MANITOBA PUBLIC UTILITIES BOARD

Re: MANITOBA HYDRO

NEEDS FOR AND ALTERNATIVES TO

REVIEW OF MANITOBA HYDRO'S

PREFERRED DEVELOPMENT PLAN

Regis Gosselin   - Chairperson

Marilyn Kapitany   - Board Member

Larry Soldier   - Board Member

Richard Bel   - Board Member

Hugh Grant   - Board Member

HELD AT:

Public Utilities Board

400, 330 Portage Avenue

Winnipeg, Manitoba

May 2, 2014

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25

1   --- Upon commencing at 8:47 a.m.

2

3   THE CHAIRPERSON: Good morning. I

4   believe that we're ready to start the morning's

5   proceedings. So on behalf of the panel, I'd like to

6   welcome Mr. Will Braun, of the Interchurch Council on

7   Hydropower. Welcome to these proceedings, Mr. Braun.

8   I understand you have a presentation for us. And

9   without further ado, please start.

10

11   PRESENTATION BY INTERCHURCH COUNCIL ON HYDROPOWER:

12   MR. WILL BRAUN: Thank you and good

13   morning. I have the distinct disadvantage of being

14   responsible for making you all come into work fifteen

15   (15) minutes earlier this morning. I'm feeling a

16   little bit sheepish about that. I beg for your

17   graciousness on that.

18   Yes, my name is Will Braun. I work for

19   the Interchurch Council on Hydropower on whose behalf I

20   will be presenting this morning. I thank you for the

21   opportunity to present. And as an Manitoban, I thank

22   you for the tremendously important and difficult work

23   that you're doing on -- in a sense, on our behalf.

24   The Interchurch Council on Hydropower

25   advocates for fair treatment of lands and people at the

9999

1 Northern end of the transmission lines in Manitoba. We

2 have funding and/or official representation from

3 Catholic, Lutheran, Mennonite, and United Churches.

4   I want to make four (4) points. First,

5 Wuskwatim lessons. Wuskwatim is a key -- key indicator

6 of Manitoba Hydro's track record in this new era of

7 hydro expansion. It was phase 1, if you will, the

8 forerunner to the Preferred Development Plan, and it is

9 faltering.

10   I'll focus on the First Nation

11 partnership, because those are the numbers of available

12 and that part also speaks to the -- the layer of risk

13 involved. According to a document that I believe is

14 known in the PUB dialect as CAC/MH II-019b,

15 Nisichawayasihk Cree Nations's 33 percent share in the

16 Wuskwatim dam and its net income over the first ten

17 (10) years of the dam is projected by Hydro to total

18 negative $134 million. That's a $134 million hit to

19 NCN's books over ten (10) years.

20   Over twenty-five (25) years, NCN's

21 projected share of net income is still in the red to

22 the tune of $8 million. And basically, that -- I'm

23 just adding up the -- the top line of numbers on the

24 image on the screen there.

25   NCN has invested $108 million in

10000

1 Wuskwatim. In Hydro's last quarterly report, NCN's

2 share in Wuskwatim stood at only $78 million. That's a

3 38 percent decline in the value of their investment,

4 and the dam is not even two (2) years old. Welcome to

5 the new era.

6   Hydro was going to smooth out cashflows

7 to NCN to protect its First Nation partner from

8 financial ruin. In part, this incler -- includes a

9 current offer of straight cash payments to NCN of $2

10 1/2 million per year for twenty (20) years. This was

11 not part of the original agreement. This is new. It's

12 part of the proposed PDA supplement number 2.

13   This is admirable, but it also points

14 out that the first dam of this new era of dam building

15 requires a $50 million crutch, seemingly, to keep the

16 partnership alive or healthy.

17   The fact that Wuskwatim -- Wuskwatim is

18 hobbling does not prove that Keeyask or that PDP should

19 not go ahead. Maybe -- maybe Keeyask will be

20 different. What it does show certainly is that big

21 dams are tremendously risky.

22   I sat through much of the Wuskwatim NFAT

23 hearing, and Hydro was just as confident and reassuring

24 then as they are now. No matter what variables or

25 scenarios were thrown at them, their project always

10001

1 came out looking rosy in their analysis. Their

2 analysis was wrong -- spectacularly wrong. Of course,

3 no one could have predicted the recession or -- or the

4 significant increase in shale gas production, but

5 that's exactly the point. It's all so unpredictable.

6   Consider this, in 2008, Hydro predicted

7 Keeyask would cost $3.7 billion, and just over five (5)

8 years, that figure has jumped by 75 percent. Consider

9 Hydro's projections of NCN's share of Wuskwatim loses

10 over ten (10) years. Over the course of only one (1)

11 year, from IFF12 to 13, that figure dimmed by 24

12 percent.

13   Despite Hydro's persistent confidence,

14 and what I might call statistical swagger, the numbers

15 change regularly, significantly, and seemingly often,

16 though not always, not in Hydro's favour. And I note

17 that the La Capra report indicates that the PDP really

18 only starts to pull into the lead towards the latter

19 end of a seventy-eight (78) year planning period.

20   Keeyask, like Wuskwatim, is risky.

21 Would you invest your retirement money in it if you had

22 such an option? I know that's not exactly in your

23 terms of reference, but one (1) way to think about

24 things.

25   Second point, is the PDP good for hydro-

10002

 1 affected peoples of the North? Your terms of reference

 2 referred to, quote:

 3   "The socioeconomic impacts and

 4   benefits of the plan and alternatives

 5   to northern and Aboriginal

 6   communities."

 7   The PDP's Northern benefits are

 8 essentially Keeyask benefits. Keeyask benefits, of

 9 course, include -- Northern benefits include adverse

10 effects agreements, training, employment, business

11 contracts, and the centrepiece, the 25 percent stake in

12 the dam, or possibility of that.

13   As -- as far as I can tell, in these

14 proceedings, the assumption is that the KCNs will opt

15 for the preferred investment alternative, somewhere in

16 the range of a 2.5 percent stake and a guar --

17 guaranteed minimum annual payment. The First Nation

18 proponents of the project appear to be opting for the

19 lowest form of investment, other than no investment at

20 all.

21   If this is indeed the case, it would

22 appear that not even the project proponents like its

23 chances, or they can't borrow sufficient cash. In

24 either case, this new era of dams is not turning out as

25 anticipated. The preferred option reduces KCN's

10003

 1 financial risk, but presumably it greatly reduces their

 2 potential benefits. I'm not a -- an accountant, but I

 3 presume that if you invest 2.5 percent, your return is

 4 going to be a lot less than if you invest 25 percent.

 5   Is this what the KCNs signed up for

 6 originally? The JKDA, which I brought along with me

 7 here this morning, is dated August 2008. This is what

 8 the people voted on. This, of course, predates the

 9 recession. It predates the significant spike in shale

10 gas production. The communities voted in 2009 when the

11 projected cost of the dam, if I'm not mistaken, was

12 $3.7 billion, and when the 25 percent equity stake was

13 still a gleaming possibility, when Wuskwatim still cast

14 a glow of promise, and when no one was talking about

15 the 3.95 percent annual rate increases. How would they

16 vote today?

17   At the Clean Environment Commission

18 hearings into Keeyask, this was last year, Tataskweyak

19 Cree Nation Chief Michael Garson said the following,

20 quote:

21   "We're talking about partnership

22   today, but I call it potential

23   partnership at this moment."

24   End quote. After fourteen (14) years of

25 negotiations and ninety (90) -- approximately $90

10004

1 million in processed payments to TCN alone, the Chief

2 of the lead partnership -- lead partner can only talk

3 about partnership if he adds a qualifier to it.

4   Fox Lake Cree Nation counsellor Conway

5 Arthurson went further, again at the CAC hearing -- CEC

6 hearing. He said the following, and he noted that he

7 was speaking against the wishes of the Band's lawyer.

8 He said Fox Lake has been, quote, "force-fed

9 negotiations." Quote:

10   "They keep shoving everything down

11   our throat and we are choking.

12   [Quote,] I support Keeyask by a

13   thread or two (2). [Quote,] I

14   cannot, in good conscience, allow

15   Conawapa to be built at this time."

16   Again, he's -- he's a counsellor for Fox

17 Lake, a proponent. His message to Hydro was blunt,

18 quote, "We don't trust you." End quote. And I ask,

19 are Hydro's northern partnerships on good footing?

20   Does the PDP truly represent a generous

21 path to prosperity for the KCNs? Can we the province

22 feel good about what our Utility is offering them? I

23 would add here that the KCN's -- a separate point now,

24 that they only make up about 20 percent of northern

25 hydro-affected Aboriginal people. If you include NCN,

10005

1 Hydro's northern partners still only comprise about

2 one-third (1/3) of Northern Aboriginal hydro-affected

3 people.

4   The rest of the affected people get some

5 training and employment if they're willing to work far

6 from home. They get ongoing impacts of hydro power

7 development, and they get a 3.95 percent annual rate

8 increase. It's not really a new era for them.

9   For reasons you've already heard about,

10 the Hydro rate increases will hit them harder than

11 anyone else in the province. I would suggest that the

12 main result of the PDP for two thirds (2/3s) of

13 Aboriginal hydro-affected people in the North will be

14 unrelenting rate increases that many of them cannot

15 afford. These people have lived with hydro impacts for

16 decades. They deserve to be considered, I think, in

17 addition to the KCNs, as your terms of reference allow.

18 No one should have the impression that the PDP would

19 have widespread positive direct benefits throughout the

20 majority of Northern hydro-affected communities.

21   My third point, macroenvironmental

22 impacts of the PDP fuel source. One-quarter (1/2) of

23 the water that would flow through Keeyask and Conawapa,

24 if they're built, would come from the Churchill River.

25 That is 25 percent of the fuel source, if you will, for

 1 the PDP will come as a result of Churchill River

 2 diversion.

 3   This point, as far as my search

 4 demonstrated, is entirely absent from Hydro's initial

 5 NFAT filing. Nowhere is Churchill River diversion even

 6 described. So I will do so briefly if I could you to

 7 switch to the map. Forgive me if this is repeat, and

 8 unfortunately I don't have a little cursor to ride

 9 along the rivers there.

10   But Churchill is Manitoba's second-

11 largest river flowing roughly parallel to the Nelson,

12 north of it. About 75 percent of its flow is diverted

13 into the Nelson River. This diversion is accomplished

14 by means of flooding Southern Indian Lake, which is

15 essentially a widening of the Churchill River, by

16 approximately three (3) metres, causing it to overflow

17 southward through a manmade channel and into the Rat

18 and Bird River systems, which empty then into the

19 Nelson.

20   On average, 25 percent of the water that

21 flows down the lower Nelson River where Keeyask and

22 Conawapa would be is a result of Churchill River

23 diversion. CRD is integral to the PDP.

24   If greenhouse gas emissions from the

25 coal fire -- coal-fired plants in the export are

 1 relevant to this hearing, then I submit that the

 2 impacts of the PDP's fuel source are also relevant.

 3 And a similar argument could be made in relation to

 4 Lake Winnipeg regulation.

 5   The effects of CDC -- CRD, excuse me,

 6 are relevant, we submit, because CRD causes severe

 7 widespread and ongoing environmental damage. And I

 8 want to show six (6) pictures form Southern Indian

 9 Lake. The lake flooded as part of this diversion.

10

11   (BRIEF PAUSE)

12

13   MR. WILL BRAUN: This is destabilized

14 in slumping shoreline on Southern Indian Lake. Your

15 terms of reference exclude, quote, "historic

16 environmental costs." So I am not going to show you

17 historic environmental costs; I'm going to show you

18 present environmental costs. These are not from past

19 dams, but from present dams. The photos here are from

20 2012 and 2013.

21   This is an eroding island on Southern

22 Indian Lake. Islands disappear right off the map.

23 This is the other half of that island which used to be

24 joint. This, I -- I believe would be called a

25 nonrenewable island.

10008

1   This is some of the flooding on Southern

2 Indian Lake. Keeyask and Conawapa, if built, would

3 flood approximately 50 square kilometres, but they

4 would also rely directly on 837 square kilometres of

5 flooding as a result of CRD.

6   At the Wuskwat -- again, this is

7 destabilized, slumping, eroding shoreline on Southern

8 Indian lake. And these are not isolated sort of areas,

9 characteristic, I would suggest, of a large portion of

10 the shoreline of Southern Indian Lake.

11   At the Wuskwatim hearing in 2004,

12 William Dysart of Southern Indian Lake said, quote:

13   "In order for Wuskwatim to be

14   feasible, my environment and the

15   environment of the people I represent

16   must continue to be destroyed."

17   End quote. And the same applies to

18 Keeyask. More of the same. Keeyask, my point is would

19 plug directly into this. So we urge you to consider

20 the sustainability and the macroenvironmental impacts

21 of the PDP's fuel source, especially CRD.

22   My fourth and final point. We are

23 concerned that Hydro made its decision, a firm

24 decision, about its future development intentions

25 before ever seriously considering a DSM alternative --

10009

 1 switching gears here.

 2   As recently as Hydro's 2010/'11 Power

 3 Resource Plan, all of the future development scenarios

 4 assumed the same very low level of DSM. There was no

 5 distinct DSM option. Our Utility solidified its

 6 multibillion-dollar future development intentions

 7 without even examining a major increase in the resource

 8 supply option that its own numbers show to be the

 9 cheapest, at least on the scale implemented to date.

10 They didn't even let their best batter take a swing.

11   We submit that this is a planning error

12 so significant and fundamental that it should stop the

13 PDP in its tracks. We submit that this is a

14 fundamental abdication of responsibility to the public

15 and the ratepayers.

16   It's hard not to get the impression

17 throughout this whole process that Hydro set its heart

18 on big new dams and then when forced studied DSM, but

19 did so in a way that ensured that it would not

20 jeopardize the PDP.

21   Why did our Utility not study a DSM

22 option properly and early? Why did it slash its

23 commitment to DSM when the industry was headed boldly

24 and innovatively in the opposite direction? Why does

25 this new plan fade away after several years? What does

1 our Utility have against DSM? Why does it resist? In

2 whose interests are they acting when they do so?

3   We believe DSM is the future and should

4 be the future, and we're more convinced of that, having

5 heard some of the presentations ear -- especially last

6 week. Sooner or later, we will need to bend the demand

7 curve down, as others are doing, and the sooner we do

8 it, the better. This brings our other arguments full

9 circle.

10   Dams are risky. DSM would be far less

11 risky, requiring no multibillion dollar commitments

12 based on sixty (60) and seventy (70) year projections.

13 You just adapt as you go. It could provide better and

14 more evenly distributed benefits to Northern peoples,

15 including more job creation, cheaper job creation,

16 improved housing stock, and reduced electricity bills.

17 It is greener than plugging two (2) mega-dams into the

18 severely damaged river systems, and to boot, it may

19 well be cheaper, perhaps a lot cheaper, as others have

20 pointed out.

21   In conclusion, your task is to examine

22 the needs for and alternatives to Manitoba Hydro's PDP.

23 We submit to you that there may well be no need for the

24 PDP, and that there appear to be superior alternatives,

25 too. We urge you to recommend that the PDP be put on

10011

1 hold and that the Manitoba government commission an

2 independent evaluation of a true DSM option or maybe a

3 DSM/wind option.

4   Keeyask does not have to be built.

5 Stranding the money already spent in Keeyask would be a

6 bitter pill to swallow. Following through with a PDP

7 could prove much worse, and would involve unnecessary

8 risk. The risk that Manitoba should take is to commit

9 sufficient resources to become a continental leader in

10 demand-side management.

11   We wish you well in the remainder of

12 your very important task. Thank you, and I'll -- if

13 you have questions, I would be open to them.

14   THE CHAIRPERSON: Thank you, Mr. Braun.

15 We -- we don't have any questions. It's a very clear

16 presentation. I think you made your point of view --

17 you've exposed your point of view very well, so thank

18 you very much.

19   And -- and I know you've been a -- a

20 regular contributor to -- to PUB in the past with your

21 submissions and so on, so I thank you for your

22 initiatives in the past, and -- and I know likely yet

23 to come.

24   So thank you very much. Thanks for

25 taking the time to see us.

10012

 1   MR. WILL BRAUN: Thank you.

 2   THE CHAIRPERSON: Probably take a few

 3 minutes for people to change positions, and we will

 4 resume as soon as possible.

 5

 6 --- Upon recessing at 9:06 a.m.

 7 --- Upon resuming at 9:14 a.m.

 8

 9   THE CHAIRPERSON: I believe everyone is

10 in position so we can start today's proceedings. I

11 just want to remind everyone that we have a presenter

12 scheduled for 12:45 today, so in addition to Mr. Braun

13 that we heard this morning, another individual will be

14 here this afternoon to -- to address the Preferred

15 Development Plan. So I'm assuming there's no documents

16 to acknowledge?

17   And if -- I'll -- I'll turn the

18 microphone to you, Me. Hacault. Bonjour.

19   MR. ANTOINE HACAULT: Bonjour, M.

20 President. We distributed by email yesterday two (2)

21 documents. Firstly, were the -- the slide deck, and I

22 understand with Mr. Singh that the slide deck would

23 become MIPUG-24.

24

25 --- EXHIBIT NO. MIPUG-24: Slide deck

10013

 1   MR. ANTOINE HACAULT: It should have

 2 been distributed to all. And the second document that

 3 was distributed electronically yesterday is a

 4 supplement to the report of Mr. Bowman. The initial

 5 report is February 4, I believe, of 2014, and this

 6 supplement deals with some of the additional

 7 information primarily contained in Manitoba Hydro

 8 Exhibit 104, which contains a lot of updates. It's not

 9 completely updated, because we did receive additional

10 information yesterday. And as I understand from Mr.

11 Singh, that would be marked MIPUG Exhibit 9-4, the

12 original report having been marked 9.

13

14 --- EXHIBIT NO. MIPUG-9-4:   Supplement to report

15   of Mr. Bowman

16

17   MR. ANTOINE HACAULT: And with that,

18 there's also at our request some 2x4 charts of what had

19 been produced yesterday, the updated kind of matrix of

20 decision points. My understanding is that the smaller

21 version is marked Manitoba Hydro Exhibit 192, so this

22 one (1), the larger version, would be marked as 192-1.

23

24 --- EXHIBIT NO. MH-192-1: 2x4 charts representing

25   matrix of decision points

10014

 1   MR. ANTOINE HACAULT: That completes

 2 the entry of exhibits. If I could ask to have Mr. Bow

 3 -- Bowman sworn in, please? I will proceed to his

 4 qualifications.

 5

 6 MIPUG RISK AND DSM PANEL:

 7

 8   PATRICK BOWMAN, Sworn (Qual.)

 9

10 QUALIFICATION OF WITNESS:

11   MR. ANTOINE HACAULT: Good morning,

12 members of the panel. Last night we did a little bit

13 like the Habs, we went into double overtime. That

14 better not happen tonight, but at least -- I'm -- I'm

15 biassed, so you see I have a smile.

16   In any event, the curriculum vitae of

17 Mr. Bowman is in Exhibit 9 at Appendix A, and what I

18 intend to do is to go briefly over some of the matters

19 that I believe are of assistance to understand Mr.

20 Bowman's background and his ability to answer questions

21 of the panel, should the need arise in various areas,

22 and also to present his evidence.

23   Mr. Bowman, it's my understanding that

24 you have approximately six (6) (sic) years of

25 experience in utility regulation areas?

10015

 1   MR. PATRICK BOWMAN: Good morning.

 2 Thank you. Good morning, Mr. Chairman, members of the

 3 panel. Yes, I -- I've been involved in utility

 4 regulation for about sixteen (16) years.

 5   MR. ANTOINE HACAULT: And when you have

 6 been doing that work over that time period, has it been

 7 only from -- for one (1) sector of clients, or could

 8 you please explain whether you, I'm going to say,

 9 represent opposite parties from time to time?

10   MR. PATRICK BOWMAN: I don't represent

11 opposite parties in the same proceedings. I have been

12 retained, I would say, about 50/50 over that time in

13 the major areas, which are either working for utilities

14 or working for Intervenors.

15   Utilities are mostly Crown government-

16 owned utilities, mostly hydro-dominated utilities; but

17 there some others: municipal distribution, water

18 utilities, that type of thing. Intervenors have been

19 mostly industrials. We work with the industrials on an

20 ongoing basis in -- in Manitoba and in Newfoundland,

21 but also have been involved in intervening on -- on

22 behalf of -- or assisting with interventions on behalf

23 of municipalities in -- in BC with regard to the water

24 issues I mentioned, in -- in Alberta.

25   On top of that, another area that we

 1 work in -- or I work in, in respect of utility work, is

 2 with government clients. I've been involved with a

 3 number of territorial and -- and provincial municipal

 4 governments in regards to utility matters, some related

 5 to project development, some related to rate issues,

 6 and also some First Nation government in regards to

 7 resource evaluation of -- of utility projects and --

 8 and compensation agreements.

 9   MR. ANTOINE HACAULT: Thank you. Have

10 you ever had occasion, not in this proceeding, but a

11 long time ago, to be at Manitoba Hydro? And 'long time

12 ago' is all relative.

13   Could you explain your involvement in

14 Manitoba Hydro?

15   MR. PATRICK BOWMAN: I haven't done any

16 work for Manitoba Hydro for, I would say, at least ten

17 (10) years. Before that, I was engaged in a couple of

18 different files mostly related to the topics that, at

19 that time, were called mitigation, things like the --

20 the Debris Management Program in regards to Northern

21 communities, and also some of the planning aspects of -

22 - of Wuskwatim in regard to working with the

23 communities on alternatives, such as where you put --

24 where you put the road, you know, where you put the

25 camp, those type of questions. Nothing related to any

10017

 1 resource planning or -- or economics or rate-related

 2 topics.

 3   MR. ANTOINE HACAULT: Before we move to

 4 describing your experience relevant to NFAT and away

 5 from the type of clients that you represent, sir, could

 6 you list the Crown and government-owned utilities that

 7 you have done work for?

 8   MR. PATRICK BOWMAN: Yes. I have an

 9 ongoing role with Northwest Territories Power. I've

10 done considerable work in the past with Yukon Energy.

11 I haven't been able to keep up with that client.

12 Others in the firm are doing most of the work with them

13 lately. But I've dealt with Yukon Energy for over a

14 decade.

15   I've had some role on Qulliq Energy.

16 We're currently undergoing an assignment for -- cost-

17 of-service studies for Nelson Hydro, which is owned by

18 the municipality. We're doing some work with the --

19 with current in regards to evaluation of distribution

20 system, and -- and also with the water util -- as I

21 mentioned, the water utilities for the regional

22 customers around -- around Calgary.

23   MR. ANTOINE HACAULT: Thank you. Could

24 I draw your attention to the area that I frame being

25 resource planning?

10018

1   What type of work have you done over

2 your career for resource planning issues?

3   MR. PATRICK BOWMAN: I guess the first

4 comment is I'll distinguish resource planning from

5 project planning. I'm not sure it's a distinction that

6 lots of -- has been made consistently through this

7 hearing. But there is quite a different between what

8 it takes to assemble the building blocks of a resource

9 plan versus what it takes to make one (1) of those

10 building blocks come together. And -- and I've -- I've

11 had a role in both, but specifically in regards to

12 resource planning.

13   I was one (1) of the lead authors on

14 Yukon Energy's 2005 Resource Plan, which was a major

15 assignment over a number of years. It included

16 testimony for the Yukon Utilities Board. It led to a

17 number of projects being developed. I was also an

18 advisor in regards to their more recent plan, which was

19 approximately 2011.

20   I've had a role with Northwest

21 Territories Power, with utility in doing -- planning

22 for criteria, system development criteria, particularly

23 in regards to reliability and capacity planning.

24 Again, that was -- that led to testimony before the

25 Northwest Territories board that set the standards for

10019

 1 -- for the reliability criteria that they use in the

 2 Northwest Territories.

 3   I have also been involved for -- for

 4 Yukon Energy in leading the development of a long-term

 5 water planning model. I would say it's akin to SPLASH,

 6 although, it's much, much simpler. But -- but

 7 nonetheless, it was a -- a fairly major undertaking.

 8 And we did that working jointly with some engineers out

 9 of Winnipeg. And I was involved in -- in directing all

10 the aspects of the load modelling, the -- the system

11 dispatch, and the -- the economic integration and --

12 and how those -- the economic aspects of how the system

13 was modelled to work together.

14   I've also fairly recently been involved

15 in preparing a -- I'll call it a draft regulatory

16 business case for a proposed new Northwest Territories

17 transmission line of about a billion-dollar project.

18 That is still undergoing some review and some -- it

19 made it to the stage of -- of being interesting enough

20 that others had to go talk to Ottawa about it. I've

21 had to leave that to focus on the NFAT, so I haven't

22 been involved in that for a little while. But we were

23 -- we were the ones who prepared the -- the regulatory

24 business case, as it's called, for that -- that

25 development concept.

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 1   MR. ANTOINE HACAULT: Thank you, sir.

 2 Now, I'd like to get into the next area that you've

 3 just identified when you started talking about resource

 4 planning. It's project planning.

 5   What has been your role in project

 6 planning during your career?

 7   MR. PATRICK BOWMAN: In regards to

 8 developing specific utility projects, the biggest role

 9 that I had was I was the designated project manager for

10 all pre-project aspects of developing the Mayo B hydro

11 project in Yukon. This was approximately a $120

12 million generating station, part of $160 million green

13 infrastructure development.

14   I -- I've sometimes likened that to in -

15 - in a per capita basis and the scale of project in

16 Yukon, that's pretty comparable to a Keeyask. Not

17 nearly as com -- complex, but... The -- the pre-

18 project aspects of that involve a huge number of -- of

19 building blocks that require a wide range of expertise.

20 There is preliminary engineering. There's

21 environmental assessments. There's consultation

22 activities. There's the regulatory approvals that go

23 with it both from the utility side as well as the

24 environmental side, financing.

25   And the job of project management is

10021

1 much more the -- the generalist to make sure that all

2 those parts work together. It's -- it's -- I -- I go

3 back to Morrison Park's comments, that it's a -- a real

4 project is extraordinarily difficult. And -- and once

5 you've got the building blocks in place, it's a -- it's

6 a very different thing than just sketching on a piece

7 of paper.

8   So that -- that was my role. I wasn't

9 the -- necessarily the practitioner of any of them. I

10 was made to work all the -- make sure all the

11 practitioners worked.

12   I was also, around that same time,

13 retained to deal with a -- a very difficult project in

14 the Northwest Territories. It was a rebuild of a -- of

15 a hydro dam, the largest project that that utility had

16 every taken on. It's still small in a Manitoba scale.

17 But it had dealt with many years of -- of development

18 work that had led to a point where it was touch and go

19 as to whether it could go forward due to cost

20 escalation and -- and timing and some other

21 difficulties.

22   And we were brought in to -- or I was

23 brought in to help -- to help solve that project,

24 contractor negotiations, the regulatory aspects. And -

25 - and we -- we eventually made that work. That

10022

 1 included testifying before the NWT Water Board in some

 2 of the -- the resource and environmental issues

 3 associated, and as well as the PUB hearings and the

 4 direct contractor negotiations.

 5   MR. ANTOINE HACAULT: Thank you, sir.

 6 Another subject area was your role in government

 7 projects.

 8   Could you please explain what type of

 9 advice and expertise the government were seeking from

10 you, sir?

11   MR. PATRICK BOWMAN: Related to the

12 work that we've done on rates and economics and project

13 development in -- in some of those examples I've given.

14 There's often a -- a far different planning context

15 than you're used to in Manitoba.

16   Give an idea, in -- in the Yukon, when

17 they were dealing with load risk, they had one (1) mine

18 that made up 40 percent of the load and had a habit of

19 -- of starting up and closing down. So when we talk

20 about load risk here, it's a very different

21 perspective, but it means that if you're going to try

22 to get a project in place, you face a very different

23 suite of risks.

24   And -- and for governments in -- who are

25 dealing with Crown utilities, they -- there -- there's

10023

 1 a -- there's a need to sort out how they can deal with

 2 risk, backstop finance, protect ratepayers, or -- or

 3 ensure that projects can go ahead. And -- and on that

 4 regard, we've acted as a principal consultant to the

 5 Northwest Territories government in respect of

 6 developing their hydro strategy.

 7   Also, I was noting the business case for

 8 the proposed new transmission line. On -- on that

 9 project, we are retained both by the Utility and the

10 government, and that -- that includes development of

11 options to manage both, manage rate impacts, as well as

12 a subsidy, if necessary. It's not always necessary.

13 Sometimes there are other tools.

14   We've done work for the Yukon

15 government. I've done work for the Yukon government in

16 respect of power project support options and -- and

17 also on -- on specific subsidy programs for those --

18 those governments.

19   MR. ANTOINE HACAULT: Sir, next --

20 another subject area with respect to evaluation of

21 utilities from an economic perspective.

22   Could you explain what your role has

23 been in your career in -- in that regard?

24   MR. PATRICK BOWMAN: Yes. When

25 approaching utility project planning in regard to

10024
 1 regulated projects, there's a -- there's a fairly

 2 significant overlap in regard to the -- the project-

 3 specific economics and the overall system economics, as

 4 you have seen in the material before you here.

 5   I've had a fairly lengthy role in -- in

 6 the overall system economics and understanding the

 7 overall system operation in regards to preparation or

 8 testing of -- of cost-of-service work in -- in many of

 9 the different utilities.

10   So, if you're -- if you're talking about

11 what role does a transmission mine play, or how does a

12 generating station fit into an overall complement for a

13 -- a system, it's many of the same questions, whether

14 you're talking about a new project versus how do you

15 allocate the costs of an existing project?

16   And in that regard, we've -- we've done

17 cost of service -- I've done cost-of-service work in --

18 in most of the hydro systems in Canada out -- outside

19 of Quebec. I'm currently engaged in -- in an

20 assignment in Newfoundland in that regard. More than

21 one (1), frankly -- the BC, Yukon, Northwest

22 Territories.

23   MR. ANTOINE HACAULT: And you talked

24 about at various points during your testimony this

25 morning in the qualification section of risk -- risk

 1 analysis.

 2   Could you speak about that a bit and how

 3 that's dealt with in the context of all this other

 4 work?

 5   MR. PATRICK BOWMAN: Yes. I -- I can't

 6 recall a -- an assignment we would have had that would

 7 have highlighted risk as a specific deliverable

 8 element, but it's very much inherent to the other

 9 project planning topics I had talked about, and -- and

10 pretty uniquely at the forefront of the topics in

11 regards to governments roll-in projects.

12   The -- most times when we're talking

13 about economic risk of projects and a roll for

14 governments, it -- it typically isn't in just throwing

15 dollars at a project. It's typically in -- in finding

16 a way that a government can -- can change a risk

17 profile of a project, or -- to help accommodate it and

18 make it go forward.

19   So risk analysis has been inherent in

20 that, but I -- I won't say it +-- it's been a specific

21 topic that we've -- or that I've focussed on in my

22 career in and of itself.

23   MR. ANTOINE HACAULT: And finally, sir,

24 could you speak a bit about, because there are new

25 panel members here, of your Manitoba experience with

 1 respect to Manitoba Hydro regulation and the type of

 2 hearings that you've testified in respect of Manitoba

 3 Hydro?

 4   MR. PATRICK BOWMAN: Yes. On and off

 5 over the last sixteen (16) years, pretty consistently

 6 throughout that period, I've worked on Manitoba Hydro

 7 issues. First hearing I was involved in was in, by my

 8 recollection, 1998 in regards to the Curtailable

 9 Service Program.

10   The first time I testified was at the

11 2001 status update, which is somewhat akin to a GRA.

12 We've been involved in Manitoba Hydro -- I've been

13 involved in testifying at Manitoba Hydro hearings on

14 rates, as well as on cost of service, a -- a particular

15 hearing on cost of service, and in regard to a proposal

16 by Manitoba Hydro to develop an energy-intensive

17 industrial rate, which this Board did not recommend go

18 forward. That was one (1) that was a -- an entirely

19 different pricing model for the Utility that -- that

20 had its own special proceeding a number of years back.

21   MR. ANTOINE HACAULT: With that

22 explanation, members of the panel, I'm asking that Mr.

23 Bowman be qualified as an expert to give the evidence

24 set out in his report and responses to IRs, and I guess

25 the supplementary report that's also part of his main

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1 report now.

2

3   (BRIEF PAUSE)

4

5   THE CHAIRPERSON: I'll call upon the

6 Intervenors to -- to address the questions of the

7 witnesses, starting with Mr. Williams, please.

8   MR. BYRON WILLIAMS: Mr. Chair and

9 members of the panel, good morning. I can indicate

10 that CAC (Manitoba) certainly will not take any

11 objections to Mr. Bowman's expertise to present his

12 report. I would appreciate some clarification from My

13 Learned Friend Mr. Hacault in ter -- in terms of the

14 specific expertise that -- that he is asserting for Mr.

15 Bowman.

16   MR. ANTOINE HACAULT: I've covered the

17 areas which are covered in his report. He has done

18 some -- made some comments on resource planning, on

19 project planning, on the government role in projects,

20 and options perhaps for the government, and also the

21 Utility economic evaluation and the financial

22 evaluation of the data that's set out in his report,

23 and finally, as an inherent part of all of this in the

24 context of all the probabilities and in the charts, et

25 cetera, the risk portion attributable to the economic

10028

1 and financial analysis.

2   Does that help, Mr. Williams?

3   MR. BYRON WILLIAMS: Yes, thank you.

4 And just one (1) or two (2) questions for you now, Mr.

5 Bowman.

6   In terms of the relative time on your

7 report that you spent on the financial aspects of your

8 analysis versus the economic aspects of the -- your

9 analysis, would it be 50/50, or would you have tended

10 to devote more of the intergroup energies towards the

11 financial analysis?

12   MR. PATRICK BOWMAN: Mr. Williams, I

13 was -- I was planning to get into some of this in the -

14 - in the presentation, but we spent a considerable time

15 at the outset on the economic analysis. We identified

16 what we considered some fundamental issues with it.

17 Our intent was still to do an -- an economic-oriented

18 evaluation. We just found that we could -- one (1) of

19 the ways to get around the issues that we saw in the

20 economics data was to move to the financial data and

21 focus on -- on the economics for ratepayers, because

22 the financial data did not have the same concerns.

23   We -- we weren't doing a financial

24 analysis. I haven't -- there's no quick ratios or --

25 or, you know, financing questions built into it. It's

10029

1 still fundamentally an -- an economics focus, but I

2 would say on your ratios, probably 60 percent of the

3 time was actually buried in the -- the financials

4 spreadsheets rather than the economic spreadsheets.

5   MR. BYRON WILLIAMS: And Mr. Chair and

6 members of the panel, CAC (Manitoba) accepts Mr.

7 Bowman's expertise in resource and project planning,

8 and financial and economic evalu -- evaluation

9 incorporated within the concept of financial and

10 economic evaluation. Our client considers the issue of

11 risk assessment to be implicit within that type of

12 evaluation.

13   THE CHAIRPERSON: Thank you, Mr.

14 Williams. Me. Monnin, s'il vous plait.

15   MR. CHRISTIAN MONNIN: Merci, M.

16 President, we have no objections.

17   THE CHAIRPERSON: Thank you, merci, Me.

18 Monnin. Mr. Peters, any questions at all?

19   MR. BOB PETERS: No -- no, sir, we

20 don't. Ms. Boyd may.

21   THE CHAIRPERSON: Sorry. Ms. Boyd.

22 Thank you.

23   MS. MARLA BOYD: Thank you. Good

24 morning. We have no objection to the witness's

25 qualification as an expert.

10030

 1   THE CHAIRPERSON: For the areas

 2 outlined by Mr. -- Me. Hacault?   Is that right?

 3   MS. MARLA BOYD: Yes, thank you.

 4   THE CHAIRPERSON: Okay. Thank you.

 5

 6   (BRIEF PAUSE)

 7

 8   THE CHAIRPERSON: Okay, we will agree

 9 to accept Mr. Bowman as an expert witness for the areas

10 that have been outlined in response to Mr. Williams's

11 query. So thank you very much, Me. Hacault, and good

12 morning.

13

14 EXAMINATION-IN-CHIEF BY MR. ANTOINE HACAULT:

15   MR. ANTOINE HACAULT: Merci, M.

16 President.

17   Mr. Bowman, your report has been marked

18 as Exhibit 9 with some supplements and revisions. Can

19 you indicate whether the report, as well as supplement

20 and revisions, were prepared by you or under your

21 supervision?

22   MR. PATRICK BOWMAN: Yes.

23   MR. ANTOINE HACAULT: And with respect

24 to the responses to the IRs or the interrogatories,

25 were they also prepared by you or under your

10031

1 supervision, sir?

2   MR. PATRICK BOWMAN: Yes.

3   MR. ANTOINE HACAULT: And to the best

4 of your knowledge, is the content of the report as

5 revised and supplemented and the responses to IRs

6 accurate and complete, or are there some additional

7 matters that you want to identify this morning?

8   MR. PATRICK BOWMAN: With the revisions

9 that were filed as Exhibit MIPUG 9-2, which made some -

10 - some small corrections to the original evidence, they

11 are -- they -- they are complete and -- and accurate,

12 to the best of my knowledge.

13   In regards to the IRs, it came to our

14 attention there was -- was one (1) omission. We had

15 failed to provide a response to PUB/MIPUG-13, and that

16 was a question on how the conclusions would change if

17 Hydro adopted a more aggressive DSM approach. Of

18 course, it was asked some time ago.

19   So in part of responding to that, the --

20 the update supplementary testimony we filed as Exhibit

21 9-4 would -- would fully address the questions raised

22 in that IR.

23   MR. ANTOINE HACAULT: Thank you, sir.

24 Now we'll move to the slide deck, and could you proceed

25 to take us through the slide deck? And I encourage

10032

1 member -- members of the panel to ask any questions

2 they may have as the presentation is being made, if

3 that's appropriate, and I may be interjecting from time

4 to time to ask some questions or challenge Mr. Bowman

5 on his -- some of his statements.

6   Please start with your presentation.

7   MR. PATRICK BOWMAN: Yes. Thank you.

8 So the presentation, I believe, has been distributed,

9 Exhibit 24. It's been pulled up on the screen. Let --

10 let me know if I'm going the right pace. I've been

11 encouraged by everyone but one (1) in the room to move

12 quickly. The court reporter dissents.

13   Page 3, we set out the scope of work

14 that was approved for MIPUG. I don't intend to dwell

15 on it. I just wanted it to be here for reference, but

16 the focus is on rates, long-term impacts, risk to

17 customers, alternatives, including demand-side

18 management programs and long-term financial and

19 economic risks, and the financial liability of Manitoba

20 Hydro with the language that was approved.

21   If we could move to slide 4, which has

22 the summary of the original key conclusions from the --

23 from the pre-filed testimony. My intention at the

24 outset is to walk through these and, in each case, show

25 where we derived the conclusion, and also how it has

10033

 1 been updated by information that has been filed since -

 2 - since the testimony.

 3   I was -- I was quite concerned that --

 4 that the -- the original testimony would be quite stale

 5 by now, but I think most of the conclusions actually

 6 hold up pretty well, so. I -- I think -- I think it's

 7 easier to go through these with a little bit more

 8 detail as we walk through.

 9   MR. ANTOINE HACAULT: Could you proceed

10 to slide 5 and the preliminary comments, Mr. Bowman?

11   MR. PATRICK BOWMAN: Yes. Mr.

12 Chairman, I -- I thought before diving into the

13 conclusions -- I thought in terms of understanding

14 them, it would be helpful to cover some preliminary

15 comments in context for the -- the work that was done,

16 and -- and particularly in light of all the water under

17 the bridge through this point. There's a lot of paper

18 been filed and ink been spilled on the topic. And --

19 and rather than have the conclusions stand on their

20 own, I -- I wanted some context that would -- would

21 explain how best they be read.

22   The first one that I think is -- is

23 quite critical to wrestle with is -- is, what is the

24 scale of decision that's -- that's being made today,

25 because I -- I think there are -- there's room for --

10034

1 for a few different perspectives on that.

2   And you'll recall not only was MIPUG

3 granted Intervenor status, but also asked to help

4 consult with the business community and bring some of

5 those views. And -- and one (1) of the things came up

6 very much from -- from that discussion and those views

7 is -- is a very different view of the -- this -- of

8 this scale and the impact of the decision being made

9 then -- then I -- I would've initially gone to if it

10 was -- was just me going through this.

11   I'm going jump ahead to the next two (2)

12 slides. We'll walk through it and then we can come

13 back to this one for -- for two (2), three (3), and

14 four (4). The sli -- the slide we put in at page 6 is

15 in -- on the left-hand side is -- is from Manitoba

16 Hydro Exhibit 104-12. On -- on the right-hand side is

17 -- is some numbers that we've prepared, but from

18 Manitoba Hydro 150.

19   And it's one (1) picture that I'm using

20 to underline a -- a view that I think is -- is one (1)

21 valid view of this hearing that we've heard over and

22 over. And it's -- it's the -- for lack of a better

23 term, it's the grandchildren view: What am I -- what

24 am I leaving to my grandchildren in respect of the

25 decision being made today?

10035

 1   And on the left-hand side you see the --

 2 the exhibit that Manitoba Hydro filed in response to a

 3 MIPUG undertaking of what is the absolute level -- peak

 4 level of debt that's going to be incurred in the -- in

 5 the relatively near term -- in the next fifteen (15) to

 6 twenty (20) years that -- that the plan has to support.

 7   And there can be a lot of different

 8 comments in respect of this debt and -- and how self-

 9 supporting debt should be looked at and what it would

10 mean to a credit rating agency. But at a -- at a

11 basic, fundamental level, it's -- an unavoidable piece

12 of understanding the plan is that -- that big plans

13 come with big debt.

14   And it is -- it must be managed. It has

15 to be considered, but it's a number that shouldn't be

16 forgotten, that we're talking about commitments that

17 are -- are multiples of the type of debt that's been

18 taking on by public sector or public sector agencies in

19 Manitoba to date. And -- and we've heard this comment

20 time and time again from -- from members if the

21 business community.

22   And on the right-hand side is the

23 present value of rates that would be paid under a few

24 of the different plans. That one shows Plan 1, Plan 5,

25 and Plan 14. And it says:

10036

 1   "The total amount paid by a Manitoba

 2   ratepayer is present value at 5.05

 3   percent."

 4   Without getting into the details, this

 5 was meant to help illustrate the one (1) perspective

 6 which is the -- I'm taking on how much debt for how

 7 much difference in rates? When you look at a set of

 8 lines that for all practical purposes are pretty hard

 9 to distinguish.

10   So that is -- that is one (1) piece of -

11 - of the puzzle and it can be read two (2) different

12 ways. One (1) is, That's sure a lot of debt and risk

13 for not a lot benefit. But it could also read as, It's

14 a lot of debt, but don't get fussed because we're able

15 to support that without having a huge rate change. I

16 said that was a preliminary comment because I think

17 it's -- it's one (1) view about the scale of job that

18 this Board is -- is deciding.

19   And the second view of the scale of job

20 is on the next slide, slide 7, which is an excerpt from

21 three (3) different Manitoba Hydro Exhibits, none of

22 which I take issue with. I think they all present a --

23 a useful perspective.

24   And they're what -- if the last slide is

25 the grandchildren, this is the slide I -- I would call

1 the home run slide. This is the: Where are the

2 upsides for the -- for the Preferred development Plan

3 and what we're talking about?

4   There's one (1) piece is the -- is the

5 be benefits to Manitoba with the nineteen thousand

6 (19,000) person years of -- of direct and indirect

7 employment in the province. There's the long-term

8 rates perspective, which if you follow the blue line,

9 it shows the -- the long-term level of rates which will

10 be beneficial. There are some challenges before we get

11 there, but the Preferred Development Plan and -- and

12 some of the larger plans bring a prospect of these

13 long-term beneficial rates.

14   And at the bottom page, particularly the

15 red and green bars, is the degree of government charges

16 benefits. I would encourage you to look at the two (2)

17 together. I think they all rate -- relate as

18 government charges, but in any -- in any interpretation

19 they're very substantial.

20   So the challenge that we faced was how

21 to -- how to make sense of the decision that's being

22 made. And I will give you advance warning that there

23 are aspects of the case that I believe have gotten

24 easier over the last number of months, and there's a

25 big new decision, and we'll -- we'll get there and --

10038

1 as we move forward.

2   MR. ANTOINE HACAULT: Are we going back

3 to slide 5 again?

4   MR. PATRICK BOWMAN: You can go back to

5 slide 5 now, yeah.

6   And the -- the comments I put there are

7 sort of the -- the hurdle concept. How -- how good

8 does a plan have to be to want to go forward with it,

9 and does it matter by -- does it change by how big the

10 plan is? Can we look at levels of debt and say, 10

11 billion, 100 billion, we can analyze them the say way?

12   Or do you say, No, no, there's a

13 fundamental difference between debt within the range,

14 borrowings for projects when the range of what Manitoba

15 Hydro has historically been able to do versus something

16 that is -- is well outside of that level.

17   There's been a comment that it's, you

18 know, it's -- it's not -- it's a basement suite, it's

19 the -- it's the opportunity to advance a project or to

20 -- to make a little money on the side before you --

21 before projects you're going to need anyway.

22   And of course, the perspective of the

23 patient capital, which is -- which is quoted to my

24 evidence, but was repeated by Mr. Rainkie, and I think

25 it's an important perspective when you're dealing with

10039

1 a -- a Crown utility.

2   The second preliminary comment I would -

3 - I'd want to make is I've been through a number of

4 different processes like this, and -- and a lot of

5 hearings on different subjects, and I can't remember

6 hearing where the Board has had as high a quality of

7 advice and -- and information put to it as -- as this

8 one.

9   So, you'll see before I get to number 3,

10 I think that there has been some exceptional work done.

11 I think you've had Manitoba Hydro's A-team in respect

12 of -- of economics. It's the -- it's the best Manitoba

13 Hydro has to offer, and although I'm always a skeptic

14 about new people coming in and managing to find their

15 feet on a system as complicated as Manitoba Hydro is, I

16 think people like Morrison Park did a very, very good

17 job, and I think you should -- I'll -- I'll try to, as

18 I work through my comments, not spend time dwelling on

19 things that I think they have covered very well.

20   La Capra did a very good job in respect

21 of the -- some of the economic work. Some of the other

22 parties, Mr. Harper is -- is always predictably useful

23 and interesting. So I think that -- hope that will

24 make my presentation shorter as a preface, and -- and,

25 in particular, I would say, as I move on to number 3,

10040
 1 that I think that with that exceptional advice, I think

 2 the degree of disagreement that is before you and that

 3 you hear listening to the debates for someone who is in

 4 this business is actually fairly small.

 5   The -- I think there's a lot of issues -

 6 - I put tempest in a teapot as my colloquialism -- a

 7 lot of the debates about, Should you use an NPV test,

 8 or an IRR test, and is a regret method correct, or --

 9 or does it matter that we didn't do an IRP, can sound

10 like very substantial issues that make it very

11 difficult to make a decision today.

12   I don't believe, at the end of the day,

13 that they need to be, and -- and I'll try to touch on

14 that as I -- as I go through.

15   And -- and the fourth point, which is

16 the -- the saving grace in respect of the Hearing is

17 that optionality and decisions unfolding over time is

18 key to working -- to working through something like

19 this.

20   It's not necessary to decide everything

21 today. Matter of fact, it's not even advisable to

22 decide everything today. It's advisable to decide the

23 things you have to decide, and then set out the

24 processes needed to make the other decisions. The

25 press -- put the pressures where they need to be. Put

10041

1 the -- the decision points where they need to be.

2   And I know that's not always in the

3 control of this Board, but I'll try to touch on that

4 more as I move through and it's -- it's part of the

5 reason Mr. Hacault wanted Hydro to produce graphics

6 that -- that help us to be able to talk about that.

7   MR. ANTOINE HACAULT: Mr. Bowman,

8 before you move to the next slide, you had one (1)

9 bullet, "future customers," and in quotations "under

10 bus," close quotation marks. You haven't touched on

11 that comment.

12   Could you please touch on that comment?

13   MR. PATRICK BOWMAN: Yes. It was -- it

14 was in relation to the -- the level of disagreement

15 that -- and debate that -- that was had, and about what

16 interest rates should be used when you're analyzing

17 future customer rates to be paid and the benefits of

18 future customers.

19   And I think it -- it implies a -- a

20 level of -- of intransigence that there's one (1)

21 method that must be used that I don't think is fair. I

22 --I would say you -- you must consider a number of

23 different tests, and you must consider what each test

24 is telling you, or is intended to tell you, and use it

25 for the right purposes.

10042

 1   And I -- I think it was just one (1) of

 2 -- one (1) of the comments in the hearing that someone

 3 could go to and say, These two (2) parties are at -- at

 4 each other's -- at odds, they're really in disagreement

 5 over this, and I -- I think with, like, a -- a

 6 different form, a -- a little more discussion, the

 7 chance that -- to -- to have their perspectives

 8 presented to the Board in a -- in a less sequential

 9 way, you'd find that there's not nearly as much

10 disagreement as it may sound when -- when we're --

11 we're moving through topics this way, that someone has

12 to come up and give all their evidence, and someone

13 else has to come up and give all theirs.

14   And it's not always the best way to

15 solve things, but my -- my submission is, and I'll hope

16 you try to bridge this as we move through, that it's

17 not as big a -- a difference as it may sound sometimes

18 when you simply read a transcript.

19   MR. ANTOINE HACAULT: Is it an

20 appropriate time now to go through each of your

21 conclusions and update them as necessary?

22   MR. PATRICK BOWMAN: I start at slide

23 9, if we can?

24

25   (BRIEF PAUSE)

10043

 1   MR. PATRICK BOWMAN: The first

 2 conclusion was a bit of -- that we put in our evidence

 3 was that you -- to make sense of this NFAT, much like

 4 any resource planning process, it's really important to

 5 sort out what are the decisions that need to be made

 6 today? At the time, there were two (2).

 7   And it's not to diminish other things

 8 that must be dealt with, but we're going to touch on

 9 the difference between different types of resources and

10 the inflexibility of the core building blocks of the --

11 of the Preferred Plan, or the alternative plans, and

12 given their inflexibility, it's important to get those

13 decisions right, and it's important to make them at the

14 time they need to be made.

15   There are lots of resources that are

16 much, much better in respect to flexibility and -- and

17 the advantage to those is you don't have to solve

18 everything up -- upfront. You don't even want to solve

19 everything upfront.

20   But we said that the key things that --

21 that there's no doubt need to be decided is -- at the

22 time was whether to take up the Minnesota Power Export

23 Agreement, which involved needing to build Keeyask, and

24 second, whether to build the line at 750 or 250.

25   As the Board's aware, the update is --

10044

1 information suggests the 250 line is not available, and

2 it -- the update has effectively collapses into one (1)

3 question, and I think if I was to put the -- the number

4 1 decision that people need as a hard decision, it's:

5 Do I want a transmission line or not?

6   Everything else is subsidiary to that.

7 If I want a transmission line, I need a partner. I

8 need a partner, it's going to be Minnesota Power. If

9 it's going to be Minnesota Power, I've got to have

10 Keeyask, because they want the power by 2019/2020, and

11 I have an agreement that underlines it.

12   So it really -- every -- it's sort of a

13 -- a -- the trickle down from the question, Do you want

14 more transmission with the US or not? And it's going

15 to change everything in regards to all of your other

16 assessments as well, like DSM and self-generation here,

17 and how -- how customer things evolve. But I think

18 that's -- that's -- if -- if I had to put it into one

19 (1) question that would be the -- the decision, I

20 think, that need -- needs to be focussed on.

21   We can move to slide 10, which is the

22 second, which is again meant to be communicated as a --

23 as a core principle of the resource planning, which is,

24 it doesn't matter which path you go down, you can't

25 avoid risk. As much as my -- my grandchildren slide

10045

 1 shows that that has a risk associated with borrowing

 2 money, there's a -- a contrary risk of lost opportunity

 3 that exists even in the smaller plans. It doesn't

 4 matter which you pick, this -- this -- the -- the

 5 optimum path always -- always exists -- always existed

 6 and -- and failing to take it means foregoing.

 7   There was a quote that I'm not sure

 8 everyone's aware. The -- the -- this PUB hired some

 9 independent experts in a previous GRA, Doctors Kubursi

10 and Magee, and -- and Dr. Magee set this out in -- in

11 testimony that I -- that I thought was pretty good, so

12 I -- I put the quote into here just to -- to get around

13 -- get to that point, and this is -- he's a professor

14 of economics, is my recollection, in -- in Ontario

15 somewhere.

16   But he -- he posed it really well, that,

17 Yes, there's a risk that you build a Conawapa or you

18 build a Keeyask and it becomes a white elephant and

19 something people can point at, and there's a

20 possibility that it becomes the best investment

21 Manitoba ever made.

22   And there's a third outcome, which is

23 you don't build it and you're -- you're really glad you

24 didn't build it. But there's also a fourth one (1),

25 which is you don't build it and you -- you lose an

10046

1 opportunity. And -- and we don't spend a lot of time

2 focussing on that fourth outcome, which is, could --

3 could we be missing one (1) of -- a -- a big

4 opportunity.

5 And he -- he just wanted to highlight

6 here that don't think that not building means I can

7 walk away and say, Ha, I avoided the risk. No, you've

8 -- you've left the risk on the table. You just -- you

9 just don't have anything to point to in regards to that

10 risk. I thought it was an interesting way of putting

11 it.

12 MR. ANTOINE HACAULT: Next slide, 11,

13 pathways and plans.

14 Could you deal with your view and

15 analysis of the distinction between the two (2) and --

16 and how we approach making decisions?

17 MR. PATRICK BOWMAN: Yes, I have looked

18 at the evidence that Manitoba Hydro has prepared. And

19 in our submission we were somewhat critical of them for

20 over-focussing on plans and not focussing enough on

21 pathways. Pathways seem to be a -- a relatively later

22 addition to the -- to the -- the thinking concept. And

23 -- and I think as a result, even to this point in the

24 hearing, there's a tendency to make everything about

25 plans.

10047

 1   And there's a -- a comment from Dr.

 2 Borison that the work that Hydro did was actually quite

 3 cutting edge. Very few organizations are able to adapt

 4 to the concept of pathways and optionality and know how

 5 to do the assessments on that. Hydro didn't even put

 6 out its -- its approach to thinking about optionality

 7 until one (1) of the PUB IRs. The PUB actually asked

 8 them a question about what to do. You won't find it in

 9 the original filing.

10   And -- and it's a -- it's a very

11 interesting IR, and I wish I had the reference in front

12 of me to encourage you to read it. But even then it

13 only deals with one (1) concept of the pathway, which

14 is: How might I respond if I learn more about export

15 prices?

16   It's more an educational tool than it is

17 a true analysis. And, yeah, we've heard Mr. Wojczynski

18 effectively underline this concept in words, but not in

19 numbers. But it says:

20   "A ref/ref/high scenario where you

21   pursue Plan 14 and the Preferred

22   Development Plan with high capital

23   costs is not credible."

24   It is not an outcome Hydro would pursue,

25 because if Keeyask comes in high and if concrete's

10048

1 costing more and rebar is costing more and labour's

2 costing more and Northern building is driving up costs,

3 they will know that and not proceed with Conawapa

4 unless it has a very different economic than are

5 presented in the plans to date. And so it's a -- it's

6 an unrealistic outcome to be focussing on ref/ref/high

7 in respect to the Preferred Development Plan.

8   I would say at the same point, it's

9 possibly just equally unrealistic to focus on Plan 5 if

10 you're in ref/ref/low. If people find the Keeyask

11 costs coming under and there is good news and

12 contractors work well and all of that kind of thing,

13 you're more likely that you're going to be able to move

14 on to Conawapa.

15   And so if you only look at the numbers

16 for Plan 5 and Plan 14 and say, These are our two (2)

17 choices -- at this point I may have to switch to Mr.

18 Hacault's pretty image -- but that these are our two

19 (2) choices and I have to pick between one (1) of them,

20 you're going to see two (2) inferior options. The true

21 one (1) you're picking is actually the best -- it's to

22 some extent the best of both, because you're not making

23 the decision yet whether you're on 5 or 14. That's a

24 decision that occurs much later at -- in this image

25 it's -- it's 2022.

 1   I -- I'm only making decisions whether I

 2 go down this road. And at this point I will have the

 3 option of going these different directions. At -- at

 4 2022, I will have the option of going those different

 5 directions and I will do it with better information. I

 6 won't say you'll do it with less uncertainty, because

 7 there will be new uncertainties that arise. But

 8 nonetheless, you'll have better information about much

 9 of the -- the aspects that -- that people are fussing

10 about today.

11   And so when Hydro went through and

12 presented that IR on optionality, what it did was, it

13 said, I want to present not a plan, a pathway. I want

14 to present one (1) sequence of numbers, like a twenty-

15 seven (27) number quilt, but for that entire pathway

16 combined where I pick -- Oh, if copper costs are low,

17 I'll pick that I will build Conawapa. If they're high,

18 I'll pick I won't.

19   And all of a sudden you've -- you've

20 taken the better numbers out of two (2) different

21 columns and you put them together and you end up with a

22 different -- a different mix than simply looking today

23 and saying, Well, I can go from here, 5 is not so good,

24 14 is not so good, so they're both bad. No, no, but --

25 but 5 -- 5 and 14 together are -- have a different

10050

1 profile than either of 5 or 14.

2   So it was in our mind when we wrote --

3 wrote the recommendation. I think it's -- it's been

4 highlighted in -- in spades as some of the issues have

5 arisen in the hearing, capital costs being one (1) of

6 them. And I -- I think it's been boiled down in

7 particular with this update by not -- by taking out the

8 250 megawatt line. We're really into a pathway that

9 involves new transmission and all the things that come

10 with it or a pathway that involves staying closer to

11 home and all the things that come with that. And

12 that's the -- the thing that needs to be focussed on

13 without figuring out exactly the -- the plan within

14 that.

15   MR. ANTOINE HACAULT: Thank you. Could

16 you proceed to your fourth conclusion in the pre-filed

17 testimony at slide 12?

18   MR. PATRICK BOWMAN: Yeah. This may be

19 redundant now. At the time we wrote this we were

20 effectively saying there may be fourteen (14) plans and

21 five (5) pathways, but you almost have to start off

22 with -- with a question about vision, and it's the --

23 the one that I just set out.

24   Is it -- are we focussing on staying

25 close to home, tweaking and optimizing, putting off

10051

 1 decisions as long as we can, doing more DSM, optimizing

 2 our -- our offers of -- of -- to an IPP supplier if one

 3 comes along, helping customers develop generation where

 4 we can, all of those aspects?

 5   And then when we finally get there,

 6 figuring out what resource we really need. And it

 7 could be Keeyask, it could be gas; but somewhere within

 8 that plan, doing -- doing this -- this very need-

 9 focussed plan? Or do we focus on Part 2 of the -- the

10 government's scope of work to you, which is the

11 opportunity side, in which case, you've got another

12 suite of options which you have to deal with.

13   And at the time, we were trying to

14 wrestle with fourteen (14) plans and five (5) options.

15 I think this is redundant now that it's really boiled

16 down to, Do I want transmission or not, in -- in a way,

17 the decision. It's -- it's all -- it's a bit of the --

18 of the same conclusion.

19   We were lamenting -- using this in part

20 to lament that I -- it seemed to me that the NFAT moved

21 quickly to advocating a Preferred Development Plan

22 before fully exploring what the need-based plan could

23 look like. And I think at one (1) level, that causes

24 some -- some confusion and suspicion, that I'm not

25 dealing with a clear set of information; I'm dealing

10052

1 with an advocacy piece.

2   I'm not as concerned about that now, but

3 I -- I would have been more comforted if Mr. Thomson

4 had not said, We're here to advocate for a plan, as

5 opposed to just be an honest broker to Manitobans about

6 what best direction to go. But I think, in practice,

7 as the hearing's unfolded, we've gotten information to

8 be able to -- to do this now; that I think the DSM

9 scenarios are critical. I'm glad we've gotten them.

10   I didn't -- in all honesty, I'll fess

11 up, I -- I didn't expect the DSM scenarios to -- to be

12 available in the time frame that was in the hearing.

13 And so when we reviewed the documents, the first thing

14 on our mind is, is there any way with the documents

15 here the Board could get to a decision by next June,

16 given it's got this big hole in terms of DSM.

17   And we turned our mind to this is not an

18 IRP. This is -- it's not an integrated resource plan.

19 It's something different. It's an assessment of a

20 business case of an opportunity. And -- and despite

21 the fact that it's not product 1, it's not an IRP, can

22 I still work with it as a business case for an

23 opportunity. And -- and we thought you could get

24 there.

25   I'm much more comforted that we actually

10053

1 have the information now that -- that is more fulsome.

2 And I think that's -- that's an advantage. It's one

3 (1) of the things that I think has -- has improved over

4 the course of the hearing.

5   Slide 13 is just an extension of this

6 conclusion.

7   MR. ANTOINE HACAULT: Mr. Bowman --

8   MR. PATRICK BOWMAN: Yeah.

9   MR. ANTOINE HACAULT: -- before we

10 leave slide 12, with respect to Pathway 1 and the DSM,

11 I think you're going to be getting into it a bit later,

12 but can you say how Pathway 1, an optimized All Gas

13 variant, has developed as a result of the new DSM

14 information going to DSM 2, for example?

15   MR. PATRICK BOWMAN: Well, it's evolved

16 -- I can say how it's evolved on -- in terms of the --

17 the scenarios that are provided. I'll certainly spend

18 more time on how it's evolved on the numbers as we get

19 to the slides that have the numbers in them.

20   But with the varying levels of DSM and

21 making the assumption that Hydro has suitably

22 identified programs and sorted its programs, at least

23 as far as -- as today's environment goes, I think that

24 -- that DSM 1, 2, and 3 give you a good ability to --

25 to test a couple of -- of key things.

10054

1   But in respect of this part, the -- the

2 All Gas part or the -- the need-based plan, they give

3 an ability to understand that DSM can play a big role.

4 It can buy even more time, if that's where your mind is

5 at. It can give you a lot more time before you need to

6 make commitments. It can play a role in helping

7 maintain your -- your investment in bricks and mortar,

8 your debt levels down.

9   So, for the -- the characteristics that

10 this Plan brought, the Pathway 1, the need, the

11 minimized plan, if anything, it -- it made it better,

12 and -- and we'll see that in some of the numbers.

13   It's -- continues to bring some

14 downsides that go with the All Gas Plan. It's not as

15 flexible for load growth risk. It's -- it certainly

16 leaves the opportunity of the 750 megawatt line on the

17 table as it exists now.

18   It -- it -- you know, it -- it may come

19 back, but for now, we would be walking away from that

20 option, and I -- I think it has a fairly significant

21 potential for -- for losing some of the social and

22 government benefits that go with the Preferred

23 Development Plan, while picking up some others that I

24 don't know that are well quantified.

25   But I think overall, people would --

10055

1 would tend to say it -- it leaves a lot of those

2 beneficial characteristics behind, things like water

3 rental payments or some other things of that nature.

4   I keep calling it a Pathway 1 Optimize

5 All Gas Variant, but I'll say the need-based pathway

6 doesn't mean All Gas, it doesn't mean build gas. It

7 means do everything else you can until you have to

8 build something, and at that point, it could be as

9 simple as gas.

10   It could be anything else, but really,

11 it's the -- it's the, put off the decision and -- and

12 know that in your back pocket, you always have gas as -

13 - that can be developed quite -- quite quickly.

14   And the other thing I'll add to this if

15 -- Mr. Hacault's point, which is one (1) of the more

16 interesting pieces of information that -- that, again,

17 I didn't expect we would get but I'm really pleased to

18 see it, was the undertaking that Mr. Thomson gave to

19 Mr. Gange in regard to, What if the load never grows.

20   How does Keeyask do and Keeyask 750 do

21 if the load never grows? And -- and I think it -- it's

22 very interesting to -- to just pull out the page of

23 economics on that that -- that says, What -- what does

24 -- what does the profile look like?

25   Because now I've got an All Gas case,

 1 but I'm still not billing that gas for at least

 2 seventy-eight (78) years. So, you know, it's --it's

 3 that far out, and -- and it tells us some interesting

 4 things about comparing the two Plans -- the two

 5 Pathways.

 6   MR. ANTOINE HACAULT: Okay, please

 7 proceed to slide 13, which is a continuation of the

 8 needs versus opportunity theme.

 9   MR. PATRICK BOWMAN: Yeah, I'm not sure

10 there's much more to add here, except that in regards

11 to the updates, I think I've covered this, the -- the

12 need for new res -- resources has been -- with DSM has

13 -- the date has gone out.

14   It is more readily clarified the -- the

15 perspectives on the pathways. I'll touch on for a

16 moment -- Mr. Rainkie used the example of the rent out

17 a basement in your house, that this is -- these are

18 opportunities to build -- build a little more than you

19 need now, advance them, make some revenue off of them,

20 and you'll grow into them.

21   And it's an example -- it's actually the

22 exact analogy I've -- I've sometimes used to people to

23 explain how Manitoba Hydro does advance its plants and

24 -- and how it builds things like Wuskwatim.

25   I didn't think it held up very well in

10057

1 this hearing because of the scale of things we're

2 dealing with and the timeframes of things we're dealing

3 with.

4   Keeyask being advanced three (3) or four

5 (4) years as it originally started, it might work okay,

6 but even then, you're bring on 695 megawatts. Your

7 need date is not because you need 695 megawatts, it's

8 because you need the first megawatt for your own

9 domestic supply.

10   It's still a long time to grow into that

11 plant, but the -- the three (3) or four (4) years, the

12 -- the basement model is, you know, the -- the bedroom-

13 in-the-basement model is not a bad example.

14   We're now talking Keeyask advancement

15 could be six (6) to nine (9) years, depends on some

16 pipeline loads in part, and -- and I would assert some

17 other industrial loads that people need to pay

18 attention to as well, as well as other load risks.

19   It's a little more than a basement

20 bedroom, might be a suite. We might be verging on a

21 duplex.

22   Conawapa is something different

23 entirely. Conawapa, in the context of Plan 14 and --

24 and its -- its need concept is a lot more like

25 investing in an apartment block across town, is the

10058

 1 phrase I've used.

 2   It's tangentially related to housing,

 3 but it's a long time before you grow into needing that

 4 one for your -- your basic supply, and so I think it's

 5 important to be able to think about that differently.

 6 And if anything, it's more complicated to think about

 7 the Wuskwatim-style basement bedroom than it is to say,

 8 No, these two (2) things are different. The pathways

 9 are distinctly different, and I'm going to apply an

10 appropriate test to each. And so I think in that

11 regard, it's gotten -- it's gotten easier in this

12 hearing, and that's where Mr. Thomson's exhibit is --

13 is so useful.

14   MR. ANTOINE HACAULT: Is this an

15 opportune time to move to the next slide which

16 discusses an opportunity-based vision?

17   THE CHAIRPERSON: Mr. Bowman, you --

18 you mentioned something about increased industrial load

19 that I hadn't heard before, and I -- I'm just

20 wondering, is that based on data that's been considered

21 by the panel before?

22   MR. PATRICK BOWMAN: Well, Mr.

23 Chairman, we provided an IR response on this topic. At

24 the time, we answered it, there was -- we highlighted

25 pipeline load, but I don't think it had otherwise been

10059

1 in the hearing, so the pipeline load is now being

2 discussed.

3   There are some other well-known

4 possibilities for Manitoba. I don't know whether you

5 have the information on them. I haven't -- I certainly

6 wasn't in the CSI portion of the -- the load forecast

7 panel.

8   But in that -- in that IR response, we

9 highlighted two (2). One (1) is it's -- it's fairly

10 well-known that Valet and Thompson has scaled back its

11 operations, that they've, you know, focussed on the --

12 the mill. They no longer have their refinery in

13 operation, but that they have a large new deposit, 1D

14 (phonetic) is my recollection of the name, that is --

15 is ready to go and could be in service by 2019 or 2020

16 as the -- as the public reports go. And -- and they

17 make a point of telling people, We have a data room

18 open in Thompson, come on down and take a look.

19   They're -- my understanding is Valet is

20 not prepared to -- to develop that, though, without a -

21 - a strategic partner who actually will use the output.

22 They're not looking for money, they're looking for a --

23 a known buyer, and so that's on the market. Right now,

24 you know, prices are where they are, and the mineral

25 supplies are. I don't know how much interest they're

10060

 1 getting, but those things change over time, and the --

 2 given it's a -- it's a know, deposit with significant

 3 spending been done on it by a -- a fairly, you know,

 4 backed by -- it's not a -- it's not a junior miner

 5 we're talking about. It's -- I think it's a -- in the

 6 timeframes we're talking about, it something that

 7 people would -- would want to pay attention to.

 8   The other one (1) that I noted was

 9 there's -- of -- been some discussion about computer

10 server type of loads, computer server farms and the

11 like. I don't have any more information on that then

12 has been -- been publically announced, but there is --

13 there will be reasons to think that it's something that

14 could connect for Manitoba. It -- it hasn't in a big

15 way, the way that some people were concerned about, but

16 -- but in terms, we're talking about ten (10) to twenty

17 (20) years. It would fit in the category of load risk

18 to me. Does that address the question? Yeah. Yeah.

19   The only other last thing I would touch

20 on here is MH-171, the third revision highlights that

21 with the DSM, many of the larger plans have some

22 erosion in their overall economic benefits. That is

23 due to the DSM, and it's -- it's not that the DSM is

24 competing. If anything, our conclusion is it's

25 complementary, but it highlights that, to some extent,

 1 we're not quite dealing with the -- we -- we're being

 2 pushed away from dealing with the -- the simple

 3 basement bedroom. We're -- we're being pushed to

 4 something else to stand on its own, irrespective of --

 5 of market environment.

 6   So that's -- that's the only comment we

 7 made in regards to that.

 8   DR. HUGH GRANT: I'm sorry, you lost me

 9 on the -- could you repeat your last part, please? I

10 didn't follow your...

11   MR. PATRICK BOWMAN: Yeah, the -- we

12 haven't been able to entirely decipher the changes in

13 the economics of the ref/ref/ref conditions for -- for

14 all of the plans, but it's clear that when you look at

15 -- people's minds have been on the Preferred

16 Development Plan, which has seen some fairly

17 significant erosion in the ref/ref/ref conditions,

18 right?

19   You also see some changes in the -- in,

20 say, Plan 5 or Plan 6 in terms of comparing the

21 original numbers to the updated numbers, and those are

22 being loaded with new -- new discount rates and higher

23 capital costs, and a bunch of other things. But what

24 it -- what it would suggest to us is looking at the

25 need dates and looking at the DSM, is that there was

10062

1 some load risk to the project -- to the economics of

2 the -- of the projects that was known even at the time

3 the was NFAT filed. It was in the 2013 update. People

4 ran some DSM scenarios. They always made the plans a

5 little bit more challenging if your domestic load was

6 lower, because it was longer until you needed the

7 basement like for your own use.

8   It seems that with higher DSM scenarios,

9 that's now incorporated. And -- and so we've seen the

10 shift as these need dates are pushed and all, that it's

11 now much more clear that we're not -- we're not, you

12 know, we're not advancing Keeyask three (3) to four (4)

13 years; we're advancing it six (6) to nine (9), or

14 eleven (11), depending on your scenario.

15   So we've -- we've effectively sort of

16 de-linked this. Does it really matter if our load --

17 do those very small changes matter anymore because now

18 we're -- we're far enough out that we're -- the -- the

19 project needs to be able to stand on its own the way

20 that Mr. Thomson talked about, because eleven (11)

21 years of -- a very small change in your average growth

22 will -- all of a sudden your -- your lines are almost

23 parallel. So you can -- it better be able to stand its

24 own, because it could be a long time if -- if you had a

25 small down-river vision now before it -- it's needed

10063

1 for Manitoba purposes. That's all we were trying to

2 highlight.

3   MR. ANTOINE HACAULT: We're on slide

4 14, the fifth conclusion in the pre-file testimony and

5 how that may be affected by the updates?

6   MR. PATRICK BOWMAN: Our fifth

7 conclusion was that despite all that talk of a need

8 plan being important and needing to be assessed, the

9 information that was filed in NFAT was, to us,

10 persuasive that at least moving to an opportunity plan

11 -- I came to Plan 4, which was Keeyask19 with a 250

12 megawatt line -- seemed to pass the test for any -- any

13 of the reasonable economics and financial metrics.

14   I won't dwell on it, because Plan 4's

15 not on the table anymore. We're really now talking

16 about conclusions that'll come later on. So we can

17 spend that time on conclusion 7.

18   MR. ANTOINE HACAULT: Thank you. Now

19 moving to issue of past experience and what we can

20 learn from past experience.

21   And how does fit into the risks of

22 technological, change going forward, Mr. Bowman?

23   MR. PATRICK BOWMAN: Having done the

24 assessment in an order that originally made sense of

25 effectively Plan 4 in the previous conclusion -- that

10064

1 Plan 4 stood on its own in terms of economic and

2 finance and rate impacts and the like, it seemed

3 important to move on say it also has a number of

4 attributes that qualitatively stand in support of that

5 type of model.

6   I'll spend more time talking about this

7 in some of our updates, but there -- there is an

8 extremely good record with hydro generation over the

9 long term in Canada. It's an inherent characteristic

10 of hydro. It's also been done well in most of the

11 places in Canada that -- that I've ever seen.

12   And even more important to that is if

13 you're -- on a system like Manitoba, interconnections

14 are -- are absolutely critical if you want to be a

15 hydro-based utility. If I'm dealing in places that

16 don't have good interconnections or don't have any

17 interconnections, like Newfoundland or Yukon or

18 Northwest Territories, or almost any anywhere that --

19 that it faces the situation in -- in Canada.

20   You're going to have a very hard time

21 economically justifying pushing your system to more

22 than, you know -- 60 percent was traditionally a ratio

23 we talked about with higher oil prices, maybe 70, 80

24 percent hydro without complementing it substantially

25 with a thermal-based generation.

10065

1   And Newfoundland has Holyrood oil plant;

2 Yukon has diesels that they're working into converting

3 to LNG; Yellowknife's always had diesels. And the

4 reason is because of the nature of hydro plants that I

5 believe Mr. Cormie's explained quite well. I -- I put

6 a graph in at the end. If we -- if it's worth going

7 over it, we can do that.

8   But hydro plants produce two (2)

9 products, one (1) of which is good for domestic

10 service, and one which is effectively not. And if you

11 want to be able to build a hydro plant, you -- you need

12 the economics where you can take the dependable product

13 and use it for your own domestic service. And that

14 opportunity product -- the second product, has to

15 either be able to be of value to you or of value to an

16 export market. If you need it to be a value to you,

17 such as they do in Newfoundland, you have to be able to

18 offset that against a fuel cost. Should we go there or

19 no?

20   MR. ANTOINE HACAULT: I think we'll

21 just bring up the slide 66. Mr. Bowman knows I'm a

22 visual guy. This is at my request. But it was

23 something that was filed by Manitoba Hydro. And I'll

24 let Mr. Bowman explain this. When I started these

25 utility hearings, I -- I had trouble coming to grips

 1 with all the dependable energy portion and the non-

 2 dependable energy portion and how you deal with load

 3 for Manitobans when you're hdyri -- adding big

 4 hydraulic pieces of energy.

 5   So could you perhaps go through this

 6 graph, Mr. Bowman?

 7   MR. PATRICK BOWMAN: Yes, this is a

 8 graph that Manitoba Hydro produced in the pre-hearing

 9 conference and from last May. It's a -- it's not meant

10 to represent, I don't believe, the exact system. It's

11 a -- it's a illustrative model.

12   But what it's effectively saying is if

13 you have a system with interconnections, you can go

14 ahead and dominate your system with hydraulic

15 resources, both on a normal basis, and even dominantly

16 in a -- in a -- on a drought basis, by being able to

17 design your system this way, where the light blue,

18 which is a hydro generation, is serving our load. The

19 black line is our load as it grows. The purple is a

20 dependable resource that is sold to the US, or sold to

21 an export market. And the yellow is a non-dependable

22 surplus product that is sold to -- exported.

23   The purple you hope to be able to get

24 prices that are higher because somebody buying the

25 purple block can use that power to avoid building.

10067

1 Someone buying the yellow part is probably just using

2 it for -- to -- to offset fuel. So you -- you expect

3 to get a lower price. That -- that's the basic theory.

4 Of course, prices go where they go in the real time.

5 But the -- the basic premise of that.

6   If you don't have the interconnections,

7 if I was looking at this graph for somewhere like

8 Newfoundland, they could not build a system this big if

9 that was their black line, because all of that area

10 above the line is hydro product you've invested in

11 that's going to be wasted. You have no economic value

12 to it.

13   What instead you have to do is build a

14 system where, if you'd envision this, your black line

15 would be a fair bit higher, running somewhere through

16 the yellows and maybe just clipping the peaks of the

17 yellows so that before I build a plant, I need all of

18 the load to be able to have the -- the dependable

19 energy used to serve my -- my customers.

20   And much of the yellow is serving my

21 customers, and it's backed up by varying levels of

22 thermal generation. So in some years that will be oil.

23 In some years that will be hydro. That's the way that

24 a -- a Newfoundland system would work. And because

25 there is so much yellow in the mix, and there would be

10068

 1 for most hydro projects, you end up needing to have a

 2 lot more load, black line higher, and a lot more of

 3 that thermal to be able to make the hydro economics

 4 work.

 5   If you have the interconnections, you

 6 can do a graph like this. You can -- you can build the

 7 hydro and keep your own system dominantly hydro and be

 8 playing a role in supporting your -- your export

 9 customers. But you can only do it with transmission.

10   And the other really important concept

11 here is that every time you build a new plant, you

12 don't only bring new dependable product. You also

13 increase the amount of yellow every year. You'll see

14 as they build the yellow gets taller and taller.

15   So even if you're only building for your

16 own needs, which this thing is -- this graph is doing.

17 This doesn't advance anything. You still need more and

18 more transmission over time because you always want to

19 be able to sell that yellow product. You want it to

20 dump into the market and you want to be able to dump it

21 at the best times possible: on peak, market constraint

22 times that, you know, supports the neighbours. That

23 type of thing.

24   So if you add into this graph the

25 concept of advancement, you'd see the purple nudge out.

 1 You'd build the purple before it hits the black line.

 2 And -- and you'd have that -- a lot more purple to sell

 3 as well as a lot more yellow to sell, and transmission

 4 becomes critical.

 5   But without transmission, you'd never be

 6 able to have the system you have today. We would -- we

 7 would be dealing with a -- a -- probably, I would say

 8 in Manitoba, a -- you'd -- you'd have found a way to

 9 develop a fair bit of the hydro, but you would have a -

10 - a very substantial thermal complement to make it

11 work. And -- and that -- that's pretty consistently

12 the evidence from -- from anywhere that runs a -- a

13 non-interconnected system.

14   MR. ANTOINE HACAULT: Perhaps we can

15 move to slide 19. And I know that's moving a little

16 bit ahead in the presentation of where you were.

17   But to contrast the needs approach and

18 if we're going to have a different focus, and it's been

19 a theme in my cross-examination, members of the panel,

20 how do we look at what is being proposed by Manitoba

21 Hydro as opposed to a needs approach?

22   MR. PATRICK BOWMAN: I think if Mr.

23 Hacault had his way, they would all be graphs. This

24 was another exhibit of Manitoba Hydro's, MH-138. It

25 was the graph that shows in practice some of the

 1 concepts that we just saw in -- in theory. It only

 2 focusses on dependable. It doesn't have any of the

 3 opportunity numbers in there; none of the yellow, only

 4 the purple, to use the -- the previous graph's

 5 colouring. And the steps you see is -- is adding the

 6 new plant. The first major step is Keeyask. The

 7 second major step is Conawapa.

 8   And you can see the degree of

 9 advancement that we're talking about. Hydro's

10 advancement for Keeyask provides it with the ability to

11 get dependable supply up above 34,000 gigawatt hours.

12 To properly assess this, you'd need the other -- you --

13 you'd need a bit more information about seasonality and

14 -- and peak capacity. But in principle, in energy, you

15 find an energy capability that can pretty much supply

16 any identified commitment that they have in the system,

17 assuming these loads evolve.

18   This is the graph that I would say shows

19 that Conawapa today is not backed by contracts. It's -

20 - it's being proposed on -- on -- to need a lot more

21 work before it's at a point where somebody can

22 seriously assess it. Right now, it's a line on a

23 graph. I think Morrison Park explained it well, is

24 it's a -- it's a development opportune -- a future

25 development opportunity that's intriguing, but you

10071

 1 don't have the information yet to know even -- even who

 2 it's being built for, much less, with the economics,

 3 what it would look like.

 4   MR. ANTOINE HACAULT: Thank you. We'll

 5 move back --

 6   THE CHAIRPERSON: I wonder, Me.

 7 Hacault, if it would the right time for a break. It's

 8 about an hour and a half that we've been -- actually,

 9 it's more than that because of the presentation, but...

10 So let's take a break right now. And -- and the

11 resume, say, in ten (10) minutes.

12   MR. ANTOINE HACAULT: Thank you.

13

14 --- Upon recessing at 10:30 a.m.

15 --- Upon resuming at 10:46 a.m.

16

17   THE CHAIRPERSON: I believe that we can

18 resume the proceedings.

19

20 CONTINUED BY MR. ANTOINE HACAULT:

21   MR. ANTOINE HACAULT: Merci, M.

22 President. Mr. Bowman, could you continue in your

23 presentation? I have taken you to a slide which was

24 one (1) ahead of this.

25   But could you deal with slide 6 and your

10072

 1 conclusion that there's no changed in -- as a result of

 2 the updates?

 3   MR. PATRICK BOWMAN: Yes. So in --

 4   MR. ANTOINE HACAULT: Sorry, not slide

 5 6, 15.

 6   MR. PATRICK BOWMAN: Slide 15. It was

 7 originally conclusion 6. We had noted in the original

 8 filing about -- that it's important to look at the

 9 experience with hydro and interconnections. We've gone

10 over that.

11   The third bullet there was -- was only

12 put there in the -- in the context of a planning

13 comment, that, you know, there are some fairly severe

14 things that were needed to make the original

15 commitments to the projects, to the Nelson River and

16 the like, that were highlighted this morning and

17 highlighted in some other -- other presentations you've

18 seen.

19   It's not my intent here to suggest that

20 I am spending any time on overall environmental

21 impacts. But just in a planning context, there has --

22 there -- the projects in the plan as proposed is part

23 of something that's been underway for fifty (50) years.

24 It doesn't mean it's the right thing to do. It could

25 be a sunk cost fallacy in respect of environmental

10073

1 impacts.

2   But it is worth noting this is not

3 striking off in a new direction for Manitoba. And --

4 and some of the -- some of the foundational and

5 unfortunate environmental effe -- effects that were

6 needed to make these projects occur are -- exist and

7 are happening today. And -- and, in that regard, if

8 they're effects that were -- were incurred with an

9 assumption of five, (5), six (6), 7000 megawatts of --

10 of downstream generation and -- and much of that is --

11 is going unused, it's -- it -- it just notes of how it

12 fits into an overall planning context.

13   We -- we answered an IR to the Metis

14 Federation on this, noting that -- I didn't intend to

15 go any further in respect to the environmental impacts.

16   I -- I think the next point on

17 interconnections is -- is not -- not always the focus

18 of -- of peoples' comments, but there is a fair number

19 of -- of commenters who are -- who are suggesting that

20 Manitoba Hydro has -- has -- is -- is moving in a

21 direction of putting all its eggs in one (1) basket.

22 It's a phrase that's used.

23   In an overall planning context, I think

24 it's a -- it's a valid comment if you're stuck with

25 running a system on an island like we see in

10074

 1 Newfoundland for now. The other option is to not be an

 2 island, is to build more transmission and -- and

 3 complement other peoples' diversity. And -- and in

 4 that regard, if there's somebody who's got a better

 5 opportunity to build wind, they should build the wind.

 6 If there's someone with a better opportunity to build

 7 the -- the thermal, there are less options and is stuck

 8 with the thermal, then they can do that.

 9   Manitoba brings to the -- this part of

10 the world some options in -- in respect to hydro that

11 other people don't have. So is -- is it diversity?

12 Well, your own entity is -- is certainly committed to

13 one (1) type of resource heavily, and it may be a --

14 may view it as a good one or a bad one. But I -- I

15 wouldn't tend to -- tend to criticize it on diversity.

16 I think the transmissions is a -- a component of the

17 diversity. And -- and getting yourself to be not

18 islanded, but part of a bigger system helps address

19 that.

20   And, of course, the other thing is that

21 if you're able to bring on bigger plants, you -- you

22 certainly have more flexibility to address unexpected

23 load requirements, so. And I don't think anything in

24 the update has changed that, so we can move to slide

25 16.

10075

 1   And this is where the conclusion now

 2   resides to say given there's no 250, you're probably

 3   still advised to take the opportunity path. At the

 4   time we wrote this, it was -- the -- the 250 megawatt

 5   transmission was on the table, and so the question is:

 6   Given the 250 looks pretty good, should you go to 750?

 7   And 750's economics in any given Plan

 8   did not hold up. It was not better than 250's in any

 9   instance. Plan 4 was -- was the best. But it always

10   gave you the benefit of optionality because you could

11   build Conawapa now, you could build it later, you could

12   not build it, and you could go with other resource

13   options that still benefited from the 750 megawatt line

14   as compared to the 250.

15   But it wasn't a lock-solid conclusion.

16   I think analytically, the numbers would have pushed you

17   to 250. Qualitatively, I think a lot of people would

18   have looked at it and said, You don't want to forgo the

19   opportunity of a 750, because they're not things that

20   come along very often. You can't upgrade.

21   Now we're at the point where we don't

22   have that. In one (1) sense, it's unfortunate, but it

23   probably makes the decision planning easier.

24   MR. ANTOINE HACAULT: Could we move to

25   slide 17, which was your eighth conclusion, sir?

10076

 1   MR. PATRICK BOWMAN: Well, this is the

 2 critical piece of -- of Conawapa. And -- and it's a

 3 conclusion that I've wanted to -- wanted to separate

 4 because -- and, again, I -- I agree with Morrison Park

 5 on this -- Conawapa is a different beast than the rest

 6 of the decisions that need to be made today. It is, at

 7 best, a future opportunity. It's intriguing. It

 8 doesn't pass any of the tests and thresholds now on

 9 terms of NPVs, but I would say the NPVs are a

10 distraction.

11   At the time we prepared this, we said

12 Conawapa is not -- would not be in ratepayer interest

13 under any normal analysis prepared on the NFAT at the

14 time. But it's intriguing enough that if you can

15 minimize, you know, ongoing cost commitments, you

16 should continue to protect Conawapa for an -- an in-

17 service date 2026 or thereabouts.

18   One (1) of our main conclusions on that

19 was that Conawapa brings massive benefits to the

20 Province of Manitoba. And we're only talking about

21 quantifying the ongoing benefits of things like water

22 rentals, and -- and debt guarantee fees, and capital

23 taxes. Even in -- with -- that's even with ignoring,

24 you know, jobs, and income, and the like during the

25 construction phases.

10077

 1   And it would seem to me, with my

 2 experience dealing with projects of this nature, that

 3 are challenging projects for ratepayers and good

 4 projects for a -- a province or a territory, there are

 5 a lot of tools that can be used to get the project over

 6 the hurdle and to make it happen. And it seems that

 7 Conawapa, even though we haven't seen any movement on

 8 that, my experience would suggest to me that it's

 9 fairly likely that if Conawapa doesn't improve as a

10 project for ratepayers, it's going to have a really

11 hard time going forward.

12   Whether it improves or not, there's

13 going to be a strong incentive on the government to see

14 it go forward, and there -- there should be strong

15 incentives for them to -- to come to the table. I

16 update this in slide 18, saying that you will have

17 better information on Conawapa once you have the proper

18 contracts that are needed to make it happen.

19   The slide that Mr. Hacault took us to

20 underlined that right now it's -- it's being proposed

21 on spec. It has -- has effectively no contracts that

22 absolutely require its output. They may legally --

23 they may, you know, precursor cond -- conditions

24 precedent, but they don't require on a kilowatt hour

25 basis on the planning context. But we all know

10078

 1 Conawapa wouldn't go forward on that basis. It would

 2 only go forward with proper loads, proper commitments

 3 from counterparties to it.

 4   So the NPVs you're looking at now are

 5 not reliable. They're not going to be the NPVs that

 6 are prevailing at the time I would say of Conawapa.

 7 But even under the current numbers, even under some of

 8 the -- the adverse conditions for Conawapa, even if we

 9 use higher capital costs, there is more than enough

10 benefit there that -- that, with the stroke of a pen,

11 to revise a benefit-sharing relationship with the

12 provincial government, Conawapa would come out as a --

13 as an advantageous project.

14   Now, I don't -- I think we have to

15 separate that conclusion into a few different parts. I

16 certainly don't have a say in what -- in -- in how the

17 agreement looks. I don't know that I've seen any signs

18 that anybody's in discussions of that nature. But the

19 question isn't: What should the agreement be? The

20 question is: Should you keep protecting Conawapa? And

21 if it has that much potential benefit, it would seem to

22 me that it's fairly likely people will solve that

23 problem. And as a result, it's worth protecting

24 Conawapa at this point while people work out the

25 contracts and while they figure out a -- a benefit-

10079

 1 sharing agreement that can make it work for everybody.

 2   THE CHAIRPERSON: I've got a couple

 3 questions in relation to the slide and what you just

 4 said. So you keep protecting the in-service date for

 5 Conawapa. And by the time you make a decision, you've

 6 already sunk -- I'm not sure what the amount is, but a

 7 substantial sum of money. So you're back where you

 8 started. You know, you're back where you started,

 9 where we are now with, I think, committed $1.5 billion

10 already to -- to Keeyask.

11   And so basically you're suggesting to

12 us, let's -- let's keep going the same track. Let's --

13 let's do the same thing with Conawapa. Let's -- let's

14 get ourselves in a position where we're kind of boxed

15 in, because we've already spent hundreds of millions of

16 dollars in -- in protecting the in-service date.

17   Is -- do you -- can you explain to me

18 what your -- what your logic is?

19   MR. PATRICK BOWMAN: Yes. And my first

20 comment would be, I -- I don't want my comments to be

21 read as suggesting because we spent money we should

22 continue to protect it. I -- I do not -- that's a --

23 there's even a term for that, the -- the sunk cost

24 fallacy, as I recall it, that we -- we spent the money,

25 so let's keep spending. It's not that at all.

 1   The issue is you've got a project that

 2 it doesn't matter how much anyone likes it or hates it

 3 at this point in time. Nobody can make a decision to

 4 go forward with it, because there's way too many steps

 5 that have to be done between here and there. So no

 6 matter what happens, there's time.

 7   But on the basis of even pessimistic

 8 numbers that have been -- been presented, there are

 9 some very large consolidated benefits between the

10 provincial government, the utility, and its ratepayers.

11 They are very poorly distributed at this point, but

12 they're very large, even on pessimistic assumptions.

13 That could change in the years that -- that are to

14 come, but at this point, they're -- they're real, and -

15 - and I think it's important to pay attention to that

16 as an opportunity for Manitoba.

17   The main point of our conclusion is, or

18 -- or what I've put down here is, right now, you have -

19 - you don't have to make a decision, but even if you --

20 in respect to building, but you do have to make a res -

21 - decision in respect to protecting, or someone has to

22 make a decision in respect to protecting.

23   And the -- the benefits are -- are --

24 appear real, that are even -- even in some pessimistic

25 assumptions. The problem is, if you're not careful

10081

 1 about assessing them, you're assessing them under a

 2 distribution of the pie, if you like, that, in my view,

 3 is unrealistic. I don't think if -- if the

 4 distribution doesn't change, I don't think Conawapa

 5 would go forward. I don't think it's credible. I -- I

 6 think ratepayers would -- would be ill served by that.

 7   That it -- you have to be careful that

 8 you're not at the point where it's a -- it's a way of a

 9 back door tax, if you like. You pay more, I take in

10 more, but the -- the pie is -- is large enough that --

11 and -- and I've -- I've had experience dealing with

12 governments on these type of -- of matters that it

13 would seem reasonable, likely, that people would want

14 it to go forward and be prepared to find a way to re-

15 carve it.

16   THE CHAIRPERSON: Okay. Let's -- let's

17 apply that logic to the -- the decision that we are

18 tasked to -- to consider as specifically in relation to

19 these government charges dealing with Keeyask. You

20 know, you -- you are making this recommendation

21 regarding government charges with respect to Conawapa,

22 but why not make the same recommendation with respect

23 to Keeyask?

24   What -- what's -- why -- did you

25 consider that as part of your -- an option?

10082

 1   MR. PATRICK BOWMAN: Well, the -- some

 2 of the numbers we ran did do that. It did have a -- a

 3 opportunity to say, What if -- what if the Manitoba

 4 government said I would forgo charges on Keeyask for

 5 the first fifteen (15) years, for example? That --

 6 there -- there are some numbers that are behind that.

 7   But my conclusion before we got here was

 8 Keeyask was able to work on its own. I don't love the

 9 distribution of the buy. If I'm working with

10 ratepayers, I'm busy saying there's -- there's a --

11 there -- there's not a huge amount in it for ratepayers

12 with Keeyask and a 750 line. There's some promise of

13 some future benefits. There's some flexibility.

14 There's some -- some, you know, good things that come

15 from it.

16   But the vast majority of the benefits

17 are to be reaped by government, but if you're only

18 giving me a choice, take this pie or don't take it, I'd

19 say take it. Not by a lot, but -- but take it.

20   In Conawapa, we're in the different

21 position. We're saying that there's a pie, but you're

22 -- you're actually going to have to contribute to it,

23 and someone else will take more than the full range of

24 benefits.

25   And we'll -- we'll touch on that for a

10083

1 long time. I -- I can even show you some -- some

2 graphs that would probably helpful. They're in our

3 evidence, but we can actually animate them and -- and

4 help illustrate that. And so that one (1) -- Keey --

5 so -- so Keeyask didn't need you to say, Should you re-

6 balance? If you ask me if I'd like some re-balancing,

7 sure -- sure, but I didn't need to get there to get to

8 a conclusion.

9   Conawapa, you look at it and you say,

10 Absent that, this thing doesn't fly based on what's

11 here. But the two (2) things that are missing is the

12 contracts that actually back it, and the fact that

13 there is this huge benefit. It's just poorly

14 structured, so that's why we got there.

15   THE CHAIRPERSON: Now, let's go back to

16 this -- this notion of the intertie and, you know, some

17 -- it has been described by some as laying the track,

18 as it were, for future development. In other words,

19 you know, having established a -- a pipeline, you can

20 then ship considerably more power that might be

21 generated by Conawapa, and other means as well.

22   And so say you get in a scenario where

23 you don't have Conawapa. Does it still make sense to

24 have that intertie -- that intertie? You know, if --

25 if you start from the premise that Conawapa is not

10084

1 justified based on the evidence, then why worry about a

2 track that may not be required?

3   MR. PATRICK BOWMAN: Well, I would say

4 that's a much -- was a much harder decision when you

5 had to decide between a 250 megawatt and a 750 megawatt

6 line than it is now, because now it's very binary.

7 You're either getting the line or you're not.

8   The information we reviewed suggests

9 that the 750 megawatt line brings benefits even if you

10 never built Conawapa. The latest information also

11 suggests, and I can -- we'll get into this later, that

12 your economic benefits and value from things like DSM

13 are improved by having the line. The line isn't --

14 isn't doubling down on product -- on future production.

15 It's also doubling down on future energy savings. It

16 improves -- improves all of your future scenarios.

17   As a matter of fact, it's -- it's even

18 better to have the line without Conawapa, because then

19 your DSM gets exported as a premium product rather than

20 being pushed to the margins, and that -- that's in the

21 numbers that we'll -- we'll look at.

22   So I'm -- that -- that's one (1)

23 comment, is I don't think the line lives and dies based

24 on whether you build Conawapa, but the second one is I

25 think there is a -- a sort of fallacy in the numbers

10085

1 that are here, that you only have two (2) scenarios,

2 one (1) that I'll call Conawapa now, and one (1) that's

3 Conawapa never.

4   There's no -- and I think I have this in

5 a future slide. There's no -- nothing here that says I

6 can build Keeyask, and rather than Conawapa 2026 or

7 2030, I could -- I could string along with a few, but

8 I'm -- but I'll get the Conawapa some day.

9   Instead, we look at these long-term

10 horizons that assume, once I've gone All Gas, that's

11 it, I -- I've made my decision and we'll see you in

12 eighty (80) years, or see your grandchildren in eighty

13 (80) years will review what to do next.

14   That's not the way plans unfold. That's

15 not the way plans work. So even as a -- if -- even if

16 your 750's a pre-build for a project that doesn't have

17 economics now, I think there's -- you can't rule out

18 that the 750 line will still be beneficial to Conawapa

19 in 2047.

20   MS. MARILYN KAPITANY: Mr. Bowman, can

21 you just expand on what you just said about DSM being

22 exported as a premium product?

23   MR. PATRICK BOWMAN: Yes. We ran some

24 numbers, and I guess now I'll be able to move over it

25 quicker when I get there, that tried to look at the DSM

10086

 1 Level 1, Level 2 in respect of each of the plans and

 2 how good is -- how -- how good does the DSM look?

 3   And depending on your plan -- I'm -- I'm

 4 told we're going there now. What Ms. Davies has just

 5 pulled up is a couple a slides forward, but this is an

 6 example of -- of Level 2 DSM applied to Plan 5. Okay,

 7 so you've built Keeyask. You've built a 750 line. You

 8 have no Conawapa. How good does DSM Level 2 look,

 9 okay?

10   And this is just a graph to say, What

11 are the building blocks? And this is Manitoba Hydro's

12 perspective, not the customers' perspective. We can

13 actually separate those two (2) based on the data we

14 have. From Manitoba Hydro's perspective, you are going

15 to spend some money on DSM, a present value of 437

16 million.

17   For that, you don't defer any hydraulic,

18 because you've committed to Keeyask for the date you've

19 committed to it, but you do defer some thermal plant,

20 and the benefits from deferring future gas from that is

21 actually already equal to pay for the DSM. If you see

22 this graph in front of you, the -- the green bar, green

23 is to the good.

24   We also defer a little bit of

25 transmission. We avoid some capital tax on fixed O&M.

10087

1 Oh, and there's all those extra exports in the green

2 bar, okay?

3   Unfortunately, the DSM also means we

4 lose domestic revenue, so you have this export domestic

5 tradeoff you have to look at. We got the benefit of

6 different water rentals, less thermal fuel in droughts

7 because our load is lower, and less purchase power, and

8 you end up with the number that Manitoba Hydro's

9 presented, which is 763 million benefit.

10   If you compare that to other plans, for

11 example -- I'm just going to find the number quickly.

12 If you compare that to Plan 2, Plan 2, that same DSM

13 program was only worth 519 million at the end bar, not

14 763.

15

16 CONTINUED BY MR. ANTOINE HACAULT:

17   MR. ANTOINE HACAULT: Could we go to

18 slide 46 --

19   MR. PATRICK BOWMAN: Forty-six (46).

20   MR. ANTOINE HACAULT: -- I believe.

21   MR. PATRICK BOWMAN: Forty-six (46) has

22 the same graph but Plan 2.

23

24   (BRIEF PAUSE)

25

10088

1   MR. PATRICK BOWMAN: This one, you see

2 that when you do the DSM, you get a different profile

3 of greens and yellows. You -- you actually do defer

4 hydraulic, which gives you a benefit. You also defer

5 some thermal. Your exports are very small, they're the

6 little green bar, because your -- a lot more of your

7 DSM goes to -- doesn't go to creating surplus hydraulic

8 generation, it goes to avoiding building plant, right?

9   And your thermal fuel, because you have

10 a lot more gas in this scenario, more of it goes to

11 avoiding having to run your units, but the time you --

12 by the time all is said and done, you're only 519

13 million ahead for that same DSM program. The line

14 actually made your DSM Program look better.

15   MS. MARILYN KAPITANY: And can you say

16 anything about those two (2) scenarios from the point

17 of view of ratepayers?

18   MR. PATRICK BOWMAN: This isn't the

19 Manitoba Hydro picture, so given that Manitoba Hydro's

20 IFF, if you like, is the perspective that people use to

21 set rates, these are in to -- to the largest extent,

22 the way that one would look at sort of ratepayer

23 benefits without getting into very specific

24 distributional aspects.

25   Like, this doesn't say how much of that

10089

1 benefit goes to the person who does the DSM versus non-

2 participants. It -- it doesn't deal -- it's a seventy-

3 eight (78) year NPV, so it doesn't deal with time

4 distribution, for example.

5   But overall, when we'll talk about

6 Manitoba Hydro benefits, it's -- it's not far off the

7 ratepayer perspective. We do have the ability to show

8 the ratepayer perspective later on, too. We didn't

9 spend as much time on that, but it -- does that address

10 the -- that visually?

11

12 CONTINUED BY MR. ANTOINE HACAULT:

13   MR. ANTOINE HACAULT: I think we're

14 somewhere.

15   MR. PATRICK BOWMAN: Okay. Ms. Davies

16 has --

17   MR. ANTOINE HACAULT: Yeah. We've

18 already looked at this slide, and your conclusion that

19 Conawapa is not supported by the evidence filed. That

20 was an initial conclusion, sir. And the updates, can

21 you tell us what it does, if anything, to that initial

22 conclusion that Conawapa was not supported by the

23 evidence in your view?

24   MR. PATRICK BOWMAN: Yeah. I think

25 we've learned more through the process of this hearing

 1 and also by implementing the lower loads in the DSM

 2 that I would encourage people to put less reliance on

 3 the Conawapa NPVs as they sit now.

 4   They just do not reflect the project as

 5 it's ultimately going to have to be assessed. They're

 6 directional. I would not put too much stock on the

 7 magnitude, and that's been -- and not only something

 8 we've spent time learning about in this hearing, and

 9 it's a conclusion I would say I've -- reflects my -- my

10 own -- my own learning through this hearing, it also

11 reflects that Conawapa is even less backed by contracts

12 now than we would have assumed when the NFAT was filed

13 because of the changes in -- in load and DSM.

14   So, if anything, it's -- it's moved more

15 into the -- the realm that Morrison Park was talking

16 about -- the interesting developing opportunity, but

17 don't think you can make a decision on it.

18   MR. ANTOINE HACAULT: Next, could we

19 move then to slide 20, which was your ninth conclusion

20 or recommendation in the originally filed report?

21   MR. PATRICK BOWMAN: Yeah, we had

22 comments that the original planning -- original filing

23 was very weak on -- on some aspects, like the -- the

24 DSM, and that you should continue to monitor and pursue

25 those customer self-generation, some other aspects like

10091

 1 life extension of -- of plants, if that's available as

 2 an option.

 3   Fuel switching, and maybe a few options

 4 that I'm not sure have been fully examined. I wasn't

 5 here for the DSM panel yesterday, and I apologize, but

 6 the fuel switching may have a broader scope as time

 7 goes on than -- than as fully examined in Hydro's

 8 materials to date. I'm not sure.

 9   MR. ANTOINE HACAULT: And, sir, could

10 you comment on opportunities in the industrial sector

11 for DSM?

12   MR. PATRICK BOWMAN: Well, industrial

13 DSM is probably one (1) of the biggest programs Hydro

14 runs to date. the customers who have participated, in

15 my experience, are -- are always looking for new

16 options.

17   Industrial DSM is -- is classically a

18 very, I'll say, lumpy experience. Often the DSM

19 opportunities exist at the time equipment is replaced,

20 and it's not replaced very often.

21   Sometimes it only exists at the time the

22 first decision is made in the way you design a plant,

23 for example. So, the opportunities are large, and

24 people -- and people should pay attention to them, and

25 -- and in -- in what I've understand from -- from the

10092

1 members, at least, is they would -- wouldn't think

2 they've reached the -- the bottom of the barrel yet.

3   Their -- sometimes their -- their

4 definition of DSM is somewhat broader than -- than

5 Hydro may have traditionally -- have been traditionally

6 willing to adopt, but it seems like that may be

7 yielding a bit on things like the self-generation. I'm

8 still interested to see how that evolves, but at least

9 it's been written down on paper.

10   MR. ANTOINE HACAULT: Could you give an

11 example of self-generation that might be something that

12 could fit into DSM?

13   MR. PATRICK BOWMAN: Yes. I think Mr.

14 Turner referenced one (1) example when he ran the --

15 the chemical plant. If you're doing the type of

16 process that -- that is used in -- in some of the

17 chemical operations in Manitoba, one (1) of your waste

18 products is -- is hydrogen, and it's vented.

19   Hydrogen can be used to generate power

20 quite easily or -- or whether that's through a boiler

21 or through other sources. So it's just a matter --

22 it's a -- it's a capital investment barrier and it's a

23 -- what is the -- what is the value of the output. But

24 there are certainly plants who capture that hydrogen.

25   There are others plants that can capture

10093

 1 waste heat -- low-grade waste heat. It's not -- it's

 2 not a wonderful source for generation, but it -- it --

 3 it is used in places -- things like pipeline

 4 compressors. And certainly people have their mind on

 5 forest products, as an example, so.

 6   MR. ANTOINE HACAULT: At the bottom of

 7 slide 20, you referenced massive changes in

 8 assumptions.

 9   What, if anything, do you want to

10 communicate to the panel with respect to generally

11 what's happened in the last six (6) months, as far as

12 the change in the case, and what does that tell us

13 about the future?

14   MR. PATRICK BOWMAN: Well, I think the

15 change in respect to the DSM is huge. I put down some

16 NPV numbers there that we get through going through the

17 tables. People will talk about Keeyask's costs went up

18 and Conawapa's costs went up. Those are effects of

19 about 300 million and 100 million on the present value

20 of the scenarios we're looking at.

21   The DSM utility spending is about 600

22 million net present value; and combined with the

23 customer, it's about 2.2 billion. So just to put

24 things into an order of magnitude of how much some of

25 the numbers have moved, the -- the DSM changes is -- is

 1 massive.

 2   Now, later on we're going to see that

 3 despite that, it's had a big change on the -- the

 4 Manitoba load and the underlying system. It's had a

 5 surprisingly small change on the ordering of the plans

 6 or the -- the decisions that -- that can be made today.

 7   MR. ANTOINE HACAULT: Thank you. Would

 8 it be appropriate to move to slide 21 now?

 9   MR. PATRICK BOWMAN: Yeah. This is in

10 terms of the update for DSM, we were saying that in our

11 original evidence that it -- the lack of DSM being

12 fully explored in the original NFAT led to a degree of

13 concern, because it can lead to two (2) potential

14 problems, two (2) -- two (2) planning issues.

15   One (1) planning issue is that you might

16 make a decision, for example, between these the two (2)

17 paths, and then six (6) months, a year later, two (2)

18 years later, five (5) years later, you make assum --

19 make a change in your assumptions on DSM that would

20 have changed your decision earlier on, that you're led

21 to making the wrong decision on the development plan.

22 And that would be one (1) possible bad outcome of

23 failing to explore the DSM.

24   And the other one is that if you're

25 advocating DSM as a way for customers to save on bills

 1 and to provide opportunities for people to upgrade

 2 their homes and the like, if you're not careful you may

 3 find, in the absence of proper information, that making

 4 decision today on one (1) of those two (2) plans, you -

 5 - you change or -- or obviate or even eliminate the --

 6 not only the need, but the -- the potential for DSM in

 7 the future. You -- you cut off your -- your DSM option

 8 because you've saturated the system with this other

 9 power, and you don't need the DSM anymore.

10   Those were our -- those were the two (2)

11 logical outcomes that can arise if you're -- if you're

12 busy planning the system without the DSM.

13   Based on what we knew in the original

14 NFAT, we had concluded it didn't appear to be the case.

15 It appeared that DSM would complement the plans, that

16 it would not compete with the plans. And in general,

17 that is underlined by the DSM we've seen, that the DSM

18 that's been proposed complements the plans. It differs

19 by plans. Some of them it helps more than others. And

20 the test is the -- is -- is of the type I described,

21 that DSM is best under plans that have relatively large

22 transmission and that are able to adjust the generation

23 and complement to deal with the DSM.

24   So Plan 5, Keeyask/750 has large

25 transmission, 750 megawatts of transmission. It only

10096

1 has Keeyask. It doesn't have Conawapa being brought in

2 for a specific date. So as the numbers sit right now,

3 it does better with DSM, as we just talked about.

4   Keeyask/Conawapa/750, the Plan 14, the

5 Preferred Development Plan, is a little bit less

6 favourable to DSM because your DSM now is -- is having

7 to compete for space on the transmission to get to --

8 to get to the market, in -- in effect. There --

9 there's a lot of changes going on. It's always a

10 waterbed; different pieces move.

11   But -- but the end of the day, your --

12 your DSM becomes a somewhat less valuable resource.

13 It's still a good resource, somewhat less valuable,

14 which -- which goes to my earlier comment about whether

15 DSM competes. It still complements, it just doesn't

16 complement as well.

17   DR. HUGH GRANT: Could you -- could you

18 elaborate on that? Because I'm -- I'm missing the

19 intuition behind it a bit.

20   So how -- how does DSM interact with --

21 take two (2) of the plans, say 5 and 14 or so?

22   MR. PATRICK BOWMAN: Yeah, I would -- I

23 would tend to go ahead in the presentation. I think

24 it'll save us time later. So I -- I don't think it's

25 going to cause problems. But I would first go to slide

10097

1 39 if we could.

2   Now, this is just to put one (1) thing

3 aside, which is -- I'll explain the graph in a minute,

4 but the conclusion is from a customer perspective the

5 DSM that's been proposed is in the numbers here equally

6 good, whichever plan you go on. How much the customer

7 invests and how much they save, okay?

8   And -- and all this -- this graph was

9 meant to show is the present value of what's invested

10 by customers as the blue lines. Increasingly dark blue

11 lines going up is your increasing levels of DSM. The

12 lightest blue line that ends about 200 million is based

13 -- I think Level 1 is -- is a fair bit higher, over a

14 billion by the time the scenario ends. Level 2 is up

15 over 1.5 billion. Level 3 is very close to that.

16   So the -- the customers are making

17 larger investments. What is the net benefit to the

18 customer? This -- for those investments ,you get to

19 the red line as the -- the net benefit. And the base

20 DSM, you'll see, is the lightest line ends the highest,

21 Level 1. Level 2 takes the -- the big jump down to

22 where -- where the net benefit is almost a billion

23 dollars present value. And then Level 3 is -- is the

24 lowest one (1). Customers are better off with Level 3

25 than they are with Level 2.

10098

 1   But from a customer's perspective it

 2 doesn't matter which plan you're on. Okay? So I just

 3 want to put -- put that aside first.

 4   From the utility and -- and what is

 5 effectively the overall ratepayer's perspective we

 6 would go to -- let's start with slide 45. And now

 7 we're back to that type of waterfall graph that was

 8 showing what happens when you do DSM.

 9   These are again seventy-eight (78) year

10 present values. We can do them over shorter time

11 frames if it's helpful, but this is Level 2 DSM, 437

12 million. You're going to see that number come up again

13 and again. That's what Hydro needs to invest in that

14 level of DSM to incent customers to do the -- the plans

15 they've talked about for Level 2.

16   In Plan 1, this is All Gas now we're

17 looking at. There's no def -- hydraulic to defer, but

18 you get a benefit from deferring thermal generation.

19 You get a little bit of benefits from differing

20 generation, outlet transmission, and capital tax and

21 fixed O&M by not having made that investment.

22   And then you get the benefit from extra

23 exports. They're not as large as we will eventually

24 see in some of the bigger plans. You have the adverse

25 impacts on Hydro's books and which ultimately means on

10099

1 their ability to collect their revenue requirement of

2 lost domestic revenue. It is a big factor of DSM and

3 it needs to be tracked. It's very important because

4 it'll -- it -- it frames overall whether -- whether DSM

5 is -- is worthwhile.

6   This is not suggesting -- this isn't a

7 RIM test, but it is a revenue -- it does include

8 revenue in your overall -- what they call the PACT type

9 of test. Water rentals has a small effect. You save a

10 lot of thermal fuel. It's the biggest single benefit

11 under an All Gas Plan. You save a little bit of

12 purchase power, and you end with a net benefit of 727

13 million. So the -- so DSM under All Gas is actually

14 very -- a very -- if you're going to go an All Gas

15 route, you better do your DSM. Okay.

16   If anyone wants to ask questions about

17 this, I'm now going to walk you through the other four

18 (4) plans that we modelled.

19   THE CHAIRPERSON: Could you clarify

20 what GOT is?

21   MR. PATRICK BOWMAN: Generation outlet

22 transmission.

23   THE CHAIRPERSON: Okay.

24   MR. PATRICK BOWMAN: It's -- it's

25 tracked in a separate column, so we just reported it

10100

1 here. It could mean hydro outlet transmission or -- or

2 thermal. That's the only reason we didn't build it

3 into the other numbers.

4   If you go to the next slide, this is

5 Plan 2 now. So this time we're -- we're building --

6 slide 46. We're building Keeyask when needed, no

7 transmission. So instead, you spend the -- the DSM --

8 I don't know if anyone can -- has -- has the paper copy

9 or kept their thumb in there. But in -- in this plan,

10 your big benefit is deferring Keeyask. Rather than in

11 2022, you end up building it in 2031 or whatever the

12 number comes out to. I have the -- the different

13 levels here.

14   You defer some thermal, you defer some

15 generation outlet transmission, you've got some extra

16 exports. Again, your lost domestic revenue is fairly

17 large. Water rentals. But you end us with 519 million

18 to benefit. So DSM is still good under Plan 2, right.

19 It com -- you know, it complements Plan 2. Not quite

20 as much as it complemented Plan 1.

21   The third scenario is the next page,

22 which is slide 47. This is going to Plan 5 now. We've

23 added a 750 megawatt transmission. And all of a sudden

24 you see the -- the huge change to what DSM is doing for

25 you. Now that we've built the 750 megawatt

10101

1 transmission, the big thing DSM is doing is the

2 exports. This isn't using DSM to avoid building or to

3 avoid some fuel. This is taking DSM to market.

4   So this version, if we actually had

5 other scenarios, you -- my suspicion is you would find

6 this level of DSM is much more dependent on -- on

7 market prices. The other ones might have been more

8 dependent on gas prices, for example, because you need

9 -- need to deal with that.

10   But the -- the benefit here is that your

11 -- your DSM is -- it's not able to defer your hydraulic

12 generation, but it -- it goes to market and it helps

13 you avoid some thermal fuel and it helps you avoid some

14 purchase power, so you come up with a $763 million

15 benefit.

16   Plan 14, which is the last one (1), 750

17 megawatt transmission line. This is slide 48 now. It

18 still has a big -- you know, same DSM, 437 million. It

19 allows -- it's now got some Conawapa deferral benefits,

20 which we didn't see in the previous version. It's

21 still got a lot of exports. The 750 line is still

22 helping you take it to -- to market. But you're --

23 you're not seeing the same benefits in the -- the

24 thermal, the water rental, the purchase power.

25   My recollection is -- well, the previous

 1 slide was seven sixty-three (763). You see the DSM is

 2 not of the same benefit here; it's only three eighty-

 3 five (385). So it complements all the plans; it's

 4 still worth while under all the plans. Where's it

 5 better? It's better under the ones with the bigger

 6 line and also the ones where you can -- you can both go

 7 to market and help defer local generation. But the --

 8 the line is all about getting it to market.

 9   DR. HUGH GRANT: This isn't an

10 undertaking, but if this is a three (3) dimensional

11 graph for the sake of your counsel, and -- and, you

12 know, I'm thinking of if the other axis was time, is

13 there any general sort of summary comment you could

14 make on this? So in other words, when -- when -- I'm

15 thinking of, say, the Keeyask/Gas one you had and you

16 saw the -- the saved thermal fuel. That would sort of

17 be pushed out fairly far in the future, right?

18   But still, I'm not saying it's that

19 important. I'm just more interested in the timing of

20 some of the benefits.

21   MR. PATRICK BOWMAN: I -- I suspect it

22 -- it may be pushed out in the future. But I'll say

23 hold your right to ask that undertaking, because if --

24 if we get the time, I'll show you something later that

25 we did with waterfall graphs in respect of the -- the

10103

 1 financial case for the -- for the -- the Preferred Plan

 2 and -- and for the other plans that does let us do it

 3 through time. It animates them, actually.

 4   And -- and it's -- we'll -- we'll jump

 5 to that. It takes a few minutes to show it, but it --

 6 it's -- we found it very helpful in understanding how

 7 the different benefits arose when we finally got to the

 8 point where we could say, What is it at each -- at each

 9 point in time, so. So it's possible you might find

10 something like that helpful; if you like three (3)

11 dimensions.

12   DR. HUGH GRANT: Can you make it

13 interactive?

14

15   (BRIEF PAUSE)

16

17   MR. PATRICK BOWMAN: Actually, it is

18 interactive and that's why we would need to flip the

19 computers and -- and pull up a different program. But

20 -- and it's only in Excel, so I can even give you a

21 live copy if you want to play, but the -- I would note

22 -- Ms. Davies reminds me that this is also over base

23 DSM, it's not over no DSM. So we don't have a no DSM

24 scenario, but I think the no DSM, it's -- it's only

25 analytically interesting. It's -- it's only in --

10104

1 analytically interesting. It's not relevant to

2 necessarily say, Was the first tranche of DSM relevant?

3 The first tranche is -- is incorporated.

4

5   (BRIEF PAUSE)

6

7   MR. PATRICK BOWMAN: So we were --

8 slide 21? I think we can probably jump forward to

9 slide 23, which is -- doesn't -- it won't take a whole

10 lot of time. We had a tenth here and some other

11 conclusions in our pre-filed testimony that I don't

12 think it's important to dwell on at this point.

13   But we did say, you know, given the

14 Board, in the last GRA, reviewed a proposal from Hydro

15 to cap participation in the DSM program, the

16 Curtailable Service Program, the Board only gave their

17 approval on an interim basis and said, We'll review it

18 again at the NFAT. I don't expect duration orders out

19 of this, but at the time we next get to a point where

20 you're issuing orders, I think we need to have -- have

21 that dealt with.

22   I also would suggest that the -- the

23 depreciation impacts, which I don't think is a matter

24 to decide today, but some of the approaches Hydro is

25 suggesting with respect to depreciation work against

10105

 1 large new plant.

 2   I don't know that we need to spend much

 3 more time on it than that, but the numbers that we've

 4 seen to date in their financials still don't wrestle

 5 with how much more ratepayers may have to pay in the

 6 early years for things like Conawapa because of simply

 7 a change in depreciation method, and that -- that could

 8 be a -- a notable adverse impact.

 9   I also -- just to weigh in on the topic,

10 I am -- I -- I haven't suggested any challenge to

11 Hydro's approach to the scenario analysis. I know some

12 people have talked about Monte Carlo modelling. The

13 Monte Carlo approaches have some real benefits. They

14 also come with some downsides. We saw Monte Carlo

15 modelling trying to be done to Hydro's system by the

16 Professors Kubursi and Magee that the Board retained in

17 the 2010 GRA, if I recall correctly.

18   And I think it may have highlighted some

19 of the reasons why that may be a inferior system for

20 modelling Hydro's approach, one (1) of the main ones

21 being Hydro's system is very complicated. It has lots

22 of overlapping variables. Monte Carlo simulations have

23 to be carefully designed if they're going to deal with

24 things that have dependent probabilities. They're not

25 all independent.

10106

 1   And -- and the other downside,

 2 especially for a regulatory type forum, is it's very

 3 hard to decipher and provide the evidentiary background

 4 and -- and poke and prod and dig through Monte Carlo

 5 simulations. So, for example, when -- when the

 6 professors did Monte Carlo simulations, they would have

 7 modelled Hydro's water rentals as one (1) -- one (1)

 8 variable. They -- they also modelled Hydro's exports

 9 as another variable.

10   And the Monte -- and we couldn't get

11 into the Monte Carlo to see whether they -- they had

12 design scenarios that had high water rentals and low

13 exports or low flows or something. Like -- like, you -

14 - you -- it's very hard to get back in. You have how

15 many thousands of lines of code if it -- if -- if it's

16 even retained. Often the system just dumps it, and all

17 it shows you is the final results.

18   So it's a -- it's -- it would be a very

19 challenging step in Hydro's planning, would be my

20 assertion, to get to that level, and I think it would

21 have some -- some definite downsides. So I -- I would

22 only make that comment for consideration.

23   The other one is that we expressed some

24 concern that Hydro may not show enough possible

25 variability in its load forecast with respect to

10107

 1 sensitivities in testing hydro balance. I think that's

 2 been highlighted by some of the changes that have

 3 occurred and that -- and as well as the -- the DSM

 4 scenarios, that DSM always needs to be looked at two

 5 (2) ways. One (1) is as a resource. The other is as a

 6 change to your load forecast, and depending on the

 7 situation, you can view it both ways, or you -- or you

 8 need to view it one way versus the other.

 9   And I think that it's highlighted that,

10 in respect of resource planning, some -- some further

11 outer scenarios on load forecast probably would have

12 been beneficial. I think we're -- we're better off now

13 with the pipeline assessment being included, because it

14 gives you an example of what could happen on the

15 upside.

16   And the last one I think that has

17 simplified is, you know, we were lamenting an inclusion

18 of DSM in the original filing to the -- the low level

19 it was because it eliminated the ability to think of

20 this as an overall integrated resource plan. It's

21 still -- but the -- it -- it took us a fair bit of time

22 to wrestle with whether we could work with the

23 information and acceptably access the plans without

24 that.

25   We now have it, so I think you've got

 1 something here that is a lot more akin to an integrated

 2 resource plan now, but at the same time, I think you

 3 have something here that is a lot less needing an

 4 integrated resource planning framework, because

 5 primarily we're talking about an -- an opportunity-

 6 based business case, and that's a fair bit different

 7 than just thinking about, How am I going to plan my

 8 system and meet my -- my own needs over the next five

 9 (5), ten (10), fifteen (15) years?

10   It does take a different set of -- of

11 standards and way of thinking. So, I -- I haven't been

12 as critical of -- as -- of Hydro as failing to adopt an

13 integrated resource planning framework for this

14 hearing. It still is a, you know, it is a -- a

15 relatively suitable industry standard for the times

16 when, you know, if we go down an All Gas path, I would

17 certainly expect them to adopt the full suite of -- of

18 resource options in assessing where they go next.

19

20 CONTINUED BY MR. ANTOINE HACAULT:

21   MR. ANTOINE HACAULT: Mr. Bowman, might

22 it be appropriate for you to transition to

23 supplementary conclusions that have been added and

24 weren't part of your initial report, so we could move

25 to slide 25, I believe?

10109

 1   MR. PATRICK BOWMAN: Yes. I'm -- I'm

 2 not sure there's much more to add here to things that

 3 I've previously talked about, but I -- I wanted to go

 4 right back to the bas -- basic planning concepts, first

 5 principles of planning, which is the, you know, What do

 6 you -- what do you know for sure out of everything

 7 that's been -- been provided? Because all we know is

 8 that there's a heck of a lot of uncertainty, and there

 9 may be a feeling that in many respects, the uncertainty

10 has increased, because we've heard a lot more views, a

11 lot more -- more perspectives and things.

12   And it's -- it's my -- I don't know if

13 it's meant to be soothing or not, but this is all part

14 of a normal planning exercise. There -- uncertainty

15 doesn't -- doesn't always get resolved as you go

16 through it. This -- this is part of the life of

17 resource planning. As much as we want to crystalize

18 the -- the planning to a document, it's never

19 crystalized. It's a moving target.

20   But, inasmuch as all those things move,

21 if I have -- had to explain the core case to somebody

22 in, you know, in -- in five (5) minutes or less, it

23 would be -- some of the comments Dr. Grant even went

24 back to. Hydraulic resources have the advantage of

25 locking in your costs in a way. They are very

 1 inflation protected to the extent inflation is a likely

 2 future event.

 3   To the extent that people will criticize

 4 hydro plants for having very few employees, this is the

 5 flip side of that, which is they are very well

 6 protected against inflation, partially because they

 7 have very few employees and very few commitments of

 8 ongoing costs like that. So they tend to be protected

 9 over the long term better than most other options.

10   The second thing is that the provincial

11 benefits are huge. The, you know, nineteen thousand

12 two-hundred (19,200) person years is the example that

13 Hydro cited that -- but we are dealing with something

14 that does have upside if you can make it work, and that

15 it doesn't obviate DSM. If anything, it complements

16 it.

17   The third thing is that I think we need

18 to -- an absolute building block, as much as we have a

19 debate about whether greenhouse gases or carbon will

20 have a price, there is a real pressure in respect of

21 greenhouse gases.

22   Price or no price, there will be non-

23 price aspects of which greenhouse gas regulations and -

24 - and expectations affect the market, and I'm -- the --

25 the environmental economist in me gets nervous when the

10111

1 true cost of carbon, as people would like to cite it,

2 gets pushed into the multiple accounts part as if it's

3 -- it's, you know, among these other externalities.

4   I don't see the prices that you see

5 about what the different scenarios adopt for what

6 carbon might be priced at in the market, but when you

7 go to what people say it really ought to priced at,

8 it's a lot higher than -- than any of the numbers that

9 -- that I've seen people assuming in the market, and I

10 think that's -- that -- that's a real -- a real aspect

11 of this -- of this development that -- that we don't

12 want to lose sight of.

13   On the same time, and -- and also that I

14 think the -- the Scott Thomson example of the zero load

15 growth was -- was very helpful, and the extra piece

16 that it underlined for me was more the thought

17 experiment that if my load never grows, you've modelled

18 it there, but can't I achieve the same thing by doing

19 DSM? Spend money, but my load never grows. And -- and

20 can't that be an alternative to the plans?

21   And they could be an alternative to the

22 plans. There's no doubt about that, mostly because, I

23 think, the -- the plans don't easily meet the test of

24 need -- the core need for Manitoba, right?

25   But that doesn't eliminate the ability

10112

1 to assess the plans as a sensible -- on a sensible

2 business case basis to still produce carbon-free

3 kilowatt hours. Your DSM kilowatt hours will be going

4 to a lower 'R' load. These carbon kilowatt hou -- of

5 carbon-free kilowatt hours will still be going to

6 supply North America load. There are still upside

7 benefits to that.

8   And if the plants stand on their own

9 even under no load growth, or even under extreme DSM

10 scenarios, then -- then that's a reason to -- to

11 continue the conversation even after a conclusion that

12 says, I don't need the project. I can do DSM.

13   MR. ANTOINE HACAULT: Mr. Bowman, just

14 on the issue of planning, could you provide some

15 observations on the process in this case versus the

16 approach in other jurisdictions?

17   MR. PATRICK BOWMAN: This was something

18 that Mr. Hacault found interesting when I walked him

19 through. We're taking on an extra difficult process

20 here because we're trying to both do resource planning

21 as well as project approval -- specific project

22 approval.

23   In most cases, when people set out a

24 fully regulated environment, they will separate those

25 two (2). Even an example of -- of, you know, British

10113

1 Columbia, where you have a Crown, and when it's

2 operating properly, not under government directives,

3 which it frequently is, but there's two (2) steps.

4 There's a step that is a resource planning step, where

5 you look at imperfect information on a -- on a whole

6 bunch of options, but at least you try to determine,

7 What's important, what tests are we going to apply,

8 what directly, broadly, do we think we should go, what

9 types of portfolios do we want? And -- and a very wide

10 ranging and creative process is involved in that, and

11 our firm has been involved in BC's resource planning

12 process on -- on behalf of the -- one (1) of the

13 Aboriginal groups there. So we -- and in the middle of

14 that.

15   And it takes a while. It involves a lot

16 of consultation the way they do it. It also involves a

17 regulatory process, but it doesn't necessarily conclude

18 what you're going to build. It just concludes, What

19 direction should be broadly be going?

20   Then the utility does its homework and

21 brings back, And here's -- here's my proposal for what

22 I'm going to build. And they need good information on

23 that, because you need to pass the test. Should I put

24 a shovel in the ground? And they're two (2) separate

25 processes that require two (2) separate sets of

10114

 1 thinking.

 2   This process has to jump back and forth

 3 a bit, because we're -- in one (1) sense, we're doing

 4 broad planning. In the other sense, we're trying to

 5 wrestle with a very specific -- a -- a very specific

 6 resource. And I think that's -- that's raised the bar

 7 on the -- the challenge of -- of this proceeding, but

 8 we -- we are where we are.

 9   MR. ANTOINE HACAULT: Thank you. Could

10 you deal with the last bullet here, Conawapa/Ontario

11 example? And then I think we can move on to the next

12 slides.

13   MR. PATRICK BOWMAN: This is -- this is

14 one (1) of the anecdotes Ms. Davies allowed me to slip

15 in. She deleted a few of my others. I used this as

16 probably one (1) of my better examples of resource

17 planning and why it's very difficult, and why we need

18 to be -- you need to understand the horizons that

19 you're dealing with.

20   When I -- you know, as a Manitoban, I

21 remember -- I -- I remember Limestone being built. I

22 remember Conawapa being in the news. I wasn't at the

23 1990 hearing, but out of that, you know, Manitoba and

24 Ontario had a deal to build Conawapa, build

25 transmission, sell -- make a substantial sale to

10115

1 Ontario well in advance of when Conawapa was being

2 built, obviously, and deliveries were going to start,

3 by my recollection, sometime around the year 2000.

4 This Board had the hearing in 1990.

5   Shortly after that, Ontario walked away.

6 They were in a recession. They were rethinking how

7 they did power planning. They had decided they didn't

8 need Conawapa and it cost them a lot of money to do

9 that. So I don't know the date, but early '90s.

10   Now, as I -- as I highlighted, I started

11 in this business in '98, and one (1) of the acute in --

12 issues in this business at that time and into 2000,

13 2001, and 2002, was Ontario's shortage of power. So in

14 1990, the early 1990s, they made a decision to walk

15 away from a thousand megawatts that would have come

16 online in 2000, and then by the late 1990s, their

17 nuclear plants weren't performing the way they wanted.

18 They started ramping up the coal plants. They started

19 getting -- people remember the Toronto air quality

20 warnings of the late '90s, the -- the inquiries before

21 the legislative committees, commitments out of

22 different politicians to -- to shut down the coal

23 plants.

24   And all of that would have happened in a

25 context where there would have been a thousand

10116

 1 megawatts ahead if they hadn't made a decision in the

 2 early '90s to say, Wait, we're moving in this direction

 3 now, we want to change what we're doing.

 4   And it's -- it's my caution about

 5 letting, you know, what you know now and -- and near-

 6 term assumptions that the trend is going to continue

 7 lead to the decisions you're going to make that affect

 8 decades.

 9   MR. ANTOINE HACAULT: So that -- is it

10 your point then, Mr. Bowman, that optionality and

11 keeping options open is very important in -- in the

12 decision making process that we have here on paths?

13   MR. PATRICK BOWMAN: Yes, but it's also

14 the -- it -- it's the what -- of what I've learned or

15 what I know or what is facing me as facts, are they

16 current facts or are they enduring facts? And how do

17 you make sense of that? And I think a lot of the

18 things that people will say, like, you know, the US

19 market is down, that, you know, the -- the industries

20 has dropped off or they're -- they're in recession.

21 I'm not looking at those as enduring facts. I think

22 you want to be cautious about using those as -- as

23 enduring facts.

24   Figure out which topic goes in which --

25 which box, of course, is very hard, fracking being a

10117

 1 very good example, and prices of natural gas. Your --

 2 I don't see the prices that you see about what people

 3 are assuming on natural gas, but I do see things like

 4 the Energy Information Administration in the US, who is

 5 -- has a bit of a reputation for taking today's price

 6 and drawing a fairly straight line, to the point that

 7 BC Hydro even wrote a rebuttal to them criticizing

 8 their -- their forecasting approach in their resource

 9 plan.

10   So pretty low natural gas prices, four

11 (4), five (5), six dollars ($6) a gigajoule enduring.

12 Well, when diesel is a dollar a litre, it's worth about

13 thirty dollars ($30) a gigajoule is my recollection.

14 So if you really think natural gas is going to stay at

15 five (5), six dollars ($6) a gigajoule and diesel's

16 going to stay at thirty dollars ($30) a gigajoule or --

17 that's if it's a dollar a litre -- and that that gap is

18 going to persist and you're not going to see a market

19 response over time, then I think -- I think there needs

20 to be some thought about whether this will be the next

21 story that people say, Oh, we should have all seen that

22 one coming, because every train and every bus and every

23 truck and every mining -- piece of mining equipment

24 that's burning thirty dollar ($30) gigajoule diesel and

25 has an option to go to -- go to something like a

1 liquified natural gas at five dollars ($5) a gigajoule

2 to purchase a product and maybe another four (4) or

3 five (5) to liquify it, so you're up to ten (10).

4   Those are transitions that if gas stays

5 at the level, that people better be pricing into their

6 -- their forecast. And if they're not, some day maybe

7 they'll call that the next black swan, I'm -- I'm not

8 sure. But it -- it goes to the question of what --

9 what can you rely on and -- and what do you know for

10 sure.

11   MR. ANTOINE HACAULT: Thank you very

12 much for that, Mr. Bowman. I'm mindful of the time.

13 And I think a lot of the next slides we can deal with

14 fairly quickly. If we move to slide 26.

15   MR. PATRICK BOWMAN: This was a

16 supplementary conclusion about load growth. I think

17 I've talked about most of this. I said there's been a

18 lot of talk in the hearing about could our load growth

19 be lower. I'm not sure there's been sufficient

20 recognition that there are other things that could

21 suggest our load growth could be higher.

22   Disruptive technologies on the load side

23 go both ways. Certainly there's been disruptive

24 technologies in terms of LED lighting, but again,

25 anecdote again. I'm in the middle of replacing a

 1 heating system in my house that involves hydronic

 2 liquid, you know, boiler. And my contractor asked me

 3 if we wanted to up-size it a bit because it seems to be

 4 a thing people are doing to be able to add driveway

 5 snow melt heating to their driveways and sidewalks.

 6   So I don't know where technologies are

 7 going, but it's not always -- it's not always down.

 8   MR. ANTOINE HACAULT: In the middle of

 9 the slide you make a point about sensitivity. And

10 that's been a theme in my cross-examination of the

11 sensitivities.

12   What's your comment on whether or not we

13 look at this from a sensitivity point of view?

14   MR. PATRICK BOWMAN: All I'm saying is

15 don't -- when you look at the graphs that Hydro's

16 produced, don't ignore the pipeline case. And -- and I

17 think in a proper planning context -- I'm sure it's in

18 Hydro's building; I don't know if it was before you --

19 is, what does the world look like if -- if the

20 surprises on the load are not on the low side because

21 they're -- they -- they could be -- could be on the

22 high side as well.

23   MR. ANTOINE HACAULT: Okay.

24   MR. PATRICK BOWMAN: That's all.

25   MR. ANTOINE HACAULT: Perhaps we can

10120

1 move to slide 27. The issue is increased exports.

2   Could you comment on that, sir?

3   MR. PATRICK BOWMAN: Increased imports.

4   MR. ANTOINE HACAULT: Imports, sorry.

5   MR. PATRICK BOWMAN: Yes, this is a --

6 this is a -- a discussion that I've heard occurring in

7 the hearing and with La Capra's evidence. We didn't

8 have La Capra's evidence at the time we prepared ours.

9 So I -- I didn't have originally a comment on this.

10 But I wanted to highlight for the Board that La Capra

11 has brought some very interesting perspectives on

12 whether you could do more with imports.

13   But I think the situation is somewhat

14 more complicated than has made it onto the record.

15 There's been some information people provided that

16 planning is different than operating. And in an

17 operating context, of course we'll take all the imports

18 that are available. And that -- and that's true, and -

19 - and I think it should be recognized. But even in a

20 planning context there are two (2) ways that one looks

21 at the power resources available.

22   One (1) answers the question, When do I

23 need to build? And the second answers the question,

24 What should I build? My understanding of La Capra's

25 cases takes Hydro's criteria and relea -- relieves them

10121

 1 for both of those questions. It says, I'm going to

 2 change my planning assumptions, with the stroke of a

 3 pen change my -- my criteria, policy, that changes when

 4 I need to build something and also changes how I do an

 5 assessment of what I should build at that time.

 6   We've heard a lot about Hydro's

 7 criteria, the only -- you take the -- the lesser of

 8 what you could import off peak versus -- or the 10

 9 percent of Manitoba's load, add to that your exports,

10 that's your maximum import that you can rely on. That

11 is only true for the, When do I need to build something

12 question. And -- and I'd encourage -- I'm going to try

13 to do a small job on this. If you're interested in it,

14 I encourage you to follow up with Hydro with it because

15 it's a lot more complicated than the record reflects.

16   In making that decision about, When do I

17 need to build, under most of the scenarios you will see

18 in front of you, it is not the 10 percent of Manitoba

19 load criteria that is being triggered. It is the off-

20 peak criteria that's being triggered. Hydro has

21 already assumed, in terms of deciding when it needs to

22 build and when it has enough energy, that it has

23 maximized the imports off peak, plus the export load.

24 Or, sorry, I apologize, just to maximize the off peak.

25   And I would strongly recommend that that

1 criteria not be departed from lightly, if at all,

2 because yielding on that criteria is the decision about

3 the lights going out. It's a decision -- and not --

4 not for short periods of time. It's a decision about

5 not having enough power for an entire winter.

6   Having done that run and concluded when

7 you need to build something, Hydro then does another

8 run of its SPLASH system that says, What's the best

9 thing to build? All right. What they call the

10 production costing run. In that production costing

11 run, they don't stick to the same import criteria.

12 They release -- relieve them already. They add another

13 1,100 gigawatt hours of imports available to you in

14 deciding what you're going to build. All right.

15   So when you're looking at Plan 1 versus

16 Plan 14, it already assumes Plan 1 can it -- cannot

17 just import to level of criteria, but it can import

18 another eleven hundred (1,100) a year. And so there --

19 there is a fair bit more relaxed imports with respect

20 to that economic analysis run. It's not unlimited, but

21 it -- but it does take into account more of what would

22 occur in an operating time frame.

23   It may be that Hydro should run some

24 scenarios around that eleven hundred (1,100) and see

25 whether it changes the plan you want to build. It may

10123

 1 be a reasonable thing to test. My understanding is

 2 eleven hundred (1,100) is a number that starts to skew

 3 your system. If you go much more than eleven hundred

 4 (1,100), you use the system differently.

 5   You -- the first eleven hundred (1,100)

 6 is relatively backed by a counterparty related to the

 7 diversity. You go much more than that and you're

 8 having to assume that you'll find somebody on peak.

 9 And the other thing about this is if it's -- it's going

10 to affect your economic analysis. It's not going to

11 change that fundamental question of, When do I need the

12 kilowatt hours. So it can be an analytical exercise

13 without chan -- without being a physical risk -- change

14 in our risk profile.

15   And I -- I think those two (2) need to

16 be separated. And it's very important if someone wants

17 to think about changing import criteria that they pay

18 attention to both of those.

19   MR. ANTOINE HACAULT: Thank you, Mr.

20 Bowman. Sorry to interrupt. Could you move to the

21 next slide, 28, on the test to apply to DSM. There's

22 been quite a bit of discussion about those tests.

23   So if you could deal with that issue

24 please?

25   MR. PATRICK BOWMAN: Yeah, I won't

10124

1 spend a whole bunch of time here, but there's been some

2 comments that the total resource cost is an industry

3 standard test. I generally agree most people will

4 apply a -- a TRC type of test. It has some downsides,

5 and even people who advocate the test recognize the

6 downsides. You'll see as we go through this later on,

7 we've spent our time focussing on customer perspective

8 and the Hydro perspective. A TRC test tries to do them

9 combined.

10   And the limitation of the TRC test is

11 you're trying to look at the total cost to society --

12 Hydro plus the customer -- and the total benefits to

13 society. But there's a very bad habit of saying the

14 benefits to society are what happens to the hydro

15 system. It completely either ignores, or if it

16 includes it includes on a very speculative basis, what

17 about the benefits that the customer gets that aren't

18 related to your -- your hydro system or the kilowatt

19 hours?

20   Like people side would increase home

21 comfort, for example. You -- if you upgrade your

22 windows, it's not just to save energy; it's so you

23 don't have drafts. And it's very hard to capture that.

24   The other thing that's even less

25 tangible is -- is altruistic reasons on a customer

10125

1 side. Our customers think lots of investments in green

2 technologies that are economically justified. All

3 you're trying to do is -- with TRC is test if it's

4 economically justified, and you're going to miss a

5 window of -- of opportunity for people to do more

6 altruistic things.

7   I -- I -- my -- our encouragement is

8 that in respect of any given day, any type of DSM,

9 first look at a -- a RIM test. RIM is the win-win

10 test. It's really easy. If you can design a DSM

11 program that passes a RIM test, it's win-win. The

12 participating customer benefits in terms of their

13 utility bills and the non-participating customers

14 benefit in terms of lower utility bills. Those should

15 be very easy to sale through. Almost always proceed.

16   Beyond that, something like the program

17 administrator cost test, which is effectively the Hydro

18 view, is really where you need to focus your efforts

19 because you don't want to be cutting yourself off from

20 -- first of all, because you need to consider revenue

21 impacts which should be included in that.

22   And, second of all, because you don't

23 want to be cutting yourself off from actions --

24 supporting actions that customers may want to do on

25 their own for other reasons, even if they don't --

10126

1 aren't economically justified in your mind.

2   MR. ANTOINE HACAULT: Thank you. Now,

3 could you deal with slide 29, being the discount rate

4 views that have been expressed in this hearing?

5   MR. PATRICK BOWMAN: Yes. I -- we made

6 some comments about Hydro's very low discount rate

7 they've suggested to be using for customer benefits. I

8 didn't use that discount rate. We did use it as our

9 low scenario just to -- so that the information was

10 available. We did not use it as our -- as our

11 reference or -- or our high.

12   I think it's -- based on -- in part on

13 the literature Hydro shared, it's -- using a rate that

14 is based on a real return on risk-free savings to the

15 customer has some analytical basis. It probably is not

16 appropriate in this instance where customers are paying

17 higher bills at one (1) point in time in order to have

18 lower bills at another point in time. You're not

19 trying to capture a social cost there. You're trying

20 to capture effectively a business case for the

21 customer, is what you ought to be doing.

22   It's exactly what Hydro did in the

23 Wuskwatim hearing; they used a -- a discount rate of a

24 higher range, around the 5 percent type of level. It's

25 what we've recommended here, and I -- I don't think the

 1 -- the one point eight-six (1.86) -- I don't think the

 2 -- the analysis starts and ends with the 1.86 percent

 3 rate.

 4   And some of the arguments they've been

 5 putting forward to it that using anything higher would

 6 double-cost -- or double -- double-count the equity

 7 returns or that it throws future customers under the

 8 bus or that it -- the entire -- that you'd be -- I

 9 guess it's the same double counting point, that using -

10 - we've already included a cost of equity and we've

11 already included risk in our -- in our scenario, so we

12 should go to this very, very low real rate because it's

13 risk free. It's the -- it's the same as what the world

14 is doing by investing in T-bills.

15   And I don't think that's a relevant

16 measure when you're asking businesses, residents, all

17 sorts of -- of people to -- to -- that it's -- what do

18 they call it -- our turn to invest when you're asking

19 for that type of -- of participation in the plan.

20   MR. ANTOINE HACAULT: What's the

21 advantage or disadvantage of doing what you did, sir,

22 of testing the high and the low around the 5.05

23 percent?

24   What insight does that give us?

25   MR. PATRICK BOWMAN: Well, it's -- it's

 1 only because there's lots of perspectives, even among

 2 the literature that is -- was distributed by Hydro.

 3 There's lots of different perspectives, and -- and so

 4 it's worthwhile knowing whether -- whether this --

 5 whether any of your decisions turn on this issue or

 6 not.

 7   And frankly, even if we look at Hydro's

 8 1.86 percent real, which is part of the reason I call

 9 this a tempest in a teapot, we wouldn't come to any

10 different conclusion in any event than the five point

11 o-five (5.05) we used, mostly because it takes an

12 extraordinarily long period of time for the -- the

13 rates -- the higher rates that are paid to ever turn

14 around, even under a 1.86 percent real. And I can take

15 you to an IR that shows that, if you like.

16   But -- but I think -- I think if -- if

17 the Board is doing that, it needs to make a decision on

18 this and figure out which rate is right or -- or that

19 somehow its decision turns on it. Then I would

20 encourage you to -- to, you know, not -- not be

21 burdened by that -- by that decision. Okay?

22   MR. ANTOINE HACAULT: Could we deal

23 with slide 30? There's been another discussion of

24 another value added to the graphs that we've seen, and

25 the graph appears on the next slide, 31, embedded

 1 equity issue.

 2   MR. PATRICK BOWMAN: Yes, I -- this is

 3 a new concept that was introduced rather late in the

 4 process by Manitoba Hydro. It's -- it's mostly just an

 5 analytic revision to the way that they present the

 6 economics. The premise is that they're reflecting a

 7 weighted average cost of capital of a hundred percent

 8 debt, and it's not entirely unreasonable to use that

 9 premise, because if you're trying to reflect a weighted

10 average cost of capital, the cost of capital financing

11 these projects is primarily going to be a hundred

12 percent debt for a heck of a long time. They're no --

13 there's no equity investors. No one's putting up money

14 from the outset.

15   So from that perspective, it's not that

16 it's -- that it -- it -- that it should be dismissed

17 right away. I wouldn't encourage anyone to use it as

18 their primary test, or to -- to not make the

19 distinction, but I don't think that's what Hydro has

20 done. They've added another bar. They've said it's

21 informative, and I -- I think it is informative.

22   I think part of the distraction is it's

23 really poorly named. It's not reflecting a return on

24 equity. That -- for that, you need to really turn to

25 the financials.

10130

1   And it's not only Manitoba Hydro.

2 Frankly, there's some BC Hydro -- BCUC cases where the

3 BCUC has encouraged BC Hydro to do some analysis on

4 this basis. I'm not entirely versed on it, but I have

5 seen it in some decisions years ago.

6   I don't think -- I -- I want to

7 underline it's not -- it -- it can't be the be-all and

8 end-all, because a project that passes that test is

9 only saying it's marginally better than the alternative

10 if your sum total returns required for -- a sum total

11 cost of money is a hundred percent debt. And it's not.

12 We know that.

13   We know that there is -- well, we know

14 that there is First Nations investors involved that

15 will carve out some of that benefit. Not a lot, but

16 some. We know that there is a need to put aside

17 reserves for other projects. We know that there is a

18 net income required on Hydro's part. So I -- that's

19 why I say, it -- use is fine. Overuse would probably

20 be a -- I'd be careful about what it -- what it means.

21   MR. ANTOINE HACAULT: Could we flip to

22 slide 32? And I don't -- I'm not too sure when we want

23 to take a break, but I -- we're moving along fairly

24 quickly in the slides, and there's quite of few them,

25 actually, we had referenced as a result of questions of

 1 the Board, so.

 2   MR. PATRICK BOWMAN: The -- the next

 3 slide, 31, was a just to show the -- the graph that I'm

 4 talking about, the embedded equity with the light blue

 5 part which is very beneficial to the big projects. And

 6 -- and I think it's -- it's valid to say there's

 7 something else there on the very big projects, but you

 8 have to be careful about what it -- what conclusion it

 9 gives you.

10   Thirty-two (32) was just to say we had

11 cited in our pre -- our pre-filed testimony that having

12 customers pay higher rates for a project, a new base

13 load project that promises lower rates over time. I've

14 seen that used a number of times, that type of

15 argument. It's okay to pay higher rates. It'll turn

16 around on you.

17   Usually in the context of -- I put three

18 (3) to seven (7), possibly nine (9) years, that type of

19 horizon. If your -- if your -- your rate -- if your

20 project isn't turning around in that type of horizon,

21 it's very hard to get a regulatory approval with it.

22   And we gave a number of examples. Hydro

23 disputed those in -- in its rebuttal evidence, and we

24 have no factual -- I have no factual debate with what

25 Hydro presented. They basically say, First of all,

10132

1 it's not comparing two (2) plans that -- the examples

2 we cited. It's comparing a -- a original plan with an

3 advancement, which, in some cases, that's true.

4   The second they say is that in many

5 cases, these are plans that were helped by government

6 decisions, which is true.

7   And the third is that in many cases,

8 they're projects that were -- were compared against the

9 very high cost baselines like oil generation in -- in

10 Newfoundland, for example, and that's true.

11   But the inclusion of it fundamentally

12 goes to the point that was the experience I was talking

13 about before. You're always assessing a project

14 against its next best alternative. Wuskwatim was

15 assessed against its next best alternative, which was

16 Wuskwatim at a later date. It wasn't advancement

17 assessment.

18   The -- the BC examples that we gave were

19 advancement assessments. Many of the times you're

20 doing advancement assessments, that's fine. It's still

21 always comparing to your next best alternative. Pay

22 higher rates now to get lower rates later, then you're

23 next best alternative. That's the -- that's the

24 argument.

25   And specifically on the government

10133

1 point, this is exactly why we raised the point was to

2 say some of these projects do have a good seventy-eight

3 (78) year, fifty (50) year, eighty (80) year economic

4 pro -- profile, but they do not have a turnaround point

5 that gets into this type of range.

6   And that's where governments have

7 stepped in to play a role, including -- anecdote --

8 including, in Manitoba, with respect to the first

9 decision to go north, where the government of Canada

10 owned and financed the -- the Bipole lines.

11   I don't have the numbers as to how that

12 worked out on the rates side, but that wouldn't have

13 happened without the Government of Canada stepping in

14 to play its role on Bipole. And Mayo B wouldn't have

15 happened without the government stepping in to -- and

16 want to subsidize -- but also, the bigger part, provide

17 some flexible financing, which has been used a few

18 different times.

19   Muskrat Falls, the Newfoundland

20 government is -- is going to be dealing with the -- the

21 rate aspects of that and -- and absorbing some of the

22 early years' impacts on -- on island ratepayers, as we

23 understand it. So it's -- in fairness, it's a moving

24 target.

25   So we were raising it in part to say

10134

1 exact -- this is that -- that exact point, that if you

2 cant get it to that -- that type of horizon or -- or

3 something thereabouts, that is a reason for -- for you

4 to seek out support.

5   MR. ANTOINE HACAULT: Slide 33, I

6 believe you've largely dealt with, Mr. Bowman, that it

7 isn't a -- a decision necessarily that we have to make

8 today that Conawapa never...

9   MR. PATRICK BOWMAN: Well, it does, but

10 I -- I might -- to cut off -- debate -- I might take us

11 to slide 58, which I think will cut off time off later

12 to make this point.

13   This is the graph of -- this is Hydro's

14 graph of -- of the cumulative rate impacts under the

15 new -- latest DSM 2 of each plan. And blue is the

16 Preferred Development Plan, which shows you, in the

17 long-term, you have these -- the -- the best rates of -

18 - of the bunch. Red is -- is Plan 5, which has

19 Keeyask/Gas, and green is All Gas.

20   And I'm only highlighting this to say,

21 yes, there are clearly Preferred Development Plan

22 benefits after year 2041 in this -- 2043 or

23 thereabouts, but it's only because it's assuming that

24 when you make that decision on gas today, you stay on

25 gas forever.

10135

 1   It doesn't have gas, gas, gas, Conawapa.

 2 The -- we don't have those type of scenarios. And I

 3 don't fault Hydro for that, but I -- I think that's one

 4 (1) of the reasons we -- sort of cautious with those --

 5 those far right-hand ends of the lines.

 6   MR. ANTOINE HACAULT: Thank you. We're

 7 moving to the pathways and slide 35. I think you've

 8 dealt with that to a large extent -- the bedroom and

 9 apartment block across town, and the slide 36, which is

10 represented by --

11   THE CHAIRPERSON: Mr. Hacault, we're

12 getting into a -- a -- I'm concerned about the time

13 here, and you're getting into an area I think that's

14 going to require a fair amount of time, and so I --

15 probably at best that we recess now, and we've got a

16 way to manage the amount of time that's available

17 today.

18   We can -- we can work till 6:00, but

19 we're not prepared to go beyond that --

20   MR. ANTOINE HACAULT: Yeah.

21   THE CHAIRPERSON: -- and our preference

22 would be not to sit tomorrow morning --

23   MR. ANTOINE HACAULT: Mine too.

24   THE CHAIRPERSON: -- so we'll have to

25 ask counsels to caucus and figure out how that we can

 1 make this work, so why don't we adjourn now?

 2   MR. ANTOINE HACAULT: I -- I think it

 3 shouldn't take too much longer to finish. We really

 4 have to just try and explain the update on a financial

 5 -- the supplementary evidence.

 6   THE CHAIRPERSON: Mr. Williams, please.

 7   MR. BYRON WILLIAMS: Excuse me, I have

 8 a longer term request to get some guidance form the

 9 Board. We're currently starting to devote a -- a lot

10 of our resources to preparing closing argument, which

11 we assume will be on May 15th, and it -- it would just

12 be helpful in the next couple of days if -- if that's

13 not going to be the -- the plan for any reason, to get

14 some guidance from the Board, because I have to make

15 some decisions on how we use staff, and how much time

16 they're spending on closing as compared to if there is

17 additional discussions with Hydro, so.

18   It's certainly -- we're at the -- we'll

19 -- we'll be ready for the 15th if the Board tells us to

20 be ready for the 15th, and it would just be helpful for

21 our resource planning to get some guidance in the next

22 day or two (2).

23   MS. MARLA BOYD: I might add, Mr.

24 Chair, that I had actually had an exchange with Mr.

25 Peters via email asking the same thing. My

10137

 1 understanding was that there would be an opportunity

 2 for Manitoba Hydro to represent its rebuttal evidence,

 3 as well. The finance and alternatives panel were to be

 4 recalled, and that was one (1) of the days that we had,

 5 at least, among counsel discussed, was the 15th of May.

 6   So it will be important for our

 7 witnesses also to know that they're going to be

 8 expected to be back and speaking to those matters.

 9   THE CHAIRPERSON: Mr. Peters, do you

10 want to address that, please?

11   MR. BOB PETERS: Yes, there are some

12 discussions happening offline, and we'll bring those to

13 the panel as soon as -- as soon as we can in terms of

14 final decisions. Thank you.

15   THE CHAIRPERSON: So with that, let's

16 agree that the discussion amongst counsel will have to

17 be pursued, and we'll wait for that to settle, and then

18 we would -- can -- provide guidance, and I think we

19 should adjourn for lunch. Me. Hacault, let's agree

20 that you will consult with Mr. Peters and see how we

21 can make the rest of the afternoon work.

22   So with that, let's break for lunch, and

23 we'll see each other -- there's a presenter at 12:45,

24 so the panel will sit at 12:45.

25

10138

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 1                    (WITNESS RETIRES)

 2

 3  --- Upon recessing at 12:10 p.m.

 4  --- Upon resuming at 12:52 p.m.

 5

 6                    THE CHAIRPERSON:   Good afternoon.  I

 7  believe that we're ready to start the proceedings.  So

 8  I'd like to welcome our presenter, Mr. Benham, Donald

 9  Benham.  Are you speaking on your behalf or on behalf

10  of Winnipeg Harvest?

11

12  PRESENTATION BY WINNIPEG HARVEST:

13                    MR. DONALD BENHAM:   So thank you very

14  much, Mr. Chairperson.  I'm the director of Hunger and

15  Poverty Awareness at Winnipeg Harvest.  And so I was

16  tasked by a committee of our board to appear here

17  today.

18                    Great.  So thank you very much.  So, Mr.

19  Chairperson, Board members, learned counsel, ladies and

20  gentlemen, Winnipeg Harvest thanks the Public Utilities

21  Board for inviting the public to address Manitoba

22  Hydro's future plans and for granting an extension to

23  the deadlines for submissions.

24                    We also acknowledge and commend the

25  Board for working with the Consumers' Association of
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10139

1 Canada and the Manitoba Metis Federation to ensure the

2 voices of six (6) Manitoba Hydro consumers were heard

3 in this room. And we also acknowledge and thank the

4 Public Interest Law Centre for their continued interest

5 in these matters and for their continued relationship

6 with Winnipeg Harvest.

7   Dave Mouland, a volunteer at Winnipeg

8 Harvest who was on the panel, has also asked me to

9 thank you, to thank all the Board members for their

10 clear respect and their attentiveness to all panel

11 members, including Dave. Mr. Mouland was speaking and

12 made this clear -- was speaking in his capacity as an

13 individual. I have been tasked, as I said a moment

14 ago, by our board's Hunger and Poverty Awareness

15 Committee, which I work with, to present Winnipeg

16 Harvest's position.

17   Winnipeg Harvest will only address our

18 perception of how Manitoba Hydro's plans are likely to

19 affect low-income Manitobans, leaving it to others to

20 speak on the many other issues before this hearing.

21   Winnipeg Harvest, and this is part of

22 our mission statement, is a nonprofit community-based

23 organization that is a food distribution and training

24 centre. Our goals are to collect and share surplus

25 food with people who live with hunger and poverty and

10140

1 to offer training opportunities to help people step up

2 and out of poverty.

3   Our ultimate goal is to eliminate the

4 need for food banks. We have adopted the interim goal

5 of reducing the need for food banks by half by 2020.

6 We work with more than three hundred and forty (340)

7 agencies across Winnipeg and across Manitoba to provide

8 emergency food assistance to people who need it.

9 Forty-seven (47) of those agencies are outside the City

10 of Winnipeg.

11   Reduced rate increases for low-income

12 Manitobans -- and I mentioned Dave Mouland a minute

13 ago. And I should say that this proposal we developed

14 in consultation with Dave Mouland as a member of our

15 Hunger and Poverty Awareness Committee. Manito -- and

16 which is very much in keeping with the philosophy of

17 Winnipeg Harvest to give our clients a voice.

18   Manitoba Hydro's current policy is to

19 charge consumers the same rates for the same amounts of

20 electricity no matter where they live in the province.

21 This policy was implemented by Manitoba Hydro at the

22 direction of the provincial government of the day and

23 is written right into the Manitoba Hydro Act.

24   This policy has two (2) important

25 consequences. Low-income ratepayers all over the

10141

 1 province pay the same Manitoba Hydro rates as high-

 2 income ratepayers. The rates do not reflect ability to

 3 pay.

 4   And ratepayers in areas which are

 5 cheaper to service for -- cheaper for Manitoba Hydro to

 6 service, such as the City of Winnipeg, subsidize those

 7 who live in rural, Northern, and remote communities.

 8 The principle of cross-subsidization is thus already

 9 well established.

10   Manitoba Hydro's current plan

11 anticipates continuing that policy of uniform rates

12 across the province. As a result, as rates are

13 increased low-income ratepayers will face exactly the

14 same cost increases as high-income ratepayers, but

15 without the financial ability to absorb the increases.

16   This will result in many more people

17 taking money out of their food budgets and needing food

18 assistance from Winnipeg Harvest and the agencies we

19 work with. And you're hearing from me sort of on a --

20 on a global scale and I think you heard that very, very

21 clearly from that panel that included Dave Mouland the

22 other day.

23   Excuse me. Winnipeg Harvest

24 acknowledges the efforts the Public Utilities Board has

25 already made to encourage savings for low-income

10142

1 consumers through greater energy efficiency. And we

2 will return to that subject in a moment. Winnipeg

3 Harvest also acknowledges the research by retired

4 University of Winnipeg geography professor Tom Carter

5 into programs designed to help low-income consumers in

6 other jurisdictions. Many of them represented well

7 intended, but ill thought out plans that foundered

8 because they were based on faulty assumptions about

9 low-income consumers.

10   The members of the Hunger and Poverty

11 Awareness Team at Winnipeg Harvest include board

12 members, staff, and volunteers, some of whom have lived

13 or continue to live with hunger and poverty. We

14 respectfully ask the Public Utilities Board to consider

15 the following proposal.

16   First, that the Board order Manitoba

17 Hydro to raise rates by no more than 1 percent per year

18 for low-income ratepayers.

19   Secondly, ratepayers would apply to be

20 designated as low-income ratepayers.

21   Thirdly, ratepayers whose Hydro bills

22 are paid in full through a government program such as

23 Employment and Income Assistance would not be eligible

24 for this new designation.

25   Fourth, Manitoba Hydro could require

10143

1 copies of the most recent year's income tax return of

2 the ratepayer and all other non-dependent adults in the

3 household. It's our understanding that this is already

4 a requirement under the Low Income Energy Efficiency

5 Program.

6   And finally, income levels to determine

7 eligibility for designation as a low-income ratepayer

8 would be based, we suggest, on the 2012 Acceptable

9 Living Level Report. So I'd now like to explain to you

10 a little bit about that, and I've had the offer to

11 actually display it for you as well. So we'll -- we'll

12 try that as well. I'll just give you a little bit of

13 the context.

14   So Winnipeg Harvest, in cooperation with

15 the Social Planning Council of Winnipeg, have worked

16 together since 1997 on producing the Acceptable Living

17 Level Report, the ALL Report, which measures how much

18 money is needed to buy basic necessities in Winnipeg.

19 The most recent Acceptable Living Level Report

20 published in 2012 is freely downloadable under the

21 'Learn' tab at winnipegharvest.org, and I have sent a

22 hard -- or sent a copy, an electronic copy, to the

23 Board. The 2012 edition also included valuable data

24 from Little Grand Rapids.

25   Winnipeg Harvest invites Public

10144

 1 Utilities Board members to read through the report, the

 2 heart of which is this list of basic nece --

 3 necessities which we'll just go through very briefly in

 4 a moment, developed by a panel of Winnipeg Harvest

 5 clients. And we say to you, as we say in the forward

 6 to the report, ask yourselves on this list of basic

 7 necessities that every family should have, ask

 8 yourselves, What would I add? What would I take out?

 9 But when you're doing so, you have to imagine that this

10 is for your family, not somebody else's family; not, oh

11 well, we need this, but poor people could do without it

12 because this is a list for everybody. This is the ALL

13 Report.

14   For instance, one (1) of the things

15 that's in there is -- is a birthday present. And we --

16 we simply ask everyone, Could you send your own child

17 to her friend's birthday party without a gift?

18   If you agree with the premise that all

19 Manitobans should be allowed to live with dignity and

20 have enough to eat, then we believe you must also

21 agree, or we ask you to agree with us, that it is your

22 duty as a public regulator to reduce the impact of the

23 rate increases on low-income Manitobans, the folks you

24 heard from the other day. Those living below, we

25 suggest, the income level set by the Acceptable Living

10145

1 Level Report.

2   So if I could ask with some help getting

3 that up. And I'm not sure I see it coming up on a

4 screen. Oh, I see it coming up on a screen right here.

5   Okay. So, yeah. So what we did is we

6 work again in -- in -- very much in keeping with the

7 philosophy of Winnipeg Harvest. We work with our

8 volunteers, who are also clients, and we've gathered

9 together a -- a tab -- a panel of clients. And we

10 worked with them. And we said, Okay, what do people

11 need to live in Winnipeg? And they created this list.

12 This comes from our clients. Sometimes we'd say, Well,

13 what about this? What about that, we'd say. And they

14 would say, Don't add too much to this. We want to make

15 sure that this is -- this is credible.

16   So we start with food, of course, for a

17 family; and in this particular case, a family of three

18 (3), a mom with two (2) kids. And you can see -- and

19 we can scroll through this fairly quickly, but you can

20 see this is not a lot of luxury items. This is milk,

21 and some cheese, and some eggs, some ground beef, and

22 some chicken, and some tuna, and some bacon or

23 sausages. And if we can just scroll up through the

24 rest of the food, we won't concentrate on that. You

25 can see again some very basic staples here to keep

10146

 1 folks going, some potatoes, some vegetables. And that

 2 is -- and then it's just that same diet, that same

 3 list, right, month after month, or shopping list after

 4 shopping list.

 5   So if we can just scroll up to maybe the

 6 next half of that page and we can show you that people

 7 need shampoo, and razor, and toothpaste, and that kind

 8 of thing. If we can keep going from there, we have two

 9 (2) growing children. So we've got some runners and

10 we've got some play clothes, but not new ones every

11 year. You'll see -- over in the frequency you'll see

12 sometimes it'll say, Well, a new one (1) every two (2)

13 years, or every three (3) years, or even every four (4)

14 years. But people do need clothes. So if we can just

15 scroll up from there. And still some more clothes, but

16 again, some stuff that is -- is every three (3) or four

17 (4) years.

18   For shelter we often hear -- so -- and

19 if we can stop on there, pause there for a moment and

20 I'll tell you that that statistic -- because we

21 sometimes hear criticisms of other statistical measures

22 of poverty on the basis that they reflect housing

23 prices in Toronto and Vancouver. And there's some

24 truth to that. And so this I want to tell you is from

25 Canada Mortgage and Housing Association -- and

10147

1 Corporation -- Canada Mortgage and Housing Corporation,

2 and it is the correct figure at the time that the

3 report was issued for the average rent for a three (3)

4 bedroom apartment in Winnipeg.

5   Healthcare, again, we can start to go

6 fairly quickly. We've got some cough syrup there and

7 some -- a little bit of life and disability insurance

8 and so on. We do have some financial risk factors in

9 here, but some very minimal ones.

10   Through childcare we do have a young

11 child and so we're assuming that this person can look

12 after the -- you know, needs childcare.

13 Transportation, only bus pass. Household operations,

14 again, some laundry soap and that kind of thing.

15   If we can keep going fairly quickly.

16 Education, we can skip through these. They're school

17 supplies, right. Our folks, our clients really have a

18 tough time in the fall with, you know, a hundred and

19 fifty (150) or two hundred dollar ($200) hit for school

20 supplies. Now, Winnipeg Harvest does help its clients

21 with some of those things.

22   Basic telephone. And if we can keep

23 going, some more risk management items, some -- a bank

24 account, household furnishings. We can keep going.

25 Recreation and leisure includes going to a birthday

10148

 1 party now and again. And that's great. If we can just

 2 go up to -- no, no, the next page. So we're going to

 3 the totals per year. If you can just stop there.

 4 Thank you.

 5   And so the total, just thinking about

 6 what it costs to buy those basic necessities for a

 7 family of three (3), is thirty-eight thousand one

 8 hundred and fifty-two dollars and forty-eight cents

 9 ($38,152.48) as of February 2012. Those are -- that's

10 shopping at stores in Winnipeg that are available to

11 folks in -- who -- who live in the inner city. So

12 that's a -- that's not taking account of income taxes

13 or goods and services taxes.

14   We would just make the point that for

15 our folks who are trying to put it together and -- and

16 feed their families and put a roof over their heads in

17 Winnipeg, I will now just compare. And if we could go

18 now to page 18. I will now just compare that list.

19 And again, as I said, you -- we went through that list

20 pretty quickly, but take your time with it and go

21 through it and you tell me if there's something on

22 there that every family doesn't deserve to live a

23 decent life in Winnipeg. Email me, tell me what's on

24 the list and why it should be taken off. But if we all

25 agree that's what families need, let's take a look at

 1 how our families, the families at Winnipeg Harvest,

 2 fare.

 3   So we asked our families, What is your

 4 source of income? And about 50 percent are on welfare.

 5 That's pretty consistent. And I use the term 'welfare'

 6 because that's the term they used, but Employment and

 7 Income Assistance.

 8   And so if you look at this graph you'll

 9 see that that's the number -- you'll see that the --

10 the bar that we are trying to achieve is on the far

11 right side, and it represents the 2012 ALL, what is in

12 the report that we just went through, thirty-eight

13 thousand one hundred and fifty-two dollars ($38,152).

14 And you can see that Employment and Income Assistance,

15 even including the federal benefits, amounts to twenty

16 thousand nine hundred and twenty-eight dollars

17 ($20,928); essentially half.

18   So when that mom goes to the store to

19 buy bread and milk for her kids, for every dollar she

20 needs for bread and milk, she's got fifty (50) cents,

21 maybe fifty-two (52) or fifty-three (53) cents. Every

22 dollar. She never catches up. There's never another

23 fifty (50) cents thrown in from anywhere. So we think

24 that's a very serious shortage and that mother -- those

25 people will be -- if there on EIA, we'll get to that in

10150

1 a minute, that's different.

2   Now let's look at the working poor. And

3 so about 12 to 15 percent of Winnipeg Harvest clients

4 consistently report that they are working, but they are

5 having difficulty feeding themselves and their

6 families. And so you can see that this mother -- and

7 this bar now on the far left. And you can see if that

8 mom has a full-time full-year minimum-wage job, she

9 will be earning twenty (20) -- which is very rare --

10 she will be earning twenty-nine thousand three hundred

11 and ten dollars (29,310) dollars. Again, an

12 improvement. But when she goes to the store now for

13 every dollar she needs, she has only about seventy-five

14 (75) cents.

15   So thank you very much for that. And so

16 that's -- we suggest that that is something to be taken

17 into account when think about what is low income in

18 Winnipeg.

19   Energy efficiency prevented by subsidy

20 rule, we thought that you folks should know about this.

21 This came to our attention directly from advocating for

22 our clients. Winnipeg Harvest acknowledges that low-

23 income Manitobans covered by the Employment and Income

24 Assistance program, also known as welfare, almost

25 always have their utility bills paid in full by the

10151

1 province. They are thus largely protected form the

2 proposed rate increases and are not eligible for the

3 low-income ratepayer designation that we have proposed

4 earlier.

5   The Manitoba Hydro Act has been

6 interpreted by the province as prohibiting Manitoba

7 Hydro from subsidizing the provincial government by

8 reducing the rates for low-income ratepayers on

9 Employment and Income Assistance, or even indirectly by

10 reducing their bills through increased energy

11 efficiency.

12   And we have submitted to the -- to the

13 Board the circular -- the policy circular from Family

14 Services and Consumer Affairs from 2011 which made that

15 point. So it is in fact a government -- a Manitoba

16 Hydro policy that is reflected in government policy for

17 people on welfare.

18   Winnipeg Harvest points out and urges

19 the Board to take action on the unintended negative

20 effect this legal provision has on the program to

21 increase energy efficiency and reduce power costs

22 through conservation.

23   And finally, my committee members asked

24 me to address the question of reduced food harvesting.

25 Flooding, dams, and other disruptions of the

10152

1 environment have negatively affected fishing, hunting,

2 and the gathering of natural foods and medicines,

3 mainly by indigenous peoples, for generations.

4   While Manitoba Hydro has reduced its

5 flooding plans over the years, a member of our board,

6 Lyna Hart, ask the members of this Board to reflect on

7 the continuing costs of past actions. Ms. Hart is the

8 Home and Community Care coordinator for the Southeast

9 Resource Development Council Corporation. In her

10 continuing work to reduce the toll taken by diabetes on

11 indigenous peoples, Ms. Hart is encouraging people to

12 plant gardens and eat vegetables. But fluctuating

13 water levels have so polluted the Churchill River, she

14 says,

15   "I wouldn't use water from the

16   Churchill River to water a garden."

17   Winnipeg Harvest urges the Public

18 Utilities Board to take into account the effect of

19 Manitoba Hydro's plans on people's ability to provide

20 their own food, especially in the rural and Northern

21 Manitoba context.

22   So thank you again for this opportunity

23 to present Winnipeg Harvest's view on food and income

24 issues arising from Manitoba Hydro's proposals. And if

25 I haven't taken too much time, I welcome any questions

10153

 1 or discussion you may have.

 2   MS. MARILYN KAPITANY: Mr. Benham, you

 3 mentioned in the Family Services and Consumer Affairs

 4 circular that you would like to see the low-income

 5 program cover recipients of EIA. So you also said the

 6 that the province pays their Hydro bills.

 7   So what benefit would you see to them

 8 from being covered by this program?

 9   MR. DONALD BENHAM: I just think it's,

10 you know, good for the -- I mean, I was asked by my

11 committee not to get into environmental questions, but

12 I just think it's clearly a good thing to conserve

13 energy and so on.

14   In a lot of cases -- you know, Dave was

15 here and talked very openly about his home. I mean, a

16 whole lot of electric heat just escapes. And he's not

17 on welfare, so that's not fair. But it -- there are a

18 lot of cases where people -- where repairs aren't made

19 and heat just escapes into the atmosphere for no reason

20 other than, you know, a -- a relatively simple repair

21 has not been undertaken.

22   And so it's just bad for people's

23 health, it's bad for their morale, and so on. So -- so

24 those are the things we would say; it's just important

25 in terms of their living conditions. And also I guess

10154

1 it would be a matter of social inclusion, as well,

2 right. People on welfare are excluded from so much, so

3 here it's very obvious when you go to their homes and

4 they're things that need repair and it's all drafty and

5 so on. It's -- it's bad socially, as well.

6   MS. MARILYN KAPITANY: That helps,

7 thanks.

8   MR. DONALD BENHAM: Thank you.

9

10   (BRIEF PAUSE)

11

12   DR. HUGH GRANT: I'm just wondering do

13 you think that it would best addressed through some

14 sort of lower rate, or would it be administratively

15 cheaper to handle it through, say, an income tax

16 credit?

17   MR. DONALD BENHAM: There may be a

18 variety of ways that the -- the Board wishes to

19 consider. We just thought that if we were coming

20 before you, we should make a suggestion.

21   And so -- so I -- I would make the

22 distinction. We aren't actually ask -- we're -- we're

23 asking, I guess, for lower rates over time. We --

24 we're saying we're -- we accept the fact that the rates

25 are the same as of today, but going ahead, we would ask

10155

1 for lower rate increases, which of course, would mean

2 different rates over time, yes.

3   DR. HUGH GRANT: And -- and the one --

4   MR. DONALD BENHAM: But -- but there

5 may be -- oh, sorry. There may be other things to

6 consider. I -- I would just throw in here that Dr.

7 Evelyn Forget of the Faculty of Medicine at the

8 University of Manitoba has done research into the

9 Guaranteed Annual Income Program, right?

10   That may be too ambitious for this Board

11 to consider, but there are lots of alternatives in

12 terms of how we can make things better for low income

13 folks.

14   DR. HUGH GRANT: Thanks.

15   MR. DONALD BENHAM: But I'm sorry, I

16 didn't mean to cut you off if you were about to say

17 something else.

18   DR. HUGH GRANT: No, it was a minor

19 footnote.

20   MR. DONALD BENHAM: By all means.

21   DR. HUGH GRANT: That's okay.

22   MR. DONALD BENHAM: Okay, well, I --

23 I'm sorry if I talked over you. I apologize.

24   THE CHAIRPERSON: I think that's all

25 the questions the panel has for today, so thank you

10156

1 very much for taking the time and trouble to appear

2 before us and for the presentation you've prepared.

3   And thanks on behalf of the panel for

4 the great work that your organization does in the

5 community. So thank you for your comments.

6   MR. DONALD BENHAM: Great. Thank you

7 very much, thank you everybody.

8

9 --- Upon recessing at 1:11 p.m.

10 --- Upon resuming at 1:15 p.m.

11

12   THE CHAIRPERSON: I believe that we can

13 resume with the proceedings, and I -- I've just noticed

14 there was lots of paper being handed out. I wonder if

15 we should put the documents on the record, and then

16 continue after that.

17   MS. MARLA BOYD: Thank you, Mr. Chair.

18 Our gift to you for a week of reading is the financial

19 evaluations that I referred to yesterday that have been

20 filed, and -- and I'm pleased to say that we have what

21 Mr. Peters colloquially called the whole shebang, so.

22   So here you have the financial DSM

23 analysis for Plans 2, Plan 6, Plan 4, Plan 12, Plan 1

24 with the potential pipeline load, Plan 5 with the

25 potential pipeline load, and Plan 14 with the potential

10157
1 pipeline load. So -- so I believe that's all of the

2 information that you were waiting for in terms of the

3 list that you provided, and we have proposed that that

4 be marked as Manitoba Hydro Exhibit 104-12-5.

5

6 --- EXHIBIT NO. MH-104-5: Financial DSM analysis for

7   Plan 2, Plan 6, Plan 4,

8   Plan 12, Plan 1 with the

9   potential pipeline load,

10   Plan 5 with the potential

11   pipeline load, and Plan 14

12   with the potential pipeline

13   load

14

15   MS. MARLA BOYD: The other item that is

16 there is Manitoba Hydro Exhibit 190 revised. I am

17 advised that it has been revised because the third

18 paragraph contained a reference to an exhibit number

19 which was incorrect. So the information will look

20 generally familiar with what you had, although there's

21 been a small correction in terms of the exhibit number

22 referenced. Thank you.

23

24 --- EXHIBIT NO. MH-190:   Revision

25

10158

 1   THE CHAIRPERSON: Thank you for that.

 2 I believe that we can continue with Mr. Bowman's

 3 evidence.

 4   MR. BYRON WILLIAMS: Mr. Chair, if I

 5 might, I think you should have one (1) other exhibit.

 6   THE CHAIRPERSON: Mr. Williams...?

 7   MR. BYRON WILLIAMS: Dr. Gunn had

 8 undertaken to provide support for the suggestion that

 9 the region had already been substantially altered and

10 the evidence from the KHLP, or Keeyask Hydro Limited

11 Partnership, and so we're presenting this. It's CAC

12 Exhibit 77.

13   So just if you're -- if you do get a

14 chance to look at it, the actual citations of Dr. Gunn

15 are found at pages 15 to 17 of her report, but to give

16 the Board context, we actually inserted the -- the base

17 pages from the original submission of the Keeyask Hydro

18 Limited Partnership. So if you're wondering if the --

19 its quotes were taken in context, that information will

20 be available for you.

21

22 --- EXHIBIT NO. CAC-77:   Support for the suggestion

23   that the region had already

24   been substantially altered

25   and the evidence from the

10159
 1   KHLP

 2

 3   THE CHAIRPERSON: Thank you, Mr.

 4 Williams. Me. Hacault or Mr. Bowman, please.

 5

 6 MIPUG RISK AND DSM PANEL, RESUMED:

 7

 8   PATRICK BOWMAN, Previously Sworn (Qual.)

 9

10 CONTINUED EXAMINATION-IN-CHIEF BY MR. ANTOINE HACAULT:

11   MR. ANTOINE HACAULT: Merci, M.

12 President. We promised a little bit of theatrics, and

13 it relates to 'Rates Do Matter'. And we just heard a

14 presentation on that with respect to a certain sector

15 of the society, and I'd like Mr. Bowman to please

16 explain what we're showing to you. And we can provide

17 you paper copies and electronic copies in due course.

18   MR. PATRICK BOWMAN: Yes, thank you.

19 Good afternoon. Dr. Grant, we had a discussion about

20 animation, so we thought we'd go for a little excursion

21 after lunch before jumping right back into the

22 presentation. These are some graphs that were

23 prepared. They were in our original evidence and they

24 are based on the original filing, so they haven't been

25 updated.

10160

1   But the question we were dealing with at

2   the time is, How does the world look for ratepayers,

3   and when do the benefits arise compared to other pieces

4   of the puzzle? And so the graph that you're looking at

5   right here is comparing the financial picture of the

6   Preferred Development Plan versus Plan 1. We can do

7   any other combination you like, but it's Preferred

8   Development Plan versus Plan 1.

9   And it is right now looking at the

10 present value benefits over ten (10) years, okay? And

11 so this is for the year, you see in the lower left-hand

12 corner, up to the year 2023. And so if you take on the

13 Preferred Development Plan versus Plan 1 up to the year

14 2023, the first benefit you're going to see, a nice a

15 green bar, is you'll get a bit more exports. That's

16 because Keeyask comes in in 2019.

17   You have a little bit of fuel and

18 purchase power savings. You have some extra interest

19 because of the project. You actually have a

20 depreciation benefit, because you didn't have to

21 amortize the sunk costs quickly, you'll get the

22 amortize the billion dollars of Keeyask slowly. That's

23 actually a benefit of Plan 14. That shows up as a

24 relatively substantial benefit, even to the first --

25 end of the first ten (10) years. You have a little bit

10161

 1 of O&M you have to pay in present value terms.

 2   And the end of that O&M section, in

 3 terms of the -- the graph here, is what I would like to

 4 say is fairly representative of -- of the pie. That

 5 there is about a billion dollar present value benefits

 6 in the first ten (10) years on an accounting basis with

 7 cost appreciation, but from pursuing the Preferred

 8 Development Plan.

 9   From here on out, it goes a little bit

10 more to how one sort of carves up the pie, if you like.

11 The first thing you see is the government charges.

12 That is solely debt guarantee fee, water rentals, and -

13 - and capital tax. On -- that's right, solely --

14 solely those three (3).

15   The next bar you see is how much of that

16 benefit was -- been effectively added to Hydro's

17 reserves, because we have to build up to the 75:25, and

18 it's a much bigger 75:25 now. You see a very small

19 slice there related to the First Nations partners, and

20 you end up with ratepayers being a present value of

21 $239 million in the hole. They're fur -- further

22 behind as a result of pursuing the Preferred

23 Development Plan in the first step.

24   Now, as we march through time, and with

25 one (1) click, you'll see the picture at year 20. Oh,

10162

 1 it went to thirty (30). Now you're nineteen (19) --

 2 there's year 20, and by year 20 we have now 2033,

 3 Conawapa is in service. Remember, this is 2026. You

 4 have the added exports really showing up. Fuel and

 5 purchase power savings, interest is taking on a -- a

 6 hit. Depreciation's actually still ahead. O&M has a

 7 cost, and you're ending with a -- a piece before the

 8 pie of, you know, somewhere of upwards of $2 billion.

 9   Government charges take their -- their

10 piece. Added to Reserves takes -- has its piece.

11 First Nations partners are -- are a billion dollars

12 behind. Now, if we want to con -- go to thirty (30).

13 Thirty (30) years, we actually start to see the others

14 pile up. Ratepayers start -- it starts to turn around

15 a bit for ratepayers, back of the bus. Gov --

16 government's still taking its share. Reserves are

17 still growing. And you can go through forty (40) and

18 then fifty (50), if you like.

19   Year 40 it finally starts to turn around

20 for ratepayers, and by year 50, if you want to do the

21 final click, it takes you to a number, 746 million

22 which is the -- the present value of rates benefits

23 under the original Preferred Development Plan filed.

24   Remember, the economic number one-six-

25 four-six (1,646) was the -- the present value of the

10163

1 economics, but that economic number did not distinguish

2 this Addition to Reserves component. It con -- it

3 would have considered that a return to the project, and

4 so it would have gone -- gone into a piece of that,

5 subject to only to that discount rate.

6   So the piece that tells more of the

7 story of this is the -- is the graph to the -- or the -

8 - the table to the right of this, which is a picture

9 that shows, if you look down at Plan 14 on the far

10 side, the Preferred Development Plan, Pathway 5, Plan

11 14.

12   It shows you the numbers we just saw,

13 746 million at -- at year 50, and it shows you the --

14 the hole you have to go through, bottoming out at about

15 a billion dollars behind for net ratepayers before it

16 turns around. And you can compare that to the numbers

17 from the original filing of Plan 4, Plan 6, as opposed

18 to plans that have -- have Conawapas.

19   So that was what I was -- I was talking

20 about. You -- one -- one can -- can take this and do

21 some -- some animation, if you like, but it -- it was

22 trying to get around to the point of, you know, do

23 rates matter? Do we only need to focus on the $746

24 million number, or do the -- does that -- the -- the

25 red bit in the middle actually make a difference? And

10164

1 I -- I know we'll -- we'll talk about the DSM graphs in

2 a moment, here.

3   So I -- I'm just going to jump, then, to

4 slide 47 and 48, because I -- I would like to revise an

5 answer I gave this morning. I had indicated that my

6 understanding of the DSM scenarios was that once we

7 went to 750 megawatt line, you ended up with a lot more

8 export benefits from DSM. And that does show here.

9 The DS -- the export benefits are very large from DSM

10 as a result of adding DSM to and with the 750 megawatt

11 line.

12   My assumption would -- was that when we

13 saw the benefits erode by moving to -- adding Conawapa,

14 the next graph if we go forward, was that you would see

15 an erosion in the export benefits, because I knew that

16 we ended up at three eighty-five (385).

17   Now, this is fairly new information, and

18 I have to admit, Dr. Grant, until had you took me

19 there, I -- I had made an assumption that actually

20 doesn't bear out, and it -- the ex -- the export

21 benefits are still almost as large. As a matter of

22 fact, they're almost as exactly as large with DSM 2,

23 even with Conawapa.

24   The DSM doesn't give you as much

25 benefits in respect of the thermal fuel and purchased

10165

1 power components, because Plan 14 doesn't have much

2 thermal fuel or purchased power to begin with. It's

3 able to back up its own droughts, if you like.

4   So if you go back one (1) again, this is

5 Plan 5. If you look at the thermal fuel benefit and

6 the purchase power benefits, they're substantial.

7   If you go to the Plan 14, the next one,

8 they -- they just about disappear. Now, I -- I hadn't

9 expected that result. I had thought that it would be

10 relatively intuitive. I would want to see this graph

11 now over -- over time to see why that's arising,

12 honestly. But I wanted to touch it -- touch back on

13 that.

14   And -- and one (1) other point that I -

15 - I realize that I should comment on, and I think it

16 comes from what we talked about earlier. The net

17 benefit column, we were asked how that -- how that

18 looks to ratepayers. And you see the 385 million

19 there.

20   We have to be a bit careful about saying

21 that's necessarily going to be rate benefits because

22 DSM is also a capital investment by Hydro, the way it's

23 treated in the financials, so it also has some other

24 downstream rate impacts you don't see here, like you

25 have to put aside reserves against it if you want

10166

 1 75:25. Spend capital, it ups your -- your 25 percent

 2 equity target value.

 3   So there are some other things that get

 4 into rates, and we'll see later on that the rate

 5 impacts aren't quite as clean as this. But I just

 6 wanted to make that distinction. The benefits to

 7 Manitoba Hydro under economics are not quite

 8 necessarily equivalent with benefits to ratepayers by

 9 the time the entire financial model is run.

10   MR. ANTOINE HACAULT: I think you had a

11 couple of comments with respect to slides 37 and 38

12 before we move to the financial slides, sir.

13   MR. PATRICK BOWMAN: Sure, these were

14 just to -- to clean up some topics. I don't expect to

15 be here long.

16   I mentioned to Mr. Williams this morning

17 that InterGroup's intention would have been to spend

18 time with economic models. We didn't do that because

19 we had concerns, and we noted this in the evidence --

20 we prepared an appendix on it -- had concerns with

21 aspects of Hydro's economic analysis. I want to be

22 clear, we -- we never had concerns with their

23 ref/ref/ref modelling or their modelling of the

24 variations in capital costs or energy prices.

25   Our concerns came in when you tried to

1 draw a quilt and draw expected values with different

2 discount rates because of the cross-row comparisons. I

3 think a substantial part of that has been solved by

4 taking out the common cost, which Hydro has -- has

5 done. So we have a lot less concern with the economic

6 end quilts now than we did. I still have a little bit

7 of concern about over-interpreting the risks of -- of

8 the cost of money interest rates built into it.

9   But I -- I would say those same issues

10 don't exist for the La Capra approach. There are other

11 limitations in the La Capra approach and it has the

12 vertical All Gas line, but that -- there -- the issues

13 don't exist there because they never compare two (2)

14 dots that have different discount rates. They always

15 compare a consistent scenario.

16   They don't exist in Mr. Harper's

17 material, because he just skips over this aspect of it.

18 He doesn't get into a interest rate variability or --

19 or discount rate variability the same way.

20   And -- and Hydro's S-curves can still be

21 informative, but you have to be careful about what

22 they're telling you with regard to the discount rate

23 aspects of it. So I -- I've -- on the appendix that we

24 prepared that was quite critical of the economic piece,

25 I think a substantial part of it has -- has now been

                                        10168

 1 resolved.

 2   MR. ANTOINE HACAULT: A very short

 3 comment, I think, on slide 38.

 4   MR. PATRICK BOWMAN: Yes thir --

 5 thirty-eight (38), I just wanted to lead into our DSM

 6 topic, which we've jumped and spent some time in, and

 7 note that it -- we've done an update. We prepared

 8 another exhibit which updates our analysis on regards

 9 to DSM.

10   The key point is the bottom of -- of

11 this slide, which is the DSM information before you is

12 hot off the presses. It's a significant change from

13 the previous version, and -- and I think it requires

14 attention over some period of time. It might even be

15 twenty-four (24), thirty-six (36) months for someone to

16 really assess whether all that can be achieved, how

17 some of those will play out. There's some -- some

18 debatable aspects that are in there.

19   But we didn't set out to try to assess

20 the DSM. What our big question was: Given this DSM is

21 possibly on the table, what does it do to the decision

22 on the plans? So the rest of the stuff we'll be going

23 through here, I -- I don't want it to be read as saying

24 a vote for plan -- DSM plan this or DSM plan that.

25   It sure looks like there's some positive

10169

1 aspects to the DSM plans if they can be pulled off in

2 the -- the way that it's show here. But the -- the big

3 question for us was: What does it do to -- to the big

4 decision of -- of the transmission and Keeyask and the

5 like?

6   MR. ANTOINE HACAULT: I think we can go

7 to slide 40.

8   MR. PATRICK BOWMAN: We may even be

9 able to go beyond that actually, because this is just

10 giving the background on some -- a set of -- a set of

11 charts that we're now used to looking at. So we can go

12 to 41.

13   And all we wanted to do with this was to

14 portray the picture of the levels of DSM, each one

15 building off of the previous one. So this was the

16 picture of what -- and -- and we always judging against

17 Plan 5. I don't think there should be any surprises

18 here. This is a picture of what Level 1 DSM over base

19 does. Level 1 is -- is good. It grows to the 390

20 million. It's still got a lot of lost domestic revenue

21 you need to pay attention to, but the benefits are

22 large, even under Plan 5, particularly that thermal

23 fuel, which is quite interesting to me.

24   If you go to the next slide you see Plan

25 2, which has a similar profile, a little bit more on

10170

1 the exports, a little bit less on the thermal fuel

2 benefits.

3   MR. ANTOINE HACAULT: Sorry, you said,

4 "Plan 2," but it's Plan 5 level.

5   MR. PATRICK BOWMAN: DSM 2 over -- over

6 DSM Level 1, I'm sorry, under Plan 5, but again,

7 numbers that we -- we've already seen. It's the next

8 slide you go to that tries to portray the case for DSM

9 Level 3, which -- which is just to -- to make the

10 fairly stark difference.

11   DSM Level 3 has some fairly large

12 spending. We've seen in other places that spending is

13 almost entirely on hydro. The customers make almost no

14 investment in respect to DSM Level 3. This appears to

15 be a way to tease out, what if we simply threw a lot

16 more money at DSM, to the point that we're -- we're

17 almost letting customers invest nothing.

18   There are some benefits. There are

19 exports. But at the end of the day, there's the

20 negative for Hydro at the far end, the 380 million, and

21 that was the -- the basic conclusion about DSM Level 3.

22 And I just wanted to draw your attention to the -- the

23 sort of stark difference between that and Levels 1 and

24 2.

25   From here, we had spent time on what

10171

1 does Level 2 do to each of the plans. And I believe

2 that we've already gone over that, unless people want

3 to spend any more time with it this morning. That the

4 plan -- DSM changes the plans, has a different effect

5 depending on the plan. It's at its best when you have

6 a 750 megawatt line, particularly a 750 megawatt line

7 and no Conawapa.

8   MR. ANTOINE HACAULT: Okay, could we

9 move to the financial analysis portion of your

10 presentation, sir?

11   MR. PATRICK BOWMAN: So starting at

12 slide 49 now. So here we're turning the -- the page on

13 the -- the input data we're using. We've left behind

14 the seventy-eight (78) year analysis and we've moved to

15 the financial analysis. We -- we didn't have

16 everything that has been requested. Some arrived over

17 lunch.

18   We also didn't have the same information

19 to update what we originally had. In the original we

20 had the entire twenty-seven (27) scenarios. And I had

21 -- I'll make one (1) brief comment here, which is in

22 regards to when I was talking about the information

23 available to this Board. This information is, I think,

24 very useful and it's uncommon to see in a resource

25 planning context. It is very rare for a utility to

 1 say, I'm not only going to tell you the story of how my

 2 resource plan changes an underlying baseline, but I'm

 3 also going to tell you what the baseline is.

 4   Usually it's: Well, rates will be what

 5 they're going to be. We're just talking about how we

 6 change the rates, so let's not fuss about what the

 7 underlying rates are. That -- that's a very common way

 8 of doing overall resource planning. I think this is a

 9 improvement in terms of how Hydro has done this that

10 you won't find in many other places. It's part of the

11 reason I say that you have good information before you.

12   MR. ANTOINE HACAULT: Now, Mr. Bowman,

13 you said some of the things we don't have.

14   Am I correct in understanding that based

15 on the limitations of Hydro in running its models, that

16 we don't have the expected values, and we had that for

17 some of the previous runs?

18   MR. PATRICK BOWMAN: Right. Unless

19 you've updated the lows and the highs in the full

20 twenty-seven (27) scenarios, you -- you can't run the

21 expected values. And in -- in the economic terms, it's

22 the quilt. But, frankly, we produced a quilt out of

23 the financials, as well. And unless all those are

24 updated, it's not possible to update the expected

25 values.

10173

1   MR. ANTOINE HACAULT: And what's the

2 significance of not knowing or knowing the expected

3 values?

4   How does it -- how did it assist us in

5 the initial analysis, and -- and what are we missing

6 from the picture without it now?

7   MR. PATRICK BOWMAN: Well, the expected

8 values -- with the -- I think everyone's up to speed on

9 this. But the expected values are the -- the

10 probability weighted outcomes across all twenty-seven

11 (27) scenarios Hydro models, rather than just the most

12 likely ref/ref/ref scenario. And it's -- it's a more

13 accurate representation about the entire picture of a

14 plan.

15   It's still limited by the fact that it's

16 only looking at one (1) plan and not a path, but it's

17 still a -- a more complete picture. The big concern

18 that we have is that the expected values of the first

19 time around were considerably lower than the

20 ref/ref/ref values. More so on the economic side than

21 on the financial side, but they were considerably

22 lower.

23   And based on the information that

24 Hydro's filed, we can't update the expected values for

25 the 2013 assumptions. But I think we want to be really

10174

 1 careful about assuming that the expected values for the

 2 2013 assumptions will be similarly lower than the

 3 ref/ref/refs for the 2013 assumptions, primarily

 4 because of the only data available to me, which is in

 5 Appendix 9.3, which said that the 2013 assumptions with

 6 respect to export prices move the reference value up 7

 7 percent, move the high value down 7 percent, but move

 8 the low value up 41 percent.

 9   And I don't -- I don't -- haven't seen

10 those prices, so you'll know better than -- than me.

11 But I think there's a -- a likelihood that the expected

12 value and ref values would have tightened as a result

13 of that, because the very low export price scenarios

14 which we, to the best of my knowledge, included in the

15 2012 scenarios, probably should have substantially

16 improved by -- by way of that adjustment.

17   And although we're provided those --

18 those numbers, a percentage change going 2013, we've

19 never seen them actually used in any of -- of this

20 analysis. So I'm -- I'm hoping that that information

21 is available to the Board to try to make sense of.

22   MR. ANTOINE HACAULT: Could you move on

23 to the next slide, sir?

24   MR. PATRICK BOWMAN: So this goes back

25 to our original filing. This is straight out of our

 1 Appendix C and --

 2   MR. ANTOINE HACAULT: We're looking at

 3 slide 50, for the record.

 4   MR. PATRICK BOWMAN: Sorry, slide 50.

 5 And what we were trying to show here is the present

 6 value of what ratepayers will pay under Plans 4 and 14.

 7 It was just to get an initial image in people's mind

 8 that the lines are pretty close together and the

 9 variability around the lines is much more important

10 than the actual lines themselves. So it's within the

11 range of uncertainty about what future rates will be.

12   Which plan is picked is actually a

13 smaller factor than many of the other variables we're

14 talking about. It's not that -- it -- it goes to your

15 initial question of: Are we changing the world for

16 ratepayers in the future? Under these images we're --

17 we're not. We're still coming very close to $40

18 billion of present value rates over fifty (50) years.

19 And you look at any given horizon there and the -- the

20 degree of variability exceeds the degree of difference

21 between the plans. And the cone is meant to be the

22 P90/P10 range, the -- the shading.

23   So in order to understand this, we had

24 to move to incremental views of the picture. This has,

25 just so that people understand, line 4 -- the line for

10176

 1 -- that says, "4," is Plan 4's expected value. The

 2 line that says, "14," is Plan 14's expected value. And

 3 then there's actually a red cone and a green cone on

 4 this graph which show the P90/P10 range for them. But

 5 they'll make a lot more sense as we go to the next

 6 slide.

 7   This slide is showing you Plan 1 versus

 8 Plan 4 as we originally had in the evidence. It is the

 9 present value difference between the two (2) plans. It

10 has pegged the X-axis as the expected value for All Gas

11 and it shows you the cone of uncertainty around All Gas

12 from P10 to P90. It also shows you the line, which is

13 the expected value for Plan 4, and the cone of

14 uncertainty around it.

15   And it highlighted how Plan 4 does bring

16 with it some risk of higher rates within the P90/P10

17 range, but not an expectation of those higher rates.

18 And over the fifty (50) year horizon, or even -- even

19 forty (40) year, it brought an expectation of lower

20 rates with a wider range of possibilities and more --

21 more risk, if you like, but -- but nonetheless fully

22 encompassing or -- or surpassing the -- the benefits or

23 the -- the -- a level of rates expected to All Gas. It

24 was -- it was to the good, down.

25   If we move to slide 52, we've kept the

1 X-axis the same. The X-axis is still the All Gas EV so

2 that we don't move the -- the bars. But you see the

3 Plan 14 variability range -- risk, if you like, and the

4 level of rates at the same -- this same discount rate.

5 So the line is the expected value of Plan 14, what

6 people will pay. It improves as you go out at five

7 point o-five (5.05) discount rate. It never exceeded

8 line -- Plan 4. And the range of -- of possible

9 outcomes was -- was quite a bit wider.

10   Now, the limitation we had with this

11 type of presentation with updating them is in the first

12 filing we were always looking at information that was

13 using the same load forecast. So you could look at the

14 total amounts paid to buy this same consistent given

15 quantity of energy, this same consistent Manitoba load

16 -- domestic load.

17   In the new updates, we change that

18 variable because our load forecast varies, and our DSM

19 varies across them. And so two (2) perspectives are

20 now relevant. One (1) is how much in total do

21 Manitobans pay for their energy? And if they're

22 getting the same services and less energy that's to the

23 good. But that's the analysis we've just gone through.

24   The other one (1) is how much pressure

25 do we expect on average rates as a result of this? And

1 has it changed? And we wanted to focus on that latter

2 one (1) because our big question in our minds is --

3 was: Is there any reason to change the conclusions we

4 had in the first piece which you've -- you've just

5 seen?

6   So we ran a series of -- of graphs that

7 do the same thing, but they take the same present value

8 of what people pay. But we had to levelize it across

9 the energy being purchased, the domestic load, so that

10 you'd actually -- rather than getting a unit in -- in

11 millions or billions of dollars present value, you're

12 instead getting a levelized cost of energy being bought

13 by Manitobans.

14   If we go to the next chart, you'll see

15 the first of these. And this is the first one (1) to

16 put it respect to All Gas. So we're still in a blue

17 cone showing P90/P10 of the original filing. We can

18 only draw cones for the original filing.

19   We see the original plan. We -- we've

20 changed the line to ref/ref/ref from expected value,

21 but the dark -- the black line is the ref/ref/ref out

22 of the original. And then we've imposed on that the

23 four (4) DSM levels of the updated and what do they

24 mean. And these are all using the original filing

25 methodology for setting rates.

10179

 1   People -- okay. Sorry. I will try to

 2 slow down. What this was showing us was that with

 3 respect to the different levels of DSM over the long

 4 term the DSM in All Gas is beneficial. We've actually

 5 jumped outside the range of what ratepayers would have

 6 paid. We have -- we have moved outside the cone with

 7 respect to All Gas.

 8   But that each respective level of DSM,

 9 based on the analysis that's there, actually has a

10 tendency to increase the average price paid in

11 Manitoba. So the light blue line is the base DSM. The

12 green line is the Level 1 DSM. The orange line is

13 Level 2 DSM. And the purple line is Level 3 DSM.

14   That doesn't necessarily mean rates will

15 be higher, because it depends on which load your DSM's

16 affecting. If you're seeing a lot of savings in the

17 industrial load, for example, your average might go up

18 simply because you've changed the relative balance of

19 residentials who pay a higher rate because there are

20 distribution industrials who don't. That could raise

21 your -- that -- that could raise your average cost

22 without necessarily meaning anybody's paying more. But

23 -- but that was -- that was the effect here.

24   Our main conclu -- or our main concern

25 was did we move outside the range. And the answer was

10180

 1 for All Gas, Level 2, we -- we do start to move outside

 2 the range that was there. It's a little bit better

 3 than it was. Which is no surprise, because DSM would

 4 expect to make things better. And All Gas didn't have

 5 a lot of variability to begin with.

 6   If we go to the next slide, now we're

 7 mixing a bit of Plan 5 and 6 here, because

 8 unfortunately they weren't consistently updated. But

 9 the numbers are not -- not that different between the

10 two (2). They're both based on Keeyask19 with a 750

11 megawatt line.

12   And the -- the bigger conclusion here

13 was the DSM Level 2 is beneficial. Average rates are

14 better than they were, but you're still largely within

15 the cone. We haven't shifted outside of the -- the

16 basic risk range that we expected.

17   And then the third was the Plan 14 PDP,

18 and similarly you'll see a bunch of lines there that

19 you might need a magnifying glass to distinguish

20 between.

21   But in general the -- the pursuit of DSM

22 has not given us a reason to think that we're talking

23 about drastic changes to the -- to the level or rates

24 or any reason to think that the -- the broad level of -

25 - of risk cones that we drew before were any different.

10181

 1   So that was a perhaps lengthier way of

 2 saying that it -- it didn't undermine any of our basic

 3 conclusions about the -- the risk to ratepayers and the

 4 -- and the turnaround in the -- the animated graphs we

 5 showed.

 6   MR. ANTOINE HACAULT: Thank you. Is it

 7 an appropriate time now to move on the updated

 8 financial analysis to the extent that you did have

 9 information, sir?

10   MR. PATRICK BOWMAN: Yes. So, slide 57

11 was our opportunity to -- to try to understand the

12 updated rates and Alternatives 1 and 2 for the rate

13 strategies. And these were very interesting additional

14 filings --

15   MR. ANTOINE HACAULT: Could I just stop

16 you there? We haven't talked before and Manitoba Hydro

17 hasn't presented yet what Alternative 1 and Alternative

18 2 is.

19   For those who have taken time to read

20 everything, we might know, but what is your

21 understanding of what Hydro was trying to do in some of

22 its updated analysis showing different alternatives?

23   MR. PATRICK BOWMAN: Okay, it's -- for

24 -- for the visual people, let's jump to slide 58.

25 Slide 58 is the updated scenarios based on the original

10182

1 filing methodology for what the percentage --

2 cumulative percentage increase in rates are going to

3 be.

4   So what you'll see is the blue line is

5 the Preferred Development Plan, the red line is Plan 5

6 and the green line is -- is Plan 1, All Gas. And it's

7 a similar pattern to what we saw before. It's based on

8 driving to 75:25 debt equity by the year 2031/'32, and

9 then changing your methodology to maintain an interest

10 coverage related target and so you see the big drop-off

11 there. We've talked about the big drop-off before.

12   And Hydro's evidence at that time was,

13 Don't be distracted by the big drop-off because it

14 doesn't actually ref -- reflect a rate strategy we

15 would pursue. So you should visually try to do

16 something else in your mind to give you an idea about -

17 - about a different rate strategy.

18   Alternative 1, to my understanding, was

19 designed to be based on 3.95 percent rate increases to

20 each plan until the 1.2 interest coverage was first

21 achieved, and then it would just hold at one point two

22 (1.2). So, in other words, it would -- it would be

23 similar to the slope for the blue line, but at some

24 point we'd get off and -- and we'd work our way out to

25 the other lines. It meant you won't get this big

10183

 1 spike. But it also means you won't get the revenue

 2 associated with the big spike, so it very much defers

 3 the date at which you reach 75:25 targets, if you ever

 4 do, okay?

 5   Alternative 2 appears to be, to my

 6 knowledge -- I -- I hope somebody will find the

 7 opportunity -- if Hydro update this -- appears to be a

 8 variant on Alternative 1, and Alternative 2 we do have

 9 graphed, which says, I'm going to have to play with

10 those interest rates or those rate increases in the

11 first couple of years, because I have to try to get

12 around some net income losses that -- that I know would

13 -- wouldn't be considered acceptable to the Company.

14   And so it's very sim -- my understanding

15 is it's a variant on Alternative 1 that simply doesn't

16 stick to a three point nine-five (3.95). It plays with

17 some different numbers there to try to get over a -- a

18 net loss problem.

19   And so Alternative 2 is what you see

20 graphed here. And what happens is you still have the

21 long-term benefits of -- of the PDP, Plan 14. You

22 don't have the big spike that you saw occurring to

23 2031/'32. You have increases until a plan is able to

24 get off of that increase, and you can compare the three

25 (3) plans.

10184

 1   In practice, what it appears to do is it

 2 continues to reflect the need to have Plan 14, under

 3 these assumptions, paid for by higher rates. It defers

 4 the period in which those higher rates occur into that

 5 middle period.

 6   You'll see the blue -- the blue line is

 7 Plan 14, the original plan. And it -- it -- it's -- it

 8 pushes it out a little bit more where those -- where

 9 those higher rates would occur, and it makes the

10 originals -- the -- the original part of the slope much

11 more comparable betwe -- between the plans. They're

12 not -- not compoundingly separating all the way through

13 2031/'32.

14   MR. ANTOINE HACAULT: Mr. Bowman, were

15 you able to locate anywhere whether -- as to whether

16 Manitoba Hydroelectric board has actually considered

17 and changed its policy with respect to the 75:25

18 targets and one point two zero (1.20) targets?

19   MR. PATRICK BOWMAN: I'm not aware of

20 anything. I -- I will say that the numbers are now

21 available to us. I haven't perfectly had the time to

22 go through them, but in 104-12 the numbers now

23 available to us, so see just how far these rate

24 scenarios will push Hydro from those original targets

25 of 75:25 and the like. It definitely pushes -- pushes

10185

1 the system quite far. I think that will require some

2 consideration at some point.

3   The debt-equity ratios by 2031/'32 were

4 filed. And we're looking at numbers rather than 75:25,

5 they are more around the range of high eighties (80s)

6 for debt ratios, high 2031/'32. So -- so clawing the

7 way back to in -- you know, in -- in some of the

8 scenarios, high eighties (80s) if you have high capital

9 costs; mid-eighties (80s), for example, Plan 14 DSM

10 Level 2 gets it way back up to 85:15 under those

11 scenarios in that time frame, eighty-six (86) under

12 scenario 1.

13   MR. ANTOINE HACAULT: Now you also

14 mentioned that some of these scenarios show pretty

15 persistent losses.

16   Do those losses consider the additional

17 pressures that I've discussed during cross-examination,

18 such as the reversal of the non-controlling interest

19 number, the depreciation -- extra depreciation which

20 it's believable be implemented, et cetera?

21   MR. PATRICK BOWMAN: Not to the best of

22 my knowledge, no. On -- on the other hand, the losses,

23 particularly for any plan that doesn't build both

24 Conawapa and Keeyask, reflects the original

25 assumptions, as I understand it, that all planning

10186

1 costs will be written off over a eighteen (18) year

2 period amortized to income.

3   And I -- I don't -- for the purposes of

4 an indicative analysis, it's not a bad way to represent

5 how those might flow through. But as we've gotten more

6 precise into saying year by year what's going on, I

7 think one has to be careful with that set of

8 assumptions. I think there's a lot of ways, for

9 example, if we headed down rate 5, we're still in the

10 bottom pathway; we're not writing off Conawapa's cost

11 tomorrow.

12   Similarly, I understand the evidence is

13 that -- is that even if we went down path 1, if you

14 like, or plan 1, there's still going to have be an

15 assessment about what can be retained out the monies

16 that have been spent in terms of value.

17   And on the other side of the picture,

18 when I've dealt with these planning cost issues in

19 other places, it has not been very acceptable to say, I

20 would like take something that I -- I identify on my

21 balance sheet that's no longer of value, but I'd like

22 to take it into income over ten (10) years. If it's

23 not value, it's -- it's off, right.

24   Is that -- and so some of these -- these

25 assumptions that will be amortized may be something

10187

1 that someone consider for rate making purposes. I -- I

2 can't say that that's what would be done with respect

3 to accounting purposes. Certainly I'm aware pressures

4 in other places not to be able to do that.

5   And if you did that, what you'd see is a

6 hit to retained earnings, but you wouldn't necessarily

7 see these annual net loses that Hydro's trying to

8 design rates here to get around. And so I think some -

9 - some of the -- the rate strategies here may not lead

10 to some of the net losses that

11 -- that are -- are shown in -- in Exhibit 104-12.

12   MR. ANTOINE HACAULT: Just -- the Board

13 can go back to your original evidence and updated

14 evidence, but can you just quickly deal with the issue

15 of rates and whether they matter? You've shown the

16 spike and as it relates to particular GS medium --

17 that's general service medium -- and general service

18 large customers.

19   MR. PATRICK BOWMAN: We had quoted in

20 our original evidence that the impacts on -- on the

21 large customers would be in the order of $400 million

22 over the first twenty (20) years. There's some updated

23 -- or there's some calculations associated with that in

24 one of the IRs we filed. The numbers weren't small.

25 And because they're compounding effects, that's a

10188

1 fairly large draw out of spending that will occur

2 otherwise by those companies or -- or whatever else the

3 money would be used for: investments, expiration,

4 returns to -- to capital.

5   It was -- it was only a way to try to

6 highlight that even though some of those lines look

7 pretty close together, they can mean real impacts, you

8 know, on -- whether that's household budgets, whether

9 that's industry budgets. They're -- they're in the

10 range, they can -- can mean a difference to -- to the

11 companies. That -- that's the most that I would be

12 able to say.

13   MR. ANTOINE HACAULT: And I wont take

14 you to it, but I had in cross-examination Manitoba

15 Hydro Exhibit 104-12-6 for the Plan 14 Level 2 DSM. We

16 we're looking at 4.27 percent rate increases, and the

17 All Gas Level 2 DSM we were looking at 3.36 percent

18 increase, so not too far from a percent difference on

19 an even annual increase up to 2031 and 2032. That's

20 taken from that particular page.

21   MR. PATRICK BOWMAN: Right. Can I -- I

22 would just comment that that is under the original rate

23 methodology. The -- the numbers look different under

24 the alternative methodologies, and the -- with respect

25 to the -- the alternative methodologies, I think they

 1 need to be thought about in terms of, are they overly

 2 aggressive on gas and -- and the other plans, I'll turn

 3 to that right now, actually, in -- in respect of what

 4 it does with the planning costs, the sunk cost

 5 amortization, and are they underreflecting Hydro's

 6 financial targets as it's long represented them?

 7   So to go through that, slide 60. Slide

 8 60 is the All Gas. It's the same one we looked at. It

 9 shows the cone from before of rate impacts of the

10 original plan's ref/ref/ref. It's got the updated

11 Level 2 DSM in red. And then it has the alternative

12 methodologies as shown in terms of hitting the plans

13 with higher rate increases in the early years. That is

14 primarily due to the attempt to avoid net income losses

15 associated with this dribble out amortization of the --

16 of the planning costs year after year, rather than a

17 one (1) time hit to -- to retained earnings, for

18 example, or -- or retaining them on the books.

19   MR. ANTOINE HACAULT: I think the

20 graphs are largely self-explanatory. If the panel has

21 questions, we can -- they can ask some later. What

22 about -- could I bring you to two (2) or three (3) last

23 subjects, perhaps, yeah, the slide 62? And then we'll

24 do slide 63, and then it comes to the final summary,

25 basically.

10190

 1   MR. PATRICK BOWMAN: So slide -- we

 2 were at 61, but let's go to 62, which shows the

 3 alternative rate strategies in respect to the Preferred

 4 Development Plan. And you'll see that they help avoid

 5 some of the original spike. In terms of the cents per

 6 kilowatt hour, it's back to a very similar range as the

 7 others, but it -- it really is -- if someone was going

 8 forward with the Preferred Development strategy --

 9 Preferred Development Plan, as listed here, we'd have

10 to think long and hard about those alternative rate

11 strategies and the benefits that -- that they provide.

12   There are two (2) key considerations.

13 One (1) is, Can we really get away with departing that

14 far from Hydro's financial targets? Well, I guess

15 that's the main one, but it has two (2) sides to it.

16 One (1) is the policy side in terms of what Hydro's

17 Board or -- or management would be willing to accept,

18 and the other is, even if they're willing to accept

19 something different than 75:25, how does it look in the

20 terms of risk? Is this -- is this taking on excessive

21 risk because we're only getting to 85:15 or 86:14, in

22 this range?

23   And we provided some information in our

24 -- in our -- our submission that says 75:25 debt-equity

25 is a nice number, and it's easy to calculate, and it --

10191

 1 it can have some meaning in a balance sheet analysis.

 2 But in respect of Manitoba Hydro, where retained

 3 earnings means, in effect, rates charged to domestic

 4 ratepayers, is there a reason to want to build all the

 5 way up to twenty-five (25)? Does it give us any

 6 significant degree of risk protection compared to what

 7 -- what we would have with only twenty (20) or fifteen

 8 (15)?

 9   If so, we may not be able to yield on

10 those targets the same way, but our conclusion was, in

11 respect of any of these plans, the drought risk, which

12 is the -- by far and away the -- the biggest one that

13 you would talk about retained earnings for, is -- is

14 significantly reduced.

15   The level of retained earnings you're

16 talking about when you get to this level of -- of plan,

17 where you're getting up towards 5 billion in retained

18 earnings, far exceeds that -- that type of risk, and so

19 I think it would be -- it's -- I wouldn't rule out this

20 type of rate strategy if one were to try to pursue the

21 larger Preferred Development Plan.

22   MR. ANTOINE HACAULT: Thank you. And

23 rather than go through those, we just encourage the

24 reading of the supplementary evidence.

25   Can you take us to the next slide, 64,

10192

1 is it? You want to go or --

2   MR. PATRICK BOWMAN: Sixty-four is the

3 next image. We can spend our time there. This is just

4 one (1) last piece. It's excerpted from our original

5 evidence, and it was the picture of Plan 14, Preferred

6 Development Plan, versus Plan 4. It still has All Gas

7 expected value as the axis, and the que -- but the

8 question was, What if we designed a plan that had some

9 yielding, some relief from the government charges for a

10 period of time? This is how far one can fairly easily

11 move the cone by readjusting those government charges.

12   This still has all of the benefits to

13 government from the construction projects, from the --

14 the taxes, the -- the workers, and all that sort of

15 thing, and it's based on a fifteen (15) year holiday,

16 if you like, of -- of government charges. Fift -- so

17 fifteen (15) years post-in-service date.

18   And it -- it can move the cone that far

19 and that's part of the reason we said it seems to us

20 there's likely a practical solution out there that --

21 that just needs to be sorted out. And it's a reason to

22 want to keep Conawapa on the table, because if -- if we

23 can move the line that way, that easily, with fifteen

24 (15) years of -- of the project, fifteen (15) years of

25 -- of forgiven revenues that weren't going to rise

10193

1 anyway, it's -- it's probably worth a lot more effort

2 and creativity than we can bring to it in -- in one (1)

3 sort section of evidence.

4   MR. ANTOINE HACAULT: Two (2) very

5 specific questions, Mr. Bowman. We've heard some talk

6 about the WPS sale at 308 megawatts.

7   What's your views with respect to that?

8 Is that something that needs to be decided right away?

9 Is there any conclusive evidence one (1) way or the

10 other?

11   MR. PATRICK BOWMAN: I don't -- I --

12 I'm relying on information in Exhibit 104-8, which I

13 don't think it's necessary to pull up, but I think,

14 looking at the -- the quilt provided in 104-8, it would

15 suggest that the WPS sale is not performing the way we

16 would have expected in the numbers, that we would have

17 expected to see locking in a -- a portion of your power

18 as compared to alt -- alternatives that don't lock it

19 in, reducing your downside, if nothing else.

20   If we actually, I guess -- if -- if you

21 go to that, you'll see that the -- you don't have to,

22 but you'll see it -- it actually doesn't serve to

23 either increase your expected value or to reduce your -

24 - or to reduce the risk to your P10 or the impact to

25 your P10s. That may just be a -- a function of the

10194

1 analysis done to date, but I'm not aware -- I'm not

2 clear as to whether this Board is expected to give a

3 thumbs up or thumbs down to a WPS sale, but it's --

4 it's one (1) pie -- moving piece of a puzzle in making

5 a case for Conawapa. If it doesn't come together in a

6 full puzzle to make a big case for Conawapa, it -- it

7 can go away in any event.

8   So I -- I don't have -- have strong

9 views one (1) way or another, but I -- I would have

10 been -- I -- I would have expected that you'd see a bit

11 more benefit on the -- on the downside mitigation

12 arising from actually locking in a -- a degree of your

13 prices.

14   MR. ANTOINE HACAULT: Now sir, you've

15 testified, as I understood, that it's your opinion that

16 Conawapa should relieve -- receive some measure of

17 protection, and the concern of the Chairman was raised.

18   The -- the question I'm asking of you

19 now is at what level? Is it a minimum protection

20 level? Is it we're -- we're going on a different mini

21 -- than a minimum protection?

22   What's your views?

23   MR. PATRICK BOWMAN: In a resource

24 planning context, I -- I would be using the term

25 'protect' to mean -- to always mean minimum protect.

10195

1 It wouldn't -- the -- the whole concept of protecting

2 an option is only doing today what's absolutely

3 necessary so that it doesn't fall off the table and you

4 can live to tomorrow and still have it alive for that

5 same date.

6   There's -- there's not a lot of upside

7 to spending money before you have to when you've got a

8 -- a planning context set out, but the tough question

9 is, What do we mean by spending it before you have to?

10 But certainly at a -- a, you know, a minimum planning

11 level is -- is what we would we mean -- what we'd mean

12 by 'protection'.

13   MR. ANTOINE HACAULT: Okay. And the

14 final summary is set out on the slide. We don't need

15 to read it. Thank you very much, members of the panel,

16 for your attention, especially since it's been a long

17 couple of months, and we're kind of at the tail end of

18 this after a long evening last night.

19

20   (BRIEF PAUSE)

21

22   MR. RICHARD BEL: The Plan 5 -- the

23 Plan 5 you analyzed, did it include the 308 WPS sale?

24

25   (BRIEF PAUSE)

10196

 1   MR. PATRICK BOWMAN: For some reason,

 2 it always -- I always get confused in my head about 5

 3 versus 6; 5 includes the WPS sale, 6 does not.

 4 Otherwise they're the same plan.

 5   MR. RICHARD BEL: Okay.

 6   MR. PATRICK BOWMAN: With a little bit

 7 of timing.

 8   MR. RICHARD BEL: Can I ask a question

 9 the Chairman asked? And you said that Plan 5, the 750

10 without Conawapa, you said it could stand alone or it

11 didn't need any smoothing or government assistance or

12 sharing of that government benefit.

13   But if you -- if we look for a moment,

14 and say that we're doing the maximum DSM, and we're

15 satisfied that we're very close to fulfilling domestic

16 load, and so, following that argument, we have a plan

17 on the table that has significant opportunities signed,

18 and we're looking to say that that plan is important

19 for us, because it's going to give us extra

20 opportunities to pay for the pre-investment.

21   And you can look at pre-investment as

22 the -- we have to pay for Bipole III, every plan has to

23 pay for Bipole III, and we have to put in -- pay for

24 the sunk cost. And then we have the rate issue.

25   So, if you combine all those elements

10197

1 and say, Yes, according to Morrison Park's test, we

2 can't turn it down, but we have to deal with that rate

3 issue, then won't that be a -- a strong reason for that

4 fifteen (15) year holiday if it's smooth rates?

5 Because it really, it's -- it's deferring that

6 intergenerational shift, pushing it out.

7   MR. PATRICK BOWMAN: Well, it's a big

8 question. I was trying to find the right image so that

9 I can keep the visual people in the room happy while

10 we're talking.

11   I think it -- it, unfortunately, it may

12 not actually be in here, but we can go to slide 51, if

13 that's possible, Melissa.

14   My general comment is if I was engaged

15 in this hearing and having a discussion with -- engaged

16 in this process and having discussion with -- with the

17 government alone about how to make it most likely that

18 a -- a plan could move forward, the very things you're

19 talking about would absolutely be on the table.

20   But I think they would tend much more to

21 focus around Conawapa than -- than the -- the elements

22 of Plan 5, in part, because -- and I pull -- pulled up

23 here an image. This is from our original evidence, and

24 it's -- it's Plan 4, not Plan 5 or 6, the numbers have

25 moved a bit, but it gives a picture that says -- says

10198

1 that this -- this could stand on its own.

2   Because we don't have a choice, you

3 know, not to build Bipole. We don't have a choice, you

4 know, not to deal with some of the pressures you're

5 talking about. Those are -- those are behind us.

6   So if -- if you're only saying, What

7 does it take to make this plan happen, you don't get to

8 not do Bipole, as -- at least, certainly in our terms

9 of reference, but even in my understanding of -- of

10 Hydro's system and the debates that are underway.

11 You're only choosing whether you're going to do

12 something minimal, staying close to home, or whether

13 you're going to take on -- on this transmission line

14 and what comes with it.

15   And given that, if you're going to have

16 high rate pressures anyway, you're not going to have

17 very much different rate pressures that are still high

18 under this plan, and it has some benefits that

19 eventually pay off and turn around, and the risks are

20 probably within a range that you could reasonably

21 expect Hydro to manage, and the debt levels are not

22 that far off of where you're heading if you're going

23 the All Gas way anyway. Maybe a little sooner, but,

24 you know, Keeyask at six (6), the All Gas has peak --

25 peaks pretty close to that -- that same ultimate debt

10199

 1 level.

 2   So the mind -- when you're being asked

 3 to review a proposal, the mind on this one doesn't go

 4 to, I'm -- I'm going to need a whole bunch of -- of

 5 government help for this plan -- for this part of the

 6 plan.

 7   Turn to Plan 14's economics review, this

 8 doesn't work at all without -- without somebody coming

 9 to the table, and so you look at where the benefits

10 are, and you say, Yeah, we've got this distributed all

11 wrong. We absolutely need to think about how to change

12 that if we're going to make this extra piece of -- of

13 Conawapa work.

14   Now, all -- if all of that is happening

15 in an environment where you're saying, My rate

16 pressures are too high because of Bipole and because of

17 whatever else, that's a -- that's a -- a different

18 hypothesis and a different question. And I probably,

19 once again, won't be the most popular guy at the MIPUG

20 meeting, but I'm not one who -- who jumps to a solution

21 of saying the government should be playing a role in --

22 in just a bulk subsidy of -- of rates. It's not --

23 it's not very well targeted. It's a very coarse tool.

24   MR. RICHARD BEL: I'm not sure it's the

25 subsidy of rates to say that the initial benefit from a

10200

 1 very expensive plan, because it is a very expensive

 2 plan. We're adding 6.5 billion -- some might say 7

 3 billion -- to an already 5 billion. I don't know if

 4 that should be considered a subsidy if we're looking at

 5 one (1) group, all the taxpayers benefiting, and

 6 another group that's kind of paying more of the

 7 freight.

 8   MR. PATRICK BOWMAN: I accept your

 9 point.

10   MR. RICHARD BEL: That's the point.

11 It's still -- it's just a share. It's your original

12 analysis.

13   MR. PATRICK BOWMAN: Sure.

14   MR. RICHARD BEL: A share of the

15 benefit.

16   MR. PATRICK BOWMAN: If your quest --

17 like if you're saying, listen there's a big pie here

18 and there's not much of it going to ratepayers, that --

19 absolutely. I -- I'm behind that. And -- and, you

20 know, good on you if you can make progress on that

21 issue. But if you can't, I'm not saying abandon Plan

22 5, right.

23   When you're with Plan 14, it's

24 different.

25

10201

 1   (BRIEF PAUSE)

 2

 3   DR. HUGH GRANT: I like your

 4 spreadsheets. You'll have to show me how to do that.

 5 But I want to get you out of your comfort zone. And

 6 just going back to some of your preliminary comments

 7 and, you know, you're thinking about metaphors about

 8 basements and hurdles, and -- you know, just the way of

 9 thinking about it. And I -- I take your point about --

10 I think Morrison Park was in a similar way. It's how

11 do you put some of this financial analysis in context

12 for the bigger decisions.

13   But I guess I was wondering if I -- if -

14 - if you and Mr. Hacault were in a bar in ten (10)

15 years, depending whichever pathway we followed now --

16 and I'm just trying to think about, you know, you're

17 getting ready for the next PUB hearings, and -- and

18 either what regrets you might have -- think you might

19 have, or you fear you might have ten (10) years out and

20 what you might be talking about going forward.

21   And I guess what I'm trying to point to

22 is some of these sort of potential black swan things.

23 Do -- do you, for example, see solar as becoming -- do

24 you think ten (10) years from now solar will be that

25 much more competitive? Do you think there's going to

10202

 1 be a long implementation period? Do you think of --

 2 you know, all this off-grid technology is just evolving

 3 so rapidly.

 4   I -- and -- and I guess -- and I was

 5 corrected the other day for thinking this, there's also

 6 these transformational technologies that work the other

 7 way as well. So -- yeah, I'm just curious about your

 8 thoughts on that.

 9

10   (BRIEF PAUSE)

11

12   MR. PATRICK BOWMAN: You're -- it's a

13 thoughtful question. I would say the analysis that's

14 been done captures a pretty good picture of -- of the

15 future scenarios that are likely, subject to if we're

16 not in the CSI room.

17   I absolutely accept that there are,

18 we'll call them, black swans, although in the proper

19 definition a black swan isn't just unexpected. The

20 proper definition is that after the fact, people

21 convince themselves that they -- they knew it all along

22 or should have known it all along. It's got a -- it's

23 got a pejorative side to it, the definition.

24   But I think the things I would be -- be

25 worried about, about -- you know, Man, we really blew

10203

1 that one -- are, you know, by definition hard to

2 identify. It -- it could relate to topics we're not in

3 the middle of, like environmental constraints on

4 operation due to -- due to species at risk; fish, for

5 example.

6   I'm -- I'm not on that one, but I would

7 say -- and -- and the risk may be quite small. I'm

8 thinking it probably is. But -- but it would sure be a

9 -- a -- you know, a hit out of the blue if somebody

10 really had to change the way that they managed their

11 system. Or -- or, you know, similarly if -- if you

12 talk about some of the -- the cornerstone aspects of

13 the system, it would change your -- your economics like

14 a -- a radically different Lake Winnipeg licence or

15 something of that nature. That -- that would be one.

16   But I think -- I think the ones that

17 would really concern me -- and remember I'm -- I'm

18 working at this with an industrial customer perspective

19 -- is that a lot of the -- I'll just take a step back.

20 A lot of the risks we're talking about are risks to

21 future power prices here; but there are also risks to

22 future power prices in most places, so they're not

23 necessarily a big risk to competitiveness.

24   Some of them, the one's you really go to

25 track, are the ones that run on contrary directions.

10204

1 And that main reason that we tended to focus on low

2 power prices as -- as the big one you got worry about,

3 because if we really do have a drastically different

4 export market environment, you -- you mentioned solar;

5 solar's interesting, I -- I think. It's got -- we'll

6 see how it evolves. At this point, I'm not sure it's

7 as rosy as some people present, but it's certainly got

8 some uncertainty involved in it.

9   The natural gas prices are there, and --

10 and certainly things that we -- we can't even conceive

11 of now, I don't know about ten (10) years, but twenty

12 (20) years. But if they're things that mean that

13 southern states of the United States or Brazil or -- or

14 Turkey or places that these companies are competing

15 with can radically change the way they -- they supply

16 power while, you know, in directions where our rates

17 are going up and theirs are going down, that -- that is

18 -- you know, that -- that's the stuff that -- that I

19 think someone has to watch out for.

20   We modelled the low price scenarios. I

21 don't -- as I said, I'm not in the room and I'm not a

22 natural gas price forecaster. But in my gut level,

23 watching this market, I -- I would not think that you

24 have a lot of -- of risks of cheaper gas than low price

25 -- current low price scenarios on the market. There

10205

1 are some incredible scenarios I could dream up where

2 you'd have a fair bit of higher gas scenarios,

3 environmental controls on fracking, you know, market

4 transformation about diesel or uses, you know, major

5 gas exports for other parts of the world.

6   So that wouldn't -- I think -- I think

7 that's -- that's the -- I think that's the one that --

8 that I would -- I would worry about most. But I'd also

9 suggest that I'd be worried about, in ten (10) years,

10 sitting down and saying, We blew that call, as if we

11 could already know if we had made the right call

12 because, you know, these are very, very long horizon

13 projects. And they're not expected to be, you know,

14 winners over ten (10) years. They're expected to be

15 winners over much longer than that. And the big

16 question is: Can Manitoba handle them during that --

17 that interim period?

18   So, you know, it may be -- we may not be

19 drinking beer. We may be in the rocking chairs or

20 something. But -- but I do think that's -- that's the

21 horizon you need to be thinking about.

22   DR. HUGH GRANT: I was going to say

23 twenty (20) years. But out of respect for your

24 counsel, I thought...

25   THE CHAIRPERSON: I think that it's

10206

1 probably an appropriate time to take a break so the

2 witnesses can prepare themselves for Mr. Williams's

3 probing cross-examination -- typically probing cross-

4 examination. So you're well advi -- well warned.

5 Let's take ten (10) minutes.

6

7 --- Upon recessing at 2:18 p.m.

8 --- Upon resuming at 2:34 p.m.

9

10   THE CHAIRPERSON: Okay, I believe that

11 everybody's in position to start. Mr. Hacault, s'il

12 vous plait.

13

14 CONTINUED BY MR. ANTOINE HACAULT:

15   MR. ANTOINE HACAULT: Yeah. I'm

16 advised Mr. Bowman started rocking in his chair, and in

17 contemplation of Dr. Grant's question and may have some

18 additional information to share with Dr. Grant.

19   MR. PATRICK BOWMAN: You -- you seem to

20 ask the most difficult questions, Dr. Grant. My

21 supplement is if the -- if it's ten (10) years hence or

22 fifteen (15) years hence and Mr. Hacault and I are

23 having a drink, I think one (1) of the things that

24 would concern me most and that we would -- we would

25 look back and say, Boy, that -- that one was -- got --

10207

1 got blown, would be Manitoba committing to a plan of

2 this -- of this type, particularly the larger ones,

3 without having a good enough understanding of the -- of

4 the patience they need for it pay off. And as a

5 result, three (3), four (4), five (5), eight (8) years

6 later, people taking drastic actions because something

7 that really doesn't matter in the long-term is -- is

8 starting to -- to show up. Like, you know, Oh, we have

9 a couple of year of low net income; let's really start

10 to ramp up rates.

11   Or -- or our -- our capital costs came

12 in a, you know, a -- a little bit high on Keeyask, so

13 let's -- let's, you know, take Hydro to the gallows and

14 -- and make -- make sure that they never build another

15 project like that again, or whatever. It -- it's

16 something that really isn't -- isn't representing the

17 long-term -- the -- the long-term underlying benefits

18 of the project to the province.

19   And -- and I think that Ontario example

20 is -- is probably one (1) of the best ones from my

21 career that I think there was probably a whole bunch of

22 people who in -- somewhere in the '80s sat down with

23 some people who may have even been in this room from

24 Ontario Hydro and -- and this team and figured out that

25 they needed Conawapa for -- for a, you know, a decade

10208

1 or fifteen (15) years.

2   And two (2) years later someone says,

3 Oh, we don't need it today. Let's -- let's cancel that

4 deal. And there's probably a few people who had their

5 -- the same situation as Mr. Hacault and I somewhere in

6 the late '90s saying, We blew that one (1), you know,

7 just -- just by over focussing on the short term.

8   THE CHAIRPERSON: Thank you, Mr.

9 Bowman. I believe that, Mr. Williams, it's your turn.

10

11 CROSS-EXAMINATION BY MR. BYRON WILLIAMS:

12   MR. BYRON WILLIAMS: Yes, thank you and

13 good afternoon. Mr. Bowman, just let's start out with

14 the financial analysis you did in your original pre-

15 filed written evidence.

16   Am I correct that much of the financial

17 analysis under -- undertaken in Chapter 4 of your pre-

18 filed evidence was based upon expected values?

19   MR. PATRICK BOWMAN: Certainly Appendix

20 C was. Some of -- only some of that got copied to --

21 to Chapter 4. I'd have to check about the relative

22 mix. But the -- the lines were all based on expected

23 values in -- in Appendix C, which was the underlying

24 detailed background for that.

25   MR. BYRON WILLIAMS: And for Appendix

10209

 1 C, you made a choice to focus on expected values as

 2 compared to ref/ref/ref values.

 3   Is that fair?

 4   MR. PATRICK BOWMAN: Yes.

 5   MR. BYRON WILLIAMS: And one (1) of the

 6 reasons presumably you did so was the expected values

 7 tended to be lower than the ref/ref/ref values?

 8   MR. PATRICK BOWMAN: My recollection is

 9 in the financials they're not -- they're not nearly as

10 different as they were in the -- in the economics. In

11 the economics they're lower. But I -- I think they're

12 a better representation. I -- I think they probably

13 are a -- a bit lower, but not enough that it would

14 really show up different on the graph.

15   MR. BYRON WILLIAMS: But you made that

16 choice because you considered them a better

17 representation of the -- the risk, opportunities, and -

18 - and expectations?

19   MR. PATRICK BOWMAN: Yes, and -- and

20 also in consultation with -- with Mr. Harper, as -- as

21 this Board had requested people to try to coordinate

22 their cases a bit. Mr. Harper was spending more time

23 on the economics piece, but he was -- he was

24 encouraging a focus on expected values, and I thought

25 that was reasonable. So we -- we sort of did the same.

10210

 1   MR. BYRON WILLIAMS: And for the

 2 purposes of your updates relying upon information from

 3 Manitoba Hydro Exhibit 104-12, you've had to rely on

 4 the ref/ref/ref values as compared to the expected

 5 values?

 6   MR. PATRICK BOWMAN: Yes.

 7   MR. BYRON WILLIAMS: And you've had to

 8 do so because the expected values are not available?

 9   MR. PATRICK BOWMAN: Yes.

10   MR. BYRON WILLIAMS: And sitting here

11 today, you are not in a position to comment

12 authoritatively on what the implications of using

13 expected values would be for the financial analysis,

14 correct?

15   MR. PATRICK BOWMAN: Correct. I -- I

16 don't think it would be material, but it's not an

17 authoritative conclusion.

18   MR. BYRON WILLIAMS: And just out of

19 curiosity, have you done a comparison on how the

20 reference values between the Gas/750 Plan versus the

21 Keeyask/750 Plan have changed using the 2013

22 assumptions versus the 2012 assumptions?

23   MR. PATRICK BOWMAN: Can you repeat the

24 plans you wanted me to think about?

25   MR. BYRON WILLIAMS: Have you taken a

10211

1 look at how the reference values, looking at the

2 Gas/750 and 750 Interconnection Plan would compare to

3 the Keeyask versus 750 Plan using the 2012 assumptions

4 versus the 2013?

5   MR. PATRICK BOWMAN: You're contrasting

6 Gas and Keeyask, but in both cases you're including a

7 750 line?

8   MR. BYRON WILLIAMS: Yeah, let me --

9 let me try that again. That was inelegantly worded,

10 and I apologize.

11   Have you looked at how the plan -- the

12 reference values for the Keeyask/Gas/750 Plan have pr -

13 - have -- at the relative gap as compared to the

14 Keeyask Conawapa 750 Plan using the 2020 assumptions

15 versus the 2013 assumptions?

16   Have you looked at whether the gap

17 widens under the 2013 assumptions?

18   MR. PATRICK BOWMAN: And by 'gap' you

19 mean the gap between reference and expected value, or

20 the gap between the two (2) plans?

21   MR. BYRON WILLIAMS: The gap between

22 the two (2) plans.

23   MR. PATRICK BOWMAN: So we're looking

24 at -- only at reference values --

25   MR. BYRON WILLIAMS: Yeah.

10212

 1   MR. PATRICK BOWMAN: -- because 2013

 2 updates, we only have the expected values. And do you

 3 mean under financial scenarios versus econom -- well,

 4 it's -- it's inherent in the -- the presentation. We

 5 didn't -- we didn't map them overtop of one another,

 6 but the -- the financial picture of -- of what I'll

 7 call the hybrid of Plan 5, 6, versus 14 are -- are in

 8 the slides that we -- we presented and there -- the

 9 changes over time are -- are shown there too, if you --

10   MR. BYRON WILLIAMS: Okay.

11   MR. PATRICK BOWMAN: -- if -- slide 55

12 and 56, if you wanted to look at them.

13   MR. BYRON WILLIAMS: I'll look at those

14 more closely, Mr. Bowman.

15   Now, just when we came back after lunch,

16 you were kind enough to provide us with some ant --

17 animated insight and entertainment.

18   Do you recall that, Mr. Bowman?

19   MR. PATRICK BOWMAN: Yes.

20   MR. BYRON WILLIAMS: And, in essence,

21 what you did is you took the evidence that you had

22 presented at page C-8, Figure 1, of your original pre-

23 filed evidence over fifty (50) years and you broke it

24 down into ten (10) year increments.

25   Would that be fair, sir?

 1   MR. PATRICK BOWMAN: Yes. And -- and a

 2 matter of fact, it was already in the original filing,

 3 or -- or at least a few of the -- a few of the steps I

 4 recall were in there. I've -- I have to look if we did

 5 it for Plan 14; but, yes, that's what we did.

 6   MR. BYRON WILLIAMS: And I guess that

 7 was my question, sir. Are -- are the specific slides

 8 that you prepared for the ten (10) year difference, the

 9 twenty (20) year difference, the thirty (30) year

10 difference, and the forty (40) year difference in your

11 pre-filed evidence?

12   MR. PATRICK BOWMAN: No, not all of

13 them.

14   MR. BYRON WILLIAMS: Would you mind, by

15 way of undertaking, agree to -- to file those on the

16 record?

17   MR. PATRICK BOWMAN: Yes.

18   MR. BYRON WILLIAMS: You would mind or

19 you would agree to? Wasn't a trick question; I think

20 we're both tired, Mr. Bowman.

21   You're agreeing to -- to file those?

22   MR. PATRICK BOWMAN: Yes.

23   MR. BYRON WILLIAMS: Yes, I'm asking

24 Mr. Hacault to undertake on behalf of his witness to

25 file the base figures that ultimately made -- made up

10214

1 Figure 1 on page C-8 at the ten (10) year time period,

2 the twenty (20) year time period, the thirty (30) year

3 time period, and the forty (40) year time period.

4   MR. PATRICK BOWMAN: Agreed. Mr.

5 Williams, we have a diverse menu here. Can I just be

6 clear, you only want Plan 14?

7   MR. BYRON WILLIAMS: Here we go. I --

8 I also -- do you have it for Plan 5, sir?

9   MR. PATRICK BOWMAN: Yes. Well, let me

10 finish the rest of the question and come back to that.

11 Do you only want it for ref/ref/ref conditions?

12

13   (BRIEF PAUSE)

14

15   MR. BYRON WILLIAMS: I would like it --

16 do you have it for expected?

17   MR. PATRICK BOWMAN: Not easily. We

18 have all twenty-seven (27) of the original ones. We'd

19 have to go through the entire weighting process to make

20 --

21   MR. BYRON WILLIAMS: No, that's fine.

22 We'll take it for ref/ref/ref for Plan 14 and Plan 5.

23 And do -- would -- you wouldn't have it for Plan 6

24 though, would you?

25   MR. PATRICK BOWMAN: Well, the -- the

1 question -- the third question was do you want it only

2 for the original NFAT filing, or do you actually want

3 the updated ref/ref/ref? We can do either, but -- but

4 the -- which plan we can do depends on whether it's

5 original or updated. Only Plan 6 was included in the

6 original. Plan 5 was never -- was never run through

7 the financials of the original.

8   MR. BYRON WILLIAMS: I'd like it for

9 the update for Plan 14 and Plan 6, Mr. Bowman.

10   MR. PATRICK BOWMAN: I'm getting a nod

11 from the back row. Yes, update Plan 14, Plan 6, ten

12 (10) years, ref/ref/ref.

13   MR. BYRON WILLIAMS: Ten (10), twenty

14 (20), thirty (30), forty (40) years?

15   MR. PATRICK BOWMAN: Yes, well, they're

16 ten (10) year increments, that's why I'm ...

17   MR. BYRON WILLIAMS: So just for the

18 court reporter, we'll be looking at updatings --

19 updating Plan 14 and Plan 6 based upon the updated

20 numbers in ten (10) year increments going out to -- out

21 to fifty (50) years. And thank you, Mr. Bowman.

22   MR. ANTOINE HACAULT: That's agreed.

23

24 --- UNDERTAKING NO. 143: MIPUG panel to update Plan

25   14 and Plan 6 based upon

10216

1   the updated numbers in ten

2   (10) year increments, going

3   out to fifty (50) years.

4

5   (BRIEF PAUSE)

6

7   MR. ANTOINE HACAULT: And by the way,

8 the risk of having been rude and -- and not being

9 forgiven by the back row, which we have, we have

10 Melissa Davies, who has been supporting us throughout

11 this hearing and I'd like to formally introduce her to

12 everybody here. She was the was one nodding to as to

13 whether all these additional analysis could be done.

14

15 CONTINUED BY MR. BYRON WILLIAMS:

16   MR. BYRON WILLIAMS: And, Mr. Bowman,

17 she's done a lot of the hard work, hasn't she, sir?

18   MR. PATRICK BOWMAN: No, that's not

19 correct.

20   MR. BYRON WILLIAMS: Just let Ms.

21 Davies know she's always got a place with us if she...

22   Mr. Bowman, getting to the -- the

23 highlight or the -- the heart of your evidence, I --

24 I'm going to suggest that one (1) key message you had

25 was that there was a legitimate need pathway to pursue.

10217

 1   Is that fair?

 2   MR. PATRICK BOWMAN: There is -- there

 3 is a pathway that could be pursued based on legitimate

 4 -- based on, you know, a reasonable definition of

 5 'need'.

 6

 7   (BRIEF PAUSE)

 8

 9   MR. BYRON WILLIAMS: And it's not just,

10 sir -- it's a pathway that you considered credible in

11 your original evidence?

12   MR. PATRICK BOWMAN: Yes.

13   MR. BYRON WILLIAMS: And based upon the

14 updated economics, you would consider it even more

15 credible today?

16   MR. PATRICK BOWMAN: It's a pathway

17 that's available and that is -- yes, it's credible.

18   MR. BYRON WILLIAMS: But, sir, if you

19 were comparing it to your original analysis, you would

20 say that in comparison to the opportunity pathway, this

21 is indeed -- is a pathway that has improved relatively

22 compared to the opportunity pathway, based upon the

23 updated information?

24   MR. PATRICK BOWMAN: Yes.

25   MR. BYRON WILLIAMS: You also suggest

 1 that there is a credible opportunity pathway, as well.

 2   Is that fair?

 3   MR. PATRICK BOWMAN: Yes.

 4   MR. BYRON WILLIAMS: And a -- a key

 5 question ultimately is: How much do we value that

 6 additional transmission?

 7   Would that be fair, sir?

 8   MR. PATRICK BOWMAN: Yes.

 9   MR. BYRON WILLIAMS: And -- and in fact

10 in your mind, that's perhaps the most important

11 question?

12   MR. PATRICK BOWMAN: It's the most

13 important question to be answered to be today. It's a

14 subset question of the bigger question, which is:

15 Where are you going?

16   And my -- my answer for that is a little

17 bit biassed, if that's the right word, by being a

18 Manitoban who would -- who would -- who I think has

19 done well by developing the plants and -- and making

20 the most of domestic resources and bringing outflow of

21 -- of funds from export markets and those types of

22 things notionally.

23   And it would be a -- a shame, if that's

24 the right word, to -- to think that somehow we --

25 today's the time where we -- where we get off this and

10219

1 we go on -- on gas forever or something. But -- but I

2 -- I think it's a credible question. Today very much

3 turns on the transmission.

4   MR. BYRON WILLIAMS: Okay. And I

5 wonder if we could pull up Manitoba Exhibit -- Manitoba

6 Hydro Exhibit 192? I don't want to ask Mr. Hacault to

7 put that in front of his face again. I -- I miss his

8 shiny -- but -- but the...

9

10   (BRIEF PAUSE)

11

12   MR. PATRICK BOWMAN: Yes.

13   MR. BYRON WILLIAMS: And Mr. Bowman, I

14 just want to make sure, and I'm going to ask you to

15 explain what you consider to be the credible need

16 pathway.

17   What is it?

18   MR. PATRICK BOWMAN: Well, I would --

19 I'll -- I'll first start with our -- our building

20 block, which was the IR -- the first IR that we asked

21 of Manitoba Hydro, which is MIPUG MH-1 with all of its

22 subparts of, What does need mean? And I think they --

23 they did a pretty good job of setting out, you know,

24 need is to supply domestic kilowatt hours, and to the

25 extent that they are still in the system, existing

10220

1 export kilowatt hours that we've committed to. And to,

2 you know, do that on a -- a -- you know, at a time when

3 -- when -- to -- or to -- to commit to resources at a

4 time when -- when it's -- when we're unable to do that.

5   The -- the credible needs pathway is the

6 top half of this page. It does involve energy

7 conservation, and so in the light blue diamonds

8 continue to review these -- continue to run a plan

9 every year, continue to look at DSM every year,

10 continue to be open to independent power proposals,

11 whether that's from wind or other things, continue to

12 have discussions with your industrial customers about

13 their opportunity to generate. All of the things that

14 make sure that you've -- you've optimized your existing

15 load.

16   And -- and when that no longer fulfills

17 the kilowatt hours demanded, then commit to

18 construction that could be Keeyask or -- or could be

19 gas. It probably wouldn't -- wouldn't be Conawapa, but

20 I -- I wouldn't rule it out. But without -- you know,

21 without necessarily taking on the transmission at that

22 time.

23   I think it's a -- it's -- it's a -- a

24 premise of minimizing capital commitments and -- and

25 only building for dates where you have shortfalls.

 1   MR. BYRON WILLIAMS: Okay. And so the

 2 essence of the -- the credible need path is certainly

 3 employing economic DSM to buy time?

 4   MR. PATRICK BOWMAN: Well, employing

 5 economic DSM because it's sensible, but it also buys

 6 time.

 7   MR. BYRON WILLIAMS: And presumably, it

 8 assists in -- in keeping the -- the debt level down.

 9   Is that fair, sir?

10   MR. PATRICK BOWMAN: It can. DSM isn't

11 always cheap. You know, you -- you would need to keep

12 it reasonable for -- for ratepayers, applies

13 appropriate tests in that regard, but -- but it

14 generally -- it's not only about keeping your debt

15 level down. It's -- it's -- when we were doing the

16 consultation process for this with the commercial

17 customers, we -- we were trying to help people

18 understand the power planning, and we -- we ended up

19 using a description that explained that there are --

20 there are sort of building block resources to assist

21 them, and there are flexible resources.

22   And -- and flexible resources have some

23 very advantageous characteristics that you can scale

24 them up, you can scale them down, they can be built

25 quickly, they often don't require big capital in -- in

10222

1 advance, and they're -- and they're not that custom.

2 So you don't have to invest a whole lot of money in

3 advance of committing to them, like including, you

4 know, wind or IPPs, or DSM.

5   There's also these big building block

6 resources that bring you a -- a whole load of -- of

7 power at one (1) point in time, but they're -- they're

8 extremely custom, and so you have to spend a lot of

9 time planning them in advance. They're not very

10 flexible to move around. It's not just generating

11 stations. It could be, you know, people who build

12 nuclear plants face the same problem.

13   And -- and export commitments would be a

14 -- a similar type of -- of demand-side aspect. They

15 don't move around easily. They take a lot of work to

16 put together. They've very difficult, very custom, and

17 so filing your system involves, What can I do with the

18 flexible resources until such time as I want to now

19 build in one (1) -- bring in one (1) of these building

20 blocks?

21   And so the -- the need-based case would

22 be, well, let -- let's make the most of all these

23 flexible resources I can work with until I need to go

24 to my next block.

25   MR. BYRON WILLIAMS: Okay.

10223

 1   MR. PATRICK BOWMAN: And -- and natural

 2 gas kind of gives you a bit of -- it has

 3 characteristics of each. But --

 4   MR. BYRON WILLIAMS: Okay. And so --

 5 and just -- and I -- I thank you for that -- that

 6 helpful answer. And I -- one (1) advantage of this is

 7 -- is lower debt, and you've suggested as well

 8 significantly enhanced flexibility --

 9   MR. PATRICK BOWMAN: Yes.

10   MR. BYRON WILLIAMS: -- as compared to

11 the opportunity pathway?

12   MR. PATRICK BOWMAN: Yes.

13   MR. BYRON WILLIAMS: Now, you mentioned

14 -- in the event that we get to new generation under the

15 credible need path, you mentioned at least three (3)

16 options, one (1) being Keeyask, one (1) being Conawapa,

17 and another being Gas.

18   Is that right?

19   MR. PATRICK BOWMAN: Yes, at least

20 those three (3).

21   MR. BYRON WILLIAMS: Anticipating my

22 next question, Mr. Bowman. We don't know what that

23 next new source is if we followed this path until we

24 get out there. You know, if it's ten (10) years from

25 now, it might be Gas.

10224

 1   It might -- it might be something else,

 2 right?

 3   MR. PATRICK BOWMAN: Yes. I think it's

 4 unlikely, you know, looking at this chart, when your

 5 first resource is scheduled to be 2024 on this chart,

 6 it could be later, but it's twenty (20) -- that you're

 7 going to find a drastic change in your suite of options

 8 by that point in time. If it gets pushed out further,

 9 you could end up with something different.

10   MR. BYRON WILLIAMS: If -- if we're

11 talking 2027/'28, we could be looking at a different

12 resource, sir?

13   MR. PATRICK BOWMAN: Yeah. I think

14 you're into -- you're into -- it's -- I think it's

15 probably still unlikely in that time frame, but, you

16 know, your second plant shown here needed is -- is

17 2031. I'm not -- I'm not prepared to say what the

18 suite of options would look like in 2031.

19   MR. BYRON WILLIAMS: Okay, fair enough.

20 Now, sir, just as we -- we think about the -- the

21 credible need pathway, in terms of what we have on --

22 on there right now, is we see All Gas, and -- and is --

23 is it one (1) of the more economic of the credible need

24 paths? Is -- is that, like, Plan 1 is represented in

25 the Manitoba Hydro schematic.

10225

1   Is -- is that one (1) of the more

2 economic of the need paths?

3   MR. PATRICK BOWMAN: For a fairly

4 significant duration, it's -- it's -- shows as

5 economic. I think for something like the rate impacts,

6 it -- it turns around eventually, if you think that

7 you're all your eggs in that basket, but for -- for a

8 reasonable scenario, it's -- it's pretty good. And the

9 main reason is because given the fact that you're

10 starting with a 5,000 megawatt system, you're only

11 adding a relatively small increment to it. The

12 increment you're adding is being driven by energy, and

13 so you're really adding drought backup.

14   That -- that 2024 addition is -- is

15 fundamentally drought backup. Gas is cheap to add if

16 you don't have to run it very often, and so it -- it

17 has a fairly good economics. If you get far enough

18 that you're adding gas you have to run very often, then

19 your economics change.

20   MR. BYRON WILLIAMS: Okay. And just to

21 keep on the credible need-based alternative for a

22 couple moments more, when we look at the All Gas Plan,

23 would it be fair to say that it is not only carrying

24 its costs, but it would be also be carrying sunk costs

25 associated with money already expended in terms of

10226

1 hydroelectric generating planning?

2   MR. PATRICK BOWMAN: In the financial

3 analysis, yes.

4   MR. BYRON WILLIAMS: Yes. And would it

5 be fair to say as well that it's like the other plans,

6 it's carrying the costs of Bipole III?

7   MR. PATRICK BOWMAN: I think you want

8 to be careful about saying what -- what plan is

9 carrying what. Bipole III is common to all plans.

10   MR. BYRON WILLIAMS: All plans,

11 including the All Gas, are carrying the costs of Bipole

12 III?

13   MR. PATRICK BOWMAN: All plans,

14 including All Gas, have the costs of Bipole III

15 included.

16   MR. BYRON WILLIAMS: Okay.

17   MR. PATRICK BOWMAN: That's my

18 understanding, yes.

19   MR. BYRON WILLIAMS: Mr. Bowman, I

20 don't know if you said these words or if I was just

21 paraphrasing you, so you'll correct me if I misstate

22 your words.

23   But did I hear words from you to the

24 effect that it's all about the transmission line in

25 your evidence this morning?

10227

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 1                  MR. PATRICK BOWMAN:   Though I may have

 2  overstated it, but the first decision is mostly about

 3  the transmission line.  It's -- you know, it starts

 4  from that.

 5                  MR. BYRON WILLIAMS:   And if we could

 6  turn to page 9 of -- of your PowerPoint from today.

 7

 8                       (BRIEF PAUSE)

 9

10                  MR. PATRICK BOWMAN:   Yes.

11                  MR. BYRON WILLIAMS:   In terms of the

12  key decisions that need to be made today, it's whether

13  to take up the Minnesota Power contract and whether to

14  take up the obligation for new transmission.

15                  Is -- is that your evidence?

16                  MR. PATRICK BOWMAN:   Yes.

17                  MR. BYRON WILLIAMS:   And, sir, is it

18  your evidence that if we do not start construction of

19  Keeyask this summer, being the summer of 2014, that we

20  lose all opportunities to build the transmission line?

21                  MR. PATRICK BOWMAN:   No, but... There's

22  room for some delays, we've heard, but not much.  And

23  having been involved in developing these type of -- of

24  projects, there is a mind-bogglingly long list of -- of

25  balls in the air, of juggling of rings in the circus
```

10228

1 that somebody is trying to orchestrate to make all

2 these pieces of the plan come together.

3   And -- and as -- as Morrison Park was

4 saying, when they do, you have to recognize it as

5 something different. And -- and Keeyask, shovel in the

6 ground this summer, is one (1) piece of that. You --

7 you -- it's not a buffet. It's a -- it's a coherent

8 option that -- that's set out.

9   It may be that there's reasons to move

10 it, but when you have a -- a contractor and a

11 counterparty and financing markets and Aboriginal

12 partners and licences and the federal government and --

13 and, you know, everything from, you know, unions to

14 governments moving in a certain direction and you've

15 managed to get this choir to sing together, it's --

16 it's very hard to say, Oh, wait, wait, wait I want -- I

17 want to change this one.

18   MR. BYRON WILLIAMS: Sir, and -- and

19 perhaps you misunderstood me.

20   I'm not suggesting necessarily changing

21 anything except for if -- if a decision was made that

22 more information was required and we would defer the

23 ultimate recommendation for a year, are you saying that

24 we would lose the interconnection opportunity?

25   MR. PATRICK BOWMAN: You would

10229
1 certainly adjust the path you're on for the short-term.

2 I -- I have no reason to -- to believe one (1) way or

3 the other on that except the same evidence you heard,

4 Mr. Williams.

5   MR. BYRON WILLIAMS: And the evidence

6 that you've heard is that there is a -- a two (2) year

7 window of opportunity, sir?

8   MR. PATRICK BOWMAN: Technically, I've

9 -- I've heard the evidence that contractual obligations

10 in -- in some of those moving parts that I described

11 have flexibility in them. But I don't think you want

12 to read that as an -- as an unlimited and -- and easy

13 ability to do that, in part because, you know, if we --

14 you've got counterparties. You've got people you're

15 trying to keep calm. You've got a whole long list of

16 people, like regulators, who you have on certain --

17 certain paths. And if -- if one (1) party says, Wait,

18 I've got an extra month and then I want the extra month

19 and I want to reconsider this. And -- and things can

20 unravel very, very quickly.

21   I'm not saying it won't happen. But I

22 think you -- you have to understand that if -- if

23 someone says, I need an extra year to get a shovel in

24 the ground because, you know, weather conditions

25 delayed me, counterparties will understand that. If

 1 you say ,I've got an extra year to get a shovel in the

 2 ground because everyone here is weak-kneed and -- and

 3 isn't ready to come together and -- but -- but don't

 4 worry, you stay under control, I'll -- I'll get this

 5 one (1) working. That -- that's a very different

 6 message.

 7   And I don't mean to be pejorative by

 8 using the phrase 'weak-kneed', but -- but I mean you --

 9 you do want to -- to understand just how many moving

10 parts you're affecting.

11   MR. BYRON WILLIAMS: So your evidence

12 is that if -- if anyone in Manitoba felt -- in the

13 decision making process felt that they needed more

14 information, that panic would ensue and everything

15 would unravel?

16   MR. PATRICK BOWMAN: Not necessarily,

17 but it would -- but I can't guarantee that it wouldn't.

18 And I -- I'm -- I'm -- and I'm relatively confident

19 that if you talked about some, you know, some shorter

20 time frame, it probably wouldn't. If you talked about

21 a longer time frame, the risks go up. And the reason

22 for your delay could make a difference as to what's

23 short term and what's long term.

24   MR. BYRON WILLIAMS: Okay. Fair

25 enough.   Now, is it your evidence that if we

10231

 1 follow a credible need-based pathway, that we will

 2 never again have an opportunity to build a transmission

 3 line?

 4   MR. PATRICK BOWMAN: No.

 5   MR. BYRON WILLIAMS: Okay.

 6   MR. PATRICK BOWMAN: And matter of

 7 fact, that's what I -- it -- it fits into what I call

 8 the 'Conawapa now or Conawapa never' sort of fallacy of

 9 looking at the lines. It's -- it's a little bit the

10 same thing. The difference is it involves a few more

11 categories.

12   MR. BYRON WILLIAMS: Okay. Thank you.

13 Mr. Bowman, apart from the -- your very esteemable

14 skills and the ever-esteemable Ms. Davies, for the

15 preparation -- for its preparation in this proceedings,

16 did the InterGroup team or the Manitoba Industrial

17 Power Users Group team retain a -- any additional

18 expertise with regard to conditions in the MISO

19 marketplace?

20   MR. PATRICK BOWMAN: No.

21   MR. BYRON WILLIAMS: And as I believe I

22 heard you say today, you yourself do not profess to be

23 an expert with regard to market conditions in the MISO

24 marketplace?

25   MR. PATRICK BOWMAN: No. Some -- some

10232
1 of the members have that experience, but I -- I don't.

2   MR. BYRON WILLIAMS: And does

3 InterGroup, as part of its ongoing work, follow

4 regularly the US Department of Energy Office of Energy

5 projects as it provides updates, in terms of energy

6 infrastructure investments in the United States?

7   MR. PATRICK BOWMAN: I don't. I can't

8 say if anyone else does.

9   MR. BYRON WILLIAMS: That would not be

10 something that the MIPUG team would regularly -- excuse

11 me, that the InterGroup team would regularly monitor?

12   MR. PATRICK BOWMAN: I can only say I -

13 - I don't.

14   MR. BYRON WILLIAMS: Okay. Does Ms.

15 Davies?

16   MR. PATRICK BOWMAN: I don't think Ms.

17 Davies does either, but...

18   MR. BYRON WILLIAMS: You were saying

19 Ms. Davies, that's not something she monitors either?

20   MR. PATRICK BOWMAN: To the best of my

21 knowledge, no.

22   MR. BYRON WILLIAMS: I wonder if we

23 could turn to slide 25 of your PowerPoint, please.

24 Under the -- I -- the third bullet, under the,

25 "Shifting sands," you make some reference to price/no

10233

 1 price.

 2   And I take it there, Mr. Bowman, you're

 3 referring to carbon prices?

 4   MR. PATRICK BOWMAN: Yes.

 5   MR. BYRON WILLIAMS: And were you here

 6 for the evidence of Dr. Gotham when he described the

 7 carbon price issue, in his view, as a binary issue

 8 rather than a probability issue, in that the choices

 9 are zero or one (1)?

10   MR. PATRICK BOWMAN: Yes.

11   MR. BYRON WILLIAMS: And, sir, just so

12 I can understand, in terms of the financial analysis

13 that you undertook either in your pre-filed evidence or

14 in your updated evidence, would you have treated the

15 carbon price issue as a binary issue for the purposes

16 of your analysis?

17   MR. PATRICK BOWMAN: In our original

18 filing, I don't -- I -- I can't think of where we would

19 have treated it as either. To the extent there were

20 inputs of export market prices, they were -- they were

21 built into scenarios that we would have worked with,

22 but it's not like we were making a decision on those.

23   Now, we have been interested in some

24 other information that's been filed, but -- but, no, in

25 the original evidence, no.

10234

 1   MR. BYRON WILLIAMS: Okay. And you're

 2 aware of the conclusion by MNP, different from Dr.

 3 Gotham's, that there was a 50/50 probability of carbon

 4 prices or -- or no price -- no carbon prices?

 5   MR. PATRICK BOWMAN: I wasn't here for

 6 that testimony. I recall reviewing the report. And I

 7 recall that being what people indicated they -- they

 8 testified to, but I wasn't here for it.

 9   MR. BYRON WILLIAMS: Okay. I wonder if

10 we could turn to the revised MIPUG evidence of February

11 28th, 2014, page C-8. And Figure 1-- oh, there it is.

12   MR. PATRICK BOWMAN: Oh, yeah.

13   MR. BYRON WILLIAMS: Mr. -- Mr. Bowman,

14 you've -- you've gone through this before, but -- and I

15 don't know if this will assist in an earlier inquiry

16 Dr. Grant made to one (1) of the CAC (Manitoba)

17 witnesses, but I'll see whether it -- it does or not.

18   But if I go about six (6) rows over,

19 what you're showing in the yellow block there is the

20 impact of government charges on the NPV calculation

21 which in this example is -- is comparing Plan 1 against

22 Plan 14?

23   MR. PATRICK BOWMAN: Yes.

24   MR. BYRON WILLIAMS: And -- and just to

25 remind everyone, this was based upon the original

 1 business case analysis of Manitoba Hydro and would have

 2 excluded the capital estimate changes, as well as DSM

 3 Scenario 2?

 4   MR. PATRICK BOWMAN: And -- and any

 5 other updates since the original, yes.

 6   MR. BYRON WILLIAMS: Yes, thank you.

 7 And so what you're showing here is, in terms of the

 8 benefit accruing to government based upon at least this

 9 comparative analysis, would I be correct in suggesting

10 that I would calculate that as being about $1.776

11 billion, being the difference between the 4.64 billion

12 and the 2.864 billion?

13   MR. PATRICK BOWMAN: Yes.

14   MR. BYRON WILLIAMS: And then if we go

15 over two (2) rows, I'll get to the -- the calculation

16 of the benefit to the First Nation Partners.

17   Is that right?

18   MR. PATRICK BOWMAN: As it's presented

19 in the -- the -- Hydro's IFF-style financial

20 statements.

21   MR. BYRON WILLIAMS: So that would not

22 include jobs associated with construction, correct?

23   MR. PATRICK BOWMAN: No.

24   MR. BYRON WILLIAMS: And it wouldn't

25 include any business opportunities?

10236

 1   MR. PATRICK BOWMAN: You're correct.

 2   MR. BYRON WILLIAMS: And it wouldn't

 3 inter -- include any opportunities post-construction,

 4 in terms of operational jobs?

 5   MR. PATRICK BOWMAN: You're -- you're

 6 correct on all of those counts.

 7   MR. BYRON WILLIAMS: What --

 8   MR. PATRICK BOWMAN: I -- I can't even

 9 guarantee it includes all economic or financial

10 benefits, too. I only know that this is alive and it

11 shows up as non-controlling interest.

12   MR. BYRON WILLIAMS: Okay.

13   MR. PATRICK BOWMAN: There is -- there

14 is different ways that one represents those deals in --

15 in different aspects within the -- the -- within the

16 subsidiary partnership.

17   MR. BYRON WILLIAMS: Given those

18 limitations, what -- what it in essence would appear to

19 reflect is a net present value of the investment

20 opportunity.

21   Would that be fair?

22   MR. PATRICK BOWMAN: Well, a net

23 present value of the non-controlling interest. The

24 difference between fourteen (14) and one (1), yes.

25   MR. BYRON WILLIAMS: Okay. And in

1 terms of that net present value, you'll agree subject

2 to check, that would be based upon the preferred share

3 option rather than the common unit share option,

4 subject to check?

5   MR. PATRICK BOWMAN: My understanding

6 based on the IRs that were filed is that this only

7 includes a Keeyask and only in respect of a preferred

8 share option. We were not able to get an answer that

9 satisfied us on how Conawapa was dealt with. It

10 doesn't appear that the numbers change between

11 scenarios that have Conawapa and don't. We're told by

12 -- in an IR that Conawapa benefits are included at some

13 level, but obviously for negotiating reasons they --

14 they weren't identified and -- and we weren't told what

15 row they show up in.

16   It wouldn't appear they're in this row,

17 though. So I think it's only Keeyask. I -- I

18 understand it is -- it is based on a preferred share

19 option, but it's -- I can tell you what line it comes

20 from. It would be better to have Manitoba Hydro tell

21 you what exactly is in that line.

22   MR. BYRON WILLIAMS: I'll maybe get Mr.

23 Wojczynski to whisper in my ear. Or maybe just leave a

24 note, Mr. Wojczynski. The difference here, we would

25 calculate the calculated benefit to the First Nation

10238

1 Partners here, recognizing the limitation of this

2 analysis as being 56 million as -- in terms of NPV?

3   MR. PATRICK BOWMAN: Yes.

4

5   (BRIEF PAUSE)

6

7   MR. BYRON WILLIAMS: Mr. Bowman, we can

8 go to slide 63 of your PowerPoint, if you would.

9

10   (BRIEF PAUSE)

11

12   MR. BYRON WILLIAMS: And at a couple of

13 times in your presentation today, sir, you talked about

14 the potential for government charges relief?

15   MR. PATRICK BOWMAN: Yes. Yes.

16   MR. BYRON WILLIAMS: And you've

17 discussed examples from other jurisdictions, whether

18 from Mayo or -- or elsewhere.

19   Is that fair?

20   MR. PATRICK BOWMAN: Yeah, not they --

21 they weren't precisely forgiveness or -- or relief from

22 government -- government charges. They were different

23 ways that a government and a Crown utility can work

24 together to address adverse rate pressures that can

25 arise from a project that is otherwise good for the

10239

1 territory as a whole.

2   MR. BYRON WILLIAMS: And, Mr. Bowman,

3 just so my client understands your presentation here,

4 do you have a specific mechanism and value of relief

5 that you're -- you're contemplating, or is this more a

6 conceptual?

7   MR. PATRICK BOWMAN: This is

8 conceptual. It's a -- it's an easy possibility. One

9 can come up -- when we've designed these type of models

10 for other government we've gone through dozens of

11 options. They've tended to not gravitate to this

12 approach, but mostly because those other jurisdictions

13 don't tend to take much in government charges.

14   So they don't really have an easy option

15 like this where, as I said, with the stroke of a pen

16 somebody can say, I -- I won't charge that fee anymore.

17 They've had to use different models that are perhaps a

18 bit more complicated.

19   MR. BYRON WILLIAMS: And just for --

20 just to assist my client, Mr. Bowman, given your

21 experience in -- in looking at different options, could

22 you outline a few for us?

23   MR. PATRICK BOWMAN: Sure.

24

25   (BRIEF PAUSE)

10240

 1   MR. PATRICK BOWMAN: Actually, we -- we

 2 have, at times in the past, prepared a bit of a -- of

 3 an outline of some different examples. I can do them

 4 top of my head. If -- if you want me to -- to cut and

 5 paste that into something for you, I -- I can do that.

 6   MR. BYRON WILLIAMS: If you could do it

 7 by way of undertaking if that's --

 8   MR. PATRICK BOWMAN: Sure. The -- the

 9 best example I'd give you though, which I just want to

10 highlight here, is we've used it before in Manitoba

11 with respect to the original Bipole I and II. You

12 know, the -- the -- when -- when Manitoba Hydro went

13 north, transmission was needed. It was an

14 extraordinary cost to that project. And the project

15 couldn't carry that transmission cost. So the -- the

16 trans -- the -- the first -- you're building your first

17 hydro dam, and your second really relies on this

18 transmission, but you need to bring the transmission in

19 a -- in a lump.

20   And that was -- I -- I don't know how

21 many people know the history, but that was -- was built

22 by the Government of Canada through AECL, who -- who

23 leased it back to Hydro at extremely favourable rates,

24 even -- even negative rates for a period of time. That

25 -- I have a bit of that history laid out nonetheless.

10241

1 And it was only, you know, fairly recently in -- that,

2 in the context of the time frames we're talking about

3 here, that Hydro finally bought that out.

4   MR. BYRON WILLIAMS: Okay. Thank you.

5 And, Mr. Bowman, if -- if you don't mind, because for

6 food for thought, our clients would appreciate just to

7 see a -- a bit of the work that -- that if it's not too

8 much additional work. And so I would ask, through your

9 legal counsel by way of undertaking, if you could

10 provide a -- a brief outline of potential options that

11 might be canvassed. And -- and if you can, again,

12 without too much work, provide some citations or

13 references?

14

15   (BRIEF PAUSE)

16

17   MR. ANTOINE HACAULT: I think we can do

18 that except for it probably would be more by way of

19 examples. I'm aware of Mr. Bowman's work in the past.

20 And there are a number of different examples that

21 exist, one (1) of which he just talked about. So for

22 the -- if that's acceptable to your client, Mr.

23 Williams, we would undertake to provide a brief summary

24 of various examples of government support, or

25 intervention in projects to deal with rate pressures.

10242

1 --- UNDERTAKING NO. 144:   MIPUG panel to provide

2   brief summary of various

3   examples of government

4   support or intervention in

5   projects to deal with rate

6   pressures; also to look

7   into examples of relief to

8   ratepayers and, if

9   available publicly, relief

10   between government and

11   other stakeholders,

12   including First Nation

13   government

14

15 CONTINUED BY MR. BYRON WILLIAMS:

16   MR. BYRON WILLIAMS: And, Mr. Bowman, I

17 took it from your evidence the -- the relief could be

18 directed at -- ratepayers is one (1) element of the

19 distributional relief.

20   That was your thinking?

21   MR. PATRICK BOWMAN: Yes.

22   MR. BYRON WILLIAMS: Notionally, it

23 could be devot -- directed, as well, at -- if there

24 were other distri -- distributional concerns, for

25 example, as between government and -- and First Nation

10243

1 governments, notionally that type of mechanism could be

2 used, as well?

3   MR. PATRICK BOWMAN: Yes. The examples

4 that I have readily available I don't believe cover

5 that. I've been involved in some -- some of that

6 nature. But, you have -- I think that -- I think it

7 could it be -- it could be thought of as a

8 distributional question and it may be worth look at

9 some history about the tools that are used on that.

10   MR. BYRON WILLIAMS: And again, Mr.

11 Bowman, I know Ms. Davies wants to get working on

12 closing arguments, so I don't want to make too much

13 work.

14   But if you have looked at using it for

15 benefits not just for ratepayers, but for other

16 stakeholders, would you be prepared to look at that, as

17 well?

18   MR. PATRICK BOWMAN: We've used it very

19 specifically looking at options for First Nations, a

20 matter of fact. I -- I would just be hesitant that I -

21 - I can only think of one (1) of those that is -- that

22 I know the entire record is pubic. The others --

23 they're -- they're private transactions between a

24 government and First Nation. I'm -- I'm -- it would

25 take a bit more time, if not a lot more time, to -- to

10244
 1 confirm what all I could provide on those. Though --

 2 though it's -- it's possible I could pretty quickly

 3 find -- find the one (1), but I -- I could look into it

 4 if you like.

 5   MR. BYRON WILLIAMS: Okay. And just so

 6 -- just in terms of confirming the undertaking, you

 7 will look into examples of ratepayer -- or relief to --

 8 to ratepayers and, if -- if it is available publicly,

 9 relief between government and -- and other

10 stakeholders, including First Nation government. And

11 recognizing your time limitations, Mr. Bowman.

12   Is that satisfactory?

13   MR. PATRICK BOWMAN: Yes.

14   MR. BYRON WILLIAMS: It's all one (1).

15   Mr. Bowman, I think I heard you use

16 words -- I think I heard you use words today of the

17 'sunk cost fallacy'.

18   Do you recall using words to that

19 effect?

20   MR. PATRICK BOWMAN: It's possible.

21   MR. BYRON WILLIAMS: That's a term

22 you're familiar with, Mr. Bowman?

23   MR. PATRICK BOWMAN: Yes.

24   MR. BYRON WILLIAMS: What does it mean?

25   MR. PATRICK BOWMAN: It means that at

 1 times when making decisions, people do irrational

 2 things because they've already committed to the steps

 3 up to this point in time, even though those -- those

 4 efforts or monies or whatever else are sunk and -- and

 5 they can't be recovered in any event. You have to make

 6 the best decision going forward.

 7   MR. BYRON WILLIAMS: Okay. Just -- I

 8 hope we'll move fairly quickly through these next

 9 questions, but we may jump around a bit. If we could

10 to slide 39 of your evidence, on the right-hand side of

11 this PowerPoint, Mr. Bowman, we see the statement:

12   "Customers generally better off with

13   bigger plans."

14   MR. PATRICK BOWMAN: Yes.

15   MR. BYRON WILLIAMS: And just so I'm --

16 we're precise in -- in knowing what you mean about

17 bigger plans, are you referring to bigger DSM plans,

18 sir?

19   MR. PATRICK BOWMAN: I -- I meant in

20 the stepping between a base, a Level 1, a Level 2, a

21 Level 3.

22   MR. BYRON WILLIAMS: Okay. You weren't

23 making any judgment in terms of whether customers are

24 better off with Plan 14 versus Plan 1?

25   MR. PATRICK BOWMAN: No, this slide is

10246

1 about DSM.

2   MR. BYRON WILLIAMS: Okay. So this --

3 and what we can take from that statement is your

4 conclusion that customers tended to be better off with

5 the bigger plans as compared to the base DSM scenarios?

6   MR. PATRICK BOWMAN: Right. And it's

7 not universal if you look at the -- the front end of

8 the plans or -- or even in respect of Level 1, in

9 respect of a quite -- quite long period of time before

10 the NPVs turned around. But -- but, yes, in -- in

11 general the lines would -- would move because to good

12 with -- as you moved up the levels.

13   MR. BYRON WILLIAMS: Mr. Bowman, you --

14 you talked a fair bit today about considerations in --

15 in protecting Conawapa -- the in-service?

16   MR. PATRICK BOWMAN: Yes.

17   MR. BYRON WILLIAMS: And I think you

18 clarified with -- with in conversations with My Learned

19 Friend, Mr. Hacault, that you would certainly want to

20 use some prudence in the level of expenditures to

21 protect the in-service?

22   MR. PATRICK BOWMAN: I think I used the

23 word 'minimize'. You would -- you protect -- the very

24 nature of 'protect' is only do today what I need to do

25 today so that I can maintain an in-service date and

10247

1 survive till tomorrow.

2   MR. BYRON WILLIAMS: And in terms of

3 the in-service date that you're contemplating, Mr.

4 Bowman, are you contemplating a 2026 in-service date to

5 -- to protect, or perhaps are you, like Mr. Harper, and

6 looking farther out to the 2030 date?

7   MR. PATRICK BOWMAN: I'm not ruling out

8 either, although I notice on the latest Manitoba Hydro

9 Exhibit 192, it doesn't even -- it -- it makes a point

10 of saying 20 -- each of the dates, 2026, '27, '28, '29.

11 So it's not a matter of here or there. It's a -- it's

12 a process between -- I wouldn't rule out either, mostly

13 because I think the Conawapa business case we have

14 right now is at best, you know, indicative. It -- it's

15 not backed by -- by anything, as -- as one (1) of the -

16 - one (1) of the graphs have -- Mr. Hacault had me put

17 up showed.

18   So the thing we know from some of the

19 exhibits that have been filed, particularly -- I have

20 written down here MH-95, it may not be right, but it

21 was the presentation that went to the Manitoba Hydro

22 Electric Board. We don't have to pull it up, but it --

23 it was based on consistently holding Conawapa to a 2026

24 as opposed to -- with different levels of DSM as

25 opposed to the analysis we've seen, which tends to

 1 defer it -- the DSM, but the numbers weren't -- weren't

 2 different enough that it's a -- it's a given that you'd

 3 want to defer.

 4   Under the current numbers, def -- defer

 5 is probably better, but it's not -- I don't -- I don't

 6 think it's a given, and I think the current numbers are

 7 -- are -- have enough room for movement in them that

 8 you may still find, if -- if Conawapa's a good project,

 9 2026 is a -- is a good in-service date.

10   MR. BYRON WILLIAMS: Based -- based

11 upon the current numbers, you indicated that deferral

12 would seem like the better choice past 2026?

13   MR. PATRICK BOWMAN: You know, Mr.

14 Williams, I -- I can't think that I have seen what I

15 would call a complete consistent head-to-head

16 comparison under all the same assumptions of Conawapa26

17 versus Conawapa31. It's possible it's in the record.

18   I have a sheet in which I've been

19 tracking the economic NPVs, and it's to the point I

20 need a magnifying glass to -- to see them all, but I

21 can't recall having seen one that was complete head-to-

22 head, but the number that I have for Conawapa 2026 with

23 -- with Level 1 DSM is close enough to being comparable

24 to the Conawapa20 --

25   MR. BYRON WILLIAMS: Okay.

10249

1   MR. PATRICK BOWMAN: -- with Level 1

2 DSM. I -- I want to be careful quoting these, but the

3 -- the numbers that I have seen, you're still in the

4 same range of economics with Conawapa26 versus 31, and

5 I think -- I think it will play out on other factors,

6 rather than the economics we know today, like if you

7 have a counterparty that has needs of a certain date,

8 as well.

9   MR. BYRON WILLIAMS: And, Mr. Bowman,

10 you talked about it near the end of -- in terms of your

11 conversation with Mr. Hacault. In terms of the WPS

12 sale, have you reviewed any information on the public

13 record that would lead you to give an unqualified

14 endorsement to it?

15   MR. PATRICK BOWMAN: No.

16   MR. BYRON WILLIAMS: Just one (1)

17 second, Mr. Chair.

18

19   (BRIEF PAUSE)

20

21   MR. BYRON WILLIAMS: Those are all our

22 questions. Ms. Desorcy has asked me, Mr. Bowman, as

23 usual, we've enjoyed all your analysis, but your

24 analysis from pages 39 through 48 on -- on DSM, our

25 client's particularly appreciate of, because she feels

10250

1 that it's really assisted in upping the level of

2 analysis on that particular issue, so she thanks you

3 for that.

4

5   (BRIEF PAUSE)

6

7   MR. BYRON WILLIAMS: Sorry, I didn't

8 mean we're -- we're done. I'm sorry, Mr. Chair. I was

9 just visiting with Mr. Wojczynski. I apologize. I'm

10 not going to bill for that time.

11   THE CHAIRPERSON: Thank you, Mr.

12 Williams.

13   MR. ED WOJCZYNSKI: I might.

14   THE CHAIRPERSON: I believe that I

15 don't see anybody from -- from GAC here, so I would --

16 I'm assuming that there are no questions. Can you

17 confirm that, Mr. Peters?

18   MR. BOB PETERS: I can confirm that,

19 Mr. Chairman. I did have occasion to speak briefly

20 with Dr. Miller, and he indicated they had no questions

21 for the MIPUG witness.

22   THE CHAIRPERSON: Thank you for that,

23 Mr. Peters. Me. Monnin, s'il vous plait.

24

25 CROSS-EXAMINATION BY MR. CHRISTIAN MONNIN:

10251

 1   MR. CHRISTIAN MONNIN: Merci, M.

 2   President. Surprisingly enough I do have one (1)

 3   question. If you could take us to slide 37 of the

 4   presentation, please?

 5   Mr. Bowman, we touched upon this earlier

 6   when we were, as the vernacular goes, offline. The

 7   last bullet here. You -- it reads:

 8   "Issue is not present in La Capra

 9   approach or Harper approach,

10   parentheses] (reads as follows: other

11   limitations exist)."

12   First, do those limitations that exist,

13   is that in reference to the Capra -- La Capra's

14   approach or Harper's approach, or both?

15   MR. PATRICK BOWMAN: Both.

16   MR. CHRISTIAN MONNIN: And with respect

17   to La Capra, could you please provide a little bit of

18   elaboration on what those limitations are?

19   MR. PATRICK BOWMAN: Yes, I'll -- I'll

20   keep it brief, because I think they noted them

21   themselves. For the visual people in the room, it

22   might be easiest to have one (1) of their S-curves up,

23   but I'm not sure I have it handy.

24   But La Capra drew S-curves in a

25   different way than Manitoba Hydro, and it solves a

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1 number of problems, because what La Capra did was

2 rather than say, I will draw a vertical line through

3 All Gas's ref/ref/ref and let every plan vary around

4 that, they started by taking the differential between

5 All Gas under the same set of assumptions, and each

6 given plan under the same set of assumptions, and said

7 I'm only going to map the difference between the two

8 (2) plans.

9   That has benefits because it can show

10 you the outcomes of various future scenarios, and it

11 can help elaborate that even if you have an S-curve of

12 Hydro style that is fully dominant to the other S -- to

13 another S-curve, that fully to the right, you can still

14 have future situations where the one (1) that looks

15 dominant is inferior.

16   Hydro style only stacks from best to

17 worst of the overall performance of the plan. It

18 doesn't necessarily match up each dot on the graph with

19 -- horizontally with another dot of the same set of

20 assumptions. So La Capra's has that benefit.

21   Two (2) downsides exist to the way La

22 Capra did it, and I think both these were mentioned.

23 One (1) is that in order to draw an S-curve of the La

24 Capra style, you need something as a vertical line,

25 effectively, and La Capra chose to make that vertical

 1 line All Gas.

 2   It's -- as long as you know what you're

 3 looking at, that's mathematically okay. You want to be

 4 careful, though, about not interpreting that to say All

 5 Gas has no risk, right? All Gas does have its own S-

 6 curve that has risk of -- of ups and downs, but they --

 7 they neutralize that out by making it vertical.

 8   So that's -- that's one (1) of the

 9 limitations of the way that La Capra did it, is it --

10 it has room for misinterpretation about whether All Gas

11 has risk, and -- and I recall them mentioning the same

12 thing.

13   The second thing about La Capra's that

14 is a -- I -- I won't say it's a limitation, but it's a

15 -- it's a -- a caution is -- I think was raised fully

16 by Dr. Borison, is that -- and -- and La Capra

17 responded to this. They've drawn a graph that has

18 meaningful S-curves, but you don't necessarily want to

19 use that type of graph to make a regret-based decision

20 making. I think Dr. Borison called them 'regret-based

21 analysis', and I'm not sure that's quite correct.

22   The analysis is just the analysis. It's

23 how you use it in a decision that turns it into a

24 regret decision or an optimization decision or the

25 like. And La Capra's graphs can support making a

10254

1 decision based on -- on avoiding maximum regret;

2 avoiding the plans that have the maximum downside, in

3 other words.

4   Regardless as to upside, I'm only going

5 to look at that chasm of the worst case over there, and

6 whatever I do, I'm not going to pick that plan, or I'm

7 going to pick the one that has the -- the short -- the

8 smallest chasm regardless of the upside. That would be

9 a -- a wrong way to make a decision. I don't think La

10 Capra is advocating that. I -- I think Dr. Borison was

11 correct in -- in not advocating that. I -- I -- but I

12 -- but -- but La Capra's graphs are the same graphs you

13 would draw if you were advocating that type of

14 approach.

15   So it's a matter of how you -- you use

16 them. It has this -- this -- no matter how you use

17 them, you need to -- need to be careful. Those are my

18 comments in regards to La Capra's graphs.

19   MR. CHRISTIAN MONNIN: Thank you, and

20 just so I'm clear. So the first is -- is limitation

21 which, if I understand your evidence, is limitation

22 which La Capra raised themselves. The second is one

23 that was cited by -- by Dr. Borison.

24   Are there any other limitations that

25 come to mind, or are they -- in answer to that one, are

10255

1 any of these limitations ones which you've identified

2 personally?

3   MR. PATRICK BOWMAN: I -- I have not

4 identified any other limitations. I would just add to

5 your preface that -- actually, both of these La Capra,

6 I think, dealt with and -- and noted. They're not

7 advocating use for regret decision making, and they're

8 also not suggesting that All Gas has no risk.

9   They -- they acknowledge both of those.

10 I'm just saying that when we went through the economics

11 -- Hydro's economics, when we identified the problem

12 that -- that is, I think -- and described sufficiently

13 here that I don't intend to go into it. We -- we

14 identified about four (4) different ways around them.

15   One (1) of them was the La Capra

16 approach. We elected not to go that route, simply

17 because it -- it was -- it had these limitations and --

18 and we thought that, given we had the financial tools,

19 we could -- we could just move directly to that and --

20 and do our analysis on the financial.

21   Now, La Capra was asked to do analysis

22 on both sections, so they had to find a way to address

23 the economic side. And I think they -- they did it in

24 a reasonable manner as long as you know what you're

25 looking at.

10256

 1   MR. CHRISTIAN MONNIN: Thank you.

 2 Those are all my questions.

 3   THE CHAIRPERSON: Merci, Me. Monnin.

 4   Now, Manitoba Hydro, Ms. Boyd?

 5

 6 CROSS-EXAMINATION BY MS. MARLA BOYD:

 7   MS. MARLA BOYD: Thank you. Good

 8 afternoon. Good afternoon, Mr. Bowman. I wanted to

 9 start just by spending a minute talking about Monte

10 Carlo simulation and scenario analysis that you touched

11 on this morning.

12   On page 1-10 of your report, you stated

13 that:

14   "Hydro's approach to scenario

15   analysis is appropriate and a better

16   tool for the NFAT that what -- than

17   what might otherwise appear to be the

18   more advanced analytical techniques,

19   like Monte Carlo simulation."

20   Do you recall that?

21   MR. PATRICK BOWMAN: Yes.

22   MS. MARLA BOYD: Would you agree that

23 in contrast to Monte Carlo simulation, that

24 probabilistic scenario analysis or probability --

25 probability tree analysis can rely on fewer runs

10257

 1 typically to get an equivalent level of accuracy?

 2   MR. PATRICK BOWMAN: It can rely on

 3 fewer runs, I would say, to get an acceptable level of

 4 accuracy. I'm -- I'm not sure if it would be

 5 equivalent, but for -- certainly, to get to acceptable.

 6   MS. MARLA BOYD: And on page 3-16 of

 7 your report you stated that:

 8   "Under scenario analysis, extensive

 9   input and output data can be provided

10   for each scenario that permits error

11   checking, confidence, and additional

12   insight as to how key variables

13   interact."

14   Do you recall that?

15   MR. PATRICK BOWMAN: Oh, I recall it in

16 spades. My chiropractor thanks you.

17   MS. MARLA BOYD: Would you agree that

18 probabilistic scenario analysis often provides more

19 transparency than Monte Carlo simulations?

20   MR. PATRICK BOWMAN: Yes, absolutely,

21 and -- and especially in a regulatory forum. If -- it

22 would be different if you were running a university

23 department or something where a bunch of people could

24 gather around a computer monitor and rerun scenarios

25 and -- and discuss them or something of that nature.

10258

 1   But if you've got a file -- some

 2 evidence and people need to be able to cross-examine

 3 you on it, Monte Carlo simulation is a very difficult

 4 way to find out if you've -- if you've done everything

 5 correctly, to be tested, to -- to have a proper cross-

 6 examination and evidence.

 7   MS. MARLA BOYD: Thank you. If we

 8 could just pull up slide 10 of your presentation from

 9 today.

10   You raised the issue actually in your

11 testimony; in your written evidence as well. You made

12 reference to Dr. Loni (phonetic) Magee from the

13 2010/'11 GRA and noted that failing to pursue expansion

14 at a time when it was advisable represents just as real

15 and potentially just as large a risk as pursing an

16 action that would later prove inadvisable, correct?

17   MR. PATRICK BOWMAN: Yes.

18   MS. MARLA BOYD: Is it fair to

19 characterize your evidence as noting similar risks

20 today from a failure to act in proceeding with the

21 construction of Keeyask?

22   MR. PATRICK BOWMAN: Yes.

23   MS. MARLA BOYD: And would you say the

24 same for failing to protect Conawapa as an option for

25 future consideration?

 1   MR. PATRICK BOWMAN: Yes, within

 2 certain bounds. I know it's not an unlimited

 3 chequebook, something like Conawapa, but -- but, yes.

 4   MS. MARLA BOYD: I don't know if you

 5 were present when the witnesses from the four (4)

 6 Keeyask Cree Nations gave evidence, but they did speak

 7 about the benefits of Keeyask and -- and Conawapa for

 8 their communities.

 9   Do you -- are you aware of that?

10   MR. PATRICK BOWMAN: Yes, I was

11 present.

12   MS. MARLA BOYD: Would you agree that a

13 risk of not proceeding with Keeyask or not protecting

14 Conawapa would be the loss of the capacity building and

15 other benefits that they spoke of?

16   MR. PATRICK BOWMAN: Yes. Loss through

17 this route. I'm not saying there couldn't be made up

18 another route, but -- but certainly loss. Again, I'm

19 going back to the -- the very nicely laid out theory

20 from Morrison Park that the bird in the hand, in

21 regards to that -- that option for capacity building

22 and -- and other -- other benefits that they

23 highlighted, yes.

24   MS. MARLA BOYD: Thank you. Turning to

25 your comments regarding the load forecast, on page 311

10260

1 in your evidence you suggest that there should have

2 been explicit consideration of scenarios that result in

3 a much higher or quicker developing for future

4 industrial load.

5   Is that correct?

6   MR. PATRICK BOWMAN: Yes.

7   MS. MARLA BOYD: And in considering

8 forecasting of net load, by which I mean load net of

9 DSM, throughout the course of this hearing Hydro's

10 provided information on three (3) levels of DSM and is

11 in the process of pursuing programs which approximate

12 Level 2 DSM.

13   Is that your understanding?

14   MR. PATRICK BOWMAN: My understanding

15 is Hydro's filed three (3) levels of DSM and that DSM

16 Level 2 is the -- the best of the bunch. I only -- I -

17 - I haven't spent as much time with the latest green

18 covered DSM plan to make sure that -- whether that is

19 Level 2 or the like. And -- and I have cautions about

20 whether all of the measures in there can be achieved.

21   I've sat through too many hearings

22 before this Board about inverted rates and conservation

23 rates and -- and debates about them to think that

24 that's a nice, low cost way of saving a lot of power.

25 There are -- there are other flip sides to that

10261

 1 argument that have been persuasive in the past. So I -

 2 - I'm only saying will Level 2 be achieved if it

 3 involves conservation rates, if it involves industrial

 4 co-generation? I think it's probably early days to

 5 know that -- that those can be put -- put into place.

 6   MS. MARLA BOYD: You sort of

 7 anticipated my next question, that there would be

 8 uncertainty in forecasting load and net load, correct?

 9   MR. PATRICK BOWMAN: Yes, and -- and

10 DSM, yes.

11   MS. MARLA BOYD: And would you consider

12 it prudent then for Manitoba Hydro to undertake

13 sensitivities with higher loads in its long-term

14 resource planning in recognition of that uncertainty?

15   MR. PATRICK BOWMAN: Oh, absolutely.

16 As a matter of fact, that was one (1) of my

17 recommendations.

18   MS. MARLA BOYD: And would you also

19 consider it prudent on the part of Manitoba Hydro to

20 recognize uncertainty with respect to achieving

21 dramatically higher levels of DSM in -- for long-term

22 resource planning?

23   MR. PATRICK BOWMAN: You use the word

24 'dramatically'. I think if someone wants to put in

25 dramatically higher levels of DSM, you would need to

 1 somehow represent that they're dramatic. And -- and I

 2 assume you're using the word 'dramatic' to mean -- to

 3 be redundant with saying there's some uncertainties

 4 associated with them.

 5   I don't -- I -- I can't say for sure

 6 whether the DSM plans that Hydro has proposed are

 7 dramatic. I can tell you a few of the measures that

 8 are in there that are significant components of DSM

 9 Level 2, I would encourage people to view with some

10 uncertainty.

11   MS. MARLA BOYD: You noted in your

12 evidence on page D-11 that one (1) of the benefits of

13 larger scale plans is that it offers protection and

14 flexibility for future load uncertainty.

15   Do you recall that?

16   MR. PATRICK BOWMAN: Yes.

17   MS. MARLA BOYD: And by 'larger scale

18 plans', are you referring to those with hydroelectric

19 generation?

20   MR. PATRICK BOWMAN: Yes.

21   MS. MARLA BOYD: And in terms of

22 uncertainty in future load, can you offer any comment

23 on the typical size of load that a new industrial

24 customer could be expected to add?

25   MR. PATRICK BOWMAN: No.

10263

 1   MS. MARLA BOYD: I appreciate there's

 2 not a typical one, but --

 3   MR. PATRICK BOWMAN: No, I don't think

 4 -- I think you have to understand there -- there is no

 5 typical. I think it also can depend on -- on the

 6 jurisdiction. It's not like you can look across the --

 7 the globe to get a sense of that. We had evidence

 8 before this Board many years ago by a fellow who spent

 9 a lot of his career working with aluminum plants. Many

10 of those aluminum plants are larger than the entire

11 Manitoba load, for example.

12   I -- I don't think someone would say --

13 even though, you know, that may be a type of load that

14 Quebec may need to think about sometimes, I don't think

15 many people would think that you're going to get an

16 aluminum plant knocking on your door saying, I'd like

17 to double your load, please. I just don't think they'd

18 look at Manitoba as a credible place for something like

19 that.

20   So, you know, within a range of the

21 loads that are here, it's probably credible. But I

22 don't -- I don't have a -- a typical example.

23   MS. MARLA BOYD: In the context of

24 Manitoba Hydro including in its load forecast a PLIL of

25 a hundred gigawatt hours per year, would you agree that

10264

 1 a new industrial load could consume several years of

 2 that PLIL if it were to arrive in the province?

 3   MR. PATRICK BOWMAN: Yes, and -- and I

 4 would say even in contrast to some of the evidence

 5 that's been here, not only could it do that, it could

 6 do it on -- on what I would call fairly -- fairly short

 7 notice of certainty, yes.

 8   There's a -- there's been some evidence

 9 -- and I -- I apologize if I'm getting beyond your

10 question. There's been some evidence that you know a

11 long time in advance before these industrial customers

12 come around. You know a long time in advance that they

13 could come around. But how long do you know in advance

14 that they will come around?

15   I -- I don't think the jurisdictions

16 that are busy planning for Keystone XL are busy

17 thinking they have a lot of time where -- that they

18 have certainty. I don't think the developer of

19 Keystone XL thinks they have certainty. But if they

20 get a green light, whenever they get a green light,

21 it's actually a surprisingly short period of time

22 before they'll be drawing fairly substantial loads on

23 their -- on their route.

24   So just because you can -- just because

25 somebody's done an environmental review or can draw it

10265

1 on a map doesn't mean you can all of a sudden know as

2 a utility how you run off and plan for that.

3   MS. MARLA BOYD: And I just want to be

4 sure that we understand your position regarding DSM and

5 the benefits it has for the 750 megawatt line.

6   You took us through to your slides 45

7 through 48 today with the various diagrams for DSM with

8 a number of the loads.

9   MR. PATRICK BOWMAN: Yes.

10   MS. MARLA BOYD: Would you agree that

11 Plan 5 shows the most benefit from Level 2 DSM among

12 the plans that you've shown us there?

13   MR. PATRICK BOWMAN: Yes.

14   MS. MARLA BOYD: And would you

15 attribute that enhanced benefit to the 750 megawatt

16 line?

17   MR. PATRICK BOWMAN: Yes, I think -- I

18 think subject to the comments I made to Dr. Grant,

19 which is this is fairly new information and I've been

20 surprised once going through it and I'd really like to

21 look at it over time, it -- it does seem -- it would

22 seem to bear out to me that -- that the line provides

23 significant advantage to -- to DSM scenarios, yes.

24   MS. MARLA BOYD: Thank you very much,

25 Mr. Bowman. Those are our questions. Thank you.

10266

1   THE CHAIRPERSON: Thank you, Ms. Boyd.

2   Mr. Peters, please.

3

4 CROSS-EXAMINATION BY MR. BOB PETERS:

5   MR. BOB PETERS: Yes, thank you. Good

6 afternoon, Mr. Bowman. Mr. Bowman, in your scope of

7 work, one (1) of the matters tasked to the MIPUG

8 witnesses was to perhaps try to, in my words, take the

9 pulse of the interests of the general service customers

10 at large, not just those in the general service large

11 category?

12   MR. PATRICK BOWMAN: Yes.

13   MR. BOB PETERS: And to that end we see

14 through MIPUG Exhibit 23-2, MIPUG Exhibit 23-2 is a --

15 an updated newsletter, I'll call it, related to the

16 NFAT process that your office has been responsible for?

17   MR. PATRICK BOWMAN: Yes.

18   MR. BOB PETERS: And this document is

19 the second of two (2), correct?

20   MR. PATRICK BOWMAN: Yes.

21   MR. BOB PETERS: Is there a third one

22   planned?

23   MR. PATRICK BOWMAN: I -- not planned,

24 but I -- I wouldn't rule it out. But right now we

25 don't have it in the --

10267

 1   MR. BOB PETERS: And to -- to tackle

 2 the additional scope that the Board asked you to look

 3 at, can you tell them what specifically you've done?

 4   MR. PATRICK BOWMAN: Yes. To confirm

 5 it was possible to do the consultation exercise, the

 6 Board set out -- there was a fair bit of discussion

 7 with some different parties who have a role in -- in

 8 working with the business community, energy users in

 9 the business community.

10   I'll say a surprising number of them

11 really didn't feel comfortable being in a role where

12 they were -- were being expected to or -- or possibly

13 would be asked to weigh in on Hydro's proposals. I was

14 a little bit surprised by that, but I guess in

15 retrospect I shouldn't have been.

16   Hydro is a big force in this province,

17 and some of the -- the associations made a point to us

18 of saying: Hydro's one (1) of our biggest members.

19 All of our other members rely on Hydro for rates. Many

20 of our members sell services to Hydro. Hydro funds our

21 training programs. Hydro's a partner with us on -- on

22 other initiatives, and it's just way too complicated a

23 relationship to think that we want to get out in public

24 and commenting on -- on a proposal such as this.

25   So we didn't have quite as much success

10268

1 in that regard as -- as we -- we might have. We did

2 manage to get the Chamber of Commerce interested, the

3 Manitoba Chamber of Commerce, who is a umbrella and --

4 and coordinates with the -- the Chambers throughout the

5 -- the province, which -- which I've noted before.

6   And the other one (1) that was -- we're

7 really appreciative to Manitoba Hydro, they have a -- a

8 group in Manitoba Hydro that are the customer account

9 managers who work with business customers and

10 industrial customers. And they have an advisory

11 committee that they convene from time to time that they

12 -- they share issues and updates with and the like.

13   And so they -- the convened a set of

14 those for us this last fall, one (1) in Brandon, one

15 (1) in Winnipeg, which allowed us to prov -- provide

16 some -- or, you know, early information about what the

17 Preferred Development Plan was about, both from Hydro's

18 perspective and -- and from -- from ours and to discuss

19 with people how it was best to consult with.

20   Most of the people who attended those

21 meeting, I will say, signed up for ongoing

22 communication, which includes the communication you see

23 here. So this was distributed to a -- a mailing list.

24 The -- the Brandon group was mostly -- was well,

25 smaller, but it was -- it was private businesses, as

10269

 1 well as some municipal. In -- in Winnipeg the group

 2 was much larger and also included a fair number of

 3 institutional parties, property managers, building

 4 managers, you know, gov -- gov -- effectively

 5 government institutional building managers, as well as

 6 -- as private businesses.

 7   So that -- that was the -- the exercise.

 8 We -- we then moved into this phase of about sharing

 9 the -- the two (2) newsletters you note. And -- and we

10 had some ongoing meetings with the Manitoba Chambers,

11 including one (1) with their policy committee and then

12 one (1) with their executive director and their, I'm

13 going to say, research -- researcher, right. I don't

14 recall the -- the exact titles, but...

15   MR. BOB PETERS: Thank you, Mr. Bowman.

16 I take it from your original evidence on this matter,

17 of the -- of their two (2) concerns, the first was the

18 magnitude of the Preferred Development Plan?

19   MR. PATRICK BOWMAN: On the -- on the

20 concerned side, the magnitude is -- is, you know, front

21 and centre. It's: What are we -- what are we biting

22 off here? Yes.

23   MR. BOB PETERS: And then a second

24 concern was a desire or a need to balance the near term

25 with long-term costs and benefits?

10270

 1   MR. PATRICK BOWMAN: Yes, and -- and in

 2 that regard, I would have understood them to be talking

 3 about rates in that context. But in fairness, there

 4 was also a fair bit of comment about -- about business

 5 opportunities, if a -- if a big project goes to head,

 6 whether that's trucking or catering. Whatever --

 7 whatever it is, there's a -- there's a -- a sizeable

 8 amount of possible future economic activity associated

 9 with the plan. So magnitude is -- is -- cuts both

10 ways.

11   MR. BOB PETERS: Where do the interests

12 of the MIPUG members diverge from other commercial

13 operations?

14   MR. PATRICK BOWMAN: The main place

15 where I found divergence is the MIPUG members will go

16 more to competitiveness and rates. Many other

17 businesses, as much as that was important to them,

18 there was more of a -- of a flavour, if you like, of --

19 of the -- the grandchildren comment, the: How much

20 debt are we taking on? What is this going to do to all

21 the other aspects to our community?

22   You have to remember that, you know, the

23 representatives we deal with on the MIPUG side are

24 fundamentally either senior executives or -- or energy

25 managers for a plant. I think that's a lot different

10271

1 than a small business organization, a Chamber of

2 Commerce who's looking out for a -- you know, a very

3 broad range of -- of considerations, not just the --

4 the business side, but the -- you know, the 'what does

5 this mean for me as a Manitoban' side.

6   And so that's where the absolute level

7 of debt comments came out stronger. You know, what

8 does it mean for my grandchildren? What is -- you

9 know, how -- how certain are we about these very long-

10 term forecasts? And -- and do the plans rely on a home

11 run in year 40 to make it all come together?

12   MR. BOB PETERS: Thank you, Mr. Bowman.

13 The -- the magnitude of the Preferred Development Plan

14 and the need to balance the near term and long-term

15 risks, were there any other concerns that came forward

16 from your consultation with general service customers?

17

18   (BRIEF PAUSE)

19

20   MR. PATRICK BOWMAN: No, I -- I don't

21 think so. We -- we heard a bit about rate instability,

22 but I think that's, you know, it will just mean, you

23 know, more -- more need to watch the reins because our

24 rates go up in a drought or something.

25   But I think that was -- that was

10272

 1 flavoured by the fact that -- particularly on the Hydro

 2 Advisory Panel, our topic followed a topic about

 3 unbelievable levels of rate uncertainty on the gas side

 4 for -- for the -- the large volume or -- or your T-

 5 service customers and the thing. So rate -- rate

 6 instability was on peoples' minds, but I -- I don't

 7 think it was a -- I wouldn't say it's anywhere near the

 8 level of the ones we just talked about.

 9   Ms. Davies is reminding me that there

10 were a few comments about flexibility and I -- and --

11 and whether this is our one (1) shot to make a decision

12 on these things. I think it has a flavour of: Will we

13 ever see Hydro's Resource Plan reviewed again? But it

14 -- it also has a flavour of, you know, if we're -- are

15 -- are -- you know, is there -- is there room to change

16 course? And, so that, but I -- but I think it's

17 encompassed in some of the things we talked about.

18   MR. BOB PETERS: All right. With those

19 concerns, was there a consensus position taken in your

20 consultations with these general service customers?

21   MR. PATRICK BOWMAN: No, and -- and

22 there was specifically a need to make agreement with

23 them from the outside -- outset that -- that -- if --

24 if they had wanted to present a position, they would

25 need to come forward and do it. They -- they -- it was

10273

 1 -- it was quite clear that -- that, you know, to put it

 2 -- put it bluntly, you know, no one speaks for the

 3 Chamber but the Chamber, and I don't fault them for

 4 that.

 5   MR. BOB PETERS: All right, thank you,

 6 sir. I want to turn to a few areas that I might need a

 7 bit more information for the panel on.

 8   On slide 10 of your evidence -- it's all

 9 day today, MIPUG-24 -- you had mentioned, I believe, in

10 your evidence, that in practical terms, the sunk costs

11 can be carried on the books or -- or written off in one

12 (1) year.

13   MR. PATRICK BOWMAN: Well, I had

14 mentioned in my evidence that my understanding of

15 Hydro's evidence is that, in practical terms, the sunk

16 costs, or at least some portion of them, are likely to

17 be -- to be carried for some period of time, subject

18 only to people shutting the entire thing down.

19   I was also commenting, based on my

20 experience, that if they're not being carried for --

21 for a period of time, I -- I don't -- you know, when I

22 started in this business, it wasn't uncommon to take

23 things and -- as a utility and defer and amortize them

24 simply for the benefit of stability or for taking

25 things in over time. And that has become much, much

 1 more difficult with the -- the type of accounting

 2 standards and -- and auditors that people are dealing

 3 with.

 4   So I -- I think there's -- there's --

 5 both of those have limitations. One (1) -- one (1) is

 6 -- is from Hydro, one (1) is from me.

 7   MR. BOB PETERS: On slide 12 of your

 8 materials, you talked about the pathways. And Pathway

 9 1 had some exposure or less ability to deal with

10 unexpected load growth risk.

11   Do you see that near the bottom of the

12 chart?

13   MR. PATRICK BOWMAN: Yes.

14   MR. BOB PETERS: Why is All Gas not as

15 flexible for load growth risk as other options?

16   MR. PATRICK BOWMAN: It's not -- I -- I

17 was wondering about how best to present this point, Mr.

18 Peters. I wouldn't say that All Gas is necessarily

19 less flexible, but it -- because you can always build

20 gas in a fairly short period of time if you have

21 something come along.

22   The problem is that it gives you less

23 options at that time, because if a load -- if a -- if a

24 load quickly comes along or -- or comes along in an

25 uncertain basis and gets firmed up, you know, not far

10275

 1 before it's needed or before they need power, if you're

 2 on an All Gas path, you -- you are building gas to

 3 serve them; whereas if you're -- if you're on a path

 4 where you've already had the time and committed to

 5 Hydro projects in advance, you -- you may still keep on

 6 your same path of assumptions about export -- export

 7 deals and -- and go ahead with gas, or you may alter

 8 the types of deals you're in discussion with or let

 9 some run out in order to bring some of that dependable

10 power back home.

11   You have some flexibility, and -- and it

12 can come from any number of sources. The other one, I

13 don't have a lot of concerns you'll get the kilowatt

14 hours there, but you know they're going to be from --

15 from gas because that's the only think that you can do,

16 is -- is build for new load.

17   MR. BOB PETERS: With a long lead time

18 needed for hydro and any commitments that are made to

19 contractually export, if you do have a short-term need,

20 isn't gas one of the more viable options?

21   MR. PATRICK BOWMAN: Oh, absolutely,

22 but it -- it's in your -- your portfolio either way,

23 right. If we -- if we go ahead with Plan 14, if Mr.

24 Cormie goes down south and -- and markets all that

25 power to the Americans or over to Saskatchewan, and --

 1 and if we're running -- you know, we're -- we're

 2 running near our limits and someone comes along and

 3 says, I'm going to have a new pipeline here in three

 4 (3) years, take an example, you can -- you can still

 5 build the gas if you want. Or you can look at your

 6 export folio and say, Yeah, we have this one expiring

 7 two (2) years from now; let's just let it expire and

 8 bring the power back here and serve our customer with

 9 that.

10   You've got the set of options, whereas

11 if you're on that All Gas path you don't have the same

12 type of options because you pretty quickly run -- run

13 out of -- if you want -- if you look at the supply-

14 demand tables, pretty quickly your -- your firm exports

15 are gone and you're just into grow, build, grow, build,

16 grow, build.

17   MR. BOB PETERS: Your suggestion that

18 Mr. Cormie was running to Saskatchewan, he's actually

19 hiding in the corner and you probably can't see him,

20 but today's not a running day for him, I'm told. I

21 think maybe this weekend. But he did run to Boston.

22 I'm not sure he managed any sales while he was down

23 there, but we'll -- we'll see when we cross-examine him

24 next.

25   I do want to turn to your slide 17, Mr.

10277

1 Bowman. And to some extent, Mr. Williams had covered

2 some of the points I was looking at. But this -- this

3 gets to be with the suggestion that you make, that to

4 sweeten the Conawapa economics, the government take has

5 to be less.

6   Is that one (1) of the messages that --

7 that can be taken from your evidence?

8   MR. PATRICK BOWMAN: Well, it's not the

9 way I would put it, but I don't think it's entirely

10 inaccurate.

11   MR. BOB PETERS: All right. On slide

12 31 of your materials, you show, I guess, what is now an

13 outdated Manitoba Hydro Exhibit 171, only outdated by a

14 few hours though, which, just so the panel understands

15 clearly, your suggestion is that the incremental water

16 revenues and perhaps capital taxes that would come from

17 Conawapa would be the first thing that you would

18 suggest be targeted as -- as foregone by the

19 government, at least in the early years, to try to --

20 to make the economics more attractive for developing

21 Conawapa?

22   MR. PATRICK BOWMAN: Not necessarily,

23 for two (2) reasons. One (1) is because as you look

24 forward -- we -- we spent a lot of time walk -- talking

25 about water rentals in -- in past hearings and -- and

10278

1 the degree of costs that water rentals impose on Hydro;

2 they're fairly large.

3   But in terms of these new projects,

4 they're not anywhere near as large because the

5 assumption is that they're staying at the current level

6 and -- and the -- the other charges are -- are driven

7 by the scale of -- of building and the scale of

8 investment and the scale of borrowing. Water rental is

9 driven by the kilowatt hour. So as time goes on, water

10 rentals are actually less of a piece of this puzzle,

11 and debt guarantee fees and capital taxes are more. So

12 that -- that's my first comment.

13   And -- and I definitely include debt

14 guarantee fees in that mix. I think if somebody is

15 going to sit down and -- and sort out a solution here,

16 debt guarantee fees would -- would need to be on the

17 table for this. And -- and I have some -- some

18 examples of that even.

19   But the other -- my other

20 comment/response to your -- your suggestion is I'm not

21 saying this -- that I'm advocating the solution. I'm

22 saying it's one (1) way of modelling a different

23 sharing of the pie. It shows me that there's enough

24 numerically to move the line far enough and that now

25 somebody's got to do the hard work and figure out

 1 what's the best way to -- to look at the -- the sharing

 2 of the pie, not only on numbers, but on risk and some

 3 other things.

 4   So I -- I want to be really careful.

 5 I'm not saying that's necessarily the right solution,

 6 but it's -- but it gives me an indication there --

 7 there is a solution.

 8   MR. BOB PETERS: All right. Leaving

 9 aside the source of the government revenues, what is

10 the -- what is the magnitude of the number that will,

11 in your words, move the line, make Conawapa a more

12 realistic economic project?

13   MR. PATRICK BOWMAN: We -- we were able

14 to move the line sufficiently by taking each of the

15 components of the Preferred Development Plan and not

16 imposing any of these three (3) charges until fifteen

17 (15) years after their in-service date.

18   MR. BOB PETERS: What did that

19 cumulatively add up to?

20   MR. PATRICK BOWMAN: I -- I would have

21 to run that number for you, Mr. Peters, if you want it.

22 But I -- but I don't think it's -- I think the -- some

23 of the -- an -- an indication at least of some of these

24 -- the blue lines -- well, actually, you know what, Mr.

25 Peters? I should run that number for you if you want

10280

1 it.

2   MR. BOB PETERS: I think we best not do

3 bath -- math on the record, and maybe you could

4 undertake through your counsel to provide the Board

5 with an indication as to the dollar amount of the

6 required foregone government benefit that you

7 determined in your analysis over the first fifteen (15)

8 years of in-service of Conawapa would be sufficient to

9 change the economics to a more positive approach.

10   MR. ANTOINE HACAULT: Agreed. Mr.

11 Peters, do you want that in real dollars, NPV, nominal

12 dollars?

13   MR. BOB PETERS: I think to -- to keep

14 it constant we'll -- we'll use the -- we'll take it in

15 -- in nominal dollars as well as NPV through -- through

16 the same methodology that we've been using.

17   MR. ANTOINE HACAULT: Agreed. So the

18 undertaking as stated by Mr. Peters and as augmented,

19 we will be providing. Is that sufficient for the court

20 reporter? She indicates 'yes'.

21

22 --- UNDERTAKING NO. 145:   MIPUG panel to provide the

23   Board with an indication as

24   to the dollar amount of the

25   required foregone

10281
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 1                          government benefit

 2                          determined in their

 3                          analysis over the first

 4                          fifteen (15) years of in-

 5                          service of Conawapa would

 6                          be sufficient to change the

 7                          economics to a more

 8                          positive approach

 9

10                     (BRIEF PAUSE)

11

12  CONTINUED BY MR. BOB PETERS:

13                MR. BOB PETERS:   Mr. Bowman, on slide

14  19 of your slide deck from today...

15

16                     (BRIEF PAUSE)

17

18                MR. BOB PETERS:   Have you determined,

19  sir, without reliance on any specific contractual

20  terms, whether the Minnesota Power contract can be

21  served without the addition of Keeyask?

22                MR. PATRICK BOWMAN:   I have not.  I've

23  just relied on the representations of Hydro that the

24  Minnesota Power requires new hydro.  That's -- I -- I

25  don't mean requires it in a kilowatt sense.  I mean
```

 1 requires in -- in a -- in a -- a contractual obligation

 2 sense. So I -- I wouldn't even have thought to do the

 3 -- the analysis even if it were available.

 4   MR. BOB PETERS: Thank you. I want to

 5 turn to some risk questions with you, sir, and you had

 6 mentioned, I think in discussions even with Ms. Boyd

 7 this afternoon, that a probability tree would be -- can

 8 be an acceptable measurement and demonstration of -- of

 9 a risk profile?

10   MR. PATRICK BOWMAN: Yes.

11   MR. BOB PETERS: And in this particular

12 case, is there a probability tree for updated plans

13 such that an expected value can be available to this

14 panel?

15   MR. PATRICK BOWMAN: No.

16   MR. BOB PETERS: In that instance, sir,

17 what is your suggestion that this panel should consider

18 in terms of risk assessment of the various plans?

19   MR. PATRICK BOWMAN: My suggestion is

20 that -- is that the panel has to look to the

21 information that's available to them. Not to be

22 cheeky, but my suggestion is the panel needs to get a

23 report written by June. And so our reliance was on

24 trying to test whether we thought there was a reason

25 that the risk profiles would be dramatically different.

10283

 1   To the extent we looked at it, capital

 2 cost was never one (1) of the biggest risks. We have

 3 the updated capital cost. The range is somewhat wider.

 4 It doesn't seem to me that it's wider enough to have

 5 made a material difference to the -- the profile of

 6 risks presented in the quilt.

 7   And the second one is the energy prices.

 8 And I'm relying on the information in Appendix 9.3,

 9 others have better, that suggests that, if anything,

10 the range of -- of prices that are -- that are

11 fundamentally being modelled in the -- in the

12 scenarios, the -- the uncommitted pieces, if anything,

13 have narrowed since -- since the original filing. In

14 particular, the low end has come up.

15   Now, Appendix 9.3 isn't perfectly clear

16 about -- about just which numbers have moved in what

17 direction. I think that's intentional. We'd probably

18 get a lot closer to CSI if it was. But to the best of

19 the information I have, I don't read 9.3's discussion

20 on energy prices to suggest that I would think that --

21 that risk has widened. If anything, it -- it may have

22 narrowed as a result of that.

23   The third one being interest rates and -

24 - and discount rates. And we can see Hydro's interest

25 rates from the -- from the IFF filings and their --

10284

1 their economic outlook. And I don't see any reason to

2 think those will -- will have moved in a way that would

3 dramatically change -- change the profile.

4   So you're playing with three (3)

5 variables. I don't think the -- the benchmark for

6 those three (3) variables is likely to have moved in a

7 direction that -- that erodes the -- the level of risk

8 shown on the quilt. I can't comment on the weighting

9 though. I think -- I -- I know, at least as far as

10 capital cost, Hydro's comment on the weighting, that

11 it's reduced the weighting on the -- on -- on the high,

12 but I -- I can't comment on the weighting about the

13 export prices or the -- or the -- well, I'm less

14 concerned about interest rates.

15   MR. BOB PETERS: But you're aware

16 there's been no change in that weighting, are you?

17   MR. PATRICK BOWMAN: There's been no

18 weighting, I think, more accurately. That's one (1) of

19 the pieces of evidence that Hydro indicated is -- is

20 preventing it, outside of just pure time, preventing it

21 from being able to run an updated quilt, as it hasn't

22 sat down and come up with new probability weightings

23 for its low-end reference and high export prices, for

24 example.

25   So I -- I don't think they exist. I

 1 don't think it's just not -- not that they haven't

 2 changed.

 3   MR. BOB PETERS: You haven't done any

 4 analysis to support that supposition, have you, that --

 5 that the profiles probably haven't changed much?

 6   MR. PATRICK BOWMAN: Well, there's only

 7 two (2) things that matter in respect of -- of drawing

 8 your probability tree. One (1) is: What are the --

 9 what are the -- the variables? What lev -- what are

10 the three (3) high, low, and ref numbers that you use.

11 And the second is how much you weight them.

12   So the -- I walked you through my -- my

13 analysis of the high, low, and ref numbers, and I have

14 no -- but I have no information or -- or no reason to

15 think that -- that anyone has -- has prepared

16 weightings for any of them, other than the capital

17 cost.

18   MR. BOB PETERS: How do you assess the

19 risk of the export contracts and what happens after

20 they expire in ten (10) or fifteen (15) years?

21   MR. PATRICK BOWMAN: Well, you do it by

22 way of the economic analysis of high, low, and

23 reference scenarios. The -- it -- it's inherent in

24 them, is my understanding of the way that all the

25 economics is modelled. And so you -- you see the -- the

10286

1 output there, at least for those of us who aren't

2 seeing the -- the inputs of the calculations that go

3 along.

4   That's the only way we can do it. I --

5 I have no -- but I have no -- I -- I'm not relying on,

6 and I -- I wouldn't encourage anyone to rely on, a good

7 knowledge about what happens on this graph on -- you

8 know, in 2035 when -- when WPS 308 comes off.

9   MR. BOB PETERS: On page 2-6 of your

10 revised February 28th pre-filed evidence, on --

11 starting on line 20, you indicate that hydro projects

12 are exceedingly challenging economic projects to

13 develop and are exceedingly risky from year to year due

14 to water flows, but are in fact among the lowest risk,

15 if not the lowest risk, power projects available over

16 any longer-term horizon, correct?

17   MR. PATRICK BOWMAN: Yes.

18   MR. BOB PETERS: And you're basing that

19 on your general knowledge of Canadian hydraulic

20 generating stations?

21   MR. PATRICK BOWMAN: Yes.

22   MR. BOB PETERS: Are you aware of any

23 hydraulic generating stations that have -- that have

24 failed? Had to be stranded?

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

10287

1 aware of any major ones. I can't -- can't think of

2 even any -- any minor ones. But, you know, it's --

3 it's possible there are some unique situations on-- on

4 smaller plants. But certainly, the -- the key building

5 blocks of all of the major, you know, the major hydro-

6 dominated jurisdictions have -- which -- which tend to

7 be the ones with the lowest rates across the country,

8 have -- have worked.

9   MR. BOB PETERS: What about what's

10 happening in Quebec right now?

11   MR. PATRICK BOWMAN: Well, that goes to

12 the -- the swing set on the porch question. Do we know

13 -- is it time to judge whether those projects have

14 worked over the lowest risk over the longer-term

15 horizon? Are the projects people are assessing into

16 that longer-term horizon? And I haven't read the

17 report by the -- by the committee that was reviewing

18 this. Mr. Hacault has, but he has the benefit of

19 language skills I don't.

20   But my understanding is that people are

21 commenting on current market prices, on current debt

22 and -- and costs being carried and are looking at this

23 from a perspective of a -- of a -- the -- the risk

24 profile and the cost to a -- to a government trying to

25 -- to balance a whole bunch of competing priorities.

10288

 1   And that's -- that's an important

 2 perspective, but I don't know that it's necessarily

 3 going to the determinative perspective on whether that

 4 project -- those projects ultimately prove to be good

 5 projects and all that.

 6   MR. BOB PETERS: All right.   Thank you.

 7 In that statement that I read to you, there's an

 8 indication that hydro projects are extremely risky from

 9 year to year due to water flows, correct?

10   MR. PATRICK BOWMAN: Yes.

11   MR. BOB PETERS: And then on page 3-13

12 of your pre-filed evidence, you -- you provide some

13 cost of drought impacts.   And I'd like to make sure the

14 panel understands what you're attempting to -- to

15 portray here.

16   Can you explain your Table 2 to them,

17 please?

18   MR. PATRICK BOWMAN: Yes.   And I would

19 highlight that there's actually a -- an exhibit we

20 prepared that we walked through with the Manitoba Hydro

21 panel which did -- did a more -- a more detailed job of

22 this.   But I can walk through it here, or I can -- I'm

23 sure I have that.   I just need to find out where I put

24 it.

25   This is a -- a presentation of the

10289

 1 information Hydro filed in the -- whatever's in

 2 footnote 47 there. They filed drought -- financial

 3 portrayals of five (5) year drought scenarios. They

 4 were the ones starting 2034/'35, so after the -- the

 5 major projects are in. And it looked at the four (4)

 6 plans, and it looked at the overall adverse impacts of

 7 the -- of a drought on -- at different -- at different

 8 plans and different energy prices and what was the

 9 adverse impacts on Hydro.

10   The version that we prepared as an

11 exhibit made a point of distinguishing between the

12 absolute level of net losses as opposed to just the --

13 the adverse impact of a drought compared to the

14 otherwise targeted level of net income. And those are

15 two (2) very important numbers. And -- and I would

16 need to turn to this table to make sure I know which

17 one we're -- we're looking at here.

18   MR. BOB PETERS: I think Mr. Hacault

19 can -- and Ms. Davies will be able to ask Diana to put

20 it up, please.

21   MR. ANTOINE HACAULT: So the -- it's

22 MIPUG Volume IV, so that's 20-4, at page 47 if my

23 pagination is correct.

24

25   (BRIEF PAUSE)

10290

 1   MR. ANTOINE HACAULT: Yes, thank you.

 2 Now, Mr. Bowman will indicate where he wants you to

 3 zoom in on these small numbers, which I need a micro --

 4 a microscope to look at.

 5

 6   (BRIEF PAUSE)

 7

 8   MR. PATRICK BOWMAN: If you can just

 9 help me for a minute, Mr. Peters. What was the first

10 table you took me to? What page was that at in our --

11 our -- on -- in my pre-filed testimony?

12

13 CONTINUED BY MR. BOB PETERS:

14   MR. BOB PETERS: Page 3-12. It's your

15 Table 1 on that page.

16

17   (BRIEF PAUSE)

18

19   MR. ANTOINE HACAULT: Might it be --

20 might I make this suggestion? It would be useful if we

21 had like about a five (5) minute break just to make

22 sure that we have the right table and we can answer

23 your question. We can discuss off the record exactly

24 what you're looking at and then we would make a more

25 succinct and to the point presentation on the whole

 1 issue of flood risk and -- and the --

 2   MR. BOB PETERS: Drought risk

 3   MR. ANTOINE HACAULT: -- drought risk.

 4   MR. BOB PETERS: You must live in St.

 5 Adolphe. If we could, Mr. Chairman, have a few

 6 minutes, just three (3) minutes, yeah.

 7   THE CHAIRPERSON: Agreed.

 8

 9 --- Upon recessing at 4:21 p.m.

10 --- Upon resuming at 4:30 p.m.

11

12   THE CHAIRPERSON: I guess Mr. -- Mr.

13 Peters?

14

15 CONTINUED BY MR. BOB PETERS:

16   MR. BOB PETERS: Yes, I'm -- Mr. -- P.

17 K. Hacault is hoping we're not here until as late as

18 they were last night, so -- I didn't know there was a

19 hockey game on tonight or at least not the one (1) that

20 he'll watch, but let us continue.

21   Mr. Bowman, before the break we were

22 talking about drought and risks of drought, sir, and

23 the cost of drought.

24   MR. PATRICK BOWMAN: Yes.

25   MR. BOB PETERS: And your counsel was

 1 kind enough to provide MIPUG Exhibit 20-4 and page 47,

 2 which was a spreadsheet wherein you did an analysis on

 3 the impacts of -- of drought?

 4   MR. PATRICK BOWMAN: Yes.

 5   MR. BOB PETERS: Can you explain --

 6 I'll use the word 'briefly' -- what -- what this --

 7 what this sheet is telling the panel?

 8   MR. PATRICK BOWMAN: I -- I believe

 9 it's self-explanatory, Mr. Peters.

10   MR. BOB PETERS: It must be Friday

11 afternoon. Okay.

12   For those of us who -- to whom it's not

13 self-explanatory, how would we best to understand this?

14   MR. PATRICK BOWMAN: The way that we

15 get information about drought and the drought

16 conditions in the Hydro system is by them taking

17 different water flow conditions and running them

18 through the modelling of their system. And that's the

19 SPLASH model which people have heard about.

20   And this is data that came from an IR

21 that we asked them that has -- it said, Take the load

22 and the conditions in year 2034/'35, the year that was

23 picked that was meant to be past the development of

24 Conawapa. So it's nothing special about that year, but

25 it gives you an idea of a particular year, point in

10293

1 time, where you've got the full plan in service.

2   And it says, Show me the SPLASH output

3 from that year, 2034/'35 loads, if we throw drought

4 conditions at that year. And 'drought conditions'

5 means the water that existed -- the water flows that

6 existed in either '87/'88, '88/'89, '89/'90, those

7 years, those five (5) years that we know of as the

8 worst drought that Hydro plans for.

9   And so you'll see the top of the doc --

10 document references that it's for -- references it's

11 for fiscal year '30 -- '34/'35. The left-hand side

12 will say it's -- it tells you that it does it at

13 different energy prices and for different development

14 plans. But it's looking at those years, '87 through --

15 through '92, the year of drought.

16   And it spits out a number that's a -- a

17 -- in these cases, a negative number. That is an

18 output of a SPLASH model. That number doesn't

19 necessarily mean much on its own. You always have to

20 look at these in the context of what is the overall

21 situation for that year, and how does it compare to

22 other situations.

23   So the way that the SPLASH output works,

24 as it's always been explained to me, is SPLASH is

25 looking at this type of output all of the variables

10294

1 that change when your dat -- when your water flows

2 change. It's not looking at any of the variables that

3 don't change when your water flow change.

4   So it doesn't look at domestic revenues.

5 Those are something else. It doesn't look at -- at

6 depreciation. It doesn't even pay attention to those.

7 All it looks at are things like water rentals, which go

8 up and down depending on your water flows; exports,

9 which go up and down; how much fuel you use; how much

10 purchase power you have. It's this mixture of, call

11 it, half of the financial forecast.

12   Okay. So because it's only showing you

13 half, the absolute number doesn't mean anything. It

14 depends on what's going on in the other half of stuff

15 you're not modelling here. But the relative numbers do

16 matter.

17   So you run through these models of the

18 SPLASH. And if you look -- if you run through under All

19 Gas development plan of '30 -- 2034/'35 load level and

20 the 1987/'88 flows, SPLASH tells you that your number

21 is minus 497.2 million. '88/'89 gives you minus five-

22 ninety-eight (598). And you go through the five (5)

23 years and you see what is the number that SPLASH spits

24 out for that series of variables.

25   But what you have to look at is what is

10295

 1 the average for '34/'34 from all of the water flows,

 2 because that's what Hydro's financial forecast and

 3 rates and everything were based on, assume the average.

 4 These would be the bad ones. There's some good ones.

 5 The average for that year of all of the SPLASH outputs

 6 is one seventy-six point nine (176.9).

 7   Okay. So -- so if you want to know how

 8 bad a drought here is, you want to say how bad compared

 9 to average. So you have to adjust all of these numbers

10 by one seventy-six point nine (176.9) to basically

11 benchmark them to the -- the no drought number, okay.

12 So you go down a little bit and you'll see the numbers

13 that -- all it does is adjust them by one seventy-six

14 point nine (176.9). You're now at minus three twenty

15 (320), minus four twenty-one (421), minus one forty-

16 three (143), okay.

17   And you add all of those up and you know

18 that when a drought occurs, the financial impact

19 compared to what would have been the average, if you're

20 under an All Gas Plan with low export prices, is 1.22

21 billion over the five (5) years. This doesn't include

22 compounding interest, which I know is a question the

23 Chairman goes to quite often, but is worse than the

24 average financial result in that year due to the water

25 flows.

10296

 1   It doesn't tell you the whole story,

 2 because now you have to flip over and say, But what was

 3 the projected net income? This just tells me I'm 1.2

 4 billion over those five (5) years off of what my net

 5 income was going to be. I need to formulate my net

 6 loss. I need to know what the overall net income was

 7 going to be.

 8   That's not on this table, okay. This

 9 table, it -- it doesn't look at what the net income is

10 to do -- when we get to the piece in the evidence,

11 you'll find the numbers aren't exactly the same because

12 it adjusts for the -- the projected net income.

13   But what this is telling you when you

14 work your way across is if you're in an All Gas

15 scenario, if you have low export prices, a five (5)

16 year drought will knock you off of the path you would

17 otherwise have been on by 1.2 billion, not counting

18 compound interest. If you reference export prices it's

19 2.014 billion. If you have high export prices it's

20 2.909 billion, okay. That -- that's this information.

21   And now you can look across this table

22 and say, How do all the other plans compare? How far

23 do they knock me off the path I would have been on

24 because of a drought? If I build more hydro, do

25 droughts gets worse?

10297

1   And not surprisingly, if you go all the

2   way down to Plan 14, which is the far lower --

3   actually, maybe we should just move across to -- well,

4   Plan 14, sorry, the far -- far lower right-hand corner

5   of the page. All the way to the bottom. Plan 14 is

6   the farthest left -- sorry, did I say right? Farthest

7   left-hand -- farthest right-hand column, sorry.

8   And you'll see that under low export

9   prices the -- the degree to which you get knocked off

10 the path you were on is 1.4 billion. All Gas was one

11 point two (1.2). If you want to scan other parts of

12 this, Plan 6 is one point two five (1.25). Plan 12 is

13 one point four (1.4). Plan 5 is one point two-eight-

14 nine (1.289). It's right next door -- right next door

15 to that one. At -- at reference prices it's 2.4

16 billion and at high prices it's three point six (3.6).

17 That's how -- that's how far a five (5) year, the worst

18 planning drought we talk about, knocks you off of the

19 path you would have been on.

20   Now, we also summarized this in -- in

21 the updated evidence that was provided today, 9-4, or

22 last night. And -- and it might be a bit cleaner, but

23 it's the same set of numbers. All it does is -- it's

24 page 2-11 if we want to go there.

25   It's the exact same numbers were just

10298

1 saw, under low prices for Plan 1, one-two-two-o (1.220)

2 is how far you get knocked off your path. Plan 5 is

3 one-two-eight-nine (1.289). Plan 4 is one point four

4 (1.4). Reference prices, it's 2 billion to two point

5 four (2.4). High prices, it's two point nine (2.9) to

6 about three point six (3.6).

7   And the right-hand side is just saying,

8 Okay, how much extra drought risk am I taking on then

9 by building more hydro, which is the right-hand side of

10 this. And if you go -- look at something like Plan 5

11 minus Plan 1, this is the Keeyask impact, you have the

12 -- the number's shown there, how -- how much more

13 drought risk. Plan 14 minus plan 5 is telling you the

14 Conawapa impact, and the final column tells you the

15 entire PDP impact, how much more drought risk am I

16 taking on.

17   But the questions these don't answer is

18 not just how much variability comes from drought, but

19 do those projects bring me the ability to have a better

20 net income to be able to handle that drought, or better

21 -- better retained earnings, as well. That's the table

22 you were at in our evidence. So if we want to go back

23 to there, that was page 3-6 of the evidence. And maybe

24 -- I don't know if you --

25   MR. BOB PETERS: I think it's 3-12.

10299

 1   MR. PATRICK BOWMAN: Oh, sorry, 3-12.

 2 You're right. Sorry, 3-12 of the --

 3   MR. BOB PETERS: You want to look at

 4 the targeted reserves?

 5   MR. PATRICK BOWMAN: Right. And now

 6 this -- this table -- first of all, the top tells you

 7 some of the same words you've seen that are -- that are

 8 done for Plan 4, which is not one we've updated. But

 9 if you -- if you scroll down -- and that -- that was

10 from a different exhibit. That was from a -- for a

11 different year. It was 2032 versus 2034, so we'll put

12 that aside.

13   But if you scroll down, then you get to

14 this table that you first took me to. And this table

15 now says now I want to take how far I'm knocked off of

16 my path and compare it to the path I was on to actually

17 figure out what -- how -- how big my net loss is I'm

18 going to hit. And the point of this table is at -- at

19 reference prices.

20   Because your net income varies, you

21 actually have no more drought risk by going with Plan

22 14 under the original scenarios than you would under

23 Plan 1 All Gas, because you've just built a bigger

24 system, your one point two (1.2) interest coverage is

25 higher, you're targeting a higher overall net income.

 1 So when the drought hits, it -- it knocks you back a

 2 little bit further, but you don't end any worse in

 3 terms of your net loss.

 4   High prices is up to about 2 billion.

 5 Net loss low prices, PDP actually still makes money

 6 over the five (5) years of a drought in -- if it

 7 occurred in '34/'35 with -- with low export prices.

 8   So that -- that's -- that's the -- the

 9 drought risk piece that we -- that we were presenting

10 in that table.

11   MR. BOB PETERS: Thank you. I

12 appreciate the -- the complexity behind it, but I do

13 thank you for putting that on the record and providing

14 us with your position on that.

15   I'd like to turn to slide 20 of your

16 slide deck from today. Just -- just while we're

17 pulling that up, Mr. Bowman, before you look there, in

18 terms of any impact DSM would have had on those drought

19 impact figures, would there be any sensitivity?

20   MR. PATRICK BOWMAN: I don't have any

21 updated information. I could think long and hard about

22 whether I would have any intuition about what would

23 happen, but it'd probably be better to get -- get the

24 data. My guess is it probably wouldn't make a -- a

25 major difference in the scale of numbers we were

10301

1 looking at, but I -- I can't say.

2   MR. BOB PETERS: All right, we'll take

3 that as you can't say, rather than you guessing.

4   MR. PATRICK BOWMAN: Yes, that --

5 that's probably better.

6   MR. BOB PETERS: And on slide 20 in red

7 ink at the bottom, the point I believe you were trying

8 to make to the panel was that even though capital costs

9 went up, it was the DSM adjustment by Manitoba Hydro

10 that has had the largest impact on the NPVs, correct?

11   MR. PATRICK BOWMAN: Not quite. I was

12 -- I was just trying to put how much DSM is here in --

13 in context, because people have had their mind on how

14 much the capital costs went up. And -- and I -- I just

15 wanted to put the two (2) head to head. I'm not --

16 there -- there are significant other impacts and things

17 like because you do DSM you get more exports and the

18 like. But -- but I just wanted it to be clear that the

19 DSM that's been put forward is not a timid plan.

20   MR. BOB PETERS: All right. Where I'm

21 having a disconnect with your evidence on this point,

22 Mr. Bowman, is in Manitoba Hydro Exhibit 95, which was

23 a slide deck used by Manitoba Hydro, and Manitoba Hydro

24 Exhibit 95, particularly on page or slide 123, Manitoba

25 Hydro provided the panel with the impacts of their

10302

1   updates.

2   Do you recall that, sir?

3   MR. PATRICK BOWMAN: Yes.

4   MR. BOB PETERS: And when I see what

5   happens as between the updates from 2012 to 2013, we're

6   seeing changes in the neighbourhood of $900 million as

7   a result of -- of the updates.

8   Do you see that?

9   MR. PATRICK BOWMAN: Will you let me

10 know which row you're looking -- you're looking at the

11 last two (2) rows of the table, is it?

12   MR. BOB PETERS: Well, look in the

13 middle column in the del -- under the delta. That's

14 comparing what happened under 2012 Chapter 9, where the

15 NPV of the Preferred Development Plan was $1.7 billion.

16   Do you see that, sir?

17   MR. PATRICK BOWMAN: Yes.

18   MR. BOB PETERS: And then as a result

19 of just the capital cost updates with -- as shown in

20 the 2012 with 2014 costs of Keeyask and Conawapa, the

21 NPV changed by approximately $900 million?

22   MR. PATRICK BOWMAN: Yes.

23   MR. BOB PETERS: How do I reconcile

24 that with what you showed the panel on slide 20?

25   MR. PATRICK BOWMAN: I only focussed on

10303

1 the change in capital costs on NPVs. This number would

2 include all of the -- the downstream effects, like

3 impact on capital taxes, impact on -- I believe their

4 estimates for -- I believe the estimates were fixed O&M

5 and were also done as a percentage of projects.

6   I'm not sure about -- positive about

7 that one, but for sure the -- this would include

8 impacts of things like capital -- capital tax changes

9 and -- and the like, as a result of -- of building the

10 -- the higher capital costs.

11   MR. BOB PETERS: I'm not sure I can

12 accept that as accurate, Mr. Bowman.

13   If -- if we recall the $1.7 billion

14 number on the bar chart, and it -- it now resides

15 somewhere around $45 million?

16   MR. PATRICK BOWMAN: Yes.

17   MR. BOB PETERS: That's exclusive of

18 the impact on the payments to Government though, is it

19 not?

20   MR. PATRICK BOWMAN: No. It -- it

21 includes the entire picture on Manitoba Hydro. It

22 includes the entire picture to Manitoba Hydro. So --

23 give me a moment here, I'll...

24

25   (BRIEF PAUSE)

10304

 1   MR. PATRICK BOWMAN: If the visual

 2 people in the room prefer a -- a table, I can take you

 3 there. But the financial -- or the economic impact

 4 you're looking at includes all of the impacts of

 5 Manitoba Hydro, including amounts they will pay for

 6 capital tax and amounts they'll pay for fixed O&M and

 7 those type of matters.

 8   MR. BOB PETERS: Yes, and I -- I think

 9 you had -- and I chastize you for an outdated Exhibit

10 171. And I think that was the -- the chart I was

11 actually just looking for at this point in time,

12 Manitoba Hydro -- and I think it was in your slide

13 deck. I just can't quite locate it.

14

15   (BRIEF PAUSE)

16

17   MR. BOB PETERS: Oh, here we go, on

18 page 31. Slide 31 of your slide deck.

19   MR. PATRICK BOWMAN: Yes.

20   MR. BOB PETERS: The -- the net effect

21 of -- and let's pick the -- in the middle of the page,

22 the K19/C31/750 Plan 14 with the $45 million NPV.

23   MR. PATRICK BOWMAN: Yes.

24   MR. PATRICK BOWMAN: It's -- it's the

25 net effect of the changes that you've made -- or that

10305

1 have -- that have occurred as a result of the

2 government payments. But you're saying that those two

3 (2) are included in the $900 million number and -- and

4 you only went to the capital cost impact?

5   MR. PATRICK BOWMAN: That's right. I

6 only...

7

8   (BRIEF PAUSE)

9

10   MR. PATRICK BOWMAN: Can I -- can I

11 take you to a table that might help? It would be in

12 Appendix 9.3 of the original filing. And -- and it

13 actually almost doesn't matter which one, but at the

14 back half of that is all economic tables. And I'll

15 just go over how those things work.

16   You might try page 91 though.

17

18   (BRIEF PAUSE)

19

20   MR. PATRICK BOWMAN: I like this one.

21 The others I don't have memorized. If you... This is

22 the -- the sheet that does the economic analysis for

23 the ref/ref/ref Plan 14 of the original filing, okay.

24   MR. BOB PETERS: Page 91 of 564 sheets?

25   MR. PATRICK BOWMAN: Five-thirty-six

10306

1 (536).

2   MR. BOB PETERS: Okay. But it's not

3 page 91 of the PDF.

4   MR. PATRICK BOWMAN: Touche. If --

5 this is the ref/ref/ref Plan 14 from the original

6 filing, 2012 assumptions. And it's just the way that

7 the economic seventy (70) -- seventy-eight (78) year

8 scenario works. And you'll see that it's got a -- a

9 number of columns that work -- that -- that are varied

10 between each scenario.

11   So we have a column for Conawapa GS.

12 This is the cashflow perspective of building Conawapa.

13 We have a column for Keeyask generating station, we

14 have a column for thermal. As you work your way

15 across, it's also got a column for capital taxes. This

16 is a cost to Manitoba Hydro, so it's in the economics.

17   If you continue to work your way across,

18 you'll see the second half, which is the SPLASH output

19 half of the model. It's got a column for water

20 rentals. There's no column for debt guarantee fees.

21 Those are -- those are different. But it's got a

22 column for that.

23   If you scroll down to the bottom of this

24 page, you'll see there's a -- there's a cost element to

25 each piece of this that fits into the net present

10307

1 value. The net present value there of two-six-two-one

2 (2.621) is not a number most people know. Sorry, two-

3 nine-two-one (2.921) is not a number most people know

4 because it has to be compared to the All Gas

5 ref/ref/ref which it is -- the number is four-six-one-

6 seven (4.617). And if you compare those two (2)

7 numbers, you get one-six-nine-six (1.696), which is a

8 number that we all have memorized from long ago.

9   So it does include all of those impacts.

10 I was only saying that -- that the impact on the -- on

11 the column called Keeyask GS -- or Conawapa GS, so that

12 -- that 4 billion number for Keeyask moved by -- or for

13 Conawapa moved -- moved the amount. If you change that

14 though, certainly you'll change the capital taxes. You

15 may also change the fixed O&M. I have to remember how

16 that's -- how that's estimated. But you've certainly

17 changed the capital taxes.

18   MR. BOB PETERS: Thank you, Mr. Bowman.

19 You'd mentioned that the provincial debt guarantee fee

20 wasn't shown as a line item.

21   But that's notionally already included

22 in the discount rate, is it not?

23   MR. PATRICK BOWMAN: That's correct.

24

25   (BRIEF PAUSE)

10308

 1   MR. BOB PETERS: Mr. Chairman, I would

 2 like to thank Mr. Bowman and Ms. Davies for their

 3 information, and Mr. Bowman for his testimony. Those

 4 are my questions of him.

 5   And I apologize to Mr. Hacault for

 6 referring to him as P.K. Hacault. I've seen Mr.

 7 Hacault play hockey and he's nowhere near P.K. Thank

 8 you.

 9   THE CHAIRPERSON: Thank you, Mr.

10 Peters. Could you remind us when we're reconvening as

11 a panel again, the date?

12   MR. BOB PETERS: Yes, I'll let Ms. Boyd

13 -- she may have a few questions as result --

14   MS. MARLA BOYD: Thank you.

15   MR. BOB PETERS: -- of some of the

16 areas I touched on.

17   MS. MARLA BOYD: I don't actually have

18 any questions as a result that, but we do have one (1)

19 manner to attend to before we adjourn for the day. So

20 we can do that now if you like, or we can wait until

21 you deal with the -- the balance of your...

22   Yesterday, in the course being examined

23 by Mr. Williams, Ms. Flynn took some information put to

24 her by Mr. Williams subject to check. And she's had

25 the opportunity to check and does have some

10309

 1 clarifications to make with respect to the solar

 2 matter.

 3   MS. JOANNE FLYNN: Good afternoon. I -

 4 - I think personally I will say that the -- the numbers

 5 put to me by Mr. Williams do check out, but I think

 6 they're worthy of a couple of comments and little bit

 7 of context.

 8   And the numbers that we were talking

 9 about yesterday were the solar generation numbers,

10 installed capacity in the first quarter of 2014 in the

11 United States. And the point was that in that first

12 quarter, the projects were installed, the -- the

13 highest number of installed megawatts related to solar.

14   And the couple of points that I'm going

15 to make about that, first of all, I would note that

16 it's probably due to a timing issue that in the first

17 quarter of the year you would see solar as being the

18 highest installed capacity.

19   And the information that I have

20 available is that the Department of Energy EIA is

21 projecting about 9 gigawatts of new capacity for 2014,

22 of which 16 percent is expected to be solar, 12 percent

23 wind, and 55 percent natural gas. So as we go though

24 the year, you're going to see that natural gas is going

25 to exceed solar in terms of -- of installed capacity.

10310

 1   If we look at the numbers for that first

 2   quarter, we'll find that probably well over 85 percent

 3   of it relates to the State of California. And if we

 4   take a look at some characteristics related to

 5   California, what we'll find is that they have average

 6   electricity rates of fourteen (14) cents a kilowatt.

 7   They have a carbon tax of fourteen dollars ($14) a

 8   tonne. And they have a renewable portfolio standard

 9   which requires 33 percent renewable energy by 2020, and

10   they are only at 15 percent at this point in time. So

11   they need to build renewable projects.

12   There is also in US a federal investment

13   tax credit available for solar PV to the end of 2016.

14   And in general terms, it represents 30 percent of total

15   project expenditures, the investment tax credit. And

16   it drops to 10 percent after the end of -- of 2016.

17   And one (1) -- one (1) interesting

18   projection from the US EIA, in their annual energy

19   outlook for 2014, is that projects for solar PV

20   additions between 2017 and 2024 are projected at zero.

21   And I would expect this is primarily due to the

22   investment tax credit being ramped down.

23   And that's the context I wanted to

24   provide.

25

10311

1   (BRIEF PAUSE)

2

3   THE CHAIRPERSON: Thank you, Ms. Flynn.

4   Now, Mr. Peters, please.

5   MR. BOB PETERS: Yes, thank you, Mr.

6   Chair. You had asked if I could just update the panel

7   and those in the room and those following the

8   transcript as to the -- the next sitting days and the

9   plans of the panel.

10   I'll start that discussion by publicly,

11 as I have privately, thanked Mr. Bowman, Ms. Davies,

12 and their counsel, Mr. Hacault, for changing the

13 planned dated from their evidence, which was initially

14 scheduled for Monday, May then 5th, and they've moved

15 it to today. And we appreciate the -- the

16 accommodation.

17   So with that said, there are no sitting

18 days scheduled for next week and that on Monday, May

19 the 12th, Mr. Hendricks will be here on behalf on of

20 MMF. And he will be followed the next day by Whitfield

21 Russell Associates, also on behalf of MMF. And that

22 will be followed by the panel travelling to Thompson

23 for public presentations on Wednesday of that week.

24   Mr. Williams had asked earlier today

25 about the Board's intentions on using May 15th for

10312

1 additional evidence from Manitoba Hydro, and that

2 discussion has -- has been occurring offline. And the

3 questions are really involving around whether, now that

4 parties have received additional information -- we

5 thank Ms. Carrier for that -- to review whether parties

6 are going to want to ask additional questions of the

7 Hydro witnesses on that date. And they're to let me

8 know, and I'm having those discussions currently.

9   And then the -- the matter that follows

10 that, if -- if there was going to be a recall of the

11 panel for public evidence, we're also considering

12 whether there is a need to recall for any CSI

13 questions.

14   And then the third component of that is

15 if we are recalling for either public or CSI and

16 Manitoba Hydro is looking to provide oral rebuttal

17 evidence, if oral rebuttal evidence is -- is possible

18 on that date. And failing that, we have to talk about

19 other options including written rebuttal.

20   But we haven't come down on it. I know

21 Mr. Williams will be working all weekend on getting his

22 submissions together. Until I hear from everybody, I

23 won't be able to communicate and get instructions from

24 the Board, so it might take until Monday to -- to

25 finalize that.

10313
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 1                 THE CHAIRPERSON:   Thank you, Mr.

 2  Peters.

 3                 Me. Hacault, s'il vous plait.

 4                 MR. ANTOINE HACAULT:   As indicated

 5  before, InterGroup has done its best to file

 6  supplemental evidence up to date to the extent it was

 7  able to.  We don't know, having received the last bits

 8  of financial information, whether it might be

 9  appropriate or -- or required to complete that revised

10  submission or supplemental submission.  So I'm just

11  raising that right now, having just received it today.

12  We haven't had a chance to look at it to see whether it

13  changes conclusions, whether there's anything that's

14  worth commenting about.

15                 And I guess we'll seek advice from the

16  Board counsel as to -- if we do think there's something

17  that's useful, as to whether there's still time to

18  provide that information or -- or whether the Board

19  still wants it.

20                 THE CHAIRPERSON:   Thank you. I believe

21  that completes the proceedings for today.  So we wish

22  you all a good next week, and we'll see each other

23  again, most of us, on Monday the following week.  Bye-

24  bye now.

25
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10314

1   (WITNESS STANDS DOWN)

2

3 --- Upon adjourning at 4.59 p.m.

4

5

6

7

8 Certified correct,

9

10

11 _____

12 Cheryl Lavigne, Ms.

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