

MR. ROBERT WALICHNOWSKI: And -- and, in effect, Mid -- Midgard suggests that Manitoba Hydro customers should have a say in how reliable their electrical service is?

MR. PETER HELLAND: Among -- among the things to be balanced. Yes, target reliability is -- is one of the things you would seek to solicit from your -- your -- your ratepayers.

MR. ROBERT WALICHNOWSKI: And am I correct, then, if ratepayers are not willing to pay more for increased reliability, then, in -- in your view anyway, that should suggest to Manitoba Hydro that it ought not pursue that additional reliability.

Am I right about that?

MR. PETER HELLAND: Yes.

MR. ROBERT WALICHNOWSKI: And -- and would the inverse of that be true, that, if customers were willing to pay more for more reliability, then Hydro should consider providing that level of service?

MR. PETER HELLAND: That's correct.

MR. ROBERT WALICHNOWSKI: And, sir, you're -- you're aware that Manitoba Hydro serves multiple customer classes, including the residentials,

the general services, and the area and roadway lighting classes?

MR. PETER HELLAND: Yeah. There -- there's a variety of classes.

MR. ROBERT WALICHNOWSKI: Yes.

MR. PETER HELLAND: Hence, a variety of tariffs.

MR. ROBERT WALICHNOWSKI: And -- and I -- I think we touched on some of this earlier this morning, and we may have touched on -- and I believe you touched on this yesterday as well.

But, you'll -- will you agree with me that dif -- different customer classes may experience different levels of risk tolerance as they relate to reliability?

MR. PETER HELLAND: Correct.

MR. ROBERT WALICHNOWSKI: And it's because the cost of an outage to -- for example, me and my home may be different than an industrial who's running a production line?

MR. PETER HELLAND: Correct.

MR. ROBERT WALICHNOWSKI: And you'll -- you'll also agree with me, sir, that different customers within specific individual customer classes may also experience different levels of risk tolerance

when it comes to reliability?

MR. PETER HELLAND: So, within a single class, yes, there will be different customers with different sensitivities.

MR. ROBERT WALICHNOWSKI: And so -- thank you. And so, for some customers then, even a short interruption of service may have a significant financial coincidence for their operations?

MR. PETER HELLAND: Yes, different customers will have different financial consequences for -- for different types of interruptions, yes.

MR. ROBERT WALICHNOWSKI: And in fact, some customers may not be willing to tolerate more frequent or longer outages than some other customers?

(BRIEF PAUSE)

MR. PETER HELLAND: The only reason I paused is the way you phrased the question. So, can you just phrase it again, because it -- it was an odd phrasing for me?

MR. ROBERT WALICHNOWSKI: Abs -- absolutely. So -- how about this, in fact, some customers may not be willing to tolerate -- how about -- how about this way, some customers may not be

willing to tolerate more frequent or longer outages than they currently face?

MR. PETER HELLAND: Some customers don't want more frequent outages than they currently face. And then the question becomes what's the appropriate tradeoff of cost, reliability, and risk that that customer wants.

MR. ROBERT WALICHNOWSKI: Okay. Thank you. Did -- did either of you either watch or -- or perhaps read the transcripts from the public presentations that the Board heard earlier in this proceeding on May 16?

MR. PETER HELLAND: Reviewed the presentation.

MR. ROBERT WALICHNOWSKI: Okay.

MR. PETER HELLAND: Didn't -- didn't watch it live.

MR. ROBERT WALICHNOWSKI: And -- and I'll ask this, and -- and -- am I correct that in your recollection that the Board heard evidence from some customers who gave presentations that there is a significant financial impact on -- for service interruptions.

MR. PETER HELLAND: Oh, so just to be clear, are we talking about the industrial customers

who presented?

MR. ROBERT WALICHNOWSKI: Some of the customers that presented on May 16th, yes.

MR. PETER HELLAND: I'll be honest, I'm losing track of the dates. They all blur together for me. I -- I watched the -- or attended the industrial customers when they were presenting.

I'm not sure if there were other customers who presented, so --

MR. ROBERT WALICHNOWSKI: And you --

MR. PETER HELLAND: -- I'm just trying to be clear.

MR. ROBERT WALICHNOWSKI: Absolutely. And -- and so you heard the lawyer's industrial clients who participated speak of the kind of financial consequences of interruptions to their business?

MR. PETER HELLAND: Yes, the different -- the different industrial customers who presented, in my view, you know, sounded typical from what we see across the different jurisdictions. Certain customers are more sensitive to certain types of outages, and other customers were less sensitive to -- to certain types of outages.

They had different financial impacts.

They could have, you know, different durations before it became impactful (sic) to their business. There was a range and a variety.

MR. ROBERT WALICHNOWSKI: Okay. Thank you. And -- and kind of building on that, if there's this range and -- and variety among -- among customers with respect to -- I'm going to suggest there's -- there's a range in variety with respect to risk tolerance among -- among Hydro's customers.

Would you agree that that means that different customers would have different expectations or different -- different expectations with respect to how to properly balance that tradeoff we were talking about earlier between cost, performance, and risk?

MR. PETER HELLAND: I certainly agree that different customers would have different desires about how to balance that tradeoff.

MR. ROBERT WALICHNOWSKI: And -- and in light of that, would you agree with me that at least some Manitoba Hydro customers would prefer to maintain their current levels of reliability?

MR. PETER HELLAND: All else being equal?

MR. ROBERT WALICHNOWSKI: All else being equal.

MR. PETER HELLAND: Yes.

MR. ROBERT WALICHNOWSKI: Okay. Ms. Schubert, if we can go to Consumers Exhibit number 8 -- this is -- this is your presentation, sir, and paragraph -- or page 21.

And these are -- this is a -- Figure 4 is a table showing the SAIDI and SAIFI comparisons between Manitoba Hydro and -- and some of its Canadian peers. And I'm just going to ask you a couple of quick questions about this graphic and -- and the paragraph underneath it.

I'm going to start -- am I -- am I correct in my -- am I correct in my understanding that your analog -- your analysis suggests that Manitoba Hydro's SAIDI and SAIFI values outperform Manitoba Hydro's Canadian peers?

MR. PETER HELLAND: Yes.

MR. ROBERT WALICHNOWSKI: And -- and I'm correct that your analysis shows that the eleven (11) year average SAIDI figure for Manitoba Hydro is -- I think it's 32 percent of its Canadian peers, and it's that first sentence on the page.

Am I right about that?

MR. PETER HELLAND: The reason I'm hesitating will -- will become obvious, I think. So -

- how do we handle this, Byron? I'm just -- in light of our conversation this morning.

DR. BYRON WILLIAMS: Mr. Chair, could we have a very short adjournment?

THE CHAIRPERSON: How short? Do you want to --

DR. BYRON WILLIAMS: Five (5) minutes.

THE CHAIRPERSON: -- step down and just -- or do you want to leave the room?

DR. BYRON WILLIAMS: We were planning to do it at the break, but, yeah, we can do it just for five (5) minutes if --

THE CHAIRPERSON: Okay. Then we'll do that.

(BRIEF PAUSE)

DR. BYRON WILLIAMS: Mr. Chair, we just had a conversation with our friends, and the reason that we're pausing and why I wanted the adjournment is Manitoba Hydro had kindly brought it to our attention. We had -- and it flowed from a discussion with Board Member Kapitany.

We had posed an Information Request, Consumer Coalition 1st Round 92A, and there was a

miscommunication in the response. Between -- I'm not blaming anyone. There was just a mis -- miscommunication. Excuse me, 92A, if you could go to the question. Thank you, Ms. Schubert.

MR. PETER HELLAND: So in ninety-two (92) --

DR. BYRON WILLIAMS: I'll just --

MR. PETER HELLAND: Oh, okay.

DR. BYRON WILLIAMS: I'll -- I'll just clarify. So we had thought we were getting -- we had asked to exclude major events, and we had asked for a comparison to Canadian without major events, and inadvertently we got a comparison to Canadian with major events.

So what -- what we've discussed with Manitoba Hydro is they're going to take this response back and -- and amend it. And Mr. -- Mr. Czarnecki will -- will clarify, but directionally, I think we're of the view that the same conclusions will flow, but we just have what -- inadvertently from the response and then how we -- we interpreted the response.

We -- we have a Canadian with major events versus a Manitoba without major events. So Manitoba Hydro is going to take that response back and amend it. They've told us that, directionally, it'll

be the same conclusion -- I'm looking to Mr. Czarnecki -- but we just want to be clear.

And that's why I had asked for the -- it was kindly brought to our attention just before, and we just wanted -- we were going to take the break to kind of reconcile it, but before Mr. Walichnowski continues down the path, we just wanted this to be clear.

Is -- Mr. Chair, does this --

THE CHAIRPERSON: Okay. It's fine. Mr. Czarnecki...?

MR. BRENT CZARNECKI: So, yes, we will -- Hydro will provide a more representative depiction of this to clarify it. Relatively speaking, it'll be the same, but the -- it'll just narrow in results is what I've been told right now.

THE CHAIRPERSON: Okay. So the question I have is: Mr. Walichnowski was doing cross-examination on this point, and I'll just put it to you, sir:

Are you going to need the revised data for you to complete your cross-examination?

MR. ROBERT WALICHNOWSKI: I -- I don't believe so, Mr. Chair.

THE CHAIRPERSON: Okay. No. Okay.

That's fine.

DR. BYRON WILLIAMS: And just from our part, Mr. Chair, we'll -- we will -- certainly if there's any prejudice to my learned friend Mr. Walichnowski, or others, we'll make our witnesses available if they do feel the -- the need to pursue it.

THE CHAIRPERSON: Thank you. Ms. Bellringer has a question.

BOARD MEMBER BELLRINGER: Well, I'm just -- I'm -- I'm actually thinking yesterday that specific question even came up, and I'm don't -- not remembering, you know, at which point yesterday. And if someone can just run through yesterday's --

DR. BYRON WILLIAMS: It's page 158 (sic) of the transcript which we will -- we -- we will correct once we -- once --

BOARD MEMBER BELLRINGER: So, you're -- you're under -- you're recalling the point that I'm referencing? Okay. Okay. Thank you.

DR. BYRON WILLIAMS: Let's -- let's not give me too much credit. With the assistance of my learned friend, Mr. Czarnecki.

BOARD MEMBER BELLRINGER: Yeah.

DR. BYRON WILLIAMS: He was kind

enough to bring us -- this to my attention, the miscommunication and the Information Request and response. So, we're just going to correct that and -- on the record, but we're --

BOARD MEMBER BELLRINGER: You'll bring it back here?

DR. BYRON WILLIAMS: Exactly.

BOARD MEMBER BELLRINGER: Yeah. Thank you very much.

DR. BYRON WILLIAMS: And I -- I hope I didn't interrupt you, Ms. Bellringer -- or Board member, sorry.

BOARD MEMBER BELLRINGER: Not always a bad thing.

DR. BYRON WILLIAMS: And I -- I misspoke. It's page 1,580. And so, we will -- when -- we will be in a position to correct it.

My only correction for Mr. Czarnecki, just while we have them is, would it be possible to get that done today?

MR. BRENT CZARNECKI: We think so, yes.

DR. BYRON WILLIAMS: With apologies for inconvenience, Mr. Chair and members of the Panel, we'll -- we'll do our -- if -- if we get that from

Hydro, we'll have our witnesses to -- to -- able to take a quick break, and then correct the record as -- as necessary. Thank you.

THE CHAIRPERSON: Okay. Thank you.

MR. ROBERT WALICHNOWSKI: Thank you.

THE CHAIRPERSON: Yeah.

CONTINUED BY MR. ROBERT WALICHNOWSKI:

MR. ROBERT WALICHNOWSKI: So, recognizing the -- what we just heard and -- and what your counsel and Mr. Czarnecki put on the record, I'm -- I'm going to suggest to you that -- that my next couple questions...

Let -- let me step back. What I -- what I heard from your counsel was he expects, and -- and I believe Mr. Czarnecki confirmed that, that the -- the revised figures that -- that will update -- that -- that will update figure 4 will lead to the same conclusion. I believe directionally, it -- it'll lead to the same conclusion as -- as what I -- is what I heard and as I understood.

Is that your understanding, as well?

MR. PETER HELLAND: Correct. That's my understanding.

MR. ROBERT WALICHNOWSKI: And am I --

MR. CHRISTOPHER OAKLEY: Two (2) -- two (2) conclusions, just to be clear. One (1) is that, like, updating this figure that Manitoba Hydro's SAIDI AND SAIFI, excluding major events, will remain stable and that it's better than Canadian averages, excluding major events, but the gap will narrow.

MR. ROBERT WALICHNOWSKI: The -- but -- but -- and -- and am I correct in understanding then that, even after this -- these revisions, you're -- you're still expecting that these trends will show that Manitoba Hydro customers over this eleven (11) year period suffered fewer outages than their Canadian peers?

You're -- you're expecting --

MR. PETER HELLAND: Yes. And maybe we should give some background as to partly why we didn't trigger on this earlier.

MR. ROBERT WALICHNOWSKI: Please.

MR. PETER HELLAND: So, previously -- in the previous GRA, we had had a conversation with the Board actually about Manitoba Hydro's reliability.

DR. BYRON WILLIAMS: Can I interrupt for just one (1) second. And I just want to make sure that we're --

THE CHAIRPERSON: Yeah, we -- we need

to be very careful here in terms of --

DR. BYRON WILLIAMS: Yes. And my --

THE CHAIRPERSON: -- what advice they gave the Board --

DR. BYRON WILLIAMS: Yeah.

THE CHAIRPERSON: -- at a previous hearing.

DR. BYRON WILLIAMS: And I apologize for -- Mr. Walichnowski. No intention to -- to interrupt, but I just want to have a brief second and -- and --

MR. ROBERT WALICHNOWSKI: M-hm.

DR. BYRON WILLIAMS: -- with apologies again.

(BRIEF PAUSE)

MR. PETER HELLAND: Okay. So, through work on the previous GRA we had reviewed the reliability data of Manitoba Hydro. And -- and contemporaneously with that, we had been sort of immersed, if you will, in the reliability data of various Ontario utilities, large ones, such as Hydro One but, in particular, urban -- you know, major urban utilities.

And what we observed based on the data that we were reviewing was that Manitoba Hydro's reliability was equal to the -- you know, within range, but equal to the reliability of urban Ontario utilities, which was far better than we had expected.

So, based on our -- so, yeah, we would -- we would have expected overall sort of provincial performance to have been not as good as Manitoba Hydro was showing, so, yeah.

MR. CHRISTOPHER OAKLEY: Typically, on a blended provincial basis, you obviously bring in all of those outliers and the long radial lines, and it just brings the performance level down.

Urban centres are so tightly interconnected that they have, you know, incredible performance, which is why when people move from the city to the country, they get disappointed so often.

But I -- I would say that just out of -- based on my recollection, Manitoba Hydro is about equivalent to Electra, which sort of the -- the 905 district. I think it is around Toronto.

This is an incredibly tightly interconnected well supplied system. That's Manitoba. That's that -- you know, if you blend the Manitoba results, they look like Electra.

And so, we were a little startled by that when we saw these provincial results. Now, that doesn't mean that there aren't individual customers. And, you know, the utilities will have their worst performing feeder. There might be worst performing transmission lines and those sorts of things, too. That's a separate undertaking though when you look at the average provincial results.

This is why we kind of say you've got the Porsche system, because we don't often seen provincial systems that perform like they're an urban -- well interconnected urban system.

CONTINUED BY MR. ROBERT WALICHNOWSKI:

MR. ROBERT WALICHNOWSKI: Thank you.

MR. CHRISTOPHER OAKLEY: That hopefully adds a bit of colour to that.

MR. ROBERT WALICHNOWSKI: Thank you. Are you aware of any evidence filed in this proceeding to suggest that Manitoba Hydro customers want to experience the same length and frequency of outages as occur in other provinces?

MR. PETER HELLAND: There was no evidence filed that asked that specific question.

MR. ROBERT WALICHNOWSKI: Thank you.

Mr. Chair, I've gone over my time. I have one (1) line of questions that may take me ten (10) minutes.

THE CHAIRPERSON: Well, I -- I've extended your time considerably, so just --

MR. ROBERT WALICHNOWSKI: Thank you.

THE CHAIRPERSON: Yeah, no, I -- I added another fifteen (15) minutes, so.

MR. ROBERT WALICHNOWSKI: Thank you. I -- I will try my best not to use those full fifteen (15). Thank you.

THE CHAIRPERSON: Yeah, no, that's fine.

CONTINUED BY MR. ROBERT WALICHNOWSKI:

MR. ROBERT WALICHNOWSKI: So, changing -- changing topics. At a high level, would you agree that the approach to asset management that -- that you're suggesting would see Manitoba Hydro being more reactive and less proactive when it comes to maintaining its system?

Am I -- am I summarizing it correctly?

MR. PETER HELLAND: No. That would be an incorrect interpretation of our evidence.

MR. ROBERT WALICHNOWSKI: Okay.

MR. PETER HELLAND: So, our evidence

states that, for the different assets and their places in the overall system, you would develop asset management strategies for -- for your asset and your system that balances capital O&M, so -- so the triangle of cost, reliability, risk.

And depending on the assets and the -- their place in the system, so a system focus, you would then choose asset strategies that provide the best value to ratepayers.

So, certain assets -- pole top transformers is the one that we've been talking about a fair amount, so I'll continue with that. They're low consequence, high volume assets that can be relaced quickly that have little impact on customers.

Yes. In those cases, a run-to-fail strategy is a -- is a good strategy and a common strategy across Canada. It extracts the maximum value from the assets themselves and -- and is a good strategy.

However, I was expecting some of this to come, so there are other strategies that Manitoba Hydro engages in. And if I'm -- if I can figure out my notes here. Just a little -- okay.

Well, there's a strategy -- I can't go to the exact IR -- but there is a strategy that

Manitoba Hydro has, for example, for looking at -- in their DC Bipole system, where they will test -- they will test their components regularly. And when they decide that they're getting close to failure, they replace them with spares.

So in that case, it's a proactive. It's a monitoring and a proactive system. And that makes sense in that case.

So it's -- it's a blend of the appropriate different strategies and it's -- it's driven by those tradeoffs. So it's not solely one, it's a portfolio of strategies. But it's an active decision to have those strategies and then implement and adequately resource those strategies.

MR. ROBERT WALICHNOWSKI: Okay. Thank you. I -- would you agree that it's -- it's fair to say that you both have significant experience testifying in regulatory proceedings across this country?

MR. PETER HELLAND: Chris has far more experience than I do.

MR. ROBERT WALICHNOWSKI: Fair. I believe in your presentation yesterday, you -- you -- it was indicated that the two (2) of you had -- had appeared at tribunals -- regulatory tribunals in

British Columbia, Ontario, Nova Scotia, Newfoundland; am I correct in that?

MR. CHRISTOPHER OAKLEY: In Ontario, we worked for the Board, so we're actually like staff.

MR. ROBERT WALICHNOWSKI: Okay.

MR. CHRISTOPHER OAKLEY: In Ontario.

MR. ROBERT WALICHNOWSKI: But you would understand that in each jurisdiction, the regulatory decision makers that you're appearing before or working for are subject to specific legislative mandates?

MR. PETER HELLAND: Yes.

MR. ROBERT WALICHNOWSKI: And -- and I think Mr. Williams walked you through this this morning, but as experts your role is to assist those regulators in fulfilling their legislative mandates.

Am I right about that?

MR. PETER HELLAND: Yes.

MR. ROBERT WALICHNOWSKI: And so, your job here is to help the Board understand Hydro's -- Manitoba Hydro's application and to provide the Board with your expert advice for how it should decide the matters it has to decide within, of course, the scope of your expertise.

MR. PETER HELLAND: Yes.

MR. ROBERT WALICHNOWSKI: And in preparing for -- for this Hearing, were you aware that when this Board sets rates, those rates need to be just and reasonable?

MR. PETER HELLAND: I don't know what the actual legislation says about just and reasonable, but in general, in principle, that would -- that would be my expectation. Yes.

MR. ROBERT WALICHNOWSKI: And -- and, sir, would you agree with me that setting rates arbitrarily would not be just and reasonable?

MR. PETER HELLAND: Correct.

MR. ROBERT WALICHNOWSKI: And would you agree with me that setting components of a rate in an arbitrary way would not be just and reasonable?

MR. PETER HELLAND: Do you set components of a rate?

MR. ROBERT WALICHNOWSKI: Components of the revenue requirement that -- that are factored into the rate that is ultimately charged. If those inputs -- if one of those inputs is arbitrary, would you say that the result is not -- would not necessarily be just and reasonable?

MR. PETER HELLAND: It -- it's my understanding that boards, commissions always base

their decisions on the evidence that is brought before them. So they don't make arbitrary decisions. They make evidence-based decisions.

MR. ROBERT WALICHNOWSKI: Okay.

MR. PETER HELLAND: So I hope I'm answering your question.

MR. ROBERT WALICHNOWSKI: I -- thank you. I -- I think you did.

Am I correct that Midgard recommends that there should be at least a 10 percent reduction in Manitoba Hydro's business capital -- or business operations capital budget?

MR. PETER HELLAND: Correct. That's -- that's on the evidence, yeah.

MR. ROBERT WALICHNOWSKI: And I believe -- and we can go there if needed -- but I believe your recommendation is that that 10 percent reduction should be in place and -- and I'm -- I'm quoting you here:

> "until such time as Manitoba Hydro provides evidence that its asset decision making is supported by quality asset management data, tool, and decision making frameworks."

Does that -- does that sound correct?

MR. PETER HELLAND: Yeah. I believe there's -- that's a quote from our report.

MR. ROBERT WALICHNOWSKI: It is and it's page 85.

MR. PETER HELLAND: Sounds familiar.

MR. ROBERT WALICHNOWSKI: So in effect, you're -- you're suggesting to this Board that Hydro -- Manitoba Hydro shouldn't be allowed to fund its full business operations capital budget during the test period from ratepayer contributions.

Am I right about that? That's the effect of your recommendation?

MR. PETER HELLAND: Can you rephrase that question? Because I --

MR. ROBERT WALICHNOWSKI: Your -- the effect of your suggested 10 percent reduction would be that this Board should not allow Manitoba Hydro to fund its full business operations capital budget during this test period from ratepayer contributions.

MR. PETER HELLAND: So I think the effect is what we stated, which is that the BOC would be reduced by 10 percent.

I -- I understand I'm not echoing your question back. But it was -- there were some odd words in there that I'm -- I'm not sure I can quite

parse.

MR. ROBERT WALICHNOWSKI: That's -- that's fair. I'll -- I'll try and rephrase it.

Let's -- let's break it down. So the recommendation, as we've discussed, is this 10 percent reduction in the business operations capital budget.

Your -- and am I correct that, in your view, the Board should not allow Manitoba Hydro to collect the full amount of its business operating capital budget from ratepayers?

DR. BYRON WILLIAMS: We're going to encourage Mr. Walichnowski to -- to continue on this line of inquiry. I just -- I'm going to object to the premise.

Because I think the premise is -- was inadvertently misstated. I think he meant to say that the recommendation is that, for the purposes of determining the revenue requirement, that the -- that the BOC budget be reduced. Because no one here thinks that the Board can disallow Hydro capital expenditures.

MR. ROBERT WALICHNOWSKI: Yes.

DR. BYRON WILLIAMS: I apologize. I hate to interrupt, sir.

MR. ROBERT WALICHNOWSKI: No. No,

absolutely. Thank you, Mr. Williams. That -- that's his expertise and experience showing how much -- how difficult it can be sometimes to phrase a question.

So with that, I'll -- I'll move on. In a --

THE CHAIRPERSON: Sorry, before you move on, I want to make sure that we have an answer to the question as Mr. Williams stated.

So -- because I believe we had your question, but we didn't have an anser to it.

DR. BYRON WILLIAMS: I just want to give him an option to rephrase his question. We're happy to answer it.

THE CHAIRPERSON: No, no.

MR. ROBERT WALICHNOWSKI: If you could answer the question as Mr. Williams better phrased it than I.

(BRIEF PAUSE)

MR. PETER HELLAND: I think the simple answer to that question is yes.

THE CHAIRPERSON: Okay

CONTINUED BY MR. ROBERT WALICHNOWSKI:

MR. ROBERT WALICHNOWSKI: Thank you. And so -- and -- and your recommendation was the Board do that until Manitoba Hydro provides, as I read, evidence of its asset decision making processes, shall we say, maturing. Am I right about that?

MR. CHRISTOPHER OAKLEY: Yeah. Our -- our concern was that we never actually did quite ever get the prioritized list showing the value stream and -- and the point at which the marginal project was cut off.

What we have is a budget that has a large list of projects, which was then revised and the list changed. But the bottom lines didn't change much because there's a balancing factor that effectively means that Manitoba Hydro doesn't believe it's going to do all that stuff. It just hasn't decided which ones it's not going to do.

So, we have a hard time accepting that they're all essential because if they were all essential, they'd all be in there and you'd find some way to fund it.

So -- so obviously, Hydro is balancing its financial requirements against risk and that sort of thing.

We just know transparency -- we've

talked about a few of the projects and said, Well, we think this might actually be surplus to system needs. We're not sure it is. For example, Grand Rapids Unit 4. Maybe, instead of spending that capital if you don't have it, why don't you just turn the unit off and use it for those few peak hours. Save the wear and tear that you've talked about. Reduce your maintenance costs on it. And then, when the room is available, then the capital budget picks it then if it makes sense.

But again, if it's surplus to your domestic need, whatever money you spend should be getting made back in profit. And you need to be able to demonstrate that.

And again, we're -- we're left without information that lets us even find out what's important to the system, what's -- what's minimum, and what is surplus.

So we couldn't evaluate that. We came up with a 10 percent as a placeholder where we can count a bunch of projects and say, I'm not sure about that one, I'm not sure about that one.

If there was better evidence, we could probably have a good discussion about it and ask questions about it. But -- but we haven't got that

prioritized list. We just know that the list is longer than the money.

MR. ROBERT WALICHNOWSKI: Thank you. And -- and just to kind of -- you anticipated one of my -- one of my questions.

When -- am I correct, you just said this -- this 10 percent -- this at least 10 percent figure is -- as you said, it's a placeholder.

MR. CHRISTOPHER OAKLEY: I think that it's actually a very minimal placeholder because we could actually identify projects that we would really question if we had better evidence why is that project in here as an essential project in this test period?

MR. ROBERT WALICHNOWSKI: Okay.

MR. CHRISTOPHER OAKLEY: Because there appears to be surplus. The Keeyask just came online.

There is evidence that says that Point du Bois is not necessary to the system until, I think it's 2030, at least, and that depends on how you treat firm -- firm exports.

MR. ROBERT WALICHNOWSKI: Okay.

MR. CHRISTOPHER OAKLEY: So, again, there is some evidence that indicates that there is surplus. We -- we've been told by Hydro that they build surplus on purpose and it's a strategic

approach.

So, we think, that if you're going to have to make marginal maintenance decisions, or replacement decisions, you need to know what that's going to do. Is it going to take care of domestic customer reliability, which I think is a concern that you're -- you've expressed to us.

Or is it to ensure that you can fulfill all of your export desires, including firm and opportunistic to the maximum.

And those are very important questions 'cause you evaluate those projects, either on reliability if their core system, you know, minimum system requirements or on -- just an economic case.

I want to see a business case and I'm speaking as -- as if I was making that, but I mean, if -- if I was being asked to make the decision in -- in utilities where I have had to -- show me the business case. Show me the MPV with the risk -- risk adjusted returns and the cost of this over the period.

Because, at the end of the day, it will fall back to ratepayers. If the revenue stream goes away, those assets are now the responsibility of ratepayers.

So, again, we're not saying it's a bad

project. If I was operating that plant, I'd want to fix that runner. But -- but if I was the person having to make the decision for the company, where -- where's the best place for the dollars to go. I'm not sure it is that plant.

MR. ROBERT WALICHNOWSKI: Okay. Thank you for that. Returning back to this at least 10 percent placeholder figure.

We'd say at least 10 percent because, well, in your -- in your view it could be more than that. Am -- am I right about that?

MR. CHRISTOPHER OAKLEY: I -- I wouldn't want to speak for the Board, but the last at -- at -- at the -- the -- I think it was the CEF-16 decision, in which was -- I don't know, '17/'18, they -- they did notionally disallow, and again they don't disallow capital, but they --

MR. ROBERT WALICHNOWSKI: Yeah.

MR. CHRISTOPHER OAKLEY: -- but require rates not to recover that capital, a fairly substantial piece of -- of -- of money -- we -- we're not sure that the conditions have actually changed much, as far as the Asset Management Program and its linkage to capital planning, at this stage.

There's not a lot of evidence that

that's happened. I think there's a lot of desire that is -- that Hydro will get there soon or, you know, in the -- in the future, but -- but they've admitted that the systems don't all tie together. There's no optimization that can happen, so it's not really easy to see across business lines that the marginal project is actually dropping off the bottom.

MR. ROBERT WALICHNOWSKI: Yeah.

MR. CHRISTOPHER OAKLEY: They -- they don't have the systems tied together in that way. I'm not saying they don't have really good data about some parts of the system, they really do. And -- and other parts of the system it's less clear and if you're focused on reliability, it's not clear that they know what investments will drive what reliability outcomes.

In fact, I think they've told us explicitly in -- in IRs and I could probably hunt around and find one where they say our asset management system doesn't support that level of -- of an analysis yet.

That -- that's fair. It's -- they're on the journey. They're getting there, they just haven't got there yet, so the -- the test period budget we see now, isn't based upon that sort of analysis. It's based upon, someone had to make a

decision with incomplete information. And you can imagine that you're the senior manager and various parties bring you their budgets and they say, well, I got to saw this off somewhere and they have to allocate between departments.

It's not clear what's going to drive the results that customers want. They have to make a financial decision, so the envelope is -- is cut and -- and then you get a big negative balancing number that says, I've got that five hundred (500) projects here and I only get to do four hundred and sixty (460) of them. And no --

THE CHAIRPERSON: And -- Mr. Walichnowski. You've got five (5) minutes.

MR. ROBERT WALICHNOWSKI: Thank you Mr. Chair. I -- I think I have three (3) questions, so I'll --

THE CHAIRPERSON: That's fine.

MR. ROBERT WALICHNOWSKI: --- be done, hopefully, before then.

CONTINUED BY MR. WALICHNOWSKI:

MR. ROBERT WALICHNOWSKI: So, just returning back to this 10 percent placeholder. Am I -- am I correct in my review of your evidence that your

evidence has no -- provides no calculation for how that 10 percent figure was arrived at?

MR. PETER HELLAND: There's -- if -- if you're asking did we select three (3) projects and they add up to 10 percent? No, when you look at the portfolio of -- of reasons and issues, our estimation is that it is -- it's 10 percent or more, so.

MR. ROBERT WALICHNOWSKI: But just to confirm, there -- there's no calculations or no calculations in your evidence that demonstrates how you arrived at that 10 percent or more figure.

MR. CHRISTOPHER OAKLEY: We provided an example from Ontario, which was the Enwin (phonetic) example and I -- it -- it was intended simply to provide an -- an example of a -- a company that's new to asset management, that's learning the technologies, but that provided to the regulator a stacked list.

It was a prioritized list showing the value that each projects adds and where the margin was. And what the -- what the value per dollar spent was for the marginal projects.

You can have a really fruitful discussion about that now. You -- you can really actually say, well, let's talk about that last basket.

'Cause at the margin is where the important decisions are made. And as we talked about, there's diminishing returns for spent.

So, the last dollar you spend is not worth what your first dollar was. It's not going to get you the results.

We would like more clarity and transparency so we could have that more granular look at it and say, well, you know, this -- this is where we would argue, or draw the line, 'cause there's not good value showing up for the next dollar spent.

We don't have that -- that list for -- for Hydro. They -- they say they have a more sophisticated system, but they aren't able to produce that list. Frankly, that's where important discussions can happen.

Again, the asymmetry of information between the Utility and -- and ratepayers and the Board, is -- is vast always. It's almost, you might say, it's almost unbridgeable, but if you can provide us why you think those projects are important and where the right line point is, then you can discuss adjusting it. Then you can have a really fruitful discussion.

We don't have that. And in the absence

of it, we suggested the 10 percent number. We think it's actually -- it -- it could be a bigger number.

MR. ROBERT WALICHNOWSKI: And -- and, I'll just -- I'll end with this -- with this last question.

In -- in arriving at that -- that recommendation, that at least 10 percent placeholder figure, am I correct, there's no reference in your material that when you -- or in your filed evidence that in making that recommendation that you undertook a consideration or analysis of the risks to either Manitoba Hydro or its customers from that placeholder reduction.

MR. CHRISTOPHER OAKLEY: I -- I think we did identify that there are a very large number of these projects that are not about addressing particular ratepayer risks, as we've said. We -- we're pretty sure there's a significant surplus system here, with respect to serving domestic loads.

And -- and those are the people who pay for these assets at the end of the day. So, there is a significant surplus. A lot of these assets are fully redundant. They're multibly redundant.

So, you know, we could go and pull out some projects and say, well, this, this, this and

this. It might be a bigger number even than -- than -- than that 10 percent. Well it -- it likely would be, 'cause there's a significant surplus system here.

But the -- but as far as having hard data that I can say, well I'd -- I'd pull this one out. We -- we read all of the CVFs and -- and -- and those sorts of things. There's a lot of material to read and it doesn't clarify for you how it stacked those blocks.

MR. PETER HELLAND: So, I -- I'll add to that. So, if we could go to tab 7, page 42 of 51. This is a, sort of a table, summarizing the area of asset investment decision making and ongoing initiatives. And this is Manitoba Hydro's.

So, developed asset health indices to enable effective age determination. You know, integrate asset condition data into maintenance activities. Develop a whole life cost model. But the model's not developed yet. It's a -- it's a future wish.

Implement a consistent risk management practice that is aligned with enterprise risk management. There's misaligned risk management and -- and -- at the bottom, an allocation of capital funds on a needs basis as opposed to historical budgeting

based on operating units.

So, take that as a collective, in addition to the -- other -- additional items that we looked at on the slide. And it's worthy of -- of a 10 percent reduction.

MR. ROBERT WALICHNOWSKI: All right. Thank you. Thank you, Mr. Helland, Mr. Oakley. Thank you, Mr. Chair, for indulging and letting me go over my time by a couple minutes. Those are my questions.

THE CHAIRPERSON: Thank you. I know that Ms. Kapitany has a -- has a question.

VICE-CHAIR KAPITANY: So, this is a question for you, Mr. Helland.

Earlier in your discussion with Mr. Walichnowski, you had mentioned different styles of maintenance. And in your direct evidence I didn't find a reference to that.

And then later in the discussion, you talked about a proactive system and different strategies -- a portfolio of strategies.

Is that the same thing you were speaking of when you said different styles of maintenance? Or, could you elaborate on that statement?

MR. PETER HELLAND: Okay. In -- in

general, the answer is yes, slightly different phrasing but same intention.

So, with different asset classes and their place within their -- and -- and looking at their place within the system, so, once again, maintaining that system focus, when you're evaluating assets, you would dev -- you would develop different asset strategies for those assets.

So -- and they'll be a -- a range. So, at one end, you have your -- I'll -- I'll call them the more important assets, the -- the Crown jewels, if you will, major generating units, major transmission lines, radial lines, where -- where the risk posed by those assets is -- is -- is higher.

So -- sorry -- the consequence of those assets is higher. So, if you'll remember the risk matrix? There's a probability of failure, which is related to asset condition, as -- as discussed and, then, there's the consequence of -- of -- of a loss of those assets. So, when you evaluate that, you will -- you will choose to situate yourself on that risk matrix in different positions. So, you're -- as you're -- maybe it's worth bringing up that graphic.

VICE-CHAIR KAPITANY: But -- but that's not a style of maintenance, right?

MR. PETER HELLAND: No. No.

VICE-CHAIR KAPITANY: That's -- that's a choice of --

MR. PETER HELLAND: It's not a style of maintenance.

VICE-CHAIR KAPITANY: -- when you would do maintenance or whether the maintenance needs to be done. I was wondering what you meant by "styles of maintenance."

MR. PETER HELLAND: It's -- I should probably say "maintenance strategies" --

VICE-CHAIR KAPITANY: Okay.

MR. PETER HELLAND: -- might be more -- more precise. Sometimes, I speak in -- in a very informal language but, sort of, your -- your asset management strategies, your maintenance strategies are informed by risk and, so, asset health and, then, the consequence of failure, and you position yourself on the risk matrix.

So, once again, pole top transformers -- I can go all the way to failure, but they will never have a consequence that is high enough to move it out of that green area on the risk matrix. So, I have a run-to-failure strategy, whereas some assets, when they fail, the consequence is high enough that I have

to maintain the health at a sufficiently high level, so that I stay in the green area.

VICE-CHAIR KAPITANY: Okay. I've got it. Strategies is what you're talking about.

MR. PETER HELLAND: Yeah. So -- so, sorry about that. I --

VICE-CHAIR KAPITANY: No problem. Thanks.

MR. PETER HELLAND: -- mixing of vocabulary. Mr. Ghikas will probably chuckle at that, based on previous interactions, but...

THE CHAIRPERSON: Okay. M. Hacault, I understand that you've asked that your time be bumped to 45 minutes from 30 minutes?

MR. ANTOINE HACAULT: It wasn't so much a bump, Mr. Chair, but that's the -- what we had been provided for by way of spreadsheet a couple weeks ago, and I had prepared accordingly.

If it's the Board's wish that I stick to 30 minutes, we'll do that.

THE CHAIRPERSON: I think -- I think we're fine at 45 minutes, but what I would suggest is, maybe, we should take the morning break now, because I don't want to cut you off halfway through your -- your cross. So, we're going to -- we'll break until 10:35.

--- Upon recessing at 10:19 a.m.
--- Upon resuming at 10:38 a.m.

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

CROSS-EXAMINATION BY ANTOINE HACAULT:

MR. ANTOINE HACAULT: Thank you, Mr. Chair and members of the Board, and Midgard Consulting. My name is Antoine Hacault. As you may have heard, I'm from TDS and we act on behalf of Manitoba Industrial Power Users Groups and large industrial users in this province.

The first question -- or line of questions I'm going to ask about is -- it relates to 2nd Round interrogatory that was asked by Coalition of Manitoba Hydro.

It's 2nd Round, 125 (a) to (c). And if we go to -- in -- in the document it actually says it's talking about the Grand Rapids Unit 4, and that's a little bit further down I think is the answer to B. Right here.

So, just to put it into context, your IR deals with the Corporate value framework related to that particular project. And I wanted to better

understand some of your general comments as it relates to a specific project.

So, we see at the top of the value measures. There's the line that says:

"Lost generation risk."

Do you see that?

MR. PETER HELLAND: Yes.

MR. ANTOINE HACAULT: And if we look at the total value and compare it to the lost generation risk, that lost generation risk really drives what happens in the total value.

Is that fair?

MR. PETER HELLAND: Yes, in the scoring it's -- it's -- it dominates the scoring.

MR. ANTOINE HACAULT: Okay. Now, to better understand what this point system means when we look at lost generation risk, could we go to the answer to the response at (a) -- see, the magic's happening already. Thank you, Ms. Schubert.

We see that lost generation risk is used to represent the impact of the unavailability of generation capacity on the grid, calculated based on the cost to replace or not sell the power that is not generated.

Now, if we go back, you've got large

points. Is it your understanding that this points number tells us anything about the internal rate of return with respect to this particular project?

MR. CHRISTOPHER OAKLEY: Well, again, because we're not really sure what the minimum system is, we couldn't tell you what the actual purpose of the system -- of that unit is in the system.

And -- and frankly, you -- there's not like some are coloured green and some are coloured blue, and -- they're all -- they're all working together in -- in a network but -- but, you know, for example, if you took that unit out of the system, would the system be deficient in generation? Well, we don't know, because we don't know what the minimum system is.

We do know that the system has surplus and, you know, quite substantial surplus, we believe, based on evidence. So -- so we don't know what that value is derived from or is derived over the entire life of the asset with -- with assumptions about future revenues.

It's not clear, you know, we've got what we've got there. Clearly, it's the driver of why this project would make sense from Manitoba Hydro's perspective.

MR. ANTOINE HACAULT: Okay. So, am I understanding your response, and I'll take it in little bites, Step 1 is det -- determine is this project required for your minimum -- minimum system requirements?

MR. PETER HELLAND: Yeah, I think that would be appropriate and -- and maybe some discussion about -- in the case of Manitoba Hydro should firm exports be considered part of minimum system. And we think you could have a meaningful discussion about that.

There is a commitment, obviously, to an external customer. You have to meet your commitment. But from our understanding, the external customers don't bear the capital risk should the contract end or -- or one thing or another happens.

So, that will still always revert back to ratepayers domestically. So -- so I think it's really important to know whether something notionally could be categorized as minimum system or where you're getting close to your minimum system requirement, because now you know how to evaluate the thing you want to do.

MR. ANTOINE HACAULT: And once we get past that stuff, I can understand your comment to

mean, just like Step 2 might be, is there a business case for this particular expenditure?

MR. PETER HELLAND: Yeah, I think there would always be a business case even if it was for reliability. But with -- with the rebut -- reliability asset is going to be based much more upon this is essential to -- to the minimum system, if I don't have this we can't meet our reliability expectations.

But certainly when it's for -- you know, largely for export or intended primarily for export, then it really should just be a self-sustaining business case that says, here's what I'm going to spend on it, here are the revenues that I'm going make.

Again, risk -- risk adjusted over the expected return period and -- and that should be a separate sort of thing brought to the -- to the Board for evaluation.

MR. ANTOINE HACAULT: Okay. Does this analysis tell us anything about whether or not it makes sense to do that investment today versus deferring that investment to -- to four (4) years from now?

MR. PETER HELLAND: No, it does not.

In fact, somewhere in the -- the IRs, I believe it's AMCL commented, and that would probably be subject to check, but that deferrals are not something that -- that are well -- well addressed.

MR. ANTOINE HACAULT: And is it your point that it would be something that would be useful to know whether or not it makes sense to defer this project for four (4) years, using this as a specific example.

MR. PETER HELLAND: It would be of value to ratepayers. So you -- you could provide a better cost-reliability risk triangle to ratepayers if you consider deferrals and have deferrals as part of your decision making.

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

Yesterday, Mr. Oakley referred to an acronym MAIFI, M-A-I-F-I. It was at slide 13 of the presentation. I don't think we need to go there.

I'll just be asking some questions with respect to other standards of measure because that's another standard, and whether Midgard recommends their use by Manitoba Hydro at all.

First, a little bit of background. Generally, are standard metrics defined in this area

by the Institute of Electrical and Electronic Engineers -- referred to as IEEE?

MR. CHRISTOPHER OAKLEY: Which standard are you speaking of?

MR. ANTOINE HACAULT: The standard for SAIDI, the outage standards.

MR. CHRISTOPHER OAKLEY: There -- I don't really believe there's actually an IEEE standard around outages, per se. There are some -- there are some standards about how you would actually measure outages, but even then there's not broad -- there's not universal acceptance of what qualifies as -- for example, as a SAIFI event.

Sometimes utilities will use a minute, sometimes they'll use five (5) minutes. It -- it depends a little bit on the utility's application.

It's the same problem we have with momentaries because there's not universal acceptance of what qualifies as a momentary.

MR. ANTOINE HACAULT: That's a useful answer because I had had some discussions with the Manitoba Hydro panel about the outages and what was measured by SAIDI. And I think the record indicates that Manitoba Hydro -- this is at page 1220 of the transcript and also MIPUG Coalition I think 1-5 --

that Manitoba Hydro uses a one (1) minute interruption in SAIDI.

And do we know -- this is my question -- whether the comparable analysis that's done by others uses a five (5) minute interruption or a one (1) minute interruption, or what interruption they use to report their SAIDIs?

MR. CHRISTOPHER OAKLEY: In my understanding, most Canadian utilities are using a minute, and I -- that's subject to check. I haven't -- I'd have to go actually check with individual utilities to see what their standard is, but I think they typically use a minute in Canada.

Canada was actually, through -- through CEA, with the old CEA that -- that used to be, was kind of a leader in this. And a lot of American utilities would actually look at the Canadian results because it was actually a benchmark that was available.

There was no -- no way that all the -- the Americans could get together and decide what to do, so what they would do is compare themselves to the CEA. And -- and the CEA was a bit of a forerunner in creating some of those standards.

And -- and I think some of the new CEA

groups that actually do include American utilities do report in to those standards now, too, but you can actually select out just the Canadian contributors to it.

The Americans use -- again, they will choose what makes sense for them, and they'll often self-compare. They'll -- they'll say, Here's our -- here's our safety result using our standard, and we'll show you how we historically do. But they don't always compare themselves to peers.

MR. ANTOINE HACAULT: Okay. Thank you. Is there another standard interruption calculation that's referred to as Customer Average Interruption Duration Index which is calculated as a total of customer interruption divided by total number of customers interrupted?

MR. CHRISTOPHER OAKLEY: Yeah. So basically, you take SAIDI and divide it by SAIFI, and then you end up with -- with when a customer gets an interruption, this is how long it typically is.

MR. ANTOINE HACAULT: So it only includes customers who actually experience an interruption versus a system interruption which doesn't take into account the customers that get interrupted?

MR. CHRISTOPHER OAKLEY: No. I -- I -- the way I've seen it done is you just take SAIDI and divide it by SAIFI. A lot of people won't report CAIDI because it's simply a division of the two (2) terms.

So all of the things that go into getting you SAIDI that -- that the utility is tracking, then all of the things that -- that go into SAIFI, they just divide those two (2) numbers and you get a CAIDI, because it's a Customer Average Interruption Duration Index. It's not for -- a particular customer might have a very different result than that.

MR. ANTOINE HACAULT: Okay. And what about Customer Average Interruption Frequency Index? That's CAIFI?

MR. CHRISTOPHER OAKLEY: That's -- that's sort of SAIFI. That tells you how many interruptions the system gets, and you can divide it by the number of customers.

MR. ANTOINE HACAULT: If you know the number of customers that were interrupted.

MR. CHRISTOPHER OAKLEY: Well, in fact, SAIFI is -- is -- I think we're talking -- I'd have to pull up one (1) of -- one (1) of the SAIFI

tables. Hang on. Let me just see here.

SAIFI interruptions basically does exactly what I just described. It just says, Here's all of our interruptions divided by our number of customers for Hydro in -- let's see -- twenty (20) -- 'F' -- 'F' -- I'm looking right now at slide -- oh, there's -- there's one (1) of them, too.

If you look at SAIFI is the -- is the amber line, let's say, and it's about one point five (1.5) it looks like, if I'm drawing across the net scale. So the average customer's going to see one point five (1.5) interruptions in a year.

And so if you divide SAIDI by SAIFI, you'll end up with CAIDI, so that would mean that one point five (1.5) interruptions would be so many minutes or fractions of an hour typically.

MR. ANTOINE HACAULT: Okay. So your experience is that there isn't really a difference where utilities actually try to focus on the number of customers that have interruption as opposed to the system and how many customers are on the system?

MR. CHRISTOPHER OAKLEY: You can do averages and you can -- so that's what the average tells you. This is what the average customer's going to see, and it's kind of indiscriminate if you're

using SAIFI as a rule -- like all customers are treated as the same. If they get an interruption, it counts as an interruption.

The -- the T-SAIFI will tell -- tell you, for those customers that are fed by the transmission system typically, there's an outage associated with a transmission outage.

MR. ANTOINE HACAULT: Okay.

MR. CHRISTOPHER OAKLEY: And I'm just trying to think. Certainly if you have -- there's the worst performing feeder approach. So sometimes utilities will say, I've got an outlier feeder or a set of outlier feeders. They're so far off of my average that I have to take action on those particular feeders because it's actually impacting those customers extensively, and a lot of -- so they'll have -- they'll have a feeder, worst -- worst feeder program that they'll actually go after and try and clean up the worst feeders in the system to deal with the outliers.

MR. ANTOINE HACAULT: Okay. Thank you. Now getting back to what you'd put in your slide, the Momentary Average Interruption Duration Index, would that to your understanding be interruptions that are less than one (1) minute?

MR. CHRISTOPHER OAKLEY: Those -- that could actually be identified. So there are a lot of interruptions, depending on where they're at in the system, that you -- you might not even know the interruption occurred unless someone was tracking it.

So if a customer for example had a sensing device -- and, you know, you can get these actually pretty economically if you want to. You plug them in, and a lot of -- a lot of meters will do this now. They just record I had an interruption. It might have been momentary.

MR. ANTOINE HACAULT: Now, you said I think in your last answer that this could be done quite economically.

Can it be done quite economically at an industrial level?

MR. CHRISTOPHER OAKLEY: I think most -- most industrials have probably adequate controls at their service entrance. They could probably set that sort of thing up. I don't want to speak for a particular industry, depending on their configuration.

There certainly is power quality metering that you can install at -- at the service entrance -- I've done it myself -- and it'll tell you a lot of things including momentary sags, surges, you

know, frequency deviations if you have those.

It'll tell you your active power draw, lots of things. But you get a lot of data, and so people don't just typically leave them humming along all the time because at some point you can't actually analyse the data. There's just an overwhelming volume.

It would be, for example, impractical for -- for Hydro to go put extensive metering at every possible service entrance because frankly, you know, every second ticks over, you've got sixty (60) cycles. Something might have happened on any of those cycles.

You start multiplying numbers, you know, a million customers by how many hundreds of millions of seconds times sixty (60) cycles, and, you know, the -- the data becomes overwhelming.

MR. ANTOINE HACAULT: Now, you said generally. My question was more specific to industrials if -- 'cause I represent industrials.

Is there some use in having this data on momentary interruptions for industrials and keeping track of it for asset management decisions?

MR. CHRISTOPHER OAKLEY: I would think it would be useful for an industrial who had a very sensitive load to monitor their power quality very

carefully.

They may have to take some actions themselves to -- to modify or mitigate that if it's not possible to achieve it on the system because if you impose the requirement on the system, you might impose costs that are really far beyond what you might expect, you know, redundant feeders.

Potentially, wherever you're located, you might have to have electronic switching instead of mechanical switching. There are -- the cost can amount really rapidly if you want to eliminate all momentaries.

MR. ANTOINE HACAULT: And my understanding is that there's also momentary average interruption frequency index.

Would that be a variation on the frequency as opposed to the duration?

MR. CHRISTOPHER OAKLEY: No. Momentary -- the momentary average interruption frequency index is talking about the frequency of momentaries. It's sort of like safety but on a smaller time scale, again, down to whatever resolution you can get to because there is typically a minimum limit, too.

MR. ANTOINE HACAULT: Now, I believe

it was explained by Mr. Patterson yesterday that, if the problem was only temporary, then -- I don't know if I'm getting the lingo correct -- there's automatic high voltage electric switches that shut off the electric power when the trouble occurs.

And then the -- there's tests and -- to the electrical line. And then it kind of resets itself?

MR. CHRISTOPHER OAKLEY: That's -- yeah. So, depending on where you're at in the system -- if you're on a rural system, there will typically be what we call circuit reclosers we used to call them. I -- I always think of them as OCRs because it was oil circuit recloser, but a lot of them aren't oil based anymore.

But -- but those devices will -- you'll stagger them along a very long radial line. So, if -- if a lightening stroke (sic) happens or -- or a bird gets on the wires or a tree falls on the far end, it doesn't take all of the customers out on the entire line back to the substation, it'll just take it back to the last OCR.

Those -- it will trip off. It'll -- it's called a recloser because it'll actually trip itself off, and then reclose after, hopefully,

whatever happened cleared.

So, if it was a bird on the wires, hopefully the bird falls off the wires, probably in less good shape than it started. But -- but then the customers are restored automatically. No one has to roll a truck. You know, people get back -- back on service without intervention by -- by a human being.

If a tree falls against the line and it actually trips that OCR, and then it tries to reclose and trips again, a lot of times, that's it, it's locked out and someone's going to have to roll the truck and get the tree off the line.

But that just limits the damage to the far extremities, which is why when you limit the far extremity of the line, you're going to see everything that happens from where you're at back to the substation where the line is sourced.

MR. ANTOINE HACAULT: Okay. Would I be correct in suggesting that, if you're getting a lot of these momentary interruptions, that it might be signalling, and if you were recording them, that it might be signalling that there's some attention that needs to be paid to that area?

MR. CHRISTOPHER OAKLEY: If you're getting a lot of them, it will typically tell you

something like I've got trees growing too close encroaching on the wires, and -- and sometimes that unavoidable.

People generally don't want to have all the trees along their residence -- in front of their residences mowed down to prevent the -- the contact with the wires. So, you'll see creative situations where the utility will actually trim the trees around the wires so the people can keep their trees, but then those branches above the lines have a tendency once in a while to fall on them.

So, it's a tradeoff between, again, as -- as Mr. Helland had said earlier, a tradeoff between the different desires people have. They want reliable power, but they want their trees. And so, sure you could mow the trees down and everything is good, you're not going to have any power problems, but it looks a little more bare and your windbreak is gone.

And we'll see the same thing with, for example, 66 kilovolt lines, transmission lines, which are just a glorified feeder in some ways. They're a sub-transmission system, but they are a transmission voltage by the -- by the CEA definition, and I think Hydro's definition, as well.

So, those are typically -- have

typically a narrower right-of-way than -- than a typical transmission, or a higher voltage transmission. And we can often see that those 66 kVs will have more momentaries because of branch falls or that sort of thing.

And -- and the conductors aren't spaced as widely as they are on the higher voltage lines either, so a really big bird can sometimes get across a couple of phases, again, with normally a disastrous result for the bird.

MR. ANTOINE HACAULT: Yeah. And what you're describing as -- as some of the balancing that we have on controlling natural events affecting reliability, cutting trees and vegetation management around trees, that's an increased expense in an O&M.

And we have to balance how much of that we're going to do to increase reliability on natural event failures?

MR. CHRISTOPHER OAKLEY: Yeah. And, in fact, one (1) of the issues we -- we raised with -- with Hydro's proposed plan is a lot of their outages aren't actually due to equipment failures, they're due to other things.

So, money that you spend to fix equipment that isn't actually addressing those other

things doesn't actually change the reliability significantly.

So, as -- as I mentioned, there's a slightly deteriorating trend in -- in equipment performance, but a lot of other things aren't going to get addressed by that capital spend.

So, you're not going to certainly change storm frequencies. If you want to change your standards to address -- you know, to harden the facilities, there's a really big spend to do that.

If -- you can address the tree clearing issue by -- by appropriately spending on tree clearing. And again, we've had this discussion with other utilities in -- in the past, perhaps even with Mr. Ghikas, that you want to optimally spend on chopping down trees because utilities are not tree harvesters; they are utility providers.

And to a utility, a tree isn't a tree. A tree is a risk, and you manage your risks appropriately. So, a big tree near a line is going to be seen as a risk, especially if it's dead or -- or potentially leaning to the line.

A little tree far away from -- from the line is not a risk really, it's not a significant risk, and the value of cutting it down is pretty

inconsequential. So, you have to treat trees like risks if you're a utility.

MR. ANTOINE HACAULT: Okay. Thank you. I think another example that you referred to is the transformers and being proactive in monitoring emission of gas from transformers and deciding whether or not the transformer needs to be replaced?

MR. CHRISTOPHER OAKLEY: Certainly one of the things you will look for is off-gasing. And so, some transformers actually have gas sensing; not all do.

And if -- if they don't have gas sensing, you'll typically do samples semi-regularly, send it off. You'll want to see whether or not the -- the stress fields inside the windings are actually breaking down the oil, the -- the insulating oil.

And -- and what happens is it actually breaks the carbon chains apart. And when they reformulate, some of them will turn into tar and -- and actually get into the paper between the windings and plug the windings up, and the other shorter parts of the radicals come together and gas off.

And so -- so, as you start having gas coming out of your transformers, you know that the thing is getting closer to end of life. There's a

level of gassing that's acceptable because there are pretty extreme fields inside transformers.

But when the gassing starts to kind of go exponential, you know that -- that you've probably actually got windings that are so plugged up that they're not getting cooling oil around the windings. And eventually, that will fail the -- the transformer when that happens.

MR. ANTOINE HACAULT: So, my understanding that you can identify the problem, and you might be inclined as a utility to deal with the problem before it actual fails, that would be an option if you saw that the level of gas emission was high enough?

MR. CHRISTOPHER OAKLEY: Yeah. Certainly, one (1) of the parameters you look for with a -- with a transformer. You'll -- you'll look for leaks, things like that. The bushings leak sometimes. In that case, you might be able to just replace the -- the gasket around the bushing.

But if you're actually getting gas -- or if you're getting a lot of off-gassing, it might mean that the transformer becomes unusable or it's going to be at risk of -- of failing catastrophically.

MR. ANTOINE HACAULT: Thank you. One

(1) of the things that was discussed yesterday was the possibility as you're dealing with replacements on your system of installing automated digital fault detectors.

Would -- would that be of any use, or what's your comments on that?

(BRIEF PAUSE)

MR. CHRISTOPHER OAKLEY: Are you suggesting from a customer perspective whether you'd have it at your site or whether the utility would put it on its site?

MR. ANTOINE HACAULT: Well, whether it gets installed period to determine -- make decisions on asset investments.

MR. CHRISTOPHER OAKLEY: A lot of new equipment now comes with a whole bunch more sensing than we used to have in the old days when they were just basically kind of dumb equipment.

I mean, they did their job reliably but -- but they couldn't tell you what happened. Why you had to open the cabinet, look inside, and see if the -- if the fittings -- you know, for example, on a breaker, whether actually things were lose, whether it

needed lubricant, or, you know -- there were lots of technologies and breakers. There would be air blasts that you had to make sure the -- the air compression system is working right, the dryers are working right, you're not putting water into them.

So lots of different maintenance procedures you would use for the old ones. But the new ones will actually monitor themselves in a lot of cases.

You pay for it, but it's -- it's actually doable now because the digital equipment has become so much less expensive to actually build into the units now.

MR. ANTOINE HACAULT: So would I be offline if I would suggest that this type of new equipment could save hours of crew time by reporting the exact location of faults that would otherwise have to be determined manually by Manitoba Hydro crews?

MR. CHRISTOPHER OAKLEY: Yeah. If -- if you had an appropriate piece of equipment and there was a better reason to replace it then just because you wanted to see, there might be some other lower cost ways to monitor at a particular point in the system.

It depends on the sophistication of the

monitoring you want to do. So if you -- if you need super fine granularity, you want to see power quality and momentaries and things like that, you might have to put in some specialized equipment.

A lot of times, that would make as much sense to put inside the industrial site because you care about it as much as you care about it, and -- and you want to know what's going on. And -- and you could provide that information to the utility if it was helpful to them.

MR. ANTOINE HACAULT: Thank you. I'm going to move on to the subject of surveys. And at slide 24 of Midgard's presentation yesterday, there was a quote that Manitobans strongly favour keeping rates as low as possible over other aspects.

First, being present yesterday for my cross-examination of the Hydro panel, you would have heard Ms. Brako confirm -- it's at pages, I think, 1550 and 1551 of the transcript -- that there are no pre-outage or post-outage surveys of large industrials.

So secondly, did Midgard conduct a survey of large industrials to measure their concerns about reliability?

MR. PETER HELLAND: No.

MR. ANTOINE HACAULT: Did it conduct surveys to measure their cost of outages to them?

MR. PETER HELLAND: No.

MR. ANTOINE HACAULT: Did it conduct a survey of large industrials to measure their willingness to pay for certain levels of reliability?

MR. PETER HELLAND: No.

MR. ANTOINE HACAULT: My next question is: Does Midgard recommend surveys, or at least data collection, from large industrials on value of lost load, in order to assist Manitoba Hydro in making asset management and reliability decisions?

(BRIEF PAUSE)

MR. PETER HELLAND: Value of -- we could see that a value of loss load information would be valuable to Manitoba Hydro to inform its decision making.

MR. ANTOINE HACAULT: Now, does Midgard have knowledge of any surveys in other jurisdictions directed to commercial and industrial customers, which could be used by Manitoba Hydro as a starting point to create its survey in Manitoba?

MR. CHRISTOPHER OAKLEY: The --

industrials are kind of a different sort of a group. There -- there are far fewer of them and they have very large power interests.

And what we've seen done, certainly, in some Ontario jurisdictions, Hydro One, for example, will call in the industrials to specific customer outreach meetings and talk to them about those sorts of issues.

They will typically have questions. So they actually don't just sort of send a survey, or they may send a survey out as well. But they actually prefer to get them in a room and sort of talk to them. Because there's more nuance to it than just check this box or check that box.

The industrials might not always tell you that they felt they were heard in some of those things because, although -- although particular industrials might have real concerns about interruptions, they'll have concerns about costs. And so, they -- they will really, really work hard to try and -- to let the utility know that -- that we have costs thing we've got to deal with here.

But certainly, especially for those that are particularly sensitive to -- to outages, they will, you know, pass that information along to -- to

the utility and say, This is how it's hurting us to have these interruptions.

So again, but it's not -- it's not typically done just as a generic send out a survey sort of a thing. There's -- we've seen it done where they actually bring them into a place and -- and get together and discuss it with them.

MR. ANTOINE HACAULT: So drilling down then, for Manitoba, not focusing on a survey specifically, does Midgard have any views as to whether or not it would be advisable for Manitoba Hydro to engage proactively on determining value of lost load of its industrial customers?

MR. CHRISTOPHER OAKLEY: I think we're -- we -- hopefully our evidence showed that we think it's important for the utility to know what its customers expect.

Now, the customers will typically want the best possible power for the lowest possible cost. And the -- the determination of what's acceptable as far as reliability goes, is going to be -- is going to -- as we've discussed -- vary between customers.

But -- but I think that's important information for a utility to know when it's actually trying to assess the value of the investments it's

making. It needs to be informed by -- by customer input.

Industrials and -- and, you know, general service customers and residential customers. It -- it's serving those customers. If it just is deciding itself what they need, that might not end up in a place that's going to satisfy people.

So -- and there's going to be a balance because different customer classes, as we've discussed and as was discussed earlier with other panels, it varies quite a bit among customers.

MR. ANTOINE HACAULT: Thank you for that. I'm going to move to MIPUG-Coalition Round 1, second question, 'B'.

In this IR posed by MIPUG, Midgard, in response to the question 'B', critiques Manitoba Hydro's survey of residential customers as not being consistent with industry best practices for determining customer preferences.

Does that continue to be true?

MR. PETER HELLAND: Yes. Our response is as stated, and that has not changed.

MR. ANTOINE HACAULT: Now, if we move down to response 'E' to this interrogatory, there's reference to a survey performed by Innovative Research

Group, and Board counsel book of documents in the last tab has an extract of this survey and information.

Am I right in understanding that this survey was commissioned by the BC Residential Customer Intervener Association?

MR. PETER HELLAND: Correct. That survey was commissioned by RCIA.

MR. ANTOINE HACAULT: And were you part of that process as Midgard?

MR. PETER HELLAND: I was, yes. No, let me clarify. I was as the then Director of RCIA.

MR. ANTOINE HACAULT: Okay. Now, is it possible to undertake to produce a copy of the relevant portions? Because there's just a footnote in the evidence and some extracts in -- of -- a list of priorities.

MR. PETER HELLAND: Yes, we can certainly take it as an undertaking to provide that onto the -- that document onto the record. It's part of the public record, so.

MR. ANTOINE HACAULT: I'm just asking for the portion which you would say would inform us on the best practice of that type of survey. It might include the survey and -- and the analysis leading to the actual survey.

DR. BYRON WILLIAMS: Can I just ask a question of clarification, Mr. Hacault.

In -- in terms of -- are you looking -- that sounds quite fine. Are you also looking for the survey results? Would that be helpful as well? I just want to know exactly what you're looking for, sir.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Thanks for offering that, but my question in -- in my inquiry, was related to industry best practices and my next question was to Midgard.

Is this an example, in other words, this survey, an example of a residential survey which Midgard recommends as being consistent with industry best practices for determining customer preferences.

MR. PETER HELLAND: So, I'll -- I'll try to be a little nuance with the question.

There was a specific assignment for this survey and this survey accomplished that tasking, according to best practice.

Manitoba Hydro's survey needs are -- are broader, so in terms of an example, the principles represented are best practice, but they're -- I

wouldn't look at it to be a comprehensive list of all the questions or considerations that Manitoba Hydro should investigate.

So, it -- it lays out the recipe, if you will, but not the -- a -- a generic recipe but not all the specific needs, you know, different menu options that you -- you would need to -- to address.

So, it's -- yeah, it -- it -- it gives you best practice, but it -- it wouldn't give Manitoba Hydro oh the -- this is a complete survey for you to administer.

MR. ANTOINE HACAULT: Okay. But what parts of the survey, at a high level, does this address, which the Manitoba Hydro survey did not address?

MR. PETER HELLAND: So this -- this survey addresses willingness to pay -- willingness to pay interests and where the concerns lie in evidence with regards to Manitoba Hydro's survey is the -- the mechanisms or -- or approach that Manitoba Hydro used, specifically with regards to issues around leading questions.

This approach provides a more neutral approach to questions so that they -- they are -- are not subject to being leading and -- and directing a

certain potential outcome to the survey.

MR. ANTOINE HACAULT: Thank you for that.

MR. PETER HELLAND: Does that answer your question?

MR. ANTOINE HACAULT: Yeah. Thank you for explaining to the Board.

THE CHAIRPERSON: Mr. Hacault, I -- I just want to tell you you've got seven (7) minutes left. Okay.

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Thank you.

MR. PETER HELLAND: For clarity, was the undertaking settled? 'Cause I -- 'cause there's sort of two (2) things. Like, I can provide the survey and I would simply provide you the whole PDF and -- and let you decide what's relevant to you.

There's also a -- some academic literature referenced in the survey with a link. Should I also -- try to obtain that academic literature, 'cause it's summarized in the survey.

MR. ANTOINE HACAULT: So, when I pulled up the document, I didn't think that the whole document was relevant to our discussion and the point

you were making. I'll leave it to your discretion ---

MR. PETER HELLAND: Okay.

MR. ANTOINE HACAULT: --- as to what you think would be useful to the Board to illustrate your points on the difference between the survey methods that are available and the ones used by Manitoba Hydro.

MR. PETER HELLAND: Understood. Thank you.

MR. ANTOINE HACAULT: Thank you.

DR. BYRON WILLIAMS: And, just to confirm our understanding -- the undertaking with reference to footnote 68 of the Midgard Evidence to provide relevant portions of the material sited in that footnote that are illustrative of best practice.

MR. ANTOINE HACAULT: Correct.

DR. BYRON WILLIAMS: Thank you. We can do that undertaking.

--- UNDERTAKING NO. 21: Footnote 68 of the Midgard Evidence - Provide relevant portions of the material sited in that footnote that are illustrative of best

practice

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Now, moving to surveys of what we've referred to as VOLL -- V -- V-O-L-L.

Are you aware as to whether or not that kind of study was recommended in Newfoundland?

MR. PETER HELLAND: For clarity, VOLL is Value of Loss Load.

MR. ANTOINE HACAULT: Yes. If not, I'll move on.

MR. PETER HELLAND: No, I'm not aware.

MR. ANTOINE HACAULT: Okay. In such a survey, do you have any views as to whether or not it would be appropriate to gather information on issues like production and revenue impacts, lost wages, additional wages such as overtime, damage to production equipment, impacts of short and longer term duration outages?

MR. PETER HELLAND: Matters pertaining to Value of Loss Load at that level of detail are outside my area of expertise, I'm afraid.

MR. ANTOINE HACAULT: Okay. Thank you. Same thing with you, Mr. Oakley?

MR. CHRISTOPHER OAKLEY: I -- I'm -- from an industrial customer's perspective, all of those things probably represent constituent parts of Value of Loss Load. I -- I suspect that that information is useful for any utility to know what -- what happens with its customers when the -- when the power goes off.

But that doesn't mean that -- that it makes sense, necessarily, to -- to again harden the system to address it, but at least it's good to understand what the -- what the value is to customers. It's part of your -- of your optimization.

MR. ANTOINE HACAULT: Thank you. And I have a couple questions to finish my questioning with respect to the Copperleaf software.

Firstly, are either of you aware of that software and have you used it?

MR. PETER HELLAND: We are aware of the software. Have not used it personally, however, have visited Copperleaf in their offices and was given a tour of the -- I'll say the basic inner workings and mechanics of the software.

MR. ANTOINE HACAULT: Okay. And does that software give flexibility to the user to assign weighting or is that done by the software?

MR. PETER HELLAND: The -- the user -- my understanding is the user is able to set the -- and what I'll describe as the input parameters. So, some of the constants that you put in. It -- it -- generally feeds -- it feeds the data -- the -- the user feeds the data.

MR. ANTOINE HACAULT: And, does that software give the user the flexibility of attributing scores, for example to people who are largely on the transmission line feeds, as opposed to distribution level?

MR. PETER HELLAND: I actually don't know that level of detail.

MR. ANTOINE HACAULT: Okay. In the materials I went through with the Manitoba Hydro Panel, I had asked whether or not the software could consider unserved energy costs, frequency costs and duration costs.

Do you know if there's flexibility and the ability to consider those items in Copperleaf?

MR. PETER HELLAND: So, our understanding is Copperleaf, as a tool, is -- is not solely oriented around utilities. It has broader applications to it, to asset management.

So, as it pertains to specific

questions such as that, I'm not -- I'm not a 100 percent sure if that level of tailoring can be done in the current version. It -- it's just a level of detail beyond which I've investigated Copperleaf.

MR. ANTOINE HACAULT: We had gone --

THE CHAIRPERSON: You've got about a minute, Mr. Hacault.

MR. ANTOINE HACAULT: Thank you. I think that's all I'm going to ask about Copperleaf then and that would complete my questioning. Thank you.

THE CHAIRPERSON: Thank you. Mr. Czarnecki and Mr. Ghikas is doing the cross. I'm just wondering if you want to do it from there or if you want to switch rows. Okay. Why don't you switch rows.

And as -- as you're switching rows, Mr. Ghikas, I -- I hate doing this to counsel, I hate breaking up cross, but we're going to be going over the lunch hour so if you could go anywhere from 12:00 to 12:30. Figure out a place which would be a good -- good break for you and then we continue after lunch.

DR. BYRON WILLIAMS: Mr. Chair --

THE CHAIRPERSON: Certainly.

DR. BYRON WILLIAMS: Could we have a

three (3) minute or five (5) minute health --

THE CHAIRPERSON: Sure. We'll have a five minute break right now.

DR. BYRON WILLIAMS: Thank you.

THE CHAIRPERSON: Thank you.

--- Upon recessing at 11:24 a.m.

--- Upon resuming at 11:30 a.m.

THE CHAIRPERSON: Okay, if we -- we could continue, Mr. Ghikas.

CROSS-EXAMINATION BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: Thank you, Mr. Chairman. Good morning, Members of the Panel and gentlemen. We -- we see each other again, Mr. Helland, Mr. Oakley, nice to see you as well.

As you know, my name is Matt Ghikas, G-H-I-K-A-S, and I'm just going to ask you some questions on behalf of Manitoba Hydro.

I wanted to follow up, first of all, if we can start on page 7 of your evidence, which is Exhibit CC-8 and right at the bottom there's a Number 6, and this is where you provide your summary list of recommendations and culminating in Number 6, where you

say:

"At least a 10 percent reduction in BOC capital budgets is warranted, until such time as Manitoba Hydro provides evidence that its asset deterior -- decision-making is supported by quality asset management data, tools, and decision-making frame-works."

So, you'll see in Number 6 there, and I -- and Mr. -- my -- my friend Mr. Walichnowski pointed this out, that it says "At least 10 percent" there.

And it -- it -- there are other references to it in the introduction and -- and the conclusion of your report, that also say, "At least 10 percent" but, in your opening presentation deck, you just say "10 percent".

So, I just wanted to ask you, first of all, which is it?

MR. PETER HELLAND: At least 10 percent.

MR. MATTHEW GHIKAS: Okay. So, it -- what does that mean, then, like 11 percent, 15 percent, 20 percent?

MR. PETER HELLAND: It means at least

10 percent.

MR. MATTHEW GHIKAS: Okay. So, now, I take it that the number you have selected there is a function of your -- your judgment. Correct?

MR. PETER HELLAND: It's a function of the evidence that we found on the record and, then, our interpretation of that evidence.

MR. MATTHEW GHIKAS: Okay. So, are you having difficulty agreeing with me, that you exercised your judgment in the number. I didn't think it was a trick question.

MR. PETER HELLAND: Okay. Yes.

MR. MATTHEW GHIKAS: Okay. Now, the -- you -- you indicated, in your evidence yesterday, and I've got the transcript here, but I suspect you'll -- you'll -- you'll recall this and -- and, I believe, you said it again here, is that you believe that, for all of the reasons that you described in that summary slide in your presentation, we believe they add up to far more than -- than 10 percent.

Do you recall that?

MR. PETER HELLAND: Yes, I do.

MR. MATTHEW GHIKAS: Okay. Now, if -- if, as you say, the cut could have been a lot more than 10 percent, why are you just recommending 10

percent or more? Why not recommend the amount that you actually think is warranted?

MR. PETER HELLAND: The amount we think is warranted is at least 10 percent.

MR. MATTHEW GHIKAS: Okay, but if you -- if you think that it is more -- I'm not trying to belabour this, Mr. Helland, but, you know, if you're saying -- you're going so far as to say we believe they add up to a lot more -- or far more than 10 percent.

So, why are you limiting yourself to at least 10 percent? Why not at least 15 percent or at least 25 percent? Are you being magnanimous or why?

MR. CHRISTOPHER OAKLEY: I think the -- the -- the evidence is not transparent enough to come down with a -- with a full, complete listing, as described.

There's no -- there's no prioritized list of projects showing the value at the incremental -- at the margin, for example.

We -- we've got a -- a -- a clear understanding that the system has surplus. Hydro says it designs for surplus, above and beyond what it would need to serve its domestic loads and, in fact, beyond what it needs to serve its firm -- firm export loads.

So, it would be -- and we asked for this -- could you tell us, sort of, what's in your minimum system, so that we know, when we're looking at these -- at these value framework structures, what's the basis of, for example, the economic?

We just had this discussion with Mr. Hacault, that -- that we're not really sure what actually is in that big driver that actually makes the project seem valuable. It's -- it's lost generation. That can mean a lot of things, and -- and Hydro says it could mean a lot of things.

But if we don't know if it's in the minimum system or in surplus, we don't know what -- how that is built up. And that number's really important, so there's not transparency to actually understand what is in those -- those value frameworks.

MR. MATTHEW GHIKAS: Okay. So what I took from that answer, if we boil it down again, is it -- it felt right to you based on the information you had.

(BRIEF PAUSE)

MR. CHRISTOPHER OAKLEY: I think it might be better to say it's our professional

assessment. You know, I mean --

MR. MATTHEW GHIKAS: That's --

MR. CHRISTOPHER OAKLEY: -- using the information that's available, we -- we felt that there was latitude for that.

There would come a point where your -- where you would restrict too much, and we didn't want to go to that point. That's -- you know, if the information was more transparent, we would have given a more precise, It looks like this much.

These projects could be deferred at least out of the test period. And we're not suggesting that some of those projects don't make sense at some point in the future. We're just saying it's certainly not clear in evidence that they're necessary in the test period.

MR. MATTHEW GHIKAS: All right. You and Mr. -- just as an aside, you and Mr. Rainkie both seem to be using the identical percentage, and I'm wondering which one of you came up with the number first, or whether it was coincidental?

MR. PETER HELLAND: It was coincidental.

MR. MATTHEW GHIKAS: Okay. Now, let's -- you referred just, Mr. Oakley, in your -- in your

previous answer to, you know, projects could be deferred I believe you said.

And you -- you'll agree with me that you haven't provided a breakdown of the at least 10 percent reduction anywhere in your evidence. In your written evidence, there's no breakdown, and I believe you already answered yes, that's true, to Mr. Walichnowski.

MR. CHRISTOPHER OAKLEY: Could you just rephrase that? I'm not sure I captured the -- the first --

MR. MATTHEW GHIKAS: You haven't -- you haven't provided a breakdown of how you arrived at the number 10 percent anywhere in your evidence.

MR. CHRISTOPHER OAKLEY: No. We -- we discussed a few projects that we thought, you know, you could actually pull those together and they would -- they would represent the 10 percent. In fact, they would exceed 10 percent.

But again, it's difficult when you look at the budget, because of the big balancing negative number, to understand what's even actually in the budget. So we could point to any of those projects and say, well, that one might maybe go out, and maybe that wouldn't be necessary.

But the balancing negative value kind of makes that pointless because it's clear that Hydro does not intend to do all of the projects in the budget or you wouldn't need a big negative line to balance it.

So they're working within an envelope. We don't know exactly how the envelope was determined, but we know there's an envelope, and they need a negative balancing number to make sure that all the projects in the list don't exceed the number in the envelope. That's our understanding of the mechanism.

MR. MATTHEW GHIKAS: Okay. In your answer there, you said, "We discussed a few projects." And I'm going to suggest to you that, in the eighty-five (85) page report, apart from talking about Bipole's reliability, you haven't mentioned a single business operations capital project that Manitoba Hydro's planned for the test years.

MR. CHRISTOPHER OAKLEY: But -- but actually, in our evidence, our -- our direct evidence and in earlier responses, we -- we did specifically mentioned at least a couple of them.

MR. MATTHEW GHIKAS: Yeah, the Pointe du Bois and the Grand Rapids Unit 4?

MR. CHRISTOPHER OAKLEY: Correct.

MR. MATTHEW GHIKAS: Yeah. And -- and that's -- that was on slide 47 of your presentation.

Would you agree with me that prior to putting that slide forward in your opening presentation, that was the first time those projects were mentioned at all in your evidence?

MR. CHRISTOPHER OAKLEY: It's possible.

MR. MATTHEW GHIKAS: And the -- it's -- it's more than possible, isn't it? There is no mention of those projects.

MR. CHRISTOPHER OAKLEY: Again, it -- there's been a lot of paper go over our desks in the last few months. I couldn't tell you if it had -- and I don't want to be accused of, well, you mentioned it back in this thing at that point. And again, I just can't recall, sir.

MR. MATTHEW GHIKAS: You can't recall ever having mentioned it?

MR. CHRISTOPHER OAKLEY: I can't. I certainly discussed Pointe du Bois. In fact, I actually believe we raised it in -- in IRs to -- to Manitoba Hydro because we were interested in Pointe du Bois. Like does this thing make sense? What are you -- what's the basis of the investment?

I think Hydro told us that it's probably going to be necessary to the system by 2032. I could be wrong with that date -- and -- and -- because we were interested. Well, why are you doing this? Is this to support exports, or is this intended to serve the minimum system, what you need to domestically -- or to reliably serve your domestic customers?

And -- and Hydro wasn't able to clarify that for us, so.

MR. MATTHEW GHIKAS: Mr. Oakley, none of what you have said was in your written evidence. Maybe Mr. Helland can help us out here.

None of that was in your evidence, and there is no reference to either of those two (2) projects. I did a Google search, and there is no reference in your -- in your written evidence.

You'd accept that?

MR. PETER HELLAND: It's a factual statement.

MR. CHRISTOPHER OAKLEY: Yeah. I haven't done the Google search, so I -- again, I just didn't want to commit to something that I couldn't be sure wasn't said somewhere.

DR. BYRON WILLIAMS: Mr. Ghikas, if it

helps you, if the question was within the eighty-five (85) pages of written evidence, is there a reference to Pointe du Bois? We'll -- we can accept that subject to check, and then --

MR. MATTHEW GHIKAS: Sure.

DR. BYRON WILLIAMS: -- we'll get back to you if that helps to move things along, sir.

MR. MATTHEW GHIKAS: Thank you.

CONTINUED BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: And the same goes for -- for programs. Apart from discussing poles and underground cables, Mr. Helland, replacement, you haven't discussed a single business operations capital program that was planned for the test years, have you, in your written evidence?

MR. PETER HELLAND: So as stated, have we identified and enumerated specific items? No, but we have said in evidence, for example, that we would recommend holding, for example, transmission spending constant, I believe.

There -- there are some more general references, but specifically, an enumerated list? The answer is no.

MR. MATTHEW GHIKAS: Okay. And with

respect to both the poles and the underground cables, which you did mention, you appeared to be supportive of an increased rate of replacement. I'm just referring to pages 71 and 72 of your report.

That's correct, isn't it?

MR. PETER HELLAND: So what we were supportive of is an evaluation of -- so this -- I'm -- I'm just going to take a step back.

There's -- and there's an expec -- a long -- we have a long-term expectation that -- I'd like to go to poles first. Actually, cables is fine.

There's a long -- we have a long-term expectation that the replacement rates will increase, that is correct, for both poles and underground cables based on the -- the evidence that we had before us. So that is correct.

MR. MATTHEW GHIKAS: Okay. Now, you alluded to this, but -- earlier, but the -- in response to Information Requests, Manitoba Hydro provided dozens of capital investment justification documents for each planned project over $10 million, didn't it?

MR. PETER HELLAND: They -- they provided capital justification documents, yes.

MR. MATTHEW GHIKAS: Yeah. And -- and

you'd agree with me that -- and you indicated I believe, Mr. Oakley, that you did review them.

MR. CHRISTOPHER OAKLEY: Yes, and -- and sometimes it was hard to find out where I should start because some went back as early as 2002.

These are, you know, either projects that have -- have been bumped a number of times or they actually were partially executed and then -- sometimes with the Bipoles, for example, you can take care of some things, and then you take care of other things.

So there's a lot of reading to get through what's intended for the test period to find out the part I needed to be reading. So was it in a -- in a user-friendly format? No, but -- but we did try and actually do it due diligence and make sure we understood what was being said.

That being said, we still didn't know how things were really ranked, and it's not obvious when you look at -- at those documents. How does something end up on the 'do this time' list, and how does it end up on the 'we can do it later'?

MR. MATTHEW GHIKAS: Now, Im not doing to ask you specific questions about individual product justifications, but at a high level, sir, you'd agree

with me that those documents discuss project costs, for example?

MR. CHRISTOPHER OAKLEY: And sometimes those project costs change again over a couple of decades quite significantly, the same project, from what we can tell. It's sometimes hard to tell has the scope changed along with them, but the -- but certainly the budgets do change over time.

MR. MATTHEW GHIKAS: Okay.

MR. CHRISTOPHER OAKLEY: So again, we're -- we were trying to see what's being lined up for this test period with documents that sometimes went back to 2002. It's -- it's pretty confusing to interpret it, but that's -- that's a presentation issue.

MR. MATTHEW GHIKAS: Yeah. Okay. Well, let's -- just listen to my question because it's a lot simpler than that.

They discuss costs, don't they?

MR. CHRISTOPHER OAKLEY: I was just trying to indicate that's not a static field. They discuss costs as they evolve over time in some cases.

MR. MATTHEW GHIKAS: They discuss lost generation risks?

MR. CHRISTOPHER OAKLEY: But not in a

way that's transparent. Again, as I discussed, I'm not sure what that means in any individual case. I don't know if the loss generation risk is because they can't support either a firm or -- or an opportunistic export load or whether it's necessary because I will not be able to serve my domestic customers reliably on peak.

And so, because that's not transparent, you simply have to accept the number that's there and move on.

MR. MATTHEW GHIKAS: And they -- they discuss safety, right?

MR. CHRISTOPHER OAKLEY: There's, in many cases, a safety number. There -- there are twenty-seven (27) factors, or I think it's twenty-seven (27), and they're not always all included.

We had a specific IR to Hydro about that, which is why do we see these in some and not in others. And they just said, if it's not considered material, we don't put it in.

MR. MATTHEW GHIKAS: And they discuss -- they tend to discuss O&M financial benefits?

MR. CHRISTOPHER OAKLEY: There is sometimes a line for -- I mean, there's often an O&M line because a lot of times, if it's -- especially if

it's a new facility, there's a change in O&M. Or if there's a facility that actually is requiring a lot of excess maintenance, there might be a reduction in O&M.

So, I think there's a wide range of possible things that can show up. Again, there's not always a lot of -- or any granularity in some cases of what's behind that number. And if the number's been optimized, it's just there's a number.

MR. MATTHEW GHIKAS: And they discuss environmental considerations, right?

MR. CHRISTOPHER OAKLEY: Again, I think in some cases, yes -- or in many cases, yes, but not in all cases necessarily.

MR. MATTHEW GHIKAS: Where they're relevant, yeah. Okay. And they also discuss risk to other components of the system where that's a function factor, too, right?

MR. CHRISTOPHER OAKLEY: I believe that's, again, one (1) of the potential fields.

MR. MATTHEW GHIKAS: All right. And you haven't referred to any particular capital investment justifications in your written evidence, have you?

MR. PETER HELLAND: That is correct.

MR. MATTHEW GHIKAS: Okay. All right.

So, if we can go back to page 7 of your evidence, the passage that we were looking at before, number 6. Okay.

So, just zeroing in on what you've said there in 6. I just want to see if I have this right. So, you believe that the data tools and decision-making framework underlying Manitoba Hydro's business operations capital budget needs to be improved.

And your solution is to recommend a nonspecific judgment-based amount with no breakdown and no discussion of specific projects.

Is that right?

MR. PETER HELLAND: So, there -- I think there were two (2) questions there, and I will try to take them in order. Yes, we believe Manitoba Hydro's asset management system needs to be improved.

And what was your second question?

MR. MATTHEW GHIKAS: Your solution to that was to recommend a nonspecific judgment-based amount with no breakdown and no detailed discussion of specific projects?

MR. PETER HELLAND: That's not the totality of our solution; it's an element of it.

MR. MATTHEW GHIKAS: Okay. And if you can turn to page 31, please, Ms. Schubert. All right.

Just under the heading, "Chapter 7," section 7. Thank you. The first sentence there you say:

> "It is widely recognized that implementing a formal asset management process produces better quantified and less subjective inputs into capital investment and operational spending decisions and is considered best practice."

So, pausing there. In your view, that's the objective as you see it, better quantification and less subjectivity, right?

MR. PETER HELLAND: Yes, that's stated.

MR. MATTHEW GHIKAS: Yeah. And...

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: And you'd agree with me that what you've done in preparing your budget amount, your recommendation to cut the capital budget, the ultimate budget there has incorporated into it additional subjectivity that has been based on your experience, correct?

MR. PETER HELLAND: So, based on the

evidence we had, which is an asset management system that has significant deficiencies, there is an element of that.

MR. MATTHEW GHIKAS: Okay. And -- and just in terms of the goal of better quantification, so does -- how does setting a capital budget based on a recommendation like 'at least 10' percent advance the goal of better quantification?

MR. PETER HELLAND: I would have to say, if the asset management system actually provided us with useful information that would make this all transparent, we could do this much less subjectively. I think that's the target. And that's what Hydro says it's trying to aim towards, as well.

As I mentioned, it's hard to reconcile a large list of capital projects with -- with a balancing number that's negative at the bottom and even understand what is really going to be done in the test period. We don't know. We are not sure which of those projects -- they don't all fit in that basket.

Someone has set that number. We don't know how they did it. We've tried to interpret Hydro's process to develop the envelope. It appears that there's a senior management feedback loop of some sort that's going into it.

But -- but, as Hydro has said, they don't have a sophisticated enough system to actually do cross-functional prioritization of their projects, so they have to make judgment calls, that their -- their budget, from what we can tell, is a judgment call. Otherwise, why is there a big negative number in it? We just don't understand that.

That -- I've not often seen a utility file a big negative number as one (1) of the project items. It's called other or balancing, and it means that all of those projects aren't going to fit in the basket.

MR. MATTHEW GHIKAS: Okay. If we can turn, Ms. Schubert, to the opening presentation of this Panel, which is Exhibit CC-15, slide 27. Okay.

So, you recognize this as slide 27 of your opening presentation?

MR. PETER HELLAND: Yes.

MR. MATTHEW GHIKAS: Okay. And so, these are the factors that you identify here that are important considerations in asset planning, right?

MR. CHRISTOPHER OAKLEY: These are considerations that are typically used, yes.

MR. MATTHEW GHIKAS: Yeah. They're important considerations, right?

MR. PETER HELLAND: Yes.

MR. MATTHEW GHIKAS: Okay. And -- and they're important in budgeting for sustainment capital, too, right?

MR. PETER HELLAND: They're important as to -- in determining risk, and that is an input to budgeting. So, it's an input. Oh, yes, it's -- it's part of -- it's an ingredient.

MR. MATTHEW GHIKAS: Yeah. It's -- these are important inputs given that a couple of slides earlier you said risk equals probability times consequence, and this is your consequence slide.

So, it was -- these are -- these factors are presumably sufficiently important to you for you to have highlighted them in your opening presentation, right?

MR. PETER HELLAND: Yes.

MR. CHRISTOPHER OAKLEY: They're a list. But they're not all equivalently important either, so, you know, there are -- there are some things that are -- that you can't transgress.

You're not going to do something that you are pretty sure is going to kill someone. You're not going to do something that you're pretty sure will cause an environmental catastrophe, but you're always

going to accept some risk. You don't -- you don't run a utility without accepting some risk.

MR. MATTHEW GHIKAS: Okay. Now, you have a section of your report devoted to -- to reliability.

And -- but in -- in making your recommendation of a reduction of at least 10 percent, you haven't addressed any other of these factors in your written evidence, have you?

MR. PETER HELLAND: We tried to address the factor that Hydro was using to justify its -- its sustaining budget, which was typically reliability based. The evidence is largely SAIDI/SAIFI --

MR. MATTHEW GHIKAS: Well --

MR. PETER HELLAND: -- and especially equipment, SAIDI/SAIFI. That -- that seems to be the focus of the justification --

MR. MATTHEW GHIKAS: Okay.

MR. PETER HELLAND: -- so that's what we addressed.

MR. MATTHEW GHIKAS: We -- we just -- so, we just talked about dozens of capital investment decision documents and the factors that went into those budgets.

And you'd agree with me that when we talked about those, there was more than just -- than just reliability?

MR. PETER HELLAND: I agree, but it wasn't -- it wasn't a comprehensive list of all of them. And I'm not sure we would have had enough time to actually read all of them if they exist. We're -- the -- the team was given a sampling of some of the projects. I assume there were -- there were some that were considered quite germaine.

But when we read the actual -- the -- the application document, the focus is really around we've got a real problem here now and we've got to address this real problem, and the problem is degrading equipment, and it's really driving bad results.

And our evidence shows that the results are actually pretty flat if you exclude major events. And -- and they actually -- the equipment degradation represents an almost undiscernible (sic) increase trend. We're not saying that that doesn't deserve attention. It just doesn't necessarily justify very large capital expenditures.

MR. MATTHEW GHIKAS: All right. Come back to my question. Mr. Helland, you were more

familiar with the content of the report earlier, so I'll just direct this to you.

You don't have a section of your evidence where you specifically analyze financial costs, do you?

MR. PETER HELLAND: That is correct.

MR. MATTHEW GHIKAS: Okay. And you had listed environmental here on this slide, slide 27. And just starting off, in the utility context, environmental impacts need to be considered, obviously, as part of prudent asset management, right?

MR. PETER HELLAND: That's one of the aspects.

MR. MATTHEW GHIKAS: Yeah. An increasingly important aspect, correct?

MR. PETER HELLAND: That's not -- that's not for me to decide.

MR. MATTHEW GHIKAS: Okay.

MR. PETER HELLAND: That would be for Manitoba Hydro to decide.

MR. MATTHEW GHIKAS: Okay. Now, aging electric assets can pose an environmental risk, can't they?

MR. PETER HELLAND: Aging assets can pose any number of risks, depending on the asset.

MR. MATTHEW GHIKAS: Including environmental risks?

MR. PETER HELLAND: It's in the list, yes.

MR. MATTHEW GHIKAS: Yeah. And you have a nice picture of a dead fish on the right-hand side, which is a nice image.

In making recommendations to cut the business operations capital by at least 10 percent, you haven't identified -- you haven't addressed or analyzed environmental considerations at all, have you?

MR. PETER HELLAND: I'll -- I'll go back to what Chris was discussing earlier.

The basis of the evidence provided by Manitoba Hydro was a narrative around degraded system performance due to degrading equipment performance. And that was the focus of our evidence as a result, was to address the argument -- the argument -- the proposal, sorry. I understand 'argument' is an odd word in the legal world. The proposal that -- that Manitoba Hydro put forward.

So we were -- we were orienting our evidence around the discussion that Manitoba Hydro fielded as the basis of their justification.

MR. MATTHEW GHIKAS: And I'm not going to get into a debate about what Manitoba Hydro said or emphasized or didn't. So I can assure you that, Mr. Helland.

But my question very simply: You don't have a section of your written evidence that deals with environmental risk in any way?

MR. PETER HELLAND: Correct.

MR. MATTHEW GHIKAS: In fact, there's no single mention of environmental anywhere in your report, is there?

MR. PETER HELLAND: Subject to check, correct.

MR. MATTHEW GHIKAS: All right. Aging assets can pose a public safety risk, can't they? Our clash events, for example.

MR. PETER HELLAND: Yes.

MR. MATTHEW GHIKAS: Yeah. And PG&E in California, I assume, knows all too well about fire risk with aging assets.

MR. PETER HELLAND: I --

MR. CHRISTOPHER OAKLEY: I'm not sure I would actually relate fire risk typically to aging assets. It's typically a -- a brushing issue. It's a tree freeing (sic) issue.

You could imagine a case where a structure just fell over by itself and started a grass fire. That's not typically the -- the thing that happens. It's typically a tree -- either a dead tree or -- or a tree in a wind storm -- that will fall against the line and that will typically cause the problem.

There are certainly -- and I've had experience of -- cases where you've had extremely deteriorated insulators that, when the first dew hits in the morning, they may flash over and start a pole fire. And so, I've seen that happen. But that is a pretty rare, sort of, event.

The typical method of ignition is that the tree branch falls against -- or a tree falls against the line. So -- and -- and NERC has identified this over and over again. Utilities need to be adequately tree freeing.

MR. MATTHEW GHIKAS: And -- and Mr. Helland, just carrying on with my theme here.

There's nothing relating to safety -- employee or public safety -- no section of your report that deals with that, no mention of public safety.

MR. PETER HELLAND: That's a factual statement, yes.

MR. MATTHEW GHIKAS: Okay. Another thing that Manitoba Hydro has to consider is compliance with legislation and regulatory requirements. That's something you -- you mentioned legal requirements -- legal compliance on your slide, right?

MR. PETER HELLAND: Yes.

MR. MATTHEW GHIKAS: And -- and you haven't assessed the implications of your recommendations with respect to compliance either, have you?

MR. PETER HELLAND: Once again, the answer is "yes" to your question. And once again, I'll refer you to what Chris said regarding we were orienting our evidence around the narrative and justification that Manitoba Hydro was putting forward.

MR. MATTHEW GHIKAS: All right. And -- and the same -- you'd agree with me that a prudent asset manager would want to consider things like lead time required to construct or procure assets?

MR. PETER HELLAND: That's part of the decision-making process.

MR. MATTHEW GHIKAS: Okay. And you haven't considered or addressed lead time in your recommendations, have you?

MR. PETER HELLAND: Yes -- or correct. Now, just to be clear, the evidence provided doesn't lead you to be able to do that analysis, so.

MR. CHRISTOPHER OAKLEY: Mr. Ghikas, our problem is that we have an indeterminate set of projects. We've got a project list that we know is bigger than -- than the budget that's going to hold it.

We could argue with any particular project. We could say, Well, this one doesn't seem to make sense. And we've talked about a couple of them.

But the problem is we know that the -- the basket actually is over-full right now. We know that Hydro is not going to build all those projects. They haven't made the value determination yet. And we're expected to opine upon it before we've got a value determination we can actually push against.

So we have no way to -- to do anything more refined than what we have, which is -- the argument is -- or the -- the position seems to be that there's deteriorating performance because of deteriorating assets. We don't see that evidence.

There are lots of other things that Hydro provided us with, but they didn't talk about it in the Application. They gave us a bunch of stuff,

which we are left to interpret.

It's sort of an unfair thing because they've got an entire department to do that -- or departments to do that, and we have to look at the evidence as it's given within the time frames that it's given.

So some of what you're suggesting would have been completely impossible for us to do. And we would like to see Hydro be able to provide more clarity and transparency. It's sort of what the focus of our -- of our evidence is for, is we think the Board is going to be in the same situation as we are, which is you look at this and how do you choose what to take out of the basket? I don't even know if the thing is really in the basket when we get to it.

So I could pick this one out and say, Well, that really wasn't going to get done anyway. So we're going to carry on.

MR. MATTHEW GHIKAS: Your -- your evidence goes a lot further than that. You're actually recommending a cut of at least 10 percent to the budget, right?

MR. CHRISTOPHER OAKLEY: Because the evidence is so non-transparent and there's so little value linkage that we can actually see and understand

the comparison. Because, again, if the argument is SAIDI/SAIFI are falling off, well, that's a really -- that's -- typically you look at the distribution system to see what's happening at the distribution system level. Yet, all of the asset management parameters aren't developed fully for the -- the distribution system.

So how can you say that the thing I'm going to do in generation and transmission -- which I'm going to spend millions of dollars on -- is going to actually affect at all what somebody sees out on the distribution system?

The asset management linkage is not there. There's no way to clarify it. And because there's so much -- we -- we believe -- and Hydro has said that they built surplus into the distribution -- or the transmission and the generation system. There's no way to tell whether that individual project that's proposed is actually going to have any impact upon domestic customers. It may impact export capability.

But a lot of cases, you could just say, Well, we're not going to do that this year because we don't have enough money in the budget. We're going to focus instead on doing some distribution things.

But we can't make that value assessment because Hydro doesn't provide us with the value assessment.

MR. MATTHEW GHIKAS: All right. You've recommended -- or appear to be advocating -- allowing generation transmission assets to deteriorate further, right?

MR. PETER HELLAND: Not the way you've framed it there in that question.

So what we're advocating is that you look at your system, you look at the impact that the asset has upon the system and its role in the system -- and AMCL echoed this yesterday -- you -- once you've evaluated the role that the asset plays in the system, you then decide on what your asset strategy is, what your recommended -- or what the optimal course of action is, and go on that basis.

So, your framing of the question as an absolute is incorrect.

MR. MATTHEW GHIKAS: The -- you've recommended deferring potentially three (3) projects that you identified in your -- in your -- in your opening presentation.

Your expectation is that those assets will continue to deteriorate, pending the work on

those assets, right?

MR. PETER HELLAND: So, no. So that's -- it raises a very interesting point and it -- and it builds on what Vice-Chair Kapitany was asking about yesterday.

So I'm going to take Grand Rapids 4 as an example. Grand Rapids 4 has a degraded condition. Given its degraded condition, what is its optimal role or desired role or new role, if you will, in the system?

And you look at that, at the options that you have. We could return it to full brand shiny new health to -- you know what we're going to do? We are going to use it for the two (2) hours a year that it's necessary. We'll save it for those two (2) hours a year that is necessary. And we will evaluate those different options and -- and -- and with those two (2) hours a year, make -- it -- it's maybe a deferral strategy, so in five (5) years, all of a sudden, the -- the -- the decision making changes.

So, what you do is, you look at the asset. You decide what its role in the system is, what its place in the system is and -- and as we've discussed the minimum system requirements won't -- won't go there right this instance, 'cause it'll cloud

things a little bit.

And then you decide, okay, that's the right role for that asset. It delivers the best value to ratepayers. And then you proceed accordingly, according to that determination.

MR. MATTHEW GHIKAS: And to make that determination you would have to consider construction and procurement lead times. Right?

MR. PETER HELLAND: There's a variety of factors and that would be one (1) of the factors that is included in that, yes.

MR. MATTHEW GHIKAS: And -- and you haven't discussed those factors in your report?

MR. PETER HELLAND: That is correct and one of the reasons we didn't discuss those factors is one (1), the evidence isn't there from Manitoba Hydro to be able to discuss it; and two (2) the best party to make those decisions to decide what role the asset should play in the system and how best to use those assets, that's Manitoba Hydro's. They're best able to do that.

MR. MATTHEW GHIKAS: And the same would be true with respect to workload implications and logistics. All of those would be factors as well, right?

MR. PETER HELLAND: Correct. And once again, it's Manitoba Hydro that -- that has the better knowledge.

Now, I will however point you to the AMCL Report. If we could bring that up, now I've just got to figure out how to get this -- how to ask for the right pages.

MR. MATTHEW GHIKAS: Mr. Helland, I think where you're going is far beyond the question that I asked.

MR. PETER HELLAND: No, actually, I don't think it is. 'Cause you were asking about resources and O&M.

MR. MATTHEW GHIKAS: I was asking whether you discussed them in your report and the answer was...?

MR. PETER HELLAND: No.

MR. MATTHEW GHIKAS: Thank you. All right.

DR. BYRON WILLIAMS: Mr. Chair --

MR. PETER HELLAND: But -- but I think it would be clarifying.

DR. BYRON WILLIAMS: I believe the witness should be given a little latitude to try and be responsive. These are responsive witnesses.

They're engaged in a discussion, so we would ask the court --

THE CHAIRPERSON: Yeah. That's fine, but I want it responsive to the question. I don't want a story around everything. I mean, we've heard sort of the same answer to a number of questions, which is, we didn't have enough information. We did -- you know, what we're doing is we're sort of -- instead of responding to the question, we're starting to get a -- a little too -- a little too broad in the response.

So, I'll allow it, but I want it responsive to the question.

MR. PETER HELLAND: So, I'm just -- Appendix 7.4, page 51, rolling down to cell -- what's called 18 Resource Management.

> "Current resourcing strategy appears to be constrained by head count and top down budget, rather than bottom-up need assessment."

And, my point is, that bottom-up need assessment needs to be input to -- to that -- that conversation. And -- and, it's not there. It's not there in evidence and AMCL says it's not there.

DR. BYRON WILLIAMS: Mr. Chair, thank

you for that latitude and we'll just remind our witnesses of your guidance as well.

CONTINUED BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: If we could turn to -- sorry, if we could turn to Manitoba Hydro Exhibit 33, that's the opening presentation of Manitoba Hydro's panel, and at slide 27.

Slide -- sorry, got the wrong slide here. I'm looking.

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: Sorry, bear with me. I have the wrong reference here. I'm told that it could be MH-30. Okay.

So, this is slide 27 of MH-30 and it's -- have you seen this graph before? Did you -- did you hear the presentation that the Manitoba Hydro panel did or -- or review it?

MR. PETER HELLAND: I did not hear the presentation.

MR. MATTHEW GHIKAS: Okay. Is the -- the -- this, as I understand it, is depicting the need for new resources. And you'll see the need for newer

capacity and the need for new energy on the right.

And the -- the total available capacity is signified by the red line and the total firm contracted exports are the green shading and the blue is the demand net of DSN plus the planning reserve.

Now, I heard, Mr. Oakley, you refer numerous times that you justified the 10 percent cut based on there being significant surplus in the system.

You -- you said, for example, yesterday, in response to a -- a question and I -- and this is -- I'll just read it, it's simple, it's PDF page 260 from yesterday. But it says:

> "I guess you could always assume everything right now is a minimum system and everything that's going to add incrementally.
>
> I'm going to now look through that lens, but frankly, there's a lot of surplus built into the existing system and that's not a bad thing, if it more than pays for itself."

Now, it -- you mentioned it today a couple of times and you linked it specifically to the 10 percent cut. And I'm -- I'm asking you I -- with

the -- is your definition of a lot of surplus built into the existing system, that white sliver between the green and the red line on each of those graphs?

MR. CHRISTOPHER OAKLEY: So, I -- I -- I think to understand these -- these graphs, you have to be clear what capacity is which is typically the -- the demand on peak. So a very short period if -- if we look at a -- at a -- at an actual load duration curve, there's a very short peak that accounts for a significant spike in -- in a heavily residential system, like -- like Manitoba Hydro has.

And so, that might look like it's a monolithic block, but there is adequate capacity obviously there to include not only the DSM, but also -- but -- but planning reserves. So there's a 12 percent planning reserve in there to deal with -- with the contingencies on generation.

There's no, obviously, allowance in the capacity side for imports during those peak hours and Hydro has done that in the past when there have been issues on -- on -- on import.

So, that is a -- a one slice look at a very complex situation, which -- which I think it could be over simplified. Most of the year, a lot of that capacity is sitting completely idle.

And then if we look at energy, we say that's dependable supply. The line is dependable supply. That's -- I believe that's the 1:100 low water year that's considered dependable.

Now, there are -- obviously, there could be a 1:100 chance of having that sort of a year, perhaps every year or -- or in the next year. Or another relatively low water year, but again, those are -- those are sort of really conservative lines that are drawn in there because you want to leave some -- some margin and -- and make sure that you're not running your system to the edge.

There's a fair whack of capacity in here that is serving dependable exports and, again, those are -- those are a value-related thing. They're not reliable supply for domestic customers, who bear the cost risks of these -- these assets.

So, we stand by that there's a lot of capacity right now in the system. That's the way Manitoba Hydro said it built the system, with a lot of excess capacity, and we take them at their word, there's -- there's surplus in here.

MR. MATTHEW GHIKAS: Sir, the total exports -- Manitoba Hydro has contractual long-term commitments to export power, doesn't it?

MR. CHRISTOPHER OAKLEY: It does. Yes.

MR. MATTHEW GHIKAS: Okay, and are you suggesting that Manitoba Hydro back out of those agreements?

MR. CHRISTOPHER OAKLEY: No, and -- and -- and, again, what we're seeing here is -- is -- though, when you're including those dependable exports in the energy, the reliability analyses you do for your domestic loads does not necessarily apply and I haven't seen the contract. So, I'd have to see what actually includes in the contract, but -- but your contract terms can't force you to not have a drought.

So, if you're a -- a Hydro supplier and you have a drought, I would assume that there is a force majeure allowance for we had a drought.

MR. MATTHEW GHIKAS: I think -- I think part of your answer there I want to zero in on is you haven't looked at the data to determine -- to back up your statement that there is suff -- that there is significant surplus in the system, have you?

MR. CHRISTOPHER OAKLEY: I haven't looked at the data. I've looked at the evidence that was provided.

MR. MATTHEW GHIKAS: Okay.

MR. CHRISTOPHER OAKLEY: I've -- I've looked at what Hydro says they do. I've looked that they said that they don't really need Pointe du Bois until 2032. I take them at their word.

MR. MATTHEW GHIKAS: Thank you, Mr. Chairman, though that's a good time to break, if it's good for you?

THE CHAIRPERSON: Okay. You know what? I -- I'm -- I'm concerned about timing for this afternoon, because I know Mr. Williams may have an opportunity for re-examination. So, I think -- did you want to comment or you're waiting -- I -- I think what we'll do is we'll break for 45 minutes instead of an hour. Okay, and we'll reconvern -- reconvene at 1:05. Thank you.

MR. MATTHEW GHIKAS: Thank you.

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

--- Upon resuming at 1:04 p.m.

MR. CHAIRPERSON: Mr. Williams...?

DR. BYRON WILLIAMS: Yes, before we turn back to Manitoba Hydro, Midgard did take an undertaking for the Manitoba Industrial Power Users Group. And in turn -- they have provided appendix A

to the Customer Willingness to Pay Survey, and will -- we've, sir, provided that electronically --

THE CHAIRPERSON: Okay.

MR. BYRON WILLIAMS: -- to -- to everyone and we would ask that that be marked as Consumer Coalition 16, and hopefully that satisfies the undertaking.

--- EXHIBIT NO. CC-16: Response to Undertaking No. 21.

THE CHAIRPERSON: Thank you.

DR. BYRON WILLIAMS: Thank you.

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

CONTINUED MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: I'd like to start, please, with the transcript from yesterday, and it will be PDF page 191, and that's transcript page 1568 at the bottom, line 22.

My Friend, Mr. Williams was -- Dr. Williams was leading you through your direct testimony and he posed the following question:

"And you provided expert evidence in

-- at the BCUC on a number of occasions on behalf of consumers for issues such as those related to BC Hydro's -- Hydro's revenue requirement, integrated resource plan, and the Fortis BC long-term Electric Resource Plan. Agreed?"

And Mr. Oakley responded:

"That's correct."

And over on 1571, he asked you, Mr. Helland, the same question and your answer was similar. Right?

MR. PETER HELLAND: Correct.

MR. MATTHEW GHIKAS: Now, the residential consumer group that you're referring to is the Residential Customer Intervener Association, correct?

MR. PETER HELLAND: Residen -- Residential Consumer Intervener Association, the RCIA, which is how I'll refer to it.

MR. MATTHEW GHIKAS: Okay. And the RCIA was actually established by Midgard and is operated by Midgard, correct?

MR. PETER HELLAND: No. So, the B -- the British Columbia Utilities Commission put out an

RFP. Midgard won that RFP and -- and established Midgard, so that part is correct. RCIA -- established RCIA, sorry. And -- and that part is correct, but it -- it is run -- it has a -- its own Board, and it's a separate legal entity.

MR. MATTHEW GHIKAS: The -- you were the founding director. You, personally were the founding director, correct?

MR. PETER HELLAND: I was the first director, yes.

MR. MATTHEW GHIKAS: Yeah. And all of the directors save for, I believe, one, are members of Midgard, correct? On the RCIA.

MR. PETER HELLAND: You know, actually, that's an interest -- I don't actually know who the directors are. I think I know. I think two (2) out of the three (3) are Midgard and one (1) is not, but I actually don't know who's on record right now as Midgard, because I'm no longer director of RCIA and I'm no longer on the board.

MR. MATTHEW GHIKAS: And that was a recent change, I gather, since we spoke in -- in the fall, right?

MR. PETER HELLAND: That is correct. So, I'm -- I actually just don't know.

MR. MATTHEW GHIKAS: Okay. And the -- in all of the instances you're referring to as having been retained on behalf of consumers, Midgard -- members of Midgard acting for RCIA, essentially, retained Midgard to act as an independent expert, correct?

MR. PETER HELLAND: RCIA retained Midgard, correct.

MR. MATTHEW GHIKAS: Correct. And in -- and in fact, in -- you -- you referenced -- in the question there you were talking about the BC Hydro revenue requirements and that -- in that instance, Mr. Helland, you -- you personally retained yourself and Mr. Oakley to be independent experts, correct?

MR. PETER HELLAND: RCIA retained Midgard, correct.

MR. MATTHEW GHIKAS: And you, in that case were the representative of RCIA, who appeared on behalf of RCIA at the procedural conference in that proceeding?

MR. PETER HELLAND: Correct.

MR. MATTHEW GHIKAS: Now, that BC Hydro revenue requirements application that you referred to there, that was -- a decision came out of that about a month ago, correct?

MR. PETER HELLAND: Subject to check, yes. It's -- it's all a blur, but yeah, a -- a decision came up --

MR. MATTHEW GHIKAS: Recently?

MR. PETER HELLAND: Recently, yes.

MR. MATTHEW GHIKAS: And if we can go to PDF 197, so page 1574, line 5. And here Dr. Williams asked at line 5:

> "And finally, Mr. Helland at a recent BCUC hearing into the BC Hydro revenue requirement -- revenue requirement for '23 to '25, the panel gave weight rev..."

Weight, I believe it means.

> "...to your views on general asset management"

And you responded:

> "Yes, that is correct."

Is that -- that was a typo, I take it, that reads --

MR. PETER HELLAND: Yeah, I would -- I would read it that way, yes.

MR. MATTHEW GHIKAS: Okay. And now -- and so your response to that was:

> "Yes, that is correct."

Now, just -- just to be -- to be clear, obviously I was a participant in that too, Mr. Helland, as were you. And the -- the recommendations -- the -- the BCUC did not accept all of Midgard's recommendations that were made in that proceeding, did it?

DR. BYRON WILLIAMS: I'm going just -- and I'm not trying to interfere with your question. I -- I'm not sure that -- we'll check the transcript because I'm not sure it's either of your interpret -- either what it says there.

I could go to my script, but -- pro -- proceed with the questions. I've just -- I think what I intended to ask was I gave -- gave weight -- I'll double-check my question, Mr. Ghikas, nothing is material, but I -- I don't think either answer in terms of -- I'll check the transcript --

MR. MATTHEW GHIKAS: Yeah, and --

DR. BYRON WILLIAMS: -- that's all I'm saying and I apologize.

CONTINUED MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: Thank you, Dr. Williams, and -- and I, you know, I take that -- I think you asked the same question to Mr. Oakley on --

on page 1570 at line 12. And you said:

"The panel gave weight to your evidence with respect to utility rate regulation."

And so on. So, I believe the formulation was 'gave weight to'.

MR. PETER HELLAND: I think that's a direct coat from the decision actually, so we just tried to not embellish what the Commission had decided.

MR. MATTHEW GHIKAS: The -- the BCUC did not accept all of Midgard's recommendations made in that proceeding, did it?

MR. PETER HELLAND: Midgard made recommendations on three (3) -- through three (3) pieces of evidence and it is correct that not all -- the recommendations in all three (3) of those pieces of evidence were accepted.

MR. MATTHEW GHIKAS: And one (1) of the recommendations that you put forward that was not accepted was for BC Hydro to provide a ranked list of all capital investments, right?

MR. PETER HELLAND: Subject to check, I believe that's correct.

MR. MATTHEW GHIKAS: All right.

Switching topics to inflation. Let's talk about inflation for a moment. Your recommended reduction in business operations capital is coming at a time when inflation is much higher than it's been for decades, right?

(BRIEF PAUSE)

MR. PETER HELLAND: I -- I think -- what we're trying to clarify is we're -- in -- are not trying to actually -- we hadn't provided in to evidence about inflation and -- well, I don't think actually Manitoba Hydro did either, so we're -- we're just not experts on inflation. We understand that it's parameter that we use in project planning and that sort of thing, so.

MR. MATTHEW GHIKAS: And I'm not asking for your expert opinion on inflation --

MR. PETER HELLAND: No, I mean, it's--

MR. MATTHEW GHIKAS: -- so let me --

MR. PETER HELLAND: -- seem to be -- we seem to be in an inflationary period and we did look through the materials you provided last night and -- and, you know, the CPI seemed to indicate in various -- at various different baskets that yes,

inflation is high.

MR. MATTHEW GHIKAS: Okay. Let's -- let's, in fact -- you read my mind, Mr. Oakley. And let's -- if we can go to the -- the documents that I -- that I provided to you previously yesterday.

The Statistics Canada documents. Start with -- start with the industrial product price index. Major product group monthly, thank you, Ms. Schubert.

So, first of all, you had a chance to review it, you indicated, and do you accept that this is a printout from Statistics Canada? Subject to check?

MR. PETER HELLAND: Yeah, it -- it appears to be from Statistics Canada.

MR. MATTHEW GHIKAS: Okay.

MR. PETER HELLAND: I'm not going to argue that.

MR. MATTHEW GHIKAS: All right. So -- now there -- there are there (3) printouts as part of this one package and there's one for each -- each year, and they're -- they're all indexed to January 2020.

And so if you look at the first page there, yes, you'll see January 2020, total industrial product price index is at one hundred (100). And then

in January -- and then if you -- if you go down a little further there's another fabricated metal products and construction materials.

You'd anticipate that there are fabricated metal products and construction materials in utility -- utility assets, correct?

MR. PETER HELLAND: Yes. I -- I don't know in what quantities or proportions, but...

MR. MATTHEW GHIKAS: Okay. And -- and then if we continue -- oh, sorry. If we scroll over -- I guess if we go up to -- it's the third page of the package in total. Sorry, Ms. Schubert, to do this to you.

So, the total...

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: Sorry, the last -- sorry, I should have numbered these pages. I'm sorry to do this. That's the one there, right.

So -- and you'll see in January 2022 the index is reading, over on the right side, "121.3," suggesting a 21 -- a 20 -- sorry, I'm not going to do my math here.

Let me -- let me move on from this, and

it'll just speak for itself, and I won't -- I won't belabour the point.

DR. BYRON WILLIAMS: Mr. Chair, if my friend is asking to introduce these as exhibits, I'll indicate that Statistics Canada, it's -- it's got -- you know, there's no question as to its reliability. Courts in the past have taken judicial notice of it. It -- it stands for what it stands for.

So, our clients do have no objection to what I assume is his intention to introduce them as exhibits.

THE CHAIRPERSON: Okay. Thank you.

MR. MATTHEW GHIKAS: It was. Thank you. Yes. And so, I'll mark this first package then as the next Manitoba Hydro exhibit, please, which is number -- I'm not sure what number it is -- 37, please, Mr. Chair.

--- EXHIBIT NO. MH-37: Statistics Canada material.

CONTINUED BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: This one is -- the next one that's headed, "Machinery and equipment price index by commodity," is an easier one to read,

so mercifully, from Statistics Canada.

And if -- if we show -- if we go down to the second page, you see the highlighted portion, "Total machinery and equipment." And you'll see it's index to Q1 2020 starting at 102.7 as opposed to 100, but on the far right at Q1 2023 it's 116.1. And so, that would suggest, in my math, around a 13 percent increase.

Does that stand to reason to you, gentlemen?

MR. PETER HELLAND: So, from Q1 2020 to Q1 2023, you're saying it's approximately 13 percent increase over the entire period. It does not reflect a compounding interest rate or anything like that. It's --

MR. MATTHEW GHIKAS: It's an index.

MR. PETER HELLAND: Yeah. That there's -- yeah. You subtract one from the other, and you -- you get an increase --

MR. MATTHEW GHIKAS: Okay.

MR. PETER HELLAND: -- in this case, over three (3) years.

MR. MATTHEW GHIKAS: And if we can scroll down to the fourth page, there's more highlighting there. All right.

And now, stating the obvious, I presume, but there are turbine generators and generator sets and the like in -- in an electric utility asset base?

MR. PETER HELLAND: An integrated utility such as Manitoba Hydro, yes.

MR. MATTHEW GHIKAS: Okay. And the same would be true with power transmission equipment?

MR. PETER HELLAND: Yes.

MR. MATTHEW GHIKAS: And if we scroll down even further, there's more yellow. Right. So, there's a line that says, "Power distribution and other transformers." You see that?

MR. PETER HELLAND: I see that.

MR. MATTHEW GHIKAS: Okay. And that would -- that's suggesting in the neighbourhood of 54 percent? The index is increased by 54 approximately?

MR. PETER HELLAND: I don't know what the percentage is but, yes, the index has moved from 104.2 to 158.6.

MR. MATTHEW GHIKAS: I'll accept -- I'll accept that. Thank you. If we could mark that as the next exhibit, Manitoba Hydro 38, please, machinery and equipment price index by commodity quarterly.

--- EXHIBIT NO. 38: Machinery and equipment price index by commodity quarterly

CONTINUED BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: All right. Now, changing topics for a moment. You can put those away. Or they can be removed from the screen. Let's put it that way. And if we can go to page 69 of your report, please, Ms. Schubert. Thank you.

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: Down in the last paragraph there's a line about five (5) lines up from the bottom -- sorry, page 69. About five (5) lines up from the bottom it says:

> "In short -- in short, it's expected that due to aging asset demographics, distribution asset renewal investments will increase but not a step increase of unnecessary preemptive replacements but rather a moderate risk informed

increase coupled with increased numbers of reactive replacement as the assets naturally age out at the end of their lives, i.e, after maximum asset value's been extracted rather than premature replacement."

So pausing there. You're -- you don't take issue with the -- the expectation that, due to aging asset demographics, asset renewal investments will increase.

What you're saying is it's effectively a matter of -- the debate is about the pace and -- and how much, right?

MR. PETER HELLAND: The debate is about the -- the pace and timing.

MR. MATTHEW GHIKAS: And if you can scroll, Ms. Schubert, to pages 71. Here you -- that's good, yeah.

So, in the first paragraph on the screen, you -- it indicates that you're discussing an expectation that, based on -- you're -- sorry, you're referring to a simplified demographic analysis, in your words, that indicated the current asset replacement rate is too low for this particular asset class over the long run because it implies an

excessive expected life, right?

And that's wood -- wood poles and underground cables are both -- are both suggesting that in the study?

MR. PETER HELLAND: So, yeah, the -- the study is suggesting that over a long term, you know, poles last seventy (70), eighty (80), ninety (90) or more years. We would expect that the average replacement rate over that type of time frame would be larger, correct.

MR. MATTHEW GHIKAS: Okay. And the two (2) asset classes that you're referring to on pages 71 and 72, that's -- that's wood -- wood poles and underground cables, right?

MR. PETER HELLAND: Those are the two (2) examples, yes.

MR. MATTHEW GHIKAS: Okay. And the demographic analysis that you're referring to is appendix 7.5 from the application?

MR. PETER HELLAND: Subject to check, yes.

MR. MATTHEW GHIKAS: Okay. And you'd agree with me that those two (2) asset classes you've identified are among the largest asset classes Manitoba Hydro has?

MR. PETER HELLAND: Probably. Wood poles would be numerically large. Manitoba Hydro has a relatively limited amount of underground cable compared to its overhead kilometres.

So, I -- I think that, for example, we were talking about cross-linked polyethylene yesterday. I -- I think we were, anyway. There's about 3,600 kilometres of -- of cross-linked polyethylene underground.

There's a much larger number, potentially an order of magnitude or two (2) larger overhead structure. So, I just want to be clear it numerically doesn't apply to both sets.

MR. MATTHEW GHIKAS: Maybe I'll save us guessing here. Just for the transcript reference, PDF page 4 of appendix 7.5, it says:

> "Four (4) assets populations, valve groups, generators, distribution, wood poles, and underground cables constitute 61 percent of the anticipated spending increase."

That's -- you don't take issue with that?

MR. PETER HELLAND: Don't -- don't take issue with that statement as it was. Your

original question, different, I believe, than that statement.

MR. MATTHEW GHIKAS: Yes. I -- I hear what you're saying, yes. Thank you.

Now, subject to check, would you agree with me that eighteen (18) of the twenty-five (25) asset classes identified in Appendix 7.5 show a similar pattern, suggesting the replacement rate is too low over the long term?

MR. PETER HELLAND: I didn't check all the -- the asset classes. So I -- I -- I don't know.

MR. MATTHEW GHIKAS: Will you accept it, subject to check?

In fact, you know what, the document will speak for itself. I don't even need you to do that. So let's -- we'll just move on.

All right. Let's -- let's turn our -- our attention to reliability, which is a topic of your report.

Now, if we can turn to page 73 of your report, please. And at item number 5 there at the bottom, you say:

> "Manitoba Hydro's distribution asset demographics indicate that future sustainment spending increases will

likely be required due to aging assets. But degraded performance has not yet shown -- showing up -- is not yet showing up in Manitoba Hydro's SAIDI, SAIFI metrics."

So now you're referring to SAIDI and SAIFI here, and I believe we -- we've covered the definitions. The other parties have covered the definitions amply there.

But, essentially, let's just start at generalities here. You'd agree with me that no utility is going to be making investments solely upon system-wide SAIDI and SAIFI metrics.

MR. PETER HELLAND: We've discussed at length that there's a variety of inputs into an asset management system and how you process things through. So yes.

MR. MATTHEW GHIKAS: And SAIDI and SAIFI are both lagging indicators, correct?

MR. PETER HELLAND: They are considered to be lagging indicators, yes.

MR. MATTHEW GHIKAS: Now, when -- when you're referring to SAIDI and SAIFI on a system-wide basis, the averages -- and I believe you even alluded to this -- but the averages can mask regional

differences in reliability, correct?

MR. PETER HELLAND: That's correct. I mean, there could be localized issues that are -- there are outliers versus the average.

MR. MATTHEW GHIKAS: Right. And -- and since they're a function of a number of customers affected, the -- the lower reliability in a less densely populated area, like an Indigenous community or a rural community, won't affect system-wide SAIDI and SAIFI as much as an outage in an urban area, correct?

MR. PETER HELLAND: That's correct.

MR. MATTHEW GHIKAS: And it -- it -- SAIDI and SAIFI on their own don't tell you anything about the risk associated with the outages, do they?

MR. PETER HELLAND: I'm not exactly sure what you mean by risk in this case --

MR. MATTHEW GHIKAS: Risk in terms of the -- in terms of impacts, whether they be safety or environmental or -- or the implications of disruptions.

MR. PETER HELLAND: Yeah. Certainly, outages have -- or equipment failures which cause outages might cause other -- other events.

MR. MATTHEW GHIKAS: Okay. And the --

just so we're on the same page here, the removal of major events -- I -- as I understand it and as has been explained to me -- is an event that results in 2 million customer interrupted minutes, which would be customers times minutes.

Is that -- just so we're level setting, does that sound right to you?

MR. PETER HELLAND: Yeah. I -- I believe we asked in an IR response and Manitoba Hydro provided us their definition. And that's consistent with my understanding of that.

MR. MATTHEW GHIKAS: Okay. Now, you have indicated today, Mr. Oakley, I believe, and you've mentioned this -- you even alluded to the fact that you and I were probably in the same Hearing hearing this message before from you.

But you've -- you've indicated that customers are indifferent to the cause of -- of outages in a way they just experience the outage.

MR. CHRISTOPHER OAKLEY: That's correct. The typical customer just knows the power is out and it knows -- and they know when it comes back on.

MR. MATTHEW GHIKAS: Right.

MR. CHRISTOPHER OAKLEY: If they're in

the house at the time.

MR. MATTHEW GHIKAS: Right. And -- but as you note, you understand that 42 percent of the SAIDI value was attributed to equipment failure. It's the largest contributor to the SAIDI figures, isn't it?

MR. CHRISTOPHER OAKLEY: Yeah, it's -- it certainly is the largest of the other groups, but it's not the -- it's not the majority of them. And we discussed that -- I think at some length in our -- in our direct.

MR. MATTHEW GHIKAS: And the next largest being tree contact is some distance behind at 28 percent.

MR. CHRISTOPHER OAKLEY: That's correct.

THE CHAIRPERSON: Sorry, can -- I just want to make sure I get this straight. Is it 42 percent of Other?

MR. MATTHEW GHIKAS: Forty-two (42) percent of -- after removing the major events, there -- there are three (3) primary causes. The first one being 42 percent for equipment failure; 28 percent due to tree contact; 15 percent due to unknown causes.

THE CHAIRPERSON: Okay.

MR. MATTHEW GHIKAS: Does that sound right to you, Mr. Oakley?

THE CHAIRPERSON: Subject to check. Thank you, Mr, Ghikas.

CONTINUED BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: Thank you. Now, if we can turn to page 27, Ms. Schubert, please. There's a figure there, figure -- figure 7-10, I believe. I've given you the wrong page number here.

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: Let's -- okay. Well, let's -- let's do it this way. I think I don't actually have to...

The equipment failure SAIDI trend is deteriorating and you don't dispute that, right?

MR. PETER HELLAND: I -- I would actually direct you to page 8 of Manitoba Hydro's direct. I think it really helps to illustrate the -- the situation in contrast to what Hydro has tried to portray.

And if you notice, certainly there's been an increase in outages due to equipment failures

since 2009/10, but -- and Hydro has portrayed that the equipment is now getting to the age that we're going to soon see -- we're getting near the edge of the cliff, I think is how it's said.

And if I was expecting to be approaching near the end of the cliff, what I would expect is to see that curve be this way. Because as we get -- the next generations get older and older and they start to fail, we'll have a compressed failure curve.

What we see here is --

MR. MATTHEW GHIKAS: I -- I have actually found the -- the figure I was looking for.

MR. PETER HELLAND: Sorry about that. Yeah, sorry. So what we see here is that the curve increases pretty -- pretty rapidly from 2009/10 to about 2016/17. And then it actually moderates quite a bit.

So I'm not saying that -- that equipment failures aren't increasing -- and we would expect that -- and the assets are aging and -- and you need to manage that as part of your reliability improvement.

I just think the story that we're approaching the cliff is maybe a little bit -- I'm not

saying rhetorical flourish -- but it's -- it's a little bit of -- of an overselling of that -- that situation.

I'm not suggesting that Hydro should be cavalier about it. I just don't -- that doesn't strike me as a panic sort of a thing. It strikes me as it's time to get our asset management program working so we can really correlate these things and do effective things to keep reliability where Manitobans expect it.

MR. MATTHEW GHIKAS: So you're not -- you're not disputing that the trend is deteriorating?

MR. PETER HELLAND: I'm just saying that the trend actually looks like it's actually improved.

If I was to do some curves on those two (2) stages, they would actually be different slopes.

MR. MATTHEW GHIKAS: Now, in -- in response to -- you've questioned the materiality of the increases in the overall SAIDI and SAIFI trends.

And in -- in response to, I don't think we have to go there, but in -- in response to Coalition Manitoba Hydro Round II 78, Manitoba Hydro showed that equipment failures, in terms of customer minutes and outages, were trending upwards at

approximately 4 percent per year.

Do you -- do you -- do you accept that, subject to check?

MR. PETER HELLAND: Manitoba Hydro provided a graph showing an -- an increasing number of outages due to equipment and they provided a figure and -- and it was in our direct yesterday, so, yes.

MR. MATTHEW GHIKAS: Okay. And -- and they provided some raw data in their rebuttal too, at page, PDF page 107. And it -- they said -- I'll just read it -- and they said:

> "Therefore, between 2011/2012 and 2021 to 2022, approximately five thousand (5,000) additional customers were interrupted each year for four (4) hours due to -- due to equipment failures."

And you don't -- you don't dispute that data either.

MR. PETER HELLAND: We did not dispute that in our evidence, no.

MR. MATTHEW GHIKAS: And older assets tend to have higher failure rates than newer assets, correct?

MR. PETER HELLAND: As a -- as a

general observation, yes. It's not universally true. There are old assets that have -- have lower failure rates but as a general commentary, yes.

MR. MATTHEW GHIKAS: Okay. So, just shifting gears for a moment here. I want to talk about -- there's a graph that's being reproduced, so we're not going to go there, but in the context of that discussion about how Manitoba Hydro fairs relative to industry when you remove the major events, you provided some -- some colour around that based on what you had seen and you mentioned Electra.

Do you recall that?

MR. PETER HELLAND: We're talking about yesterday in our conversations?

MR. MATTHEW GHIKAS: I'm -- I think it was this morning, actually. I'm losing -- it was in response to questions from Mr. Walichnowski and he -- he -- you -- you said that -- that you compared the reliability of Manitoba Hydro to that of Electra in that is the utility in the 905 region.

I believe it was you, Mr. Oakley, do you remember that?

MR. CHRISTOPHER OAKLEY: Yeah, we had -- at -- at the time we were -- we were working on GRA, it would have been '17/'18 and '18/'19. We were

also simultaneously doing work in Ontario and Electra was one of the utilities we looked at.

And it struck us at the time that -- that the numbers were interestingly similar for -- for a provincial scale utility and -- and an urban utility -- urban suburb and there's some suburban in Electra as well.

MR. MATTHEW GHIKAS: Okay. Now, and you've characterized on multiple occasions that Manitoba Hydro has a system built like a -- a Porsche when it comes to reliability. I think you've used that analogy. Correct?

MR. CHRISTOPHER OAKLEY: It's a -- it's a very well built system. I mean and -- like, you know, it's -- it's -- it's reliable. It's robust and -- you know, there's some benefits here, like the fact when you have winter for a very long period of time, frozen poles don't rot. And -- and transformers that see winter peaks will often be experiencing their peak load while there's snow sitting on top of them.

If you live in the southern US, your -- your peak happens in the summer. So, at the same time your transformer is maximally loaded, the transformer ambient condition, the outside air, is -- is 125 degrees, if you're in Phoenix.

And, what happens is it breaks down the windings. That -- that discussion we were having this morning, I think with Mr. Wal -- Walichnowski, was that it actually breaks the -- the oil molecules apart and reformulates them. And that really sets off when you get the extreme electric fields around the windings and the heat from -- basically a cooked transformer, that degrades the transformers at twice or three (3) times the speed that they'll degrade in a climate like this.

And so we've seen north -- northern Canadian assets that last to -- to -- to lengths that American utilities really can't frankly understand.

MR. MATTHEW GHIKAS: Do you --

MR. CHRISTOPHER OAKLEY: 'Cause they're just refrigerated at the best time.

MR. MATTHEW GHIKAS: Mr. Oakley, do you remember my question?

I'll ask you -- I'll ask you again. You've characterized Manitoba Hydro's system as a -- as a Porsche and it has the same reliability system wide of that of Electra in the 905 region. Right?

MR. CHRISTOPHER OAKLEY: Yeah, I mean it's -- not -- not identical, but yes in the same kind of performance level.

MR. MATTHEW GHIKAS: So, do you characterize Electra as having reliability of a Porsche as well?

MR. CHRISTOPHER OAKLEY: Electra is a -- is a densely interconnected municipal -- or -- urban utility. It'll have multiple transmission connections, back-feed capabilities. If there's a problem on a feeder, you can remotely switch and actually back feed most of the customers from another feeder.

And sometimes, adjacent three (3) or four (4) feeders, whereas if you're with Manitoba Hydro, you have distribution and transmission lines that go radially over line -- over land for -- for a hundred (100) kilometers.

It's a surprise to us, that that kind of a system with those kind of features would be operating the same as Electra.

MR. MATTHEW GHIKAS: Okay, now we're getting somewhere. So -- so when you, Midgard, are raising the potential of allowing reliability to potentially deteriorate somewhat, are you talking about allowing the urban portions of Winnipeg to drop below that of Electra?

Or, are you just allowing the rural and

Indigenous communities to bear the brunt of it?

MR. PETER HELLAND: We aren't suggesting that reliability should fall. We're suggesting that Manitoba Hydro should make an assessment of their system, their ratepayers desires and the constraints of cost, reliability and risk and make an appropriate and informed judgement about where those should lie.

We are not predetermining an outcome of that investigation or analysis.

MR. CHRISTOPHER OAKLEY: And we also don't think that it's a vanilla thing either. So, you'll have a target reliability for the bulk of your assets and -- and the thing we talked about earlier, then you'll have a targeted program that says, I've got some worse performing feeders. Because they're just not actually meeting anything like an acceptable standard. They may not effect my SAIDI/SAIFI numbers much, but the customers that are on those feeders are not getting good service.

And that doesn't mean you're going to go do all of the -- that extra spend on all of your facilities, but you'll say, I've got those ten (10) or fifty (50), in some cases worse feeders, and I'm going to focus my attention on those because it really

matters to the people that are on those -- those lines. They are really getting bad service.

But, generically, we can target a level of reliability that's -- that's reasonable, that -- that justifies the investments, or rather that the investments are actually going to affect reliability.

And this is the thing we've been really trying to hunt out of this -- this evidence, is show us that the thing you're talking about spending on, is actually going to produce those results.

The reason we looked at the equipment trends, is we said, well, you know, that's degrading but if the bulk of your capital spending is going to address equipment trends and you're getting a .01 outage per year improvement, because you maybe flattened that curve off, is that a prudent investment?

And are -- are people going to even notice it happened? They're going to notice the spending happened, but they may not notice that the results happened and that's where -- where we focused our evidence.

MR. MATTHEW GHIKAS: So, if we're focused -- and I'm just going to come back to the -- the -- the question that I was -- what I was getting

at here, is -- it -- it has to be one or the other. Right?

If -- if you're going to expect that you're going to maintain the same level of reliability as Electra, for example, you -- you are -- if you -- if you're going to allow Manitoba Hydro's system to SAIDI and SAIFI for the system to deteriorate more than that of Electra, you'd have to -- you'd have to -- you'd have to do, you know, stop working somewhere wouldn't you?

And then you got -- you're going to have to choose and that -- if you're just looking at the SAIDI and SAIFI numbers overall, the customer numbers are going to drive those. The density is going to do it because it's the -- it's -- it's a function of the number of customers that are -- that are out. Right?

(BRIEF PAUSE)

MR. PETER HELLAND: Right -- would -- could you please rephrase. I apologize I -- we -- were having a discussion 'cause it -- the point was -- was a little bit confusing to me and I want to make sure I actually exactly respond to what you're asking.

MR. MATTHEW GHIKAS: Well, I think the question was probably a bit of a mouthful as well. So, in fairness, so, let's -- I think -- I think I can actually skip that.

What I wanted to do is touch on one thing that you said in the course of that longer answer was that, in some cases, you have to look at radial lines, I believe you said, or distribution feeders, even it's not affecting the overall number very much. Is that right?

MR. CHRISTOPHER OAKLEY: Right. Yes. That's exactly the reason that utilities will have, you know, worst -- worst-performing feeder programs, because it's not getting caught in SAIDI. We don't recommend that the only thing that you -- that you look at is SAIDI and SAIFI. There are many factors you look at, but the evidence provided was it's about SAIDI/SAIFI deterioration.

We think that you can apply some -- some points solutions very effectively to take care of those that are really being underserved, but, if you were going to, you know, start driving up or -- or continue to hold the line where you're at now, even then, you can do without a massive, I think, extra investment in capital. There might be some tree-

trimming things that will solve some problems.

There would be response time things, as -- as Hydro mentioned, if they -- if they have adequate staff to go out and actually take care of the -- the -- the pole top transformers, when they blow up. They can bring those duration times down. It -- it's a matter of approaching it in a holistic manner, doing the right balance of capital and -- and operating, and -- and maintenance investments.

MR. MATTHEW GHIKAS: So, that's an instance where you -- you believe it's important to look at reliability on an asset-specific basis?

MR. CHRISTOPHER OAKLEY: No. It -- it's -- that's a customer-specific basis. So, I -- I really think a focus on assets makes you lose sight of the thing you're trying to do is the problem, and -- and I've been an asset manager. I've been the guy who actually had to make a decision, I got to fix this unit or I've got to fix that line, and you try and take care of your assets.

But -- but the overall decision is for the or -- organization should be what is our organization attempting to -- to do and what are we -- are we spending the money in the right places that lets our organization do that better.

I don't ask the generation folks, maybe, or the generation plant operator, where should I spend my money, 'cause they'll say, in my plant, and I can show you all the places, and I got old stuff and things that need to be replaced and is breaking down and it looks ugly anyway. So -- so, let's fix it, but that might not be the best place for the company to put its money to do the thing it's trying to do, which is reliably serve customers. So, someone had -- has to make an oversight vision, you know, decision on that.

MR. MATTHEW GHIKAS: So, Mr. Oakley, Manitoba Hydro's overall SAIDI and SAIFI trends are deteriorating, if major events are included. Right?

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: I understand you don't want to use those, but I'm just asking you --

MR. CHRISTOPHER OAKLEY: If you -- if you look at major events, sure. If you look at Puerto Rico's results after one of the hurricanes went through, that would be a really bad year. You could say that's a trend, but it's -- it's a hurricane and you deal with hurricanes. You fix afterwards.

MR. MATTHEW GHIKAS: And I presume --

MR. PETER HELLAND: -- but I'd like to add an additional bit of colour to that. I don't know what the major events of tomorrow are and there's no evidence on the record, outlining and, specifically, documenting Manitoba's expectation of the major events of tomorrow.

They aren't predicting that, in five (5) years, there will be an earthquake. They are not selecting, in this part of the Province, there will be a forest fire or the next ice storm will land here.

So, looking back, historically, the answer can be yes. Looking forward, respectively, the answer is no.

MR. MATTHEW GHIKAS: So, you'd accept, I presume, that extreme weather events are becoming more frequent?

MR. PETER HELLAND: So, what I'll accept is that Manitoba Hydro has not filed evidence that has demonstrated that it will become more common.

Now, anecdotally, we hear about this in the media, but what we don't see and where Manitoba Hydro has an obligation, is to take what we an -- anecdotally hear about or what makes the news, and actually bring some rigour to it and say this is how

it will impact our system, here is our forecast for that, this is our expectation for that, and, then, bring that forward here.

So, yes, could be more, could be the same, could be less, don't know, but you have to take that and put it into an analytic framework that allows you to make an informed decision, and I don't see that evidence.

MR. MATTHEW GHIKAS: So, you -- you do accept, as a general proposition, that utilities must plan for a future of more extreme weather events.

MR. PETER HELLAND: I accept they must plan for the future. Yes, and that includes major events.

MR. MATTHEW GHIKAS: Now, asset management and utility investment decisions can affect the impact of extreme events on -- on the utility and the customers, can't they?

MR. CHRISTOPHER OAKLEY: So -- so, yes, you're -- so, a utility has the asset base they -- they own today or they maintain today, they have that. There is a current -- current state.

They can choose to make different decisions into the future with regards to what it -- what the utility perspectively believes the future

will bring and that will drive things like alterations to standards, potentially, or system architecture, or staffing levels in certain areas, such as O&M. All those feed in and you bring all that together to make a decision about -- about your future and how you're going to plan.

MR. MATTHEW GHIKAS: Now, I heard, Mr. Oakley, you responding -- indicating that, you know, nobody's going to harden the entire system, and I don't think anybody is talking about doing that here, in terms of spending so you have perfect reliability.

But it's -- it's not an all-or-nothing decision about whether or not to harden the assets. I would suggest that you're portraying it as an all-or-nothing proposition on the whole system. That there are all sorts of decisions you can make at a -- at a discreet level, that harden the assets in a way that is beneficial.

MR. CHRISTOPHER OAKLEY: I -- I agree. Could you do that. I don't think the evidence shows that Hydro has claimed that they're doing that actually, and they haven't claimed that they're actually trying to address such things.

They've said that we have deteriorating assets and we're going to have to increase spending to

address the deterior -- deteriorating assets, because they're affecting reliability. We don't find that that is a compelling argument, because the -- the amount of deterioration, at this point, is not what I would call material -- requiring material address right now.

It -- it may in the future. We expect there will be some asset classes that are going to need in -- incremental investments, as they age out, but -- but that's not what they've proposed here. They're not proposing hardening the system to deal with -- with extreme events.

So, that's why we -- we asked them to remove the -- the major events, because we don't think they're actually managing for that any more than anyone does prudently. You set standards that you think your facilities are likely to see and, when an extreme outlier event happens, you just accept you're going to replace facilities.

MR. MATTHEW GHIKAS: And, Mr. Oakley, aging assets, let's just talk 50,000-foot level here.

Aging assets can pose an elevated failure risk in a major event, can't they?

MR. CHRISTOPHER OAKLEY: I don't think that's a compelling way to describe it, certainly not

in evidence, and my experience is, if a tree falls on a pole, it doesn't matter if you put it in yesterday, it breaks the pole. If a -- if a tornado goes through a line, it's taking them out, one way or the other. If a forest fire actually envelops a distribution line, which has happened recently here, you would hate to have had just invested in brand new poles when that happened, because you've wasted that asset now, whereas, if you had good old poles that were still standing and doing okay, you get to replace it with new poles now. Fantastic. You -- you kill two birds with one stone. You -- you get new poles and you have addressed the -- the damage from the fire -- forest fire.

So, I -- I -- I think you have to change standards, if you want to survive some of those events, and -- and that's not what Hydro's proposed to do here.

MR. MATTHEW GHIKAS: Okay. Let's just talk about what Manitoba Hydro has said and hasn't said, because I'm not sure that your characterization of what they've said and haven't said is actually fair, Mr. Oakley.

So, would you agree with me that there -- have you read the rebuttal evidence of Manitoba

Hydro?

MR. CHRISTOPHER OAKLEY: Yes.

MR. MATTHEW GHIKAS: Okay. And I'm going to suggest to you that there is a section, in that evidence, that addresses hardening of -- of assets, and there's a bullet list of them there, opportunities to harden assets, as the opportunity arises.

MR. CHRISTOPHER OAKLEY: Could you bring that up? I'm -- I don't have it at my fingertips here.

MR. MATTHEW GHIKAS: One (1) of the examples that was brought forward was geotechnical slope stabilization to prevent underground cable or -- or structural failure.

That's something that you could do to harden your assets. Correct?

MR. PETER HELLAND: Can you -- can you bring up the reference, please, so we can view it?

MR. MATTHEW GHIKAS: Well, I'm -- I'm asking you. I'm just asking you, point blank, as an engineer, geotechnical slope stabilization to prevent underground cable or structure failure is something you can do to harden your assets?

MR. CHRISTOPHER OAKLEY: I -- I'm just

wondering what, I mean, I'm, first of all, not a civil engineer, but -- but I'd have to see the particular example you're talking about to determine if that's hardening against the extreme events.

Like we -- we talked about forest fires, we talked about ice loading and maybe tornadoes. If you're talking because a river's undercutting a cable, well, you probably should stabilize the slope. I don't think that's hardening it against an extreme event. It's just taking care of a particular risk faced by one (1) asset.

So that's why I'm trying to get some clarity because I'd like to respond to, you know, a particular example that shows me that in -- in evidence we are talking about doing these investments to deal with this hardening.

MR. MATTHEW GHIKAS: I'm -- I'm looking at my own time here, Mr. Oakley, and I'm going to just move on and let the evidence speak for itself on that point.

Your -- if you can turn to page 51, please, of your evidence.

(BRIEF PAUSE)

MR. MATTHEW GHIKAS: Thank you. And you have a recommend -- in the -- right at the bottom of the page, your recommendation with respect to generation assets is -- is right at the bottom, and it says:

> "Consequently, evidence indicates that Manitoba Hydro has sufficient surplus generation resources that at least some or all of its generation assets can be permitted to degrade further before intervention is warranted from a ratepayer risk and system impact standpoint."

So first of all, you'd agree with me that Manitoba Hydro's generation facilities are among its key assets?

MR. PETER HELLAND: I would agree that gen -- the generation assets of Manitoba Hydro are necessary for its system, yes.

MR. MATTHEW GHIKAS: Okay. And if -- if we -- just above the last block quote, just above that, where you say, "For clarity here," just based on what you've said here for clarity, you concede that, as generation assets age, their performance will degrade over time, right?

MR. PETER HELLAND: That's what Manitoba Hydro is outlining in their quote, correct.

MR. MATTHEW GHIKAS: And -- and you're saying you don't dispute?

MR. PETER HELLAND: In general, no.

MR. MATTHEW GHIKAS: Okay. And Manitoba Hydro's generation assets are aging, aren't they?

MR. PETER HELLAND: As the days go by, yes.

MR. MATTHEW GHIKAS: Now, right after the block quotation on page 51, just below that, you provide two (2) reasons for your position that generation assets can be permitted to degrade, two (2) related reasons, and the first being stable overall SAIDI-SAIFI metrics.

You see that?

MR. PETER HELLAND: Yes.

MR. MATTHEW GHIKAS: Now, I found your -- your focus on overall SAIDI and SAIFI in the context of generation in -- interesting.

Would you -- would you not agree that, overall, SAIDI and SAIFI for electric utilities are most impacted by events on the distribution system as opposed to generation or transmission?

MR. PETER HELLAND: So once again, I'm going to go back to the basis of what Manitoba Hydro provided as their narrative. Their narrative was it's degrading SAIDI-SAIFI, degrading equipment, therefore, investment. And that's the narrative we were responding to. So --

MR. MATTHEW GHIKAS: Yes.

MR. PETER HELLAND: -- generation is not the sole driver of SAIDI-SAIFI, but it is a contributor to SAIDI-SAIFI.

MR. MATTHEW GHIKAS: Distribution outage time is a key driver, right?

MR. PETER HELLAND: It's a driver, yes.

MR. MATTHEW GHIKAS: Well, that's the part of the system that has less redundancy built into it by virtue of its criticality, right?

MR. CHRISTOPHER OAKLEY: It has less redundancy --

MR. MATTHEW GHIKAS: It's designed to be --

MR. CHRISTOPHER OAKLEY: -- built in to manage costs. You would -- if you -- if cost wasn't an issue, you would build redundant lines everywhere 'cause you can provide very -- very high --

high reliability into, you know, four nines, five nines (sic).

MR. MATTHEW GHIKAS: By virtue of being more radial than the transmission system, there is -- it's -- the -- the outages on the distribution system, the trees that you described along people's roads, it tends to be a significant driver of overall systems SAIDI and SAIFI, right?

MR. CHRISTOPHER OAKLEY: It does, yes.

MR. MATTHEW GHIKAS: Okay.

MR. PETER HELLAND: Okay. So I would like to just go back in the evidence. In -- in evidence, Manitoba Hydro outlined three (3) primary drivers, and that was their narrative. I believe it was unknown, tree contacts, and then equipment. So we addressed those three (3) items in our evidence because that's Manitoba Hydro's narrative, unknown-tree contacts narrative.

So to the extent that, you know, distribution are exposed more to tree contacts, understood. But -- but we responded to Manitoba Hydro's narrative in the way they formulated their argument.

MR. MATTHEW GHIKAS: So the second reason that you cited on page 51 after that quote

there is that:

"The above confirmation that generation outages do not cause system outages."

See that?

MR. PETER HELLAND: I see it there on the page, yes.

MR. MATTHEW GHIKAS: Okay. And if you can just scroll up now to -- the quote you're referring to is the second block quote in the middle of page 51 that begins, "Confirmed," right?

(BRIEF PAUSE)

MR. PETER HELLAND: Yes.

"A single force generated outage will not normally result in any outage to domestic customers due to the available genera -- sorry -- due to the typical available generating capacity --"

Sorry. I'm not reading well here today.

" -- customers due to the typical available generating capacity is

greater than domestic load, and imports are also possible."

MR. MATTHEW GHIKAS: You left -- you left out the word 'normally', right?

MR. PETER HELLAND: I may have. My apologies.

MR. MATTHEW GHIKAS: Okay. Now, I want to come back to this concept of whether deteriorating generation affects ratepayers.

Generators are revenue-producing assets, aren't they?

MR. PETER HELLAND: The system is a revenue-producing asset. Generators are a part of that system.

MR. MATTHEW GHIKAS: People are purchasing the electricity generated at the generating stations, correct?

MR. PETER HELLAND: People are purchasing the electricity generated at the generators and then transported through the transmission system to -- and then distributed through the distribution system or for in the case of industrials, their connection to the transmission system. So it's the system.

MR. MATTHEW GHIKAS: And you

understand that there are significant extra-provincial revenues forecasted as a part of the revenue requirements in this application?

MR. PETER HELLAND: I understand there are revenues forecasted. The -- the magnitude, I -- I can't comment on --

MR. MATTHEW GHIKAS: Okay.

MR. PETER HELLAND: -- how that would be classified.

MR. MATTHEW GHIKAS: I think I have a reference for you there if -- if you were wanting to check there. It's the -- the Application, tab 4, 'Financial Forecast Scenario, Figure 4.2'. And we don't necessarily have to go there, but the extra-provincial revenues -- oh, well, here we go. Ms. -- Wayne Gretzky in action again. Ms. Schubert, thank you very much.

It's page 5 of 52, and I don't know. It's not the PDF. I don't know if it -- I'm just looking at -- sorry, page 7 of 52. My apologies. Okay. Great.

So we see the line there, 'Extra-provincial'. When we scroll across, right in the -- right under 'Revenues, Extra-Provincial', and you'll see the numbers there in -- in millions, 916 million,

one point two (1.2), 8 billion, 1.15 billion, and 964 million. So those are -- those are large numbers, aren't they?

MR. PETER HELLAND: They're -- they're numbers. I can't comment as to their size. It's outside my scope.

MR. MATTHEW GHIKAS: All right. And so customers are going to be affected if that revenue is unavailable to them or if a portion of it is unavailable to them, correct?

MR. CHRISTOPHER OAKLEY: I think part of the -- the thing we struggled with is that the evidence doesn't really show us what part of the investments that the customers are paying for are -- are delivering this -- this incremental power.

And if we look at the recent Keeyask, Bipole III, and MMTP combination, which I think came as a package if I'm not mistaken, that's -- I think it kind of nets out at something like $20 billion of investment.

What we see here is a revenue line that I think results from any, including the -- the pre-Keeyask facilities that existed. So, we don't know what portion of that number was -- is from Keeyask and what portion is from the older facilities.

So, is that an appropriate return if you had to invest $20 billion? I don't know. That would -- that would require a business case.

MR. MATTHEW GHIKAS: So -- so, sir --

MR. CHRISTOPHER OAKLEY: That is -- I mean, it's a substantial return. The question is, if you don't put the cost picture in, it's hard to say whether it's a substantial return.

I could be making a billion dollars a year, but if I'm spending 2 billion a year, I'm losing money every year. And -- and we're not making that value judgment. We're just saying it's not clear from the material. We don't know what part of the system does what or is intended to do what.

MR. MATTHEW GHIKAS: Sir, every one of those assets is already built in the ground and sunk, isn't it?

MR. CHRISTOPHER OAKLEY: Well, some of them are going to -- are proposed to be significantly rebuilt, and so there's where it -- on the margin, you're not getting the value from that investment. How do you know you should make it?

If -- if I could see a really clear business case around, for example, Grand Rapids 4, I could tell you, well, what's -- what's its job and is

it making a return on that. If it's critical to reliability, then let's see that evidence, so.

MR. MATTHEW GHIKAS: Okay. So --

MR. CHRISTOPHER OAKLEY: I just can't tell you, sir.

MR. MATTHEW GHIKAS: In -- in the course of recommending that generation be allowed to degrade, you did not assess lost revenues, did you?

MR. PETER HELLAND: To be clear, we did not recommend that generation be allowed to degrade. We said there's the potential for it, and that potential needs to be assessed.

The role of any specific generation asset -- so, let's not talk about generation as a monolith. It's not a monolith. It's a series of assets that have a place in the system that have a role in the system.

And when you look at an individual generation asset and you consider its place in the system and its role in the system, you then make that determination.

So, to -- to treat it as a monolith is -- is an inappropriate and -- way of -- of evaluating and considering your investments.

MR. MATTHEW GHIKAS: Sir, I'm going to

read your own words back to you from page 51 of your evidence.

> "Consequently, the evidence indicates that Manitoba Hydro has sufficient surplus generation resources such that at least some or all of its generation assets can be permitted to degrade further before intervention is warranted from a ratepayer risk and system impact standpoint."

Those were your words, right?

MR. PETER HELLAND: Correct, those are my words. And let's be clear what 'some' means. 'Some' means near zero to some larger number. It -- it's a -- it's quite a range.

And so, to characterize it as anything other than a range from near zero, effectively zero, to all would be a mischaracterization.

MR. MATTHEW GHIKAS: Okay. Before leaving the topic of generation, I want to jump into -- you've mentioned for the first time Point du Bois and Grand Rapids Unit 4 in your opening statement.

So, just dealing with Pointe du Bois for a minute. Are you aware that that project is

predicated on receiving 114 million or more than a quarter of the cost receiving in federal funding where the full funding amount is only available if the project is completed by October 31st, 2027?

Are you aware of that?

MR. CHRISTOPHER OAKLEY: I think we are aware of that. And -- and we're not sure that that's really the best driver for an asset management decision because there's still a really big block of additional money that has to go into it.

And -- and I don't think it does do -- do service to other Canadians if they're going to subsidize something that turns out not to be a practical investment.

So, I'm not going to take issue with the Federal Government doing the incentives it's doing. I'm just saying that the project still has to stand on its own feet. And -- and just saying, if you don't -- you know, buy now, or else the -- the opportunity's gone, this is what knife salesmen do and stuff like that, so I just think that's the wrong reason to make a decision to build a project.

I'm not saying whether it should or shouldn't be built. I do know that Hydro has mentioned that they don't really need it until 2032.

I believe that was the date I -- I saw, so -- so. And subject to check. It could be 2030, but -- but...

So, again, there's -- there's attention there between what would you do as an asset manager and what would you do to take advantage of a grant.

MR. MATTHEW GHIKAS: It would be a legitimate consideration that they are receiving 140 million -- $114 million.

That's a legitimate consideration as an asset manager, correct?

MR. CHRISTOPHER OAKLEY: It's a cost consideration, yeah. I mean, I can't dispute it. If someone said that they would give me half the price of a new car, I might consider it quite seriously.

MR. MATTHEW GHIKAS: All right. Now, let's talk about --

THE CHAIRPERSON: Sorry, Mr. Ghikas. I just want to tell you you've got ten (10) minutes.

MR. MATTHEW GHIKAS: Thank you.

THE CHAIRPERSON: Yeah.

CONTINUED BY MR. MATTHEW GHIKAS:

MR. MATTHEW GHIKAS: Now, you understand that the Grand Rapids Unit 4 investment, it's a sustainment investment, right? It's not adding

new capacity?

MR. PETER HELLAND: Correct.

MR. MATTHEW GHIKAS: Okay. And -- and you accept that -- subject to check, that the capacity of Unit 4 is 125 megawatts?

MR. PETER HELLAND: Subject to check.

MR. MATTHEW GHIKAS: Okay. Can we pull up Manitoba Hydro Exhibit 30, please, and tab 27 -- or sorry, slide 27 again. It's the new capacity chart. All right.

If we look at these on the capacity side and deduct 125 megawatts, you'd agree with me, subject to check, that -- that that date moves forward -- moves -- moves up to 2027/'28 subject to check?

MR. CHRISTOPHER OAKLEY: Well, Grand Rapids is a capacity project, but --

MR. MATTHEW GHIKAS: It's existing capacity, right?

MR. CHRISTOPHER OAKLEY: Existing capacity. Apparently, its rate of degradation is -- is advanced enough that the choices are between massive refurbishment and replacement of the runner.

One (1) of the options to consider in this case, if you need it for capacity, that means that you need it for that peak load period which might

be a day sometime in the wintertime.

If you said, I need that for capacity, I'm going to keep that unit in service by using it for that one (1) day in the winter. I'm not going to put much wear and tear on the -- on the propeller anymore, I'm going to be able to probably extend its life.

And this is done with aging assets. As you know, BC Hydro did this with -- with Burrard. They -- it wasn't suitable to run it all year as base load anymore, but for peak periods and for power support, you could run the units and take the chance that one would fail, but it didn't make sense to reinvest in it. It would have been hundreds of millions of dollars.

MR. MATTHEW GHIKAS: What's -- do you know what the lead time is for purchasing new generation equipment? If -- if -- let's assume this had to be in service then by 2027.

Do you know what the lead time is for--

MR. CHRISTOPHER OAKLEY: It depends on -- it depends on the -- the equipment you're -- like, Kaplan like this is -- is a reasonably sophisticated custom piece of equipment. It -- there would certainly be a lead time of -- of more than a year. But that doesn't mean you build it five (5) years

before you need it.

MR. MATTHEW GHIKAS: You're familiar with mandatory reliability standards, I assume, gentlemen?

MR. CHRISTOPHER OAKLEY: Yes.

MR. MATTHEW GHIKAS: Okay. Now, there was no mention of mandatory reliability standards in your evidence at all, was there? That's not something you considered?

MR. PETER HELLAND: It's something we considered, but you're correct, it's not discussed in our evidence.

MR. MATTHEW GHIKAS: Okay. The -- the Bipole lines and the generation facilities that you have referred -- have identified in your opening statement, those would all be subject to mandatory reliability standards, wouldn't they?

MR. CHRISTOPHER OAKLEY: Some aspects of them would.

MR. MATTHEW GHIKAS: And -- and mandatory reliability standards apply on an asset specific basis, too, don't they?

MR. CHRISTOPHER OAKLEY: There are some that are asset specific; some are system.

MR. MATTHEW GHIKAS: And it would be

irresponsible for Manitoba Hydro to be taking actions allowing assets to deteriorate to such a point that it would be in violation of mandatory reliability standards, wouldn't it?

MR. CHRISTOPHER OAKLEY: I don't think we would propose they would do that. I don't think we have proposed that.

MR. MATTHEW GHIKAS: You just haven't discussed it?

MR. CHRISTOPHER OAKLEY: No, I'm -- I'm reasonably aware of them. I actually used to sit on NERC reliability assessment subcommittee. I know where those rules came from.

MR. MATTHEW GHIKAS: I -- I --

MR. CHRISTOPHER OAKLEY: I understand why they're -- why they're there. It just wasn't pertinent to our evidence, so we didn't mention it.

MR. MATTHEW GHIKAS: Okay. Thank you. Those are my questions, Mr. Chairman. Thanks very much, Panel. I appreciate your time. Thank you.

THE CHAIRPERSON: Thank you very much. We'll take the midafternoon break and reconvene at 2:30. Thank you.

--- Upon recessing at 2:14 p.m.

--- Upon resuming at 2:33 p.m.

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

CROSS-EXAMINATION BY MR. BOB PETERS:

MR. BOB PETERS: Yes. Thank you. Good afternoon. And good afternoon, Mr. Helland, Mr. Oakley.

As counsel for the Board I have some questions. I'd like to summarize some your evidence as I understood it and try to tie together some of the aspects relative to the answers you've given to other counsel.

And I will start with the SAIDI and SAIFI acronyms. And it was a matter that was discussed between yourselves and the Chair, as well as Panel Member Bellringer yesterday.

But I took from some of that discussion that the ultimate step by the homeowner, if they're concerned about their reliability, is they can take their own steps to ensure that they have electricity, such as through a backup generator.

MR. PETER HELLAND: I mean, it's possible that a homeowner could do that, and I've

considered it myself because I understand enough about power systems to know that they're never flawless. And -- and we are very dependant upon power in this -- in this country. You don't survive a winter without it.

But I -- I don't think we would suggest that -- that the system should be requiring everybody to -- to buy a backup generator.

MR. BOB PETERS: And I'm not suggesting that would be the case. But you're saying that where -- depends where you are on the risk spectrum, you will make that decision. And ultimately, it -- it may come out of your chequebook, rather than in your monthly bill?

MR. PETER HELLAND: Yeah, if I was -- for example, if I had medical equipment, life-saving equipment, that I needed to have operational all the time, I would definitely have a -- a backup generator, probably through a battery system so that it automatically would transfer over on loss of power.

MR. BOB PETERS: And do I take, from your evidence and discussion with other counsel, that -- and I'll start on page 48, I guess, of Board counsels' book of documents. And I do want to steer clear of the undertaking that Manitoba Hydro is

providing through to my colleague, I believe, Mr. Walichnowski.

But when you see these kind of values of SAIDI and SAIFI, Midgard says, Manitoba Hydro is doing all right.

That's -- that's what you're telling this Board?

MR. PETER HELLAND: Yes.

MR. BOB PETERS: And you're not disagreeing that if these indices are trending upwards, that's a bad sign.

MR. PETER HELLAND: So just to be clear, the -- the document on the board -- or the image on the board includes major events. And we exclude major events so that we look at what Manitoba Hydro has direct control over.

That it's trending up, nobody likes to see that. But in terms of what your expectation is of the future, we would expect, you know, in the test period, for example, that major events would revert to the mean. You know, there's not going to be some radical change in expected major events over the next few years.

MR. BOB PETERS: And in dealing with Manitoba Hydro, these major events would be the

October snow and ice storm and the Pukatawagan fires that you're familiar with?

MR. PETER HELLAND: Yeah. Those would be two (2) examples. Yes.

MR. BOB PETERS: So when we talk about those major events, would it be correct to summarize Midgard's evidence as saying that those uncontrollable events are not justification for increasing capital investment?

MR. CHRISTOPHER OAKLEY: They could be if you felt there was a trend. If you -- again, this is something that did -- was experienced by Hydro Quebec. You know, frankly, I think they had a pretty robust system in the '90s. It was tested to the extreme and -- and some very, very well built extremely heavy towers fell down because there were, in some cases, half a foot of ice on them.

And -- and if they hadn't fallen down, I would have said that they had not engineered that very well because you shouldn't be building for half a foot of ice.

But -- so they -- they actually did change their standards though. But they did that knowing that there was a very significant cost. They just weren't willing to bear that happening again.

And yet, it happened again.

So I'm just trying to say that additional incremental investments in -- in hardening are fraught. You have to be really, really selective on how you apply them.

MR. BOB PETERS: Right. So what is Midgard suggesting Manitoba Hydro should do in the case of these major events?

MR. CHRISTOPHER OAKLEY: Well, if you detect a trend -- I mean, I -- I think a couple of outlier years do not a trend make. And hopefully this does revert to the mean.

If -- if a trend is detected and -- and it requires substantial standard changes, be prepared for the cost of that. It will not be trivial.

Alberta recently -- well, I guess, now fifteen (15) years ago, but pretty recently for me -- changed its -- its double circuit 240 kV tower standard. They actually doubled the weight.

So what we would have built in the old days with -- with, you know, 10 tonnes of steel, they build with 20 tonnes of steel now. And they also stepped up all their other structures.

So they've now made it so that most structures in southern Alberta, right up to about Red

Deer, could withstand Crowsnest Pass type winds.

And I'd suggest there's not as much return as they might hope for in that kind of investment. But they did it consciously. They said, We're just not having towers blow down in -- in wind and snow and we're going to pay for it. And they certainly have.

MR. BOB PETERS: Did I understand Midgard's evidence to say that whatever is happening with climate change, don't use that as the excuse to harden the assets?

MR. CHRISTOPHER OAKLEY: I think more correctly, until you actually have a trend that you can forecast, you can't just decide, I'm going to willy-nilly go out -- I mean, I don't know what I would do if someone said, Harden -- harden my assets against climate change.

In what way? What are -- what do you want me to prepare for? You can't just go out and -- and make the ones that are out there now stronger and better. You're going to have to either selectively replace them or -- or, again, apply a different standard and say, I'm going to retroactively replace the good assets that are out there right now because I'm worried that something might hit them.

MR. BOB PETERS: What about replacing assets that are needing replacement with more durable assets?

MR. CHRISTOPHER OAKLEY: And that's certainly one approach. If you say, Look it, I'm detecting a trend. I've actually got material that says it's worth making this investment.

But understand once you've signed up to that new standard, they don't ever tend to revert backwards. So once you bought it, you've bought it.

Now, every -- every double circuit tower in Alberta, since whenever that decision came out to do that upgrade, has been built with 20 tonnes of steel. You actually can't erect them with helicopters unless they're the super heavy lift ones now, so.

MR. BOB PETERS: All right. On your slide presentation, which I noted I think is Consumer Coalition Exhibit 15, slide 33 was a slide you discussed with the Vice-Chair yesterday.

Do you recall that?

MR. PETER HELLAND: Yes.

MR. BOB PETERS: And do I take from that that redundancy may be a good thing, but you're going to end up paying for it?

MR. PETER HELLAND: Redundancy can be a -- a good thing. It does lead to additional costs because you're adding assets to your system and you may not be -- you're moving down the curve of marginal returns. So your -- your first dollar invested gets you the best return on your investment. And then, the additional dollars, you move down the curve.

The choice as to where to be on that curve is, I think, at some level, what we're discussing here in this proceeding.

MR. BOB PETERS: Does it also minimize the effect of a major event?

MR. PETER HELLAND: So the answer is it can. It may or may not depending on the -- the system architecture and -- and what event you have.

So certain choices may be vulnerable to -- the same event may take out both assets in the -- in the same event. Or, for example, if you were to geographically disburse your assets, maybe the one event -- a forest fire, for example -- it takes out one asset because it moves through and it burns an area but it misses another.

So that -- the vulnerability to -- to events depends on the event and how it interacts with the system and how the system is configured in its

architecture.

MR. BOB PETERS: So, one of the things that I noted in your direct examination, I think you referred to PUB -- I think you called it PUB-24. I think you meant PUB Exhibit 24, do you recall -- recall that.

And I'll maybe ask Ms. Schubert if she can locate that.

MR. PETER HELLAND: Yeah.

MR. BOB PETERS: It was a -- it was a chart that I discussed with Manitoba Hydro's witnesses. And are you familiar with it?

MR. PETER HELLAND: I was made familiar with it, yes.

MR. BOB PETERS: All right. In these charts and -- and we can deal with the one on the screen, being the winter load serving capacity of Manitoba Hydro, this shows that the solid blue line is now over the solid green line. Correct?

MR. PETER HELLAND: Correct, up till, is it 2040'ish.

MR. BOB PETERS: I'll give you that. And so the green line is the Manitoba load that would have to serve if Bipoles I and II went down and this shows that it is possible to serve those loads, but

you need Bipole III and you also need some import capability.

MR. PETER HELLAND: That's my interpretation of this graph.

MR. BOB PETERS: Does -- does Midgard rely on the underlying premise of this graph to suggest then that Manitoba Hydro can relax its business operations capital on its other transmission infrastructure, because its got Bipole III?

MR. PETER HELLAND: I wouldn't phrase it quite as directly or causily as -- as you framed it.

What I would frame it as, looking at Manitoba Hydro's system and this graph and what it implies, Manitoba Hydro now has the opportunity and, I might argue the obligation, to consider those types of alternatives, because you now have the space or surplus to consider those alternatives.

MR. CHRISTOPHER OAKLEY: And I -- I don't think that should be conflated with -- where -- allow something really important to blow up and take out its neighbour and things like that.

So, we're very conscious that some facilities if they were to fail could catastrophically -- will have bigger ramifications.

So, and we think Manitoba Hydro's aware of those and is taking care of those sorts of issues. We're just saying that where something is creeping up on the probability of failure curve, but it's -- it's not going to be catastrophic, you should understand that you've got head room.

You -- in the worst case, remember these are all serving peak load too. So peak load is a very, you know, very peaky thing. It -- it -- it takes a few days in the winter and the peak hours of those days that -- that at substantially higher load than your -- than your normal load serving obligation happens.

So, it would have to be a low probability event happening in the worst possible hours. Although the, you know, the consequences could be big if you didn't have this back-up capacity.

MR. BOB PETERS: A transmission infrastructure like this has that -- and I probably used the wrong term, but its got that N minus 1 design feature to it, which makes it redundant in many ways.

MR. CHRISTOPHER OAKLEY: Yeah, I mean that's -- that's -- that's a standard kind of deterministic approach you take N minus 1. And I've seen N minus 1, minus 1, for -- for things that --

that tend to when they fail, fail for a while and you -- you can say, well I can restore my system after N minus 1. What happens when the next thing occurs?

But, operators are always adjusting for that as -- as the thing happens, they're going to reconfigure the system. Try and move loads around, dispatch different generators, to try and get ready for the next thing.

MR. BOB PETERS: In terms of generation assets, we now have Keeyask generation online, correct?

MR. PETER HELLAND: Correct.

MR. BOB PETERS: And, included in the -- the planning by Manitoba Hydro is a 12 percent reserve?

MR. PETER HELLAND: That's my understanding is there's a planning reserve margin of 12 percent at Manitoba.

MR. BOB PETERS: And that planning reserve is to contemplate when generators will be out out or out for service?

MR. PETER HELLAND: Among -- among other things, yes. Basically to account for variability unexpected events. A variety of contingencies.

MR. BOB PETERS: And is that 12 percent available to be used by Manitoba Hydro to serve Manitoba load?

MR. CHRISTOPHER OAKLEY: It certainly exists, I mean it's intended to be there and that you -- you -- you do planning reserve because it takes a while to build a generator, as we all know.

So, you -- you plan for a kind of worst-case situation, in the future, and you add 12 percent to whatever you needed, after allowing for your -- your typical system reconfigurations, dispatch allowance.

And, typically, if you're modeling, for example, in the hydro system, your winter peak, you're probably at your worst water conditions too. So, you'll allow for what's available in those water conditions.

MR. BOB PETERS: If we could turn to Midgard's evidence to page 21 at the bottom, please.

MS. GWEN MUIRHEAD: Mr. Peters, sorry to interrupt, it's Ms. Muirhead.

For your benefit and for the Board's benefit as well, I thought it might be an opportune time to advise the Board that Manitoba Hydro has refiled the IR response with the major events.

And if maybe we could mark that as being an exhibit. I don't know if that's where you were going in your questioning. I just saw that SAIDI SAIFI graph come up.

MR. BOB PETERS: I -- thank you, Ms. Muirhead. I was staying away from it for two (2) reasons, one is I hadn't seen it and number 2 it was probably more properly for Mr. Walichnowski to -- to look at, but if -- if I could -- maybe I could take the liberty of, unless there's an objection by my friend, that -- to have it put on the screen and I'll put it to these witnesses?

MR. ROBERT WALICHNOWSKI: Absolutely, Mr. Peters.

MR. BOB PETERS: Thank you. Thank you Mr. Walichnowski. And thank you Ms. Muirhead. Does Ms. Schubert have a copy?

DR. BYRON WILLIAMS: Mr. Peters, Board Chair, we're happy with this, but there is a -- a narrative with it as well. So, if -- if my friend's going to do that, I just recommend giving just a couple minutes for the witnesses to -- to look at it. It might smooth your conversation, Mr. Peters. It's up to you. Up to the Chair, obviously.

MR. BOB PETERS: You -- you want your

witnesses to read the full response is what I hear -- what I'm hearing?

DR. BYRON WILLIAMS: Yes. The --

MR. BOB PETERS: All right. I think that's fair. Thank you, Mr. Chair.

THE CHAIRPERSON: No, sorry. That's fine. The question I have is -- and I have no problem with Mr. Peters taking the witnesses through that.

The concern I have is Mr. Walichnowski raised it, so I'm going to ask him, after Mr. Peters concludes maybe on that point, if you have any other questions in relation to it or you're satisfied with the questions he's asked if you could -- if you could indicate as well, at that point.

MR. ROBERT WALICHNOWSKI: Yes, Mr. Chair. That -- that's acceptable.

THE CHAIRPERSON: Okay.

DR. BYRON WILLIAMS: And -- and we thank the panel and Board for its courtesy.

THE CHAIRPERSON: Sorry, and are we having -- so is it marked as an exhibit -- are we marking it as an exhibit? Is Hydro marking it as an exhibit?

MS. GWEN MUIRHEAD: We -- we also have filed some undertaking responses, so if I may just

mark two (2) matters -- or two (2) documents as exhibits.

THE CHAIRPERSON: Okay. Well, let's mark this one first, since we're talking about it and --

MS. GWEN MUIRHEAD: I believe Ms. Schubert has already marked some undertaking responses as --

THE CHAIRPERSON: Of course she has.

MS. GWEN MUIRHEAD: -- MH-39. She's very on the ball.

THE CHAIRPERSON: Yes.

MR. BOB PETERS: I'm sorry, Ms. Muirhead. I missed the number.

MS. GWEN MUIRHEAD: So, the updated response to Coalition Manitoba Hydro Round 1 IR 92a-d will be marked as Manitoba Hydro Exhibit 40.

And preceding 40, is Manitoba Hydro's Undertaking Responses -- Undertaking 914 and 15, will be Manitoba Hydro Exhibit 39.

--- EXHIBIT NO. MH-39: Manitoba Hydro's Undertaking responses 914 and 915

--- EXHIBIT NO. MH-40: Updated response to

Coalition Manitoba Hydro
Round 1 IR 92a-d

DR. BYRON WILLIAMS: And, Mr. Chair, just while our witnesses are reviewing, we do want to acknowledge that Manitoba Hydro brought this to our attention earlier today.

And were very forthright and we appreciate their courtesy in -- in doing this.

THE CHAIRPERSON: Yes.

DR. BYRON WILLIAMS: It's collegial --

THE CHAIRPERSON: Certainly. Thank you. Okay.

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: All right, if -- you had an opportunity, Mr. Helland, and, Mr. Oakley, to have a quick skim of this new exhibit?

MR. PETER HELLAND: Quick skim is correct.

MR. BOB PETERS: And we're looking at figure 7.9 at the top of the screen, correct?

MR. PETER HELLAND: Yes.

MR. BOB PETERS: And, can you explain to the Board whether this either includes or excludes

major events?

MR. PETER HELLAND: I believe this actually includes ---

MR. CHRISTOPHER OAKLEY: Includes. Yeah. I believe this includes major events.

MR. BOB PETERS: And, so now if we scroll there's going to be another, I suspect, chart.

And is this your understanding -- this is the new chart, that compares Manitoba Hydro with other Canadian utilities with both comparisons excluding significant events.

MR. CHRISTOPHER OAKLEY: That is our understanding, yes.

MR. BOB PETERS: All right. And so the discussion before was Manitoba Hydro's SAIDI in the dark blue, solid line, compared to the dotted dash blue line for the Canadian average, is superior to the Canadian average. Correct?

MR. PETER HELLAND: Correct.

MR. BOB PETERS: Has that average narrowed from what -- from what you previously saw?

MR. CHRISTOPHER OAKLEY: I believe somewhat.

MR. PETER HELLAND: Yeah, somewhat. In fact, I think if you scroll a little further, Mr.

Peters, Manitoba Hydro was kind enough, if -- if I could use that word -- scroll a little further -- to show the revised values. Oh, go back a little bit. The 42 percent of SAIFI and 60 percent of SAIDI.

And I think those compare, if memory recollects, something around thirty-two (32). So it went from thirty-two (32) to forty-two (42) and 56 to 60 percent, something like that. Maybe I should actually look up my own slide.

But -- so the -- the gap has narrowed certainly, but the conclusions have not changed. Our conclusions don't change. Yeah. SAIDI was 32 percent previously and is now -- oh, 60 percent, sorry, and SAIFI has gone from fifty-six (56) to forty-two (42). Oh, okay. Well, they've changed, sorry.

MR. CHRISTOPHER OAKLEY: That's an unexpected result. We -- we will probably want to look at that.

MR. PETER HELLAND: Look at that. I'd -- I'd hate to compound something in a rush.

MR. BOB PETERS: All right. And why do you suggest that might be an unexpected result?

MR. CHRISTOPHER OAKLEY: Because the -- the SAIDI-SAIFI relationship as a percentage has changed, and -- and we would have thought that, after

removing the major events on the Canadian comparators, both numbers would have gotten closer. That's what we would expect 'cause those -- those major events cause big frequency -- big -- big individual events and durations normally.

MR. BOB PETERS: All right. I'm going to move away from this and Mr. Walichnowski can -- can see if he can -- can figure it out in the meantime while I keep moving.

We -- we talked about transmission and the Bipole III. We talked about generation in Keeyask. Let's turn to distribution in the bottom, I believe, of Midgard evidence, page 21, at the bottom.

And the question here -- I think the Chair has some questions as well, but we start with 85 percent of the value because you've taken out the extreme events, correct?

MR. PETER HELLAND: So -- so no. So the -- the extreme events have been removed, or external events have been removed, and then there's three (3) primary causes that account for 85 percent of the remaining -- like of what's remaining is my --

MR. BOB PETERS: And that tells the Board that 15 percent was related to these extreme events?

MR. CHRISTOPHER OAKLEY: No. Actually, the 15 percent is other stuff besides those three (3) things. So it -- it's not relating -- this statement doesn't relate to the pre-removal state.

MR. BOB PETERS: Okay. I understand your point. Let's deal with this tree contact first of all. It's Midgard's view that Manitoba Hydro should not use tree contacts to justify increased capital spending.

Have I got that right?

MR. CHRISTOPHER OAKLEY: Not increased. Sustaining capital spending. There might be situations where, because you had a particular tree issue, you might modify structures. But -- but I would have a hard time actually figuring when that might happen.

But -- but tree contacts are dealt with my dealing with trees. The structures aren't designed to withstand contact with trees. You have energized conductors in the air.

MR. BOB PETERS: And you were just putting it in the sustainment category?

MR. CHRISTOPHER OAKLEY: Well, we're just saying that you can't make sustaining investments to take -- deal with tree contacts. Typically, the

way you deal with -- as I say, with tree contacts is you either cut trees or you make a wider right-of-way.

So when you acquire the facility, or when you first build the facility, you -- you decide the -- the right-of-way you need for the importance of the facility, and you buy that much land. So that's -- that's a capital investment you can make to manage tree contacts.

But then you have to -- O&M-wise, you have to keep investing in cutting the trees down so that you maintain that clearance. Otherwise, making investments to deal with tree contacts is -- is not going to normally produce results.

MR. BOB PETERS: Does Manitoba Hydro's abilities today with -- with this business operations capital expenditure allow for the comparison of the effectiveness of money spent on vegetation management compared to that same money spent on sustaining capital?

MR. PETER HELLAND: I don't think so. I think they -- they acknowledge that their -- their asset management system hasn't advanced to that point.

MR. BOB PETERS: It's not mature enough yet?

MR. PETER HELLAND: Yeah. I think

they can do some things, but they just acknowledged we haven't got that all knitted together yet.

MR. BOB PETERS: And then I believe on the next page, 15 percent of these failures are due to unknown causes, and that's simply there's not sufficient data at this point in time to narrow that down.

MR. PETER HELLAND: And some unknown causes, I'm not sure you ever -- never can account for them. These -- these are far-flung assets. You don't have people watching them. Something happens, the line tripped out, you go, you can't find anything. Even if you walk the line you can't find anything.

They're really frustrating things to deal with, and I've had to deal with them in the past, and they're -- they're -- like any temper -- or any -- any intermittent outage on electrical systems drives you crazy to solve.

MR. BOB PETERS: When we deal with the -- if we scroll up to page 21, we see that that leaves equipment failures at 42 percent as a primary cause, correct?

MR. PETER HELLAND: Correct.

MR. BOB PETERS: I understood from what you had told the Chairman earlier today that

equipment failures were not the -- the highest cause of outages. Did I misunderstand that?

MR. PETER HELLAND: I guess, to clarify, 42 percent is less than 50 percent, so the remaining 58 percent is the -- as an aggregate is the largest cause. And -- I -- is your question is it the single largest? And the answer is it appears so, yes, but it is not the majority. Fifty-eight (58) percent is -- is the other causes.

MR. BOB PETERS: All right. And if we go to Midgard's evidence, I think it's on page 24, Figure 5.

What you're showing the Board here is if they look at the dark solid blue and the solid grey, they're going to see that Manitoba Hydro's equipment failure in the blue line is comparable to the Canadian average of equipment failure shown in the grey line.

MR. PETER HELLAND: Yes.

MR. BOB PETERS: And if we go to page 26 of your report, I think in the narrative there's a suggestion, yes, that Midgard recommends that Manitoba Hydro focus on -- and those are my words -- improving the response time to distribution outages as a preferred strategy rather than using these metrics to

justify increased capital expenditures, correct?

MR. PETER HELLAND: So -- so yes. And -- and maybe this is not perfectly worded. So Midgard recommends that Manitoba Hydro continue to select, and -- and that's probably what was missing here, improving the response times because in its evidence, Manitoba Hydro indicated that it was a cost-effective and direct way to -- to affect SAIDI-SAIFI outcomes.

And more or less, we were endorsing Manitoba Hydro's strategy of having resources to get out to outages in a -- in a reasonable time frame.

MR. BOB PETERS: And so while Manitoba Hydro indicates that's one (1) of the tools in their toolbox, Midgard's saying that -- that there should be more tools just like that.

MR. PETER HELLAND: Tools like this should be considered. So in an overall system perspective, it's not just capital. It's not just O&M. If you want to think about it, there's -- there's capital, there's O&M, there's O&M versus capital, and those would be in each of the business lines.

And then there's all of those and -- and probably O&M and capital for across all the business lines. So there's -- I don't want to say a

grand bargain, but the -- the larger objective is to break down sort of the siloing between the -- the major groups -- generation, transmission, distribution -- so that you can say, okay, let's balance O&M and capital across all our business lines and -- and, you know, find the best value for ratepayers because there may be a group where you say, look, we can move money from this group to another group and improve our reliability outcomes and reduce costs.

So, you -- you have a different trade-off and -- and that's what we were trying to -- to get at and forward, is that more holistic conversation.

MR. BOB PETERS: And, at this point in time, that trade-off is not able to be calculated by the utilities asset management infrastructure?

MR. PETER HELLAND: That's our understanding. Yes.

MR. BOB PETERS: All right. I'd like to turn to page 55 of Board counsels' Book of Documents on the same topic and, at the top of 55, we see there's a couple of sentences highlighted here, to focus the witnesses.

Again, it's to -- Midgard's suggestion to increase operational staff, rather than replacing low-cost assets with new assets, and the indication,

in the next sentence, that increased equipment failures don't justify replacing low failure consequence assets with better and more expensive assets. Correct?

MR. PETER HELLAND: Correct. And, just to provide a little bit of colour, if I may, when we talk about, for example, pole top transformers, which we've revisited several times here today -- maybe you're getting a little bit tired of that, I hope not -- there is going to be a demographic profile with regards to Manitoba Hydro's pole top transformers. They're low-consequence, high-volume assets.

The -- the demographics are what they are and to Vice-Chair Kapitany's earlier question about asset management strategy, the asset management strategy is we're going to let those assets run to fail, because it makes sense, from a -- a risk-value proposition.

What that implies to -- to maintain your system performance is you have to adequately resource the people who are going to go out and replace those assets reactively, when they run to fail, and it's simply that conversation that we're trying to -- to highlight.

You -- you have strategies and the

appropriate allocation of resources to enable and facilitate those strategies.

MR. BOB PETERS: All right. On that very point, if we have an access to the transcript from, I think, yesterday, transcript 1308, Line 6 -- Lines 16 to 18, and this was a question that I was speaking with Ms. Vine about, and I had put to her -- if I could just go up to Line 12, the suggestion about increasing operational staff to fix equipment failures is the best near-term strategy, rather than replacing mostly depreciated assets with newer, high-cost, undepreciated -- undepreciated assets.

You see the question?

MR. PETER HELLAND: I do.

MR. BOB PETERS: Her response took me a bit by surprise because she suggests that this is Midgard suggesting the client should be more reactive and less, in my words, proactive.

MR. PETER HELLAND: So, I -- I -- I saw this comment and I sort of chuckled because what it misses is the planning and the planning is to select an asset strategy for an asset, based on its place in the system and its role on the system and, once you've selected that strategy, one of which is run to fail, and I think that's the reactive component

that she's referring to, the planning has still occurred but it's straightforward planning.

It's our pole top transformers, we're going to let them run to fail. That's the plan. We know our demographics. We know how those transformers fail, on average. We resource accordingly. There is a plan. So, I think it's a slight -- I would just describe it as a misinterpretation or a little bit of confusion, but -- yeah.

MR. CHRISTOPHER OAKLEY: I -- I'm surprised that she was surprised, in a sense, because this is a really common strategy for things like pole top transformers. I don't think we know too many Canadian utilities that don't actually use run to fail. I -- actually, we know a couple that don't, but that's, typically, a discussion point with them, is, why aren't you using run to fail, and -- and -- and, so, yes, that's a reactive strategy, but it's a -- an appropriate economical reactive strategy that you address appropriately by being ready to replace them. As they say, it's a once -- once in, you know, let's say a forty (40) to fifty (50) year event and some of them go way longer than that.

And you're going to have a -- a short outage to a limited number of customers when that

happens. You want to extract every dollar out of that thing, because that's an asset you can do that with.

Others, you -- you have to take the chance and -- and obviously abandon part of your -- your asset life by taking it out earlier, because you don't know when it'll fail. Nobody has a crystal ball. We don't expect Manitoba Hydro has one. You still want to take them until you've extracted the most asset life out of them that you can without putting the system at risk.

Again, always system focus, always system focus. What -- what am I trying to deliver? What's the best cost to deliver that thing?

MR. BOB PETERS: Okay. But in -- in fairness to Ms. Vine, I think if we go down to line 22 she continues in response to a question, and -- and she includes in her answer that some assets are fine to do fix on fail, but when you get to the point that you are beyond the asset failing, and failing service to customers, you've gone way too far.

Do you see that answer?

MR. PETER HELLAND: I -- I do, and -- and perhaps we're in agreement with each other then. If you take the -- the totality of the -- of the evidence there.

MR. BOB PETERS: Does Midgard know which such Manitoba Hydro assets are on a run-to-fail basis?

MR. PETER HELLAND: We do not. And it's actually one (1) of the things that we -- we notice here. If you go to tab 7, page 20 of 51, cell 2, document asset class strategies. It's something that Manitoba Hydro is planning to do in 2027, and that tentative based on framework requirements.

I would probably recommend that that should be advanced because knowing your asset management strategies is a key input and part of planning. So -- yeah, that's a more comprehensive answer to the question and you probably won't know until 2027 as per the current plan.

MR. BOB PETERS: All right. And in your discussions with the Vice-Chair, you were suggesting that asset classes need their own strategies, correct?

MR. PETER HELLAND: Asset classes and then within an asset class, understanding the different system impacts that different assets have. So, it's not solely the asset class. It's asset class and then consideration for their place and role in the system.

So, for example, radial transmission line versus redundant transmission line. You -- you would have poles, but you may have different condition replacement requirements depending on whether it's radial or redundant.

And -- and we discussed that a little bit in the direct evidence, the slide deck with the -- the two (2) transformers and the switch as -- as an example.

MR. CHRISTOPHER OAKLEY: Page 33 of -- of the direct evidence. It's -- it's exactly that discussion.

MR. PETER HELLAND: So you -- you would have -- you would do it by asset class, because that's typically an easy way to organize it, but you would also have the consideration for its place in the system.

MR. BOB PETERS: I -- I thank you for your point. I wanted to just ask Midgard what other assets has Midgard seen where the strategy was run to fail?

MR. CHRISTOPHER OAKLEY: Defacto distribution wood poles turn into that. We were chuck -- chuckling over a wood pole. I took a picture over on -- I'm not -- I think it's at Criden (phonetic) or

Crauten (phonetic), Coryden Avenue.

It's a -- it's a wonderful pole. It's got all sorts of elaborate headframe stuff and there's two (2) separate sets of cross arms and that sort of thing.

And yeah, there -- there it is right there. And this is -- this is one (1) of those things that -- I think it was a Winnipeg Hydro thing originally, before it was acquired, but it just -- in my mind it just strikes to the heart of -- you run wood poles to -- wood poles to fail.

And this is a pretty important pull. You'll see it's kind of a junction of a whole bunch of cool things. I don't know if we zoom in at the bot -- can we zoom in to this one at all?

If you -- if you were to see the very bottom of that -- that pole, you would see that it's actually been hit by plows and probably all sorts of groovy things, but it's still there doing its job, it's just fine.

It would probably actually be classified as very poor condition. I don't think anyone intends to replace it until it gets even closer to falling down.

So, this is why I don't get too

horrified when -- when someone will describe to me a pole is getting in bad shape. It's like, yeah, so? My rule used to be, if someone won't climb it, it's time to replace it. That's kind of a rough rule of thumb.

MR. BOB PETERS: I'll resist asking whether you went to Enoteca or Mona Lisa, but...

THE CHAIRPERSON: I was just going to say nobody's going there for dinner tonight.

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: The -- the thrust of your -- your point is you've talked at some length, and probably enough, about pole top transformers. Now you're saying wooden poles. But are --

MR. CHRISTOPHER OAKLEY: I'm saying it's defacto. I'm not -- I can't tell you for sure that that's Hydro's strategy on those. And -- and it wouldn't be sort of all wood poles because some wood poles are going to be in a critical situation, and it's just -- you're not going to run them to fail. You're going to take care of them.

I thought that was a pretty critical one, that -- frankly. It looks like it's carrying all sorts of wires, doing really important things in that

-- that intersection, but clearly, it's, you know, being allowed to get pretty close to fail before it gets replaced, and that's not an imprudent decision.

I -- I could show you pictures of a wood pole that's actually failed a ground line and it's actually sitting between the two (2) other poles that are holding it up, and the only reason anyone ever finds out that it actually broke off is someone goes and leans on it or something one day and they go, oh, yeah, there's nothing there anymore.

It was still doing its job, which is to keep the conductors in the air. Air is just the cheapest insulator we have. And that's all that pole is doing, is, if you could make it float up there with sky hooks, that's what you'd use.

MR. BOB PETERS: Maybe back to page 55 of Board counsels' book of documents just to conclude on this -- on this matter.

There was the recommendation or suggestion from Midgard to increase operational staff rather than put money into new undepreciated assets, correct?

MR. PETER HELLAND: So, to be clear, to match operational staff to the asset management strategies you've chosen, in this case run to fail for

pole top transformers for -- for risk of flogging a death horse and -- and matching those -- matching those things.

So, it's not a carte blanche increase. It's, go look at your assets. Figure out what your demographic profile looks like, what your expected needs are going to be, and resource that strategy accordingly.

MR. BOB PETERS: And if that strategy is resourced by Manitoba Hydro to hypothetically replace five thousand (5,000) poles a day, but a major event or something happens where we now have to replace ten (10) times that, there's no human resources to do that.

MR. CHRISTOPHER OAKLEY: I think that's the case with any utility that has a major event. And that's why utilities actually collaborate with each other when those things happen any number of times.

I've worked with utilities that have -- have sent crews to neighbouring provinces, or the US even, and vice versa, the US will send resources here because we all know we have to chip in together when it's time to fix up after a big storm.

MR. BOB PETERS: And how does that

answer, Mr. Oakley, change that, instead of the five thousand (5,000) per year that Manitoba Hydro is resourced to replace, suddenly due to the age and condition of the stock, there now needs to be fifty thousand (50,000) replaced in a year not due to a major event, but just as a matter of the asset?

MR. CHRISTOPHER OAKLEY: Because -- I see. Well, you've hit a demographic wall. And that's -- we don't see that analysis here. We understand. And they've given us some demographics, but that's not what this is notionally based on yet.

And also, those -- you can take the age of those poles -- as I described, poles last a long time here. You have a good, dry climate. You've -- you've got half the year when the thing is frozen, and they don't rot when that happens.

You get a lot more life out of them. And -- and I think that the seventy (70) years is -- is probably very conservative for some poles. I mean, some will rot after ten (10) years. They're -- they're in a bad spot and the ants get to them or something, but...

So, I think that they certainly have to be aware of that demographic trend as it approaches, but I don't think you change your strategy on it. You

-- you might start to have to say, well, we start ramping up now because we see we're hitting the wave. And we start seeing those -- it may be a lagging indicator, but you start seeing poles falling down more often.

MR. BOB PETERS: Has Midgard quantified how much more Manitoba Hydro should spend on operation staff compared to capital expenditures to reduce outage duration?

MR. PETER HELLAND: No, we haven't done that analysis.

MR. BOB PETERS: You don't have the data to it or it's not part of your assignment?

MR. PETER HELLAND: We don't have the data. It certainly wasn't in evidence to show that -- that kind of calculation. And frankly, the only party that could really do that effectively is -- is Hydro. They know their system and they know where their staff are located.

MR. BOB PETERS: I'm going to turn to a different topic, and it dealt with surveys. And my friend, Mr. Hacault, and others have also canvassed this topic, so I don't want to repeat anything that they've done.

But is it correct, if we go to page 39

of the Midgard report, at the top, and look to see:

> "Manitoba Hydro does not appear to genuinely or actively solicit ratepayer desires regarding the tradeoffs that Manitoba PUB is asked to adjudicate."

That's your sentence, correct?

MR. PETER HELLAND: Correct.

MR. BOB PETERS: And I take it from that and the other discussions that I've heard that the efforts to date that Manitoba Hydro has used, Midgard thinks it falls short of getting the -- the true customer intention and the customer's desirability on tradeoffs between reliability and higher rates?

MR. PETER HELLAND: I might rephrase it slightly. Manitoba Hydro's interpretation of their survey falls short.

MR. BOB PETERS: That just means you have a different interpretation?

MR. PETER HELLAND: Correct.

MR. BOB PETERS: And I know Board Member Sy and others had questions relative to those surveys. But at the bottom of page 39 I think you set out -- I -- and I want to know, are these the two (2)

questions that you pulled from -- from the MFR-12 survey that you think are the only two (2) that were relied on by Manitoba Hydro when they talked about customer preference?

MR. PETER HELLAND: No. So, just to take a step back. We -- we had reviewed the -- the survey evidence presented by Manitoba Hydro. And -- and I do that regularly as part of our work in Ontario, for example, soften the role that I have in our -- in our team, and had come to a conclusion with regards to Manitoba Hydro's survey and their interpretation of the survey.

And then when I saw Rainkie's evidence, his interpretation and conclusions regard the survey were very closely aligned. And, as a result, we elected to quote Rainkie and go with what he was saying, and the basis for it, because it matched our interpretation.

So, it was partly to simplify the record. I'm not sure that I achieved that. Does that answer your question fully, Mr. Peters?

MR. BOB PETERS: It does. Thank you. At the bottom of page 30 of Midgard's report, Midgard distills Manitoba Hydro's target is to maintain the levels of safety and reliability to which they claim

Manitobans are accustomed, correct?

MR. PETER HELLAND: Correct.

MR. BOB PETERS: And it's also correct, is it, that based on Manitoba Hydro's current maturity in the asset management, they don't yet know what the correct amount of spending is to maintain the current levels?

MR. PETER HELLAND: That's correct.

MR. BOB PETERS: But if the index scores that we've seen in these graphs remains above the Canadian average, doesn't that mean Manitoba's system is, in fact, being maintained at a reliability level greater than the Canadian average?

(BRIEF PAUSE)

MR. PETER HELLAND: Can you rephrase that again. I just want to make sure I understand what you're talking about there with indices.

MR. BOB PETERS: So, if -- if we're going to judge Manitoba Hydro's reliability using the SAIDI and SAIFI metrics, how -- how will Manitoba Hydro know what happens when they spend less on their business operations capital?

MR. PETER HELLAND: So, with a more

mature asset management system, Manitoba Hydro would be able to model and evaluate different options or scenarios and its impact on the system with regards to reliability and risk.

So in a -- in a more mature system, you would be able to say, Okay, you know, what is business as usual? What is this type of constraint envelope? What is this type of constraint envelope? And what are some of the tradeoffs we'll see with regards to reliability and risk?

And then be able to make a more nuanced and informed decision about what's the appropriate selection.

MR. BOB PETERS: And until Manitoba Hydro has that more mature system, they won't be able to make that -- that determination, correct?

MR. PETER HELLAND: Not -- not proactively.

MR. BOB PETERS: All right. At page 52 of Board counsels' book of documents, there's a response by Manitoba Hydro to one of the Information Requests. And in the 'D' part, it's highlighted.

Manitoba Hydro is telling the Board that it would -- that while it would be intuitive to assume that lowering performance targets will result

in lower required business operations capital investment, Manitoba Hydro is unable to confirm this.

And they also then go on to cite about the -- the maturity level is lacking for them to -- to come to that. Correct?

MR. PETER HELLAND: Correct.

MR. BOB PETERS: And is that the same point you just tried to make to the Board, is that while Manitoba Hydro's matrices -- or metrics should -- are above Canadian averages, intuitively, spending less on business operations capital would cause Manitoba averages to go closer to Canadian averages?

MR. PETER HELLAND: Intuitively, you -- you would expect that.

But, there are offsetting and potentially mitigating factors. For example, if you offset that against O&M activities, for example managing tree contacts, vegetation management program. So it's -- it's not a silo-by-silo conversation. It's what's the interaction between the different aspects of Manitoba Hydro and where to best allocate your dollars. And that's the distinction we're trying to draw.

MR. BOB PETERS: On page 33 of your report, gentlemen, it's this figure 10 chart.

In light of the answers that we've just come through that the system is not yet mature enough to provide that clarity, at what point in time, on your scale, will Manitoba Hydro have that clarity?

MR. PETER HELLAND: As -- as Manitoba Hydro's asset management system matures, you will start to get more and more information and more and more visibility.

What I will call competent clarity will -- will arrive approximately when they've achieved a standing -- a score -- an asset management maturity score of three (3), which -- you know, as per ISO 55000, is what's considered competent as per that standard.

Up to that point, it will improve over time. You'll get more and more clarity over time as their asset management maturity improves. And it's a continuum. You'll get more clarity through time as the maturity improves.

It's not a -- included in asset management is the objective of continuous improvement. So it's -- it's a never ending cycle. Like, it's always -- you're always trying to continually improve.

So it doesn't stop at a certain point. You can't just say, I've arrived, I'm done. It's --

it's an ongoing and adaptive process.

MR. CHRISTOPHER OAKLEY: It probably will help when the distribution system catches up somewhat to the -- the transmission and generation as well. Because, right now, investments made to -- to deal with reliability -- since everyone gets served mostly by the -- by the distribution system, if you're not meeting your reliability targets on that because you're not investing appropriately in distribution assets versus some of the other options, you won't see those reliability benefits.

If you're going to actually use SAIDI and SAIFI as this is my benchmark I'm going to measure myself against, you really have to integrate distribution into those decisions.

And I -- I think, you know, Hydro tries to do that, but they -- they acknowledge that the asset management system right now can't do that for them. They have to use judgment and -- and that's the nature. You do what you have to with what you've got.

MR. BOB PETERS: And to get to that competent level is approximately five (5) years out, according to Manitoba Hydro's time line.

MR. PETER HELLAND: That's my understanding of Manitoba's time line.

MR. BOB PETERS: Just before I leave this chart, Ms. Vine provided document Manitoba Hydro 34. And on slide 9 of that, she provided a scale that -- I asked her -- I believe I asked her to compare it to yours. And she didn't think yours was the -- was the proper scale. I'm not sure if -- those weren't exactly her words.

What's the difference between the two of your -- your scales that you put before the Board?

MR. PETER HELLAND: I'm not sure there's as much difference as maybe is being made.

We all agree that a score of three (3) is competent. From there, my general view is that if your score is less than three (3), you haven't yet reached competence.

So if competent is at three (3) and that's your standard, and -- and I -- that's widely agreed because AMCL says it -- We're -- we're good with that. Three (3) is competent.

So less than three (3) is less than competent per the standard.

So when we look at competent at three (3), less than three (3), the -- the stage that's less than three (3) according to what we see on the screen there, is developing.

So from two (2), in that case, to three (3), you're developing. Because you haven't yet reached competence.

And then, aware goes from one (1) to two (2) accordingly. Because it's the next on the step.

And then, I think it's novice or -- I can't remember the word. But from zero (0) to one (1), it is aware -- not aware; novice or something like that. I forget the exact word that gets used at this time.

MR. BOB PETERS: We'll -- we'll go back --

MR. PETER HELLAND: But -- but hinged on something that we all agree about. Three (3) is competent.

MR. BOB PETERS: All right. And do you recognize this -- this chart that Ms. Vine has used?

MR. PETER HELLAND: I -- I see it now. In colour, it's nice to see. The original evidence was in black and white, so I didn't appreciate the colours. The colours are lovely.

MR. BOB PETERS: But is this one that's accepted by the asset management industry more

than the one that you've put at page 43 of Board counsels' book of documents?

Maybe we can just switch back to the previous one, Ms. Schubert.

MR. PETER HELLAND: Oh, I -- so we weren't putting this forward as our interpretation. We were quoting this as what UMS provided.

I would say that our interpretation is the same as AMCL's for this proceeding. And -- and the interpretation is founded or anchored on three (3) being the -- the standard for competence. And then, you work from there.

MR. BOB PETERS: All right. I want to turn to a different topic in relation to Board Member Sy's question of witnesses.

On page 18 of the Midgard report, there's a conclusion that -- highlighted at the bottom:

> "Manitoba Hydro's strategy of over-investing in assets made sense when electricity growth rates were high. But in today's mature electric grid environment, with low growth rates, a different strategy is warranted when evaluating asset investments."

Do you see that?

MR. PETER HELLAND: Yes, I do.

MR. BOB PETERS: Those are your words, right?

MR. PETER HELLAND: Yes.

MR. BOB PETERS: And the suggestion there is that Manitoba Hydro is doing its business operations capital expenditures assuming it was still in a high growth rate era, correct?

MR. PETER HELLAND: That was our interpretation of what Manitoba Hydro provided to us as evidence, yes.

MR. BOB PETERS: If we go -- if we go back to that somewhat underappreciated Board counsel book of documents, 19-1. Go to page 33. We can start on 33.

We start with a Midgard drawing out the Manitoba load growth since 1961. Do you recall that?

MR. PETER HELLAND: Yes.

MR. BOB PETERS: And, I took from this that in the '60s and '70s and into the '80s there was -- there was a fairly steep growth curve or growth rate. Would that be fair?'

MR. PETER HELLAND: Correct. And I think we --

MR. BOB PETERS: You did the math on it --

MR. PETER HELLAND: -- 17 point something percent.

MR. BOB PETERS: Yea, I was going to try and stay away, but we can come back to that.

And then -- and then, you know, things happened and through the '90s to -- to the 2000, the growth rate was also again relatively steep. Correct?

MR. PETER HELLAND: The period from -- yeah, there -- there's -- there was a -- a dip and then a sort of a recovery, if you will.

MR. BOB PETERS: All right. And then starting in 2000, going through to 2010, up and down not -- not the same growth rate. Correct?

MR. PETER HELLAND: Correct.

MR. BOB PETERS: And then the last ten (10) years shown here from 2010 to 2020, Midgard is telling this Board that, in all fairness, the growth rate in Manitoba is -- is quite flat.

MR. PETER HELLAND: Yes.

MR. BOB PETERS: All right. With --

MR. PETER HELLAND: And just to be clear, as per Stats Can data.

MR. BOB PETERS: Well, if we turn to

page 34 we see that Manitoba Hydro has provided us with the general consumer sales adjusted -- weather adjusted figures. Correct?

MR. PETER HELLAND: Yes.

MR. BOB PETERS: And I -- I don't think we're seeing anything different, but if we go to 35, this is a document that did not come from Manitoba Hydro. It was put together using the numbers I just showed you on 34, to try to figure out where is the growth rate in Manitoba going and how does that relate to what your evidence was telling the Board.

Would it be correct that from 2020 to 2025 and even to 2030, Midgard is telling this Board that Manitoba Hydro's compounded annual growth rate would be relatively low.

MR. PETER HELLAND: That's what the graph appears to say, yes.

MR. BOB PETERS: And after we get out for a -- the next decade, the growth rate is supposed to increase to I think it's 0.4 percent a year.

Do you recall that?

MR. PETER HELLAND: Yeah, the -- the growth rate increases at -- in -- in the later years of the forecast, the -- the growth rate increases.

MR. BOB PETERS: And that future

growth is ten (10) times higher than what the current growth rate is?

MR. PETER HELLAND: I -- I can't comment on the ten (10), but yes, the -- the future growth rate is -- is -- is higher than -- than the current growth rate, yes, and materially higher.

MR. BOB PETERS: And I thought from 19 -- I thought you were telling the Board -- you -- you gave us one number early on, and then from '05 to 2019, the compound annual growth rate was around 0.04 percent.

MR. PETER HELLAND: Oh. Okay, sorry, I'm starting to catch up with the math you're -- you're describing. Okay.

MR. BOB PETERS: Don't try to keep up with legal math, that will -- you'll need a course in that. But -- so my --

MR. PETER HELLAND: If I understand correctly, the '05 to 2019, 0.04 percent based on our -- the data that we -- we got out of Stats Can, forecast for the first ten (10) years of .4 percent. And those would be ten (10) times different.

MR. BOB PETERS: All right.

MR. PETER HELLAND: Yeah.

MR. BOB PETERS: And that -- and that

ten (10) times different is being driven by the decarbonization in the future?

MR. PETER HELLAND: Did not look into what's driving that, specifically, if that's the key driver or not. I -- I take that at face value. The -- the -- the 0.04 percent at face value.

MR. BOB PETERS: And, if the growth rates are increasing, does this not suggest that Manitoba Hydro needs now to prepare for that load growth?

MR. PETER HELLAND: So, herein lies a very interesting question. So, when you look at sort of what I'll describe as historic growth rates, this pre 1985 growth rate, which I think we estimated at seven point -- I think six-nine (7.69) percent, but I'll say somewhere in the middle of seven (7). I just don't have the number at the top of my head here.

I guess I could -- 7.69 percent. And then we look at the forecast growth rates that are implied by the -- the -- the green line here, moving from zero point -- so, it is 7.69 percent, so moving 0.4 percent in the early years.

And then I think increasing to like 2 percent or 2 1/2 percent in the latter years. I -- I don't really know.

But, the important thing is, it's still a fraction of that pre 1985 growth rate. We're not returning to the pre 1985 seven (7) and change growth rate. It's something far lower than that.

So, what that implies is that if you are thinking that that sixty (60) year old strategy that was -- made sense, and was -- I don't want to say validated, but validated might be a -- a reasonable word, in with the pre 1985 growth rate. Continuing that into the future is fraught because your growth rates are still a fraction of that pre 1985 growth.

And -- and that has significant rate impacts for ratepayers -- or the potential for significant rate impacts for ratepayers.

MR. BOB PETERS: All right. I've got that point, but underlying that, using the rearview mirror that you were trying not to use earlier, is Midgard saying that Keeyask and Bipole III are over-builds?

MR. PETER HELLAND: I'm not going to comment on past decisions. Manitoba Hydro has the system they have. It -- the current system has surplus and -- and we've discussed that quite a bit.

Our point is that when you go forward, you evaluate those future-oriented investments on the

basis of what is necessary for your domestic reliability versus what is necessary for economic opportunity and provide the justifications accordingly in a clear and transparent manner.

MR. BOB PETERS: I'll come back to the -- to the capacity and the over-build comment in a -- in a few minutes.

I did want to turn to a -- a different topic. And on page 48 of the Midgard Report, there's a quote -- there's a quote from Manitoba Hydro that's in -- highlighted, about a deferral of capital expenditures would only temporarily reduce finance expense until the deferral -- the deferred expenditures are undertaken at a later date.

And it continues on, correct?

MR. PETER HELLAND: Correct.

MR. BOB PETERS: Do you take from Manitoba Hydro's evidence that a temporary deferral of a business operations project could result in an increase in costs at a later date?

MR. PETER HELLAND: I take from Manitoba Hydro's statement, that they are using that fear or that concern as a justification for not deferring projects and it would be our argument that that's not adequate justification for not deferring

projects.

MR. BOB PETERS: Let's turn to the transcript, 'cause there was some discussion of that yesterday, maybe we can tie that together.

Page 1338, I think starting on line 17, Ms. Halayko was responding to some questions. And on line 21:

> "Investments we defer now is going to be for, you know, future Manitobans or for next year. It's not like the spending we have now can be deferred and there's nothing following in its place."

Do you see that?

MR. PETER HELLAND: Yes. I do.

MR. BOB PETERS: And then, I think on, perhaps the next page there was discussion about a bow wave and pushing deferred projects down the time line.

Do you recall that?

MR. PETER HELLAND: I don't specifically require -- recall the word 'bow wave', but I -- I see the text here and -- and understand what's being said, I believe.

MR. BOB PETERS: All right. So, Manitoba Hydro is saying that if -- if you -- if you

defer a project, you're pushing it down the road, and that's not solving your problem?

MR. PETER HELLAND: So, that's what I believe Manitoba Hydro's position would be and --

MR. BOB PETERS: Is that intuitively correct?

MR. PETER HELLAND: If you had a solely an asset focus to your world, I could see how Manitoba Hydro would arrive at that position or stance.

However, when you take a step back and look at a system perspective and the role that assets play in a system -- and I'll -- I'll go to Grand Rapids 4 again -- it's correct.

If we defer the investment in Grand Rapids 4, it would -- ultimately, a project is going to get done at Grand Rapids 4. I'm not going to say what the project will be, but a project will get done.

The deferral requires that you then decide, okay, what's the new role of that asset in the system? Is it for those few -- few peak hours on winter peak or is it, you know, to provide base load power?

If you're going to defer it, you may have to change from a base load orientation to the --

to the asset to become a peaking oriented asset.

So, I appreciate what they're saying about bow wave. The -- the asset management maturity that Manitoba Hydro has doesn't allow them, in particular with the lack of asset health indices and their major deficiency there, to quantitatively justify or provide the evidence around those types of arguments. They -- they simply lack the data. It's -- it's their weakest area of scoring.

But if you had solely a asset focus and an intuition, that the assets are getting older and eventually there's a problem coming, I can see how Manitoba Hydro would have this statement.

However, if you have asset data, good asset health data, and you know the conditions of your -- condition of your asset -- assets and know how they degrade over time, you can now say, okay, here's my demographics, here's how it's going to change through time, here's what's coming in the future, let me show you with clarity and transparency this is how I will plan to use these different assets in my system now, in that context, and you come to a different tradeoff and set of considerations.

MR. BOB PETERS: Thank you for that. Maybe we could turn to Midgard's report, top of page

43. I just want to follow that further with you, Mr. Helland.

We see highlighted the statement that:

> "Presumably, the overall capital spending targets are, therefore, determined in discussions between the senior management team, the Manitoba Hydro Electric Board, and the government.
>
> How the overall capital envelope is then allocated between projects in the generation transmission and distribution business groups is not clarified in the evidence. But the implication is that the group that lobbies the most effectively for its cause will be allocated the biggest envelope."

Those are your words?

MR. PETER HELLAND: Yes.

MR. BOB PETERS: But isn't it also correct that Manitoba Hydro is already using Copperleaf software as a decision-making tool to value dissimilar projects?

(BRIEF PAUSE)

MR. PETER HELLAND: So, I think part of the problem before the Board and -- and Manitoba Hydro is Copperleaf is a -- is a good tool. There are a variety of tools out in the marketplace; Copperleaf is one. It's -- it's suitable for its intended purpose.

The difficulty and the fundamental problem, and it's identified quite clearly in AMCL's report with their recommendations, is that the information that is going into Copperleaf is inadequate, in particular, asset health indices, and -- and AMCL is quite clear on it.

They -- they say Manitoba Hydro's asset management maturity is being constrained by asset health indices, i.e., their poor quality. And so, you can have Copperleaf, serviceable tool, good tool, but if you're not giving it good inputs, you will never get good outputs.

And the AMCL report is quite clear on that, improve the quality of the inputs, the -- the three (3) lowest scoring areas, risk and review, asset management decision-making, asset information. Those are the key areas. And -- and I -- we echo that in

our report. Please get on to those three (3) areas because without that you'll -- you'll never advance materially. That -- that's kind of the -- the real important message out of the AMCL report which -- which we endorse and support.

MR. BOB PETERS: Embarrassingly, I jotted down two (2) of the three (3). Would you mind repeating those three (3) again.

MR. PETER HELLAND: Asset -- asset management decision-making, risk and review, and asset information. That's what AMCL calls them.

MR. BOB PETERS: To -- to attend to those three (3) identified deficiencies and to get further along the maturity time line, gentlemen, how does Manitoba Hydro do that?

MR. CHRISTOPHER OAKLEY: I think it's been identified for quite some time. They need data. That's -- you just can't start without the data. And then starting to -- with the data, you can start processing your -- your asset health indices.

The asset health indices are that predictive tool that you need to have. And so, even with run-to-fail assets, you need to know when that -- when the ramp-up has to happen. You need to know predictively where it's going to happen. And you

start to get a better picture of that as you get more fulsome data.

But again, as we've seen, the distribution system is probably the most directly responsible for -- for your reliability performance, but it's the one that -- that Hydro has the least comprehensive and well knitted together asset management processes, so it's a pretty important weakness.

And, you know, having been in enough utilities myself, I know that -- that sometimes the folks from generation and transmission have sort of the glamourous stuff. And -- and I think Peter used the description yesterday, the -- the kind of the other child sort of is -- is distribution because you can kind of ignore it a little bit.

It's not that -- it's not that elaborate. It's not that, let's say, sexy to work on sometimes, but it needs to be worked on. It's -- it's the final interface to customers. And -- and you need to kind of ramp that stuff up.

You can -- you can maintain a distribution system really low tech. But if you're an integrated utility that has a certain amount of capital that it can spend, you need to direct your

funds much more consciously towards creating that product that you want, which is reliable service, not because this is a really groovy thing.

And we -- you know, we appreciate that Bipoles are fantastic assets; they're high-tech. The -- the generating -- you know, I love working on hydro generators; they're lovely. It's really fun and exciting and everything, but that might not be where your best dollar is spent right now.

MR. PETER HELLAND: And, Mr. Peters, I'll be -- I'll be short and -- just to add on to Chris. In Chapter 5 of the AMCL report, they have a summary and recommendations. They -- they provide the roadmap with, you know, overall summary, prior -- enabling recommendations, priority recommendation, do this.

MR. BOB PETERS: And --

MR. PETER HELLAND: Do -- do what AMCL recommends.

MR. BOB PETERS: All right. But how do they do that? Do they need more human resources to do that? Do they need more support from executive or management or do they just need more money?

MR. PETER HELLAND: Okay. So, from reading the AMCL report, it's my understanding that

Manitoba Hydro has put in place this senior management piece. So, the answer to that is I think that's settled enough for now.

Where it has to happen is primarily in those three (3) key areas. There's -- there's other things in the recommendations. Is that solved with money? The evidence tells me that they've already wrapped up their group -- their asset management group. They have a hundred additional people there, if I remember the evidence correctly.

I believe their plan, as I understand their evidence, is to advance the AMCL recommendations, and it's already in their plan.

So, I -- I think the -- the money's there, and if not the people already, the plan to -- to get the people. But the key is, please, implement what's in the AMCL report.

So -- so, specific hows about, you know, which department and that, that'll have to be for Manitoba Hydro. That's -- that's a level of detail I -- I, unfortunately, can't go into.

MR. BOB PETERS: I -- I have your points. Thank you for that. I want to turn to --

THE CHAIRPERSON: Sorry. Can I just ask a question.

MR. BOB PETERS: Yes, certainly.

THE CHAIRPERSON: Can I ask a question about this paragraph. You know, I -- I read this before, and probably not closely enough. And then Mr. Peters was good enough to highlight it, so. And I've got a problem with the paragraph.

Do we have -- or do you know of evidence of how the capital envelope was allocated? Your comment is it's not clarified in the evidence. Your first paragraph is, you're -- you're making an assumption. It's -- spending targets are determined in discussions between senior management, Manitoba Hydro, and the government.

Do you know of discussions with the government?

MR. CHRISTOPHER OAKLEY: No. We -- we actually tried to provide sort of the sources. We were trying to figure out, well, where is the decision made. We know that there's an envelope, or we -- we intuit that based on the way that we see the budget being presented, which is a whole bunch of projects that you're going --

THE CHAIRPERSON: Right.

MR. CHRISTOPHER OAKLEY: -- to take some off, right. So, someone said cut it off here.

THE CHAIRPERSON: But that may be just Manitoba Hydro?

MR. CHRISTOPHER OAKLEY: It could be. We -- we don't know for sure. But that's what we tried to -- if you look through the paragraphs above this --

THE CHAIRPERSON: Yeah.

MR. CHRISTOPHER OAKLEY: -- we tried to say, here -- here in evidence is where you talk about this. So, I mean, I puzzled over this personally for hours just trying to say, well, let me -- let me just pretend I'm walking through the halls and I'm taking this document to here and I'm having these discussions with these people.

I just tried to -- and, you know, frankly, from my experience in the way we used to do it in utilities, that's how we used to do it anyway. So it would map onto my -- my own past experience. You -- you typically get together in a big room and you say, what's the budget, and how are we going to allocate the dollars between the -- the different groups?

I mean, that was my actual specific job at -- originally at -- at West Kootenay Power. I was asset deployment, so I had to take a look and see,

well, where are we putting those dollars?

THE CHAIRPERSON: Yeah. I guess the problem I have is that, from previous hearing in '18, there were comments about that in terms of that's how they used to make decisions. It was siloed.

Since then, we keep hearing about changes. Certainly what they're -- what's here is different. It may not be fast enough, the right way, or whatever, but I guess the problem is I'm -- I'm reading this in relation to something that was done five (5) years ago with nothing indicating that's how it's done now.

I mean, it didn't come in -- I don't think it came in evidence from Manitoba Hydro.

MR. PETER HELLAND: Can we just scroll down a little bit so we can -- so, sorry, scroll up a little bit so we can see the preceding quote here. You know:

> "The recommended capital targets are evaluated, along with Manitoba Hydro's long-term financial situation."

THE CHAIRPERSON: Right.

MR. PETER HELLAND:

> "Senior management reviews and

approves the targets."

And then it goes on and on, and it says:

"As described in Coalition MHI-91A, which includes approval by the Manitoba Hydroelectric Board and government."

We just -- we didn't --

THE CHAIRPERSON: Yeah. No, no. Sorry, sorry. And -- and the process is that their capital expenditures are approved by Treasury Board. That's different than -- scroll down, please, scroll down. That's different than -- yeah. Okay.

I mean, this sounded like there were ongoing discussions between government and that rather than approval. So I'll just -- I'll just leave it alone and stop interrupting Mr. Peters.

MR. BOB PETERS: No, Mr. Chair. Without -- without giving more away than the trailer of the movie, there's a reason to come back next week because when the Revenue Requirement Panel is here, there will be somebody who's going to assist the Board in getting to the bottom of that very question.

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: I want to turn to Board counsels' book of documents, page 56, if Ms. Schubert can -- can bring that up, please. This is Pointe du Bois Renewable Energy Project.

I just have a few minutes left, gentlemen, but this has been talked about, including with my friend Mr. Ghikas.

The concern that I understood from Midgard is that this project is an expensive project whether or not there's a federal contribution to it.

MR. PETER HELLAND: I mean, it's certainly a lot of dollars. I won't comment whether it's not an appropriate amount of dollars for what you get out of it, but I think this gets to the core of our concern about -- about the -- the surplus system versus the -- the minimum system.

We don't know where -- where it lays. We asked Hydro to tell us, you know, So is this actually primarily intended for exports, or is it -- is it for, you know, domestic loads? And then they didn't really want to talk about domestic versus firm exports, so we treat those as one (1) block. I don't know if that's appropriate, but we just decided that's not a hill to die on.

But -- but Hydro then says, we would

expect that we -- we actually really need this for the system by about 2032 -- again, whether that's for -- for combined firm and -- and domestic -- but the -- the project would be needed by then.

Again, it's hard to evaluate whether you should look at at a purely economic basis to say, am I getting enough revenue for building this -- this unit, or building at the time we're going to build it?

The argument is that -- that it's -- it makes sense because we're going to get a big federal, you know, incentive here. It's a legitimate financial consideration, there's no doubt about it. It just doesn't justify a project.

MR. BOB PETERS: All right. Let's -- let's -- if we could go to the next -- I think it's on page -- maybe go ahead a page, maybe another page, please, forward. Just -- just wanted to confirm -- and I guess we'll keep going. I was looking for the...

(BRIEF PAUSE)

MR. BOB PETERS: Thank you. Thank you, Ms. Schubert.

We see at the top of the screen that

the project would increase system capacity by 54 megawatts, correct?

MR. PETER HELLAND: Yes.

MR. BOB PETERS: And I -- I think there's an undertaking to come back to me with some specific numbers, but let's -- let's use 54 megawatts, and then let's turn to Board counsels' volume 1 of the book of the documents to page 59 and look at the winter capacity supply and demand table.

You're familiar with this table, at least in general terms?

MR. CHRISTOPHER OAKLEY: I assume I've seen it. It just doesn't flash into my mind as something --

MR. BOB PETERS: Well, you -- you also saw with Mr. Ghikas a chart, and I could find it, but it was a chart that shows you on one side energy, one side capacity. And I'm just looking at the numbers that underpin that.

Will you accept that?

MR. CHRISTOPHER OAKLEY: Yeah, I guess that's fine. Sure, yes.

MR. BOB PETERS: All right. And so where we're seated today in the '23/'24 year, we go to the bottom, and let's assume that there's 164

megawatts of surplus capacity. You with me?

MR. CHRISTOPHER OAKLEY: Yes.

MR. BOB PETERS: And then the -- the Pointe du Bois Project I think is finished in approximately '27/'28, and its numbers would be included in the existing and committed Hydro resource, as I understand this table.

Would you accept that?

MR. CHRISTOPHER OAKLEY: My eyes aren't that fast anymore. Sorry. I'm trying to -- which line are you looking at here?

MR. BOB PETERS: Let's go to the 2027/'28 column, and then we go down and we see 'Existing and Committed Hydro'. There's a big number, five thousand (5,000) -- sorry, yeah. Just below row 5.

MR. CHRISTOPHER OAKLEY: Oh, I see it now, sure.

MR. BOB PETERS: Okay.

MR. CHRISTOPHER OAKLEY: And it was -- wasn't one of the bolded ones I was looking --

MR. BOB PETERS: So let's assume that Pointe du Bois gets built or renovated, and it's extra 54 megawatts are included in that line.

Will you -- will you accept that

assumption?

MR. CHRISTOPHER OAKLEY: I guess. It's not in that year you're talking about. It's -- it happened earlier in this --

MR. BOB PETERS: No, I'm saying it comes into service in that year. That extra 54 megawatts is going to be -- the project is finished in about '27/'28, and that's when that extra 54 megawatts will appear in the -- in their base supply.

MR. CHRISTOPHER OAKLEY: I just don't see that, so something else is dropping off obviously.

MR. BOB PETERS: No, no. I'm -- I'm -- it's not distinctly identified, but it's going to be included in those numbers in and about that time.

MR. PETER HELLAND: So just to be clear, it goes from fifty-eight forty-two (5,842) to -- in '26/'27 to fifty-eight fifty-two (5,852) one (1) year later, so a 10 megawatt increase. So there's -- call it a fifty (50) -- Pointe du Bois at fifty (50) -- fifty (50) and change, and then a -- an offsetting 40 megawatt reduction elsewhere?

MR. BOB PETERS: I'm not able to confirm that, but let's assume it ramps in, and let's just assume that Pointe du Bois is already included in the numbers by the time we get out to '27/'28 based on

-- on the filing that we've seen.

Are you comfortable with that?

DR. BYRON WILLIAMS: Mr. Peters, you're just asking them to assume a hypothetical --

MR. BOB PETERS: Well --

DR. BYRON WILLIAMS: -- at line 5 that Pointe du Bois is an existing committed Hydro for '27/'28 for the purposes of discussion.

Is that what you're asking them to do?

MR. BOB PETERS: Thank you -- thank you, Dr. Williams. Yes.

DR. BYRON WILLIAMS: Okay.

MR. CHRISTOPHER OAKLEY: There -- there does look like a step up about that size a year earlier than that, so maybe that's where we're getting confused.

CONTINUED BY MR. BOB PETERS:

MR. BOB PETERS: All right. Let -- let's try to keep the confusion out of this.

So based on what you've told the Board, we're going to conclude that, as we sit here today with 164 megawatts of surplus capacity, that Pointe du Bois is not part of a minimum system, correct?

MR. CHRISTOPHER OAKLEY: I'd say we

don't know really, and -- and we -- we were hoping to see that clarified by -- by Hydro.

MR. BOB PETERS: Well, we do know that we don't need those 54 megawatts today.

MR. CHRISTOPHER OAKLEY: Today, no, we don't, no.

MR. BOB PETERS: So it's not part of today's minimum system?

MR. CHRISTOPHER OAKLEY: I agree.

MR. BOB PETERS: All right. So, if we go down the line at the bottom, we'll see that Manitoba Hydro starts to get capacity constrained in about the 20 -- you said 2031 or 2032 or 2033, in that time-frame. Correct?

MR. CHRISTOPHER OAKLEY: Yeah, and I think that's actually in their evidence. They said we'll -- we'll need it by that -- around that time.

MR. BOB PETERS: So, if it's not -- if Pointe du Bois is not part of a minimum system for Manitoba Hydro, you would want Manitoba Hydro to evaluate it as an export asset. Correct?

(BRIEF PAUSE)

MR. CHRISTOPHER OAKLEY: Yeah. I

mean, the -- the thing is the minimum system doesn't stay static, because you're, you know, you have growth, you have additions that are going on, your minimum system has to adapt and flex with -- with your growth, with -- with what you're planning to do.

It might not, today, be a minimum system but, again, we just can't get our hands around exactly what's minimum system and you -- you know, and -- and Hydro says it would be really, really difficult to figure it out. I'm, you know, we -- we -- we think they might be able to figure it out, but -- but it would be helpful because, then, you can look at these.

If I'm going to advance a project, let's say, I really don't need it now for the system, but it makes sense for these reasons to do it now, and I think that was the -- the argument for -- for Keeyask and Bipole II and -- or Bipole III, and -- and MMTP, was, we didn't need a right then, but we're going to need it pretty soon, so, we may as well advance it, 'cause there's fantastic economic benefits.

I think that you look at projects different, when you're -- when you're deciding if it's for reliability or if it's for economic gain.

MR. BOB PETERS: And -- and we've --

we've got your point on that. So, if -- if it's not part of the minimum system today, you evaluate it, using different criteria.

That's your suggestion. Correct?

MR. CHRISTOPHER OAKLEY: Yes.

MR. BOB PETERS: All right. So, now, if we go out on the time-line and we get out to the 2033/2034/'35 time-line, we see that that extra 54 megawatts is actually needed by Manitoba Hydro, by looking at the bottom line, the surplus because, without it, we would be -- we would have no capacity surplus. Correct?

MR. PETER HELLAND: So, just to be clear, any resource is necessary, not necessarily Pointe du Bois. So, you're -- you're point is well-taken. A resource is necessary. Is it Pointe du Bois?

And -- and those are -- those are two (2) different questions. If -- if the only resource available is Pointe du Bois, then, yes, but there are more than just Pointe du Bois available to Manitoba Hydro.

MR. BOB PETERS: All right. In fairness to the witnesses, at the top of the page, in the 2033/'34, you'll see highlighted 20 megawatts

ramping up. Do you see that? 20, 40, 80. It's highlighted in yellow on the screen.

MR. PETER HELLAND: I see the 20. Yes.

MR. BOB PETERS: Okay, and -- and, as you go out, we were told that that is a -- that is wind, that's an assumption of wind.

You'll accept that?

MR. PETER HELLAND: Yeah. I see the line says "total new wind".

MR. BOB PETERS: And, then, if you look at the line above that, out at 2038/'39, you'll see that there's $223,000,000, the first year, as part of a -- I'm sorry, 200 -- 223 megawatts, as the first year of in-service of a -- an actual gas plant that's assumed at that point in time.

Do you see that?

MR. PETER HELLAND: I do. Yes.

MR. BOB PETERS: And Manitoba Hydro's evidence, and Ms. Muirhead will certainly correct me when I'm wrong, that Manitoba Hydro had suggested that that was the -- the most cost-effective way to meet their capacity requirements out to that point in time and you'll accept that, for the purpose of our discussion?

(BRIEF PAUSE)

MR. PETER HELLAND: Yes.

MR. BOB PETERS: All right, and, so, what happens now is we go along with Pointe du Bois, which is not part of the minimum -- the minimum plant -- the minimum system but, within a decade, it is needed, as part of the minimum system.

So, how -- how -- how do we decide, how do we evaluate that pro -- program today, by having the lead time to make sure we have that in place when we need it.

MR. PETER HELLAND: Okay. That's an excellent question. So --

MR. BOB PETERS: It might be my last one.

MR. PETER HELLAND: That was an effective way to set me off kilter.

So, what -- what you would be doing is, when you look at -- we've discussed the issue of timing, so there's the resources and timing.

Assets, as part of the minimum system that are needed for reliability, you have very little volition around timing. You have far less volition around time, because you're serving domestic

ratepayers and providing them a reliable system.

The economically-driven investments, timing is determined by what's the economically optimal time to land the project. And if you defer the project from being purely economic, i.e., surplus, and then eventually it's needed to supply your domestic system, it's like, okay, it was never economic, but now I need it according to a different criteria and your timing justification, your timing trigger, if I could describe it that way, changes.

So, you would have a -- a question, and -- and it's not always going to be binary like that. It's could be like -- well actually, if I build it two (2) years earlier, it -- it's still economic, but building it ten (10) years earlier is too much too early, as there's not enough of the -- the costs are recovered economically, or on -- on a risk-adjusted basis.

And I'm not suggesting that that's the case, just -- those are the types of considerations that you would have. So, it has to do with the volition on the timing.

And -- and the volition for a reliability driven investment is -- is much more prescriptive if I could use that word, or -- or

defined as compared to an economically driven investment where you're basically trying to maximize the economics of the investment.

And so, it -- it's a -- it's a straight offer scenario or -- or you work out what's optimum, what makes the best sense.

MR. BOB PETERS: All right. We thank you for that answer. And, Mr. Chair, that does conclude my questions of Mr. Helland and Mr. Oakley. I want to thank them for their responses.

THE CHAIRPERSON: Thank you.

MR. BOB PETERS: There is a couple of just quick housekeeping matters. Apparently as they're out photographing poles in Winnipeg -- I suppose that better be entered as an exhibit, because it was referenced on the transcript and I'll leave that to Ms. Schubert and Mr. Williams to sort out.

I would also say that I did try to leave three (3) minutes for Mr. Walichnowski to decide whether he was interested at this point in time in having any questions of this panel on Manitoba Hydro 40, so thank you.

THE CHAIRPERSON: Thank you.

MS. GWEN MUIRHEAD: Mr. Peters...

THE CHAIRPERSON: Sorry?

MS. GWEN MUIRHEAD: And I would just like to make a correction for the record, and I've spoken with some of my learned friends about this.

So, Manitoba Hydro filed Exhibit 40 earlier this afternoon, the updated IR response and we identified an inadvertent error in some of the percentages.

So, initially where we had indicated the update to SAIDI and SAIFI values, they had been inadvertently swapped. So, now what you see on the slide is the corrected -- further corrected IR Response. And so, if we can have this document be marked as Exhibit Manitoba Hydro-40, that would be appreciated, Ms. Schubert.

And I believe Mr. Walichnowski might have a further question on this.

MR. BOB PETERS: Yes, thank you, Ms. Muirhead, and thank your team for being nimble on that. I know it's identified today and corrected today, so we do appreciate that. Thank you.

THE CHAIRPERSON: Thank you.

MR. ROBERT WALICHNOWSKI: Thank you, Mr. Chair, I'll -- I have two (2) very short questions. I shouldn't be more than a moment.

THE CHAIRPERSON: Sure.

CONTINUED CROSS-EXAMINATION BY MR. ROBERT WALICHNOWSKI:

MR. ROBERT WALICHNOWSKI: Gentlemen, you'll remember when we were discussing the pred -- or the predecessor version of this -- this figure that was in your -- your filed evidence, you indicated to -- to the Board that when this updated version was -- would be -- or -- or when you viewed this updated version you expected it to be -- to lead to a -- and I'm not -- I'm trying to remember the exact words you used, and I -- and I -- I might not be remembering them correctly, but you said you expected them to be, I believe, directionally similar? Am I -- am I correct on that?

MR. PETER HELLAND: I'll go with that paraphrase for now.

MR. ROBERT WALICHNOWSKI: Can you just confirm in -- in your view this is directionally similar?

MR. PETER HELLAND: Correct. The conclusions and logic, if you will, and the foundation of the logic in our evidence remains intact.

MR. ROBERT WALICHNOWSKI: Thank you, Mr. Chair. That was my question.

THE CHAIRPERSON: Thank you. And Ms. Bellringer has a question.

BOARD MEMBER BELLRINGER: Thank you. My question is on -- it's -- oh, just one (1) second. It's tab 6, I think, the O&E expenses.

Have you looked through that tab? Is that something you would have looked at?

And the -- the reason I'm asking is it does reference quite a few areas that would have been assumed in -- in some of the things that you spoke about, vegetation management, other staff increases that would be the offset of -- if -- if you don't fix the equipment, you're going to need to run in and do something, so there's staffing increases.

So, I'm just wondering the extent to which you looked at the details behind that in tab 6.

(BRIEF PAUSE)

MR. CHRISTOPHER OAKLEY: It was outside of our agreement from our client. But we did actually look through it because we think O&M and capital do -- they relate to each other, achieving that good outcome we were talking about; it involves both.

THE CHAIRPERSON: Dr. Williams, any re-examination?

DR. BYRON WILLIAMS: I don't have any re-examination, but I do want to correct the record from yesterday. So, if Ms. Schubert can pull up -- have at the ready the transcript from page 1,580.

And then as a backup, Ms. Schubert, like, the other document I'll be referring to is Midgard's PowerPoint which I believe is Consumer Coalition Exhibit 15, slide 12, but I would like the transcript reference, and specifically line 21.

(BRIEF PAUSE)

DR. BYRON WILLIAMS: Maybe you can scroll up a couple -- couple lines. So, my questions I think will be to you, Mr. Helland.

You understand that in this conversation, Vice-chair Kapitany was looking at slide 12 of your PowerPoint and asking -- recognizing that the Manitoba numbers were without major events, and then asking whether the dotted lines that represent other utilities also exclude major events. And you answered, "That is correct."

Do you want to re-answer that question,

sir?

MR. PETER HELLAND: So, at that time -- we now understand that they didn't, but based on the revised figure it would just -- I guess -- I'm not sure I should say this, but I will, the -- the preceding math, if I could describe it, like, lines 12 through 20, would have to revised according to the updated information, and -- and the slide would be updated, but I'm hoping that's not controversial.

DR. BYRON WILLIAMS: And I'll just finish off with this. So, if the -- the Chair was looking for the correct apples-to-apple -- or the Panel -- excuse me -- was looking for the correct apples-to-apples comparison, I'll suggest to you they would go to the updated Consumer Coalition 1-92(a)?

MR. PETER HELLAND: Correct.

DR. BYRON WILLIAMS: Okay. And lastly, I'll ask you, Ms. Schubert, to pull up slide 12 of Consumer Coalition Exhibit 15, the PowerPoint of Midgard.

And again, Mr. Helland, you see at the bottom the figures of SAIDI, 32 percent appears. What would be your understanding of what that figure is now?

MR. PETER HELLAND: The figure would

be as revised by Manitoba Hydro in the -- the revised Coalition. They -- they kindly updated the figures.

DR. BYRON WILLIAMS: So, that -- and if you -- would you accept subject to check it's 42 percent?

MR. PETER HELLAND: Yes, subject to -- to check, it was 42 percent. And I can't remember the other one.

DR. BYRON WILLIAMS: Thank you.

MR. PETER HELLAND: And 60.

DR. BYRON WILLIAMS: Yeah. So, people could strike out -- I'll suggest to you, Mr. -- Mr. Helland, you could strike out 32 percent and replace it with 42 percent for SAIDI, S-A-I-D-I, and strike out 56 percent for SAIFI, S-A-I-F-I, and replace it with 60 -- 60 percent?

MR. PETER HELLAND: Correct.

DR. BYRON WILLIAMS: Thank you. We have no other questions, Mr. Chair.

THE CHAIRPERSON: Thank you.

DR. BYRON WILLIAMS: And thank you very much.

THE CHAIRPERSON: Yeah, thank you. And thank you, gentlemen. It's been a long day, and we appreciate -- we appreciate your assistance.

So, we're adjourned until Tuesday morning at nine o'clock when we'll start with the Manitoba Hydro Revenue Requirement Panel.

MR. BOB PETERS: Just before you go public with that, I'm not sure that's the correct date. Some of us --

THE CHAIRPERSON: Sorry, Monday. Yeah, my apologies. Sorry, Mr. Peters, no golfing on Monday.

MR. BOB PETERS: Thank you.

THE CHAIRPERSON: Sorry, Monday May 29th. Sorry, I was looking at the wrong week. Yeah, Monday May 29th. Thank you.

--- Upon adjourning at 4:20 p.m.

Certified Correct,

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Wendy Woodworth, Ms.