(9:05 a.m.)

CHAIRMAN:
Q. So I understand there are no preliminary matters.

MS. GLYNN:
Q. That's right, Mr. Chair.

KELLY, Q.C.:
Q. No, Mr. Chairman.

CHAIRMAN:
Q. So I think, Mr. Kelly, we are over to you, sir.

DR. LAURENCE BOOTH (PREVIOUSLY SWORN) CROSS-EXAMINATION BY IAN KELLY, Q.C.

KELLY, Q.C.:
Q. Thank you, Mr. Chairman. Good morning, Dr. Booth.

DR. BOOTH:
A. Good morning, Mr. Kelly.

KELLY, Q.C.:
Q. Dr. Booth, this is our third discussion. We had our first discussion on cost of capital in 2009, just to kind of refresh your memory, and then again in January of 2013. So, and we have substantially the same Board

as before, so there's a lot that I'm not going to go back over because the Board is already heard it before, but what I did want to start with is the situation that we're in now versus the situation that we were in in January 2013 when we had our last discussion, just so you know where I'm going. And at that point in time the long Canada 30-year bond rate was about 2.3 percent?

DR. BOOTH:
A. That sounds about right.

KELLY, Q.C.:
Q. Right. We can take you to a reference if you want.

DR. BOOTH:
A. Yeah.

KELLY, Q.C.:
Q. But 2.3 percent –

DR. BOOTH:
A. Yeah, I remember the—I think I used the full cost of three percent which is about 20 basis points more than I'm using now.

KELLY, Q.C.:

Q. Right and when we actually were here in the hearing room--if you want, we'll—we can go to the transcript of January 18th, 2013. Samantha, if you could bring that up at page 117. And if you go down to lines 19 through about 23, you'll see, "No, I wouldn't regard that as unusual. What I would say is what's unusual is the starting point and the starting point at the moment is long Canada bond yields of 2.3, 2½ percent, forecast 2.7 percent." Correct?

DR. BOOTH:
A. That was unusual then and it's exactly the same thing that's unusual at the moment.

KELLY, Q.C.:
Q. Okay. Now, can I take you next to page 440 of the company's evidence that's filed in this matter? It's in the Finance Section and—there you go. And we have a graph there that shows where interest rates have gone, and if we look at the January 2013 period, you can see we're about 2.3 percent. They go up to about, say, 3.1 approximately. Move along down to 2015, they're down just

below two and where this graph ends, a little above two. Correct?

DR. BOOTH:
A. That's correct.

KELLY, Q.C.:
Q. Right.

DR. BOOTH:
A. That was the bump I was talking about with—when the U.S. introduced this schedule for stock in the bond buying program.

KELLY, Q.C.:
Q. Right.

DR. BOOTH:
A. That was when interest rates popped up.

KELLY, Q.C.:
Q. And so where—we've moved in a very narrow range over that period from 2013 to essentially where we are today?

DR. BOOTH:
A. Relatively, yes.

KELLY, Q.C.:
Q. Okay. Can I take you next to your Surrebuttal Evidence, just so we can fill out the end from that graph at page 3?

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There you go. And you very helpfully here for us put up the latest RBC forecast and if we look out through 2016, if we come down to the Canada 30 year line, and we go across, the first quarter 2016, the second quarter, all the way over then to the end of 2017, the current forecasts are 3.35 percent?

DR. BOOTH:
A. That's right. That's RBC's forecast. They tend to be a little bit optimistic, but not that much different from the consensus.

KELLY, Q.C.:
Q. Right, it's—right, and in fact we'll see in a little—in a few minutes your colleagues at the University of Toronto tend to be even a little more optimistic?

DR. BOOTH:
A. Yeah, I've taken them to task on that many times, but –

KELLY, Q.C.:
Q. Right, okay.

DR. BOOTH:
A. - they rely upon large-scale macroeconomic model rather than what's going on in the

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market.

KELLY, Q.C.:
Q. Different people with different views, but if I can get—just get Samantha to put back up the graph that we just had? Bearing in mind now we're looking out to 2017, and we if extend out that graph line, essentially we'll have moved from the low 2s up to about 3.2, and as we get out towards the end of 2017, the forecast is about 3.35?

DR. BOOTH:
A. That is correct.

KELLY, Q.C.:
Q. Correct, again that's a fairly narrow range. And as I understand your position, essentially it is that none of this really matters because until you get to an equilibrium yield of about 3.8 percent or yesterday you referred I think to 3.8 to 4, that that doesn't result in any changes?

DR. BOOTH:
A. That is correct, and that's the same position I had three years ago, which essentially is the—our models are based upon

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a risk return trade-off.

KELLY, Q.C.:
Q. Okay.

DR. BOOTH:
A. Individuals basically saying, "I want this on a fixed income security and I need this as a risk premium. So this is what I want for expected rate of return or the required return on equities." But the only problem is, is it's not individuals determining the long Canada bond yield.

KELLY, Q.C.:
Q. Right, and –

DR. BOOTH:
A. And it's--what I think I referred to three years is the global policy maker.

KELLY, Q.C.:
Q. Right.

DR. BOOTH:
A. Which are the central banks.

KELLY, Q.C.:
Q. Okay, now if we can just get Samantha to put up the transcript again from the last time, at page 9? And we go there to the top of

Page 8

the page where I asked you the question, "Now in your report I tried to figure out what you think the current interest rates are going to be for 2013, and I didn't really find a clear answer to that because at the end of the day you come to the conclusion, `Well, I've got to adjust it to 380 because that's'—'I've got to at least get there before it's going to make any difference.'" And your answer was, "I think you're reading is absolutely correct, Mr. Kelly."

DR. BOOTH:
A. Yeah, I think that was—your reading was correct then and your reading is correct now.

KELLY, Q.C.:
Q. And what—right, which is the point I'm kind of coming to. We're essentially in the same position today as we were in January of 2013?

DR. BOOTH:
A. In terms of the bond buying programs, I suspect we're worse because the U.K.

finished 2012, the U.S. finished 2014, but now we've got this mass of bond buying programs by the European Central Bank and the Bank of Japan. So I think I said, "Waiting for Godot." I should have said in the play Godot never turns up.

KELLY, Q.C.:
Q. I was going to ask you about that.

CHAIRMAN:
Q. Yes.

KELLY, Q.C.:
Q. And it's—there's a couple of other references first where you make it clear that you view the 3.8 percent as a minimum level, correct?

DR. BOOTH:
A. That's correct.

KELLY, Q.C.:
Q. Yes.

DR. BOOTH:
A. Two percent inflation, 3.3 percent after tax is barely the rate of inflation. So it's a negative real interest rate.

KELLY, Q.C.:

Q. Okay. So let me come then to your question about "Waiting for Godot," because you mentioned that yesterday and in fact in—you make the same comment in NP-CA-082, and we don't need to go there, but when we first had this discussion in 2009, you said to the Board you expected interest rates within a few years to go to the 4.5, 5, 5.5 range. When we had this discussion the last time, you still expected them to go to that range, but had no clarity as to when we were going to get there, and as you said in "Waiting for Godot," Godot never came, and it was Beckett's thesis presumably that he was never going to come. And for clarity as to what you mean by "Waiting for Godot," is it that yes, we will eventually get there, but it's still well off in the future? In other words, are we still waiting for something you expect to happen?

DR. BOOTH:
A. A very good question, Mr. Kelly.

KELLY, Q.C.:
Q. Thank you.

DR. BOOTH:
A. No, it is. It's something I've grabbled with for the last four years. 2009 we saw a rapid spring-back in the Canadian economy. 2010, the Bank of Canada started moving up short-term interest rates, and the Royal Bank and other forecasters were saying, "Well look, Canada, a sort recession. We're going to be back on stream." And then we watched our major trading partners, and the U.S. introduced quantitative easing or bond buying. That knocked us back. All of a sudden, massive bond buying by the U.S. Government and 3½ trillion dollars' worth of securities taken off the capital market. That's where we were in 2012. I started to get—well, is this the new normal? When is this going to happen? If the U.S. was to suddenly dump those 3½ trillion dollars' worth of securities on the capital market, interest rates would pop up, two, three, four percent without any question whatsoever. Now we've not just got the U.S. We've got the other major capital markets.

I compare it a bath, i.e. liquidity money. Three years ago we had the U.S. opening the taps full force, filling up the world with liquidity, with cash. They've turned off the taps, but the bath, the U.S. bath is incredibly full, and we've got the Europeans and the Bank of Japan. They've—their taps are wide open. So the world is awash with liquidity.

KELLY, Q.C.:
Q. Okay, so –

DR. BOOTH:
A. And when we think about that--and this is where I take exception. I've had discussions with our people in a macroeconomic forecasting model. They've got a standard macroeconomic forecasting model, a large-scale model with all of these exports, imports and everything else. The critical thing is the global policy makers. Do the central banks dump all of those securities and get us back to normal, or do they simply keep flushing the system with cash?

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KELLY, Q.C.:
Q. Right.
DR. BOOTH:
A. Personally, I don't think the monetary policy is working and hasn't worked for several years.
KELLY, Q.C.:
Q. Okay, don't –
DR. BOOTH:
A. But that's the only stream –
KELLY, Q.C.:
Q. No need to dive too deeply into the world's monetary policy.
DR. BOOTH:
A. Okay, if I –
KELLY, Q.C.:
Q. Because it –
DR. BOOTH:
A. I don't know, Mr. Kelly. I would say 2009 I was confident that we had a normal spring-back. 2012, I began to question this because of the U.S. Central Bank Bond purchases. Now there's absolutely no question; the capital markets do not believe

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the economists.
KELLY, Q.C.:
Q. All right, so –
DR. BOOTH:
A. If they did and interest rates increased, there'd be massive losses in the bond portfolios.
KELLY, Q.C.:
Q. So we've gone from your certainty of 2009 to at least "Waiting for Godot", but maybe even questioning whether he's coming?
DR. BOOTH:
A. Yeah, perhaps he's not coming for another ten years.
KELLY, Q.C.:
Q. Okay. So we remain in a relatively narrow range that we just looked at from approximately 2.2 percent long Canada rates to 3 and a bit?
DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. Okay.
(9:15 a.m.)

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DR. BOOTH:
A. If you asked, me would I buy bonds now, I would say no. If you asked me do I think we're going to have interest rates of 3½ percent next year, I'd say highly, highly unlikely. I discounted the idea of a new normal four—three or four years ago, but I think we may end up being in this period of low interest rates for at least another three to five years.
KELLY, Q.C.:
Q. Okay. And so as a result of that, your recommendation hasn't changed, correct?
DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. And I take it from that, that your view of the cost of capital hasn't changed?
DR. BOOTH:
A. That's correct. I've recommended 7½ percent three years ago, and recommended that the Board use an automatic adjustment model, but not change anything until the interest rates hit 3.8 percent. Until that happens, we do

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not have ordinary investors determining interest rates.
KELLY, Q.C.:
Q. So your message to the Board, if I follow you correctly, is this is the time to stay the course, nothing has changed to warrant doing anything differently?
DR. BOOTH:
A. I would say that my message to the Board is to use risk premium models post problems. The same problems this time as they did three years ago because the base of the risk-free—the risk premium models is the risk-free rate and that's not been determined by ordinary investors. So I recommended they not change the allowed ROE three years ago unless interest rates went above 3.8 percent. Based upon allowing a 7½ percent fair ROE, and that's exactly the same recommendation at the moment.
KELLY, Q.C.:
Q. Right.
DR. BOOTH:
A. Since then, I would just say I've become

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more pessimistic about where interest rates are going. You probably remember, Mr. Kelly, that I offered the Board an alternative three years ago, that they use an automatic adjustment mechanism and not increase until interest rates go above 3.8 percent, or they go with the fixed rate. I think it was 8.2 percent three years ago. I've dropped that recommendation because I don't see interest rates increasing over the two test years to a level that would make 8.2 percent a fair ROE.

KELLY, Q.C.:
Q. So across the Canadian capital market, I'm taking it from what you've said, that the cost of equity is essentially the same today as it was in 2013?

DR. BOOTH:
A. That's correct. The -

KELLY, Q.C.:
Q. 2012. All right.

DR. BOOTH:
A. I would say the overall equity market, there might be a 50—I think there's generally

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about a 50-basis points or so decline in the expects return on the equity market, but there's a range of seven to eight or nine percent by different people at like Aon and Wyman and other people.

KELLY, Q.C.:
Q. So if the—and assuming for the moment that we accept that the Board has exercised its regulatory judgment the last time, your view would be that the market conditions haven't changed to change anything from 2012 to 2013. We're still in that narrow range?

DR. BOOTH:
A. I would—that's generally true. I think the A bond yield at the time I prepared my testimony to—in 2012 to now has come down about 20, 25 basis points.

KELLY, Q.C.:
Q. Okay.

DR. BOOTH:
A. So there has been a decline in interest rates, but my basic recommendation is not to change until we hit 3.8 percent.

KELLY, Q.C.:

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Q. Right, exactly. So if interest rates move around a little bit, and we've looked at that graph, when they went up to 3.35 in 2015, you wouldn't have said, "Oh Newfoundland Power's cost to capital should go up," because we're just still in that narrow little range?

DR. BOOTH:
A. Yeah, my recommendation would have been 7.5 percent.

KELLY, Q.C.:
Q. Exactly.

DR. BOOTH:
A. And I suspect, I hate to tell you this, Mr. Kelly, that if we come back here in three years' time –

KELLY, Q.C.:
Q. You may be saying the same thing.

DR. BOOTH:
A. - my best bet at the moment is that it's going to be exactly the same in three years' time as it is now.

KELLY, Q.C.:
Q. Now let's have a look at PUB-CA-005. And

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Samantha, if you scroll up to—scroll along so we get lines 15 through about—there we go, that part of the thing. And you explain to--in response to this RFI, Dr. Booth, how you go about trying to assist the Board and your first point was "analyse the market conditions." I'm going to skip through the first couple.

DR. BOOTH:
A. Sure.

KELLY, Q.C.:
Q. "Let the data say what it says; consider applying economic reasoning to adjust historic data to reflect current market conditions," and then, "show the order of magnitude of any adjustments so the regular can make"—"regulator can make a decision on the basis of both fact and expert judgment."

DR. BOOTH:
A. That's correct.

KELLY, Q.C.:
Q. Right. And the key piece out of this for the Board is at the end of day the Board has got to exercise its regulatory expertise

judgment, correct?
DR. BOOTH:
A. Absolutely.
KELLY, Q.C.:
Q. Yes.
DR. BOOTH:
A. The Board, any board, is up there in order to exercise judgment to determine what is fair and reasonable -
KELLY, Q.C.:
Q. Right.
DR. BOOTH:
A. - in terms of the rates.
KELLY, Q.C.:
Q. So in the capital asset pricing model, or I don't know if you want to call it your adjusted model, we still have the basic—whatever the risk-free rate is, which you're saying is 3.8 as an equilibrium number, correct?
DR. BOOTH:
A. Well that's true. I mean the forecast for the test here, I think I have is 2.8 percent.

KELLY, Q.C.:
Q. We'll come to that.
DR. BOOTH:
A. I mean that's reasonable objective.
KELLY, Q.C.:
Q. We'll come to that one.
DR. BOOTH:
A. Yeah.
KELLY, Q.C.:
Q. But the equilibrium rate 3.8 to 4?
DR. BOOTH:
A. Yeah.
KELLY, Q.C.:
Q. The market risk premium and beta. These are all factors as we talked about the last time that require judgment, either your judgment as the finance professor and ultimately the Board's regulatory judgment. Correct?
DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. Right. Now let's go to the point that you just touched on which is your interest rate use that used the last time. And we've

provided you with your evidence and perhaps that needs to be marked as the next –
MS. GLYNN:
Q. Information Number 31.
KELLY, Q.C.:
Q. Thirty-one. And Dr. Booth, I'm going to take you into that to page 25 and to the bottom of the page. Can we go to page 25, Samantha? The bottom of the page. There we go, and this is the rate that you were looking at in 2013 and '14?
DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. And you say there, "The RBC forecast for Canada is now more optimistic than that of the September consensus that puts the 10-year Canada bond yield at 1.8 2 months out and 2.2 12 months out, so adding the current spread for the 30-year bond implies a forecast long-term Canada yield of barely 2.8 percent." Correct?
DR. BOOTH:
A. That's correct.

KELLY, Q.C.:
Q. And if you could, just go on to the next page, Samantha? "I would judge long-term Canada yields are marginally less than three percent as well below any equilibrium yield since they are only one percent above forecast inflation," et cetera. I'm going to stop there. And the rate that you used in your analysis in 2012 was that three percent rate, correct?
DR. BOOTH:
A. I think so, yeah. I think -
KELLY, Q.C.:
Q. As your starting CAPM analysis?
DR. BOOTH:
A. Yeah, I think so and then I added 80 basis points for my bond buying.
KELLY, Q.C.:
Q. And your 40 for credit spread adjustments?
DR. BOOTH:
A. Yeah, that's correct.
KELLY, Q.C.:
Q. So you started at three the last time. Now can we pull up your evidence from this time

Page 25

and it's at page 25, line 17, and if you—no, page 25 of Dr. Booth's current testimony. Oh, I'm sorry, still looking for it. There you go. And we'll go to the last paragraph, okay? Now in this one you again are referring in line 10 to the RBC forecast and if I come down a little bit to the sentence that begins, "If the current spread from Schedule 2 between the 30, 2.05 percent and the 10-year 1.2 percent bond of .81 percent is added to the end of the 2016 forecast, this implies the 30-year bond yield at the end of 2016 will be only 3.01 percent. The average of March and December consensus forecast which is a proxy for the average for the year as a whole, and consistent with the application to an average forward test year rate is 2.81 percent." Correct?

DR. BOOTH:
A. That's correct.

KELLY, Q.C.:
Q. Right, now the 2.81 percent is essentially the same as the 2.8 percent that you looked at the last time?

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DR. BOOTH:
A. Yes.

KELLY, Q.C.:
Q. Correct?

DR. BOOTH:
A. They were basically exactly the same.

KELLY, Q.C.:
Q. Exactly.

DR. BOOTH:
A. The .01 percent is not material.

KELLY, Q.C.:
Q. Absolutely. Last time however though, you looked out to see what was the rate going out into 2014 because we have a 2013 - 2014 test year. This time we need to look at the rate going out through 2016 – 2017, correct?

DR. BOOTH:
A. That's correct.

KELLY, Q.C.:
Q. Right, but you haven't factored that in because if we go back to the top of the page when you're writing this, Samantha, and we look at the—this was the RBC forecast which you're using a the point in time, and we go

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across the 30-year long bond rate and we come to 2017, we have rates that would go to 3.65 percent. And as we've just seen, looking at your—the corresponding updated data, you'd have 3.35 percent? Correct?

DR. BOOTH:
A. That's correct.

KELLY, Q.C.:
Q. Right. So do we not—to compare apples to apples, do we not need to essentially say that the rate looking out over 2017 is something in the three percent range?

DR. BOOTH:
A. As I said, Mr. Kelly, the—I mean you're correct. If I was to be consistent with what I did three years ago, then at that point as I said I offered a fixed rate, but remember we're—three years ago we were talking about returning to the adjustment mechanism. So I was looking for—I forget what the test year was, but I was looking for the test year for a starting point for the automatic adjustment mechanism, and I offered an alternative. It was a fixed

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rate. As we've just been talking, I'm getting less and less pessimistic about future interest rate increases. We've had essentially the--exactly the same forecast of increasing interest rates for the last six years.

KELLY, Q.C.:
Q. Okay.

DR. BOOTH:
A. And it hasn't happened.

KELLY, Q.C.:
Q. Okay, now –

DR. BOOTH:
A. Which is "Waiting for Godot."

KELLY, Q.C.:
Q. Right, but my point still is, and I think we've—you've agreed with me on it, that if the—since the Board is looking to compare where we were the last time and where we are this time, we need to be adding—we'd be needing to look at that out through 2017 which would take us, as we've just seen, somewhere over three percent?

DR. BOOTH:

A. That's correct.
KELLY, Q.C.:
Q. Right, about 20 basis points more than what you've factored into the beginning of your analysis?
DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. Right, okay. And in fact, if we pull this up from the last time, just to kind of set the stage here a bit more, if we go back to the transcript at page 10, and go to the bottom of the page, you'll see where I put the question, "My next question then is what are you saying in relation to 2014," because we had a similar discussion, "because I look, for example, at the consensus forecast, Mr. McDonald," who was the Board's cost of capital witness, "has done a nice summary in his report out through 2013 and 2014, and he still has a 3.04 percent average," and you can read all down through the next couple of pages. Over on page 12 you agree that that's correct. So we had

three percent the last time, looking out; today we have roughly three percent, maybe a little bit looking out? Agreed?
DR. BOOTH:
A. That's correct. I don't think the interest rate forecast has changed that much.
KELLY, Q.C.:
Q. Okay. I agree.
DR. BOOTH:
A. And that's one of the problems.
KELLY, Q.C.:
Q. Okay. Now, let's turn next then to—bear with me for one second. Let's go next to your testimony now at page 42. And here we are. If we go to the top of the page there at about line 4, you say, "I would therefore judge the going-forward utility risk premium to be 2.25 to 3," because we have to factor in the market risk premium and beta. And your recommendations on those are essentially the same as the last time?
DR. BOOTH:
A. Exactly the same.
KELLY, Q.C.:

Q. Exactly the same.
DR. BOOTH:
A. In fact, I think they're same in—as in 2009.
KELLY, Q.C.:
Q. Exactly.
DR. BOOTH:
Q. I see no change in the relative risk of Canadian utilities.
KELLY, Q.C.:
Q. Right, again a matter that the Board will exercise its regulatory judgment on. And what I want—this is what I want to set up here, is what are the apples and apples comparisons with your last testimony?
DR. BOOTH:
A. To be actually honest, Mr. Kelly, it's almost exactly the same as three years ago.
KELLY, Q.C.:
Q. Exactly, exactly.
DR. BOOTH:
A. And I –
(9:30 a.m.)
KELLY, Q.C.:
Q. You and I are in substantial agreement.

Let's just go forward here. "If this is added to a 2.81 consensus forecast," so you haven't roast this up for the 2017 year, "for the average long Canadian bond yield for 2016 and a 50-basis flotation cost allowance, I would judge a simple CAPM fair return estimate for 2016 as follows." And then you set it out, and then you say below that at line 13, "The average estimate of 6.08 is slightly lower, .2, than the simple average of 6.28 I used in my 2012 testimony simply because the forecast long Canada bond yield is that much lower." But adjusting for the fact that we have a 2017 test year, you actually get back to the same result, don't we?
DR. BOOTH:
A. That's right. It's not much difference.
KELLY, Q.C.:
Q. Exactly, okay.
DR. BOOTH:
A. I mean the critical thing, as I've stressed, is the—I would not regard 5½ to 6½ percent as a reasonable ROE for a regulated utility

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because we're using a forecast long Canada yield that's not being determined by ordinary investors. It's being determined by the central banks.

KELLY, Q.C.:
Q. Okay, understood. Now, then we adjust for that one point to be sure we're comparing apples to apples. Then you go through two adjustments that you made the last time and the first, Dr. Booth, is the 40-basis point adjustment that you used in 2012 for credit spreads, and this time it's .45 percent?
DR. BOOTH:
A. That's right.
KELLY, Q.C.:
Q. Forty-five –
DR. BOOTH:
A. Credit spreads are marginally higher.
KELLY, Q.C.:
Q. Sorry?
DR. BOOTH:
A. Credit spreads are marginally higher than they were three years ago.
KELLY, Q.C.:

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Q. Right, and that's just a mathematical calculation?
DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. Okay. Then you do your operation twist adjustment. Correct?
DR. BOOTH:
A. Yeah.
KELLY, Q.C.:
Q. And the last time you had 80 basis points, and this time you have 130 basis points?
DR. BOOTH:
A. Well, the last year I had 80 basis points and was reasonably comfortable with it. This time I have 130 and I'm very uncomfortable with it.
KELLY, Q.C.:
Q. Not quite as certain, but -
DR. BOOTH:
A. I'm not quite as certain because—and that's why the critical thing the Board has to look at is simply these bond buying programs. And even in 2012 the U.S. bond buying

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programs came in, but we were looking at a schedule that the FED was talking about to get out of the bond buying program. Right now we have no idea when the Japanese and the European central banks are going to stop their buying programs. And we don't know when the FED is going to unwind the 3½ trillion dollars' worth of securities it's got.
KELLY, Q.C.:
Q. Which is why on your analysis you're actually doing this operation twist adjustment?
DR. BOOTH:
A. Well I'm doing it, but as you can see in my evidence, it's a lot more volatile now than it was three years ago.
KELLY, Q.C.:
Q. Right.
DR. BOOTH:
A. And that's partly as I explained because we do have some problems with preferred shares issued by banks and by resource stocks, and also because there's these rate reset

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preferreds where they're being reset based upon the five-year long Canada bond yield and that's now down at .68 percent.
KELLY, Q.C.:
Q. The 1.3 percent operation twist adjustment I take it is your best judgment and advice to the Board that you feel you can give at this point in time?
DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. In other words you've tried to use your best judgment to get to that number?
DR. BOOTH:
A. That's right. I've tried to look at the current level of bond yields, two percent, and they're clearly incredibility low. Anybody buying Government Canada bonds at two percent for 50 years is taking what we call—let's see. Instead of a risk-free rate, it's a rate-free risk.
KELLY, Q.C.:
Q. Okay.
DR. BOOTH:

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A. Because the real return is negative and there's a huge amount of uncertainty surrounding that. So it's a question of what is a reasonable rate of return that people are thinking about in terms of a risk return trade-off. You add 130 basis points to 2 percent, you're at 3.3 percent.

KELLY, Q.C.:

Q. Okay. Now, so from there you then complete out your—can I call it an adjusted CAPM analysis?

DR. BOOTH:

A. No, it's not a CAPM analysis at all. It's a risk premium analysis.

KELLY, Q.C.:

Q. A risk premium, okay. I just—I don't want to be offside in whatever language you're using.

DR. BOOTH:

A. No, no, that's fine. The—I think at the moment the CAPM is, as I've said, is giving unreasonably low estimates, but you can couch any estimate in terms of the risk premium.

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KELLY, Q.C.:

Q. I don't want to get into a semantic debate is simply my point.

DR. BOOTH:

A. Okay.

KELLY, Q.C.:

Q. Now let's go to page 51 so we understand where this kind of goes. Having made your two adjustments on the same methodology that you did from 2012, you come up with a range at lines 4 to 5 of 7.31 to 8.36 and you say, "This would indicate a 2016 fair ROE of 7.83 percent for a benchmark utility," correct?

DR. BOOTH:

A. That's correct.

KELLY, Q.C.:

Q. Right. Now, can I stop you there? In order to make that apples to apples again to adjust for the 2017, I have to add on 20 more basis points, so that would take us to 8.03 percent?

DR. BOOTH:

A. That sounds about correct.

KELLY, Q.C.:

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Q. Right, 20 basis points on 7.83, because I want the Board to understand what's the comparable with 2012 – 2013. Now then you say, "Taking into account the current yields on utility preferred shares," which you've just mentioned, "and the difficulty in making a direct transfer from preferred shares to common equity, I would tend to be conservative and recommend the same 7.5 percent as in 2012." Now, can I stop you there? You've already told us you used your best judgment to get to 1.3 and the .45 is simply math. Why do you adjust it back down? Because you've used judgment to make your adjustments and now you're adjusting your judgment.

DR. BOOTH:

A. Because the—if we look at the graph on the previous page, we can see that in 2012 we had basically a spread that was pretty constant throughout 2012. It was around about 75, 80 basis points. So I was reasonably comfortable with that. In 2013 we had interest rates going up and the

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spread dropped down, and in fact our—before I think it was Hydro Quebec I represented a 40 basis point adjustment because we were getting to the situation where interest rates were increasing and the impact of the U.S. bond buying was dissipating. People were seeing interest rates increasing. And then, starting in 2015, we have this huge increase and huge volatility. And if we go from one month to the next, we see swings of 50, 60 basis points. So the problem is how much reliance am I going to be—place on something that has resulted in huge volatility swing during 2015. So when I say conservative, I'm saying when I look at the spread here, I'm not as comfortable looking at preferred shares and going from preferred shares to common shares as I was three years ago. Three years ago it was a reasonably stable relationship. Now there's extreme volatility in that relationship.

KELLY, Q.C.:

Q. What does conservative mean? Because if you're not sure, then couldn't vary either way? So maybe 1.3 for operation twist should be 1.2, but maybe equally it could be 1.5? In other words, you've already used your best judgment to get to 1.3. It doesn't make logical sense then to be making an adjustment to your judgment.

DR. BOOTH:
A. Oh it does, Mr. Kelly. All of this is based upon trying to figure out what is going on in the government bond market and what's going to happen when the bond buying programs in Europe and Japan stop and when the U.S. unwinds its program?

KELLY, Q.C.:
Q. Is this the point that the chair of the BCUC was making to you that you referred to at the end of your opening yesterday that you're using a lot of judgment, Dr. Booth?

DR. BOOTH:
A. When the BCUC, one of the panel members said—I can't remember the exact quote, but "Is judgment more important at this point in time?" And I said, "Yes."

KELLY, Q.C.:

Q. Yes.

DR. BOOTH:
A. There's absolutely no question judgment is more important now than I would say almost any time I've been testifying for the last 30 years.

KELLY, Q.C.:
Q. Okay.

DR. BOOTH:
A. We have never ever had a situation where we've had this massive amount of intervention in government bond markets around the world which I think has made the risk premium models suspect, simply because they may be the yields that exist in the market, but I do not think they're fair basis for setting a risk premium model.

KELLY, Q.C.:
Q. Okay, now –

DR. BOOTH:
A. So there's that huge amount of uncertainty, and that clearly—and as I said, Mr. Kelly, one of the problems with the preferred shares is a bit section of the market is

what we call rate resets. They reset the dividend based, every five years, based upon the five-year government of Canada bond rate. Since the spring and the drop in the overnight rate, we've seen people looking at those preferred shares, saying, "Those are going to be reset at a premium over .68 percent. I'm holding them now, but the dividends are going to be dramatically cut." So the price of those rate reset preferreds is dropped and their dividend yields have gone up. So a significant amount of that volatility I suspect, which is the index on the Toronto Stock Exchange, I suspect is being driven by these rate reset preferred shares. And you can see that when you actually look at Fortis's preferred shares.

KELLY, Q.C.:
Q. Your comment about volatility is kind of interesting though, isn't it? Because you've said to the Board before that, well, the market is telling us what people—what investors think it is today. So why wouldn't we look at that market? You've

applied your judgment at 1.3 percent. Why does volatility suddenly become an issue on which you have to adjust your judgment?

DR. BOOTH:
A. Well, because the range could be anywhere from 100 to 150 basis points for that, that adjustment. And in fact, if you go back into the spring, and it was basically 85 basis points. That has been a hugely volatile adjustment. And as I said, all I'm saying is that when I look at those preferred shares, those rate reset five-year preferred shares are causing a lot of problems in the Toronto Stock Exchange index.

KELLY, Q.C.:
Q. Okay.

DR. BOOTH:
A. Which has a significant component of five-year rate reset preferred shares. So all I'm saying is the--three years ago I said to the Board, "Accept an automatic adjustment mechanism and don't change it until the forecast long Canada bond yield is 3.8

percent." I'm looking at what's going on in the government bond market. I don't think we're going to see an increase in interest rates for the next two years.

KELLY, Q.C.:
Q. Yes.
DR. BOOTH:
A. In fact probably for the next three or four years.
KELLY, Q.C.:
Q. Which is why you're not—now not recommending an automatic adjustment mechanism?
DR. BOOTH:
A. I don't think—I wouldn't recommend the Board goes to an automatic adjustment mechanism.
KELLY, Q.C.:
Q. Yes. We got there in 2009 with that analysis, but -
DR. BOOTH:
A. Yeah, well most boards didn't. The Board came back. 2009 was huge uncertain year, as you know, Mr. Kelly, but the—and the conditions in 2009 were completely different from what they are not.

KELLY, Q.C.:
Q. Okay.
DR. BOOTH:
A. The reason why the Board's –
KELLY, Q.C.:
Q. I don't want to bog down over automatic adjustment.
DR. BOOTH:
A. No, but you made a comment there and I'll just say that the reason why boards—some boards jettison in the automatic adjustment mechanism was because the ROE and the borrowing rate for utilities were going in opposite directions. We could -
KELLY, Q.C.:
Q. When I said "we," it was Newfoundland Power who was recommending in –
DR. BOOTH:
A. Well, you weren't the only one.
KELLY, Q.C.:
Q. - in 2009 not to have the formula. The Board did adopt it in '09, and we continued on until we got to 2012.
DR. BOOTH:

A. That's right, but you weren't the only one. Most utilities across Canada said, "Look, how can this be? How can you give us a lower ROE when our borrowing cost is going up?"
KELLY, Q.C.:
Q. We're glad to see the finance professors are catching up to the utility industry. Anyway, can I -
DR. BOOTH:
A. No, that is not correct, Mr. Kelly. And that is a facetious remark. The -
KELLY, Q.C.:
Q. Well, we're –
DR. BOOTH:
A. As I said, in 2009 there was a period of about six months when the bond spreads increased. The A borrowing cost went up and the ROEs were going down because they were tied to the long Canada bonds yield. At that time I said the ROE—the adjustment mechanisms are fine because that was a temporary phenomenon. And it was a temporary phenomenon. And in 2009 through

to 2012 long Canada bond yields came down, and A bond yields came down. So the underlying premise that caused the problems in the adjustment mechanism back in 2008 – 2009, has got nothing to do with what's going on at the moment.
KELLY, Q.C.:
Q. Okay.
DR. BOOTH:
A. What's going on at the moment is something that's entirely different in the capital markets which is the massive bond buying on the part of the central banks.
KELLY, Q.C.:
Q. Sure.
DR. BOOTH:
A. That did not exist in 2009. So drawing a comparison now with the fact that I'm not recommending an automatic adjustment mechanism whereas the utilities recommended in 2009 under entirely different circumstances, is not correct.
KELLY, Q.C.:
Q. Okay, well I don't wish to have that debate

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further, but what I want –

DR. BOOTH:
A. You just did.

KELLY, Q.C.:
Q. I do want to come back to this point, and that we left from. And Samantha, can we come back to Dr. Booth's testimony the last time at page 56, lines 20 to 21? No, this should be his –

MS. PIERCEY:
Q. Oh you want 2012?

KELLY, Q.C.:
Q. 2012 testimony. Sorry, I wasn't clear. There we go, the bottom of the page. Now Dr. Booth, this is the analysis that you had did—that you did in 2012, and I just want to set this up for the Board. The last time you made your adjustments based upon your judgment, and starting with the 3 percent for the forecast interest rate, adjusted for your two adjustments and came up with the estimate of 6.95 percent to 8 percent, and then you said, "Overall, this would indicate a 2013 a fair ROE of 7.50," which is halfway

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in between.

DR. BOOTH:
A. That's correct.

(9:45 a.m.)

KELLY, Q.C.:
Q. Right. So what you've done in this time, Samantha, if we can now come back to page 51 of Dr. Booth's current testimony, is we now have this adjustment to the judgment added on. In other words, there's a component in your current analysis different than in 2012. This is the second change in approach, the first one being we had to adjust for the 2017 interest rate, this one here is you've added this new element of judgment to it at the end, correct?

DR. BOOTH:
A. It's correct that circumstances have changed over the last three years in terms of my assessment of the impact of bond buying program, that's correct.

KELLY, Q.C.:
Q. Can I take you down to the last sentence here, which one of the reasons you give for

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your adjustment is, "I would also note that allowed ROEs in both Alberta and Quebec have been lowered since 2012". Now that doesn't seem to me to be an observation that a cost of capital expert should be making to reduce an analysis because that introduces circularity, doesn't it? A cost of capital expert is supposed to give the Board best assessment of what markets are saying, not to be driven by what boards have already done. So my first problem I have with that reason for your adjustment is circularity. I'll give you an opportunity to agree or not?

DR. BOOTH:
A. I would agree with that, it's the responsibility of an expert witness to inform the Board, and to offer unbiased opinion and judgment to the Board as to what is a fair ROE.

KELLY, Q.C.:
Q. But you wouldn't make your adjustment based upon what other regulators have done surely, it's circular?

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DR. BOOTH:
A. Not really, it's circular in the sense that they look at exactly the same evidence, but regulators look at a variety of issues and they come on with an informed judgment as to what is fair and reasonable, and all I'm doing here is I'm not changing my recommendation. All I'm saying is in the end, "However, I note that consistent with Concentric's review of allowed ROEs prepared for the Canadian Gas Association, the statistical evidence from bond yields is for lower allowed ROEs than in 2012. I would also note that allowed ROEs in both Alberta and Quebec have been lowered since 2012". That's just background information to support my -

KELLY, Q.C.:
Q. I see. So you're not saying that the explanation you provided in this is actually the reason for the 33 basis point adjustment?

DR. BOOTH:
A. What 33 basis point adjustment?

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KELLY, Q.C.:
Q. Well, you've gone from 783 to –
DR. BOOTH:
A. 750 to 783.
KELLY, Q.C.:
Q. To 750.
DR. BOOTH:
A. In terms of that 750 to 783, as I thought we've established, Mr. Kelly, the major reason for that is the adjustment for bond buying from 80 to 130, and as I've indicated, I'm very uncomfortable with that because of the volatility of the preferred spreads.
KELLY, Q.C.:
Q. Right, because the other problem in looking at what regulators do, is it begs the question of who has led the list lower, and if we go for a moment to PUB-NP-034, Samantha, we'll come back to this page again, you see these are the current allowed returns, correct?
DR. BOOTH:
A. I think so, yes.

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KELLY, Q.C.:
Q. Samantha, can you pop up NP-CA-82? Here we go. Now if we can scroll up the table a little bit, you'll see in – if we go to the 2012 lines, Dr. Booth, the first one in March is a TransCanada Pipeline restructuring. This is about your evidence, so we'll skip over that one, and then the next one we get to is actually the Newfoundland Board, which is the point at which it got reduced to 8.8 percent, and then after that we have Nova Scotia Power, then we have the Newfoundland Board again, and it's only after that, after the Newfoundland Board being at 8.8 now on two times, that BCUC finally gets in the game and Alberta gets into the game. So they actually come after. We've heard a lot of evidence before the Board about the timeliness of this Board's decisions, so it's actually this Board which has led the Canadian numbers lower. Do you not agree with that?
DR. BOOTH:

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A. No, not really. I'll explain the reason for that is there's the evidentiary basis and then there's the timing of the decision. This Board has got quicker decisions than the Alberta Utilities Commission, which takes forever to come to their decision, and the BCUC seems to take a long time, but in terms of the sequence this year, I think it's almost exactly the same as three years ago. The BCUC had its hearing a month ago, we've got a hearing now in Newfoundland, and we're expecting to have a hearing in Alberta May/June. So basically the evidentiary basis for those hearings is not that different. Mr. Coyne's evidence, for example, is there's a 14 day difference between this Board and the BCUC. So the evidentiary basis on which the boards make their decisions very, very similar. The only difference is how long it takes the boards to get the decisions out and the hearing. I regard them all as being exactly the same.
KELLY, Q.C.:

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Q. Samantha, can you put back up PUB-NP-034, and these are all the rates which are currently in effect, and, in fact, Ontario's rate is a 2016 rate just established last fall.
DR. BOOTH:
A. I will accept that.
KELLY, Q.C.:
Q. In fact, Ontario has just looked at their mechanisms and concluded that it is giving the correct results. They've just, as of January 2016, reaffirmed it?
DR. BOOTH:
A. What I would say is Ontario hasn't had a litigated hearing into the ROE since 2004. The Ontario Energy Board had a review with internal staff that said it's working fine, but that's not a litigated hearing. That was an internal decision by the board.
KELLY, Q.C.:
Q. And that rate there for Ontario is a 2016 rate?
DR. BOOTH:
A. I think so. I think that's probably what

came out in September/October.

KELLY, Q.C.:

Q. So if we look at that, British Columbia and Alberta are now under review, and we'll wait and see which way they go.

DR. BOOTH:

A. That's correct.

KELLY, Q.C.:

Q. But Ontario, Prince Edward Island, and Nova Scotia, are all above where this Board currently is?

DR. BOOTH:

A. That's correct. I mean, when you look at this, they're investor owned electric utility companies, but FortisBC Electric has generation, Nova Scotia is an integrated electrical utility that has complete generation, so you're not comparing like with like. The T & D is in Alberta, BC and Nova Scotia are not T & D, Prince Edward Island, that's the Government – so I'm not going to comment on that except for the fact they were supposed to be having a hearing and they didn't have a hearing.

KELLY, Q.C.:

Q. Ontario covers a whole range of utilities, doesn't it?

DR. BOOTH:

A. That's correct. Ontario is the outlier both in terms of the common equity ratio and in terms of the allowed ROE, and it's mystifying to understand why the OEB hasn't had a litigated hearing for 12 years, but as you probably know, Mr. Kelly, the two gas companies, Union Gas and Enbridge Gas, have been under settlement for about the last ten years. The only hearing into their common equity ratio was three years ago when it was confirmed at 36 percent. The rest of the utilities are the electric utilities who are almost all publicly owned.

KELLY, Q.C.:

Q. I think there's something like 40 utilities across Ontario that are covered by that program?

DR. BOOTH:

A. I'd suspect that there's more than that.

KELLY, Q.C.:

Q. More than that, yeah.

DR. BOOTH:

A. Because one of the things the OEB did was give a standardized cost of capital in the hope that they would force some mergers and acquisitions to reduce the number of tiny little distribution companies.

KELLY, Q.C.:

Q. There's a large number of utilities in Ontario with the allowed ROE of 9.19 percent for 2016?

DR. BOOTH:

A. That's right, and they've all got – well, even further than that, Mr. Kelly, they've got deemed common equity ratios, deemed cost of debt, deemed short term borrowing costs, and a deemed ROE, because most of them, their financial structures don't look anything like normal utilities because they're municipally owned. I'd also point out there that you're probably aware the Ontario Government, not only does it have a huge budget deficit, but its selling off Hydro One, and it's selling off Hydro One at

a huge premium over its book value. At the same time, it's decided not to review the ROE, so I'll leave it to you to work out what the motivation of the Provincial Government is in Ontario.

KELLY, Q.C.:

Q. Samantha, can we come back to page 51 of Dr. Booth's current evidence. Now this adjustment to the judgment, I'll call it, of 33 basis points, is it 33 basis points that you're adjusting here?

DR. BOOTH:

A. No. What I'm saying is that given the uncertainty and the difficulty making a transfer for preferred shares to common equity, I would tend to recommend the same 7.5 percent as in 2012, and the other side to that, Mr. Kelly, is that you can look at all the DCF evidence and the overall return on the equity market which has come down a bit.

KELLY, Q.C.:

Q. I'll come back to that. Before we leave this, in order to be comparable, earlier on we had a discussion which we agreed that we need to add 20 basis points to make this apply to 2017. So instead of 750 in your analysis, is it 770?

DR. BOOTH:
A. No. What I said in –

KELLY, Q.C.:
Q. So you get the same result of 750 regardless of whether you look at a 2016 test year or a 2017 test year?

DR. BOOTH:
A. I would say that if you believe the forecasts which have been consistently wrong for the last six years, you're entirely correct. As I've said, and I've said repeatedly, I'm getting extremely pessimistic about the forecasts that are coming out of all the economic forecasters. They're simply not believed by the capital market. If it was actually believed that interest rates would go from 2 percent to 3.3 percent over the next two years, there would be huge losses in the bond market because as interest rates go up, the value

of bonds go down, and to be absolutely honest, I think this Board had it right several years ago where you used the existing long Canada bond yield because that is the best market expectation where the long Canada bond yield is going to be next year.

KELLY, Q.C.:
Q. But I –

DR. BOOTH:
A. And then the Board moved to a forecast. The forecasts have been consistently wrong.

KELLY, Q.C.:
Q. To get to your 3 percent, I used your surrebuttal updated RBC forecast for those 20 extra basis points, so Samantha, can we pull up Dr. Booth's slide from yesterday, the last one, please, and I think it's number 48.

DR. BOOTH:
A. I will accept, Mr. Kelly, that consistent with 2012, I've not made an adjustment for – the second year of the two year test year because in 2012, I was assuming an automatic

adjustment mechanism, whereas now I'm just recommending 7.5 percent because I do not have any faith in the forecasters and the increase in interest rates. It's just incompatible with the way in which the capital markets are working.

KELLY, Q.C.:
Q. You're saying there's more uncertainty out there, but we still have to do a risk premium analysis. So if I take what you've presented yesterday in your opening, and I adjust the base forecast to 3 instead of 2.81, and do the math, I get 8.03 on the screen, 20 basis, 8.04.

DR. BOOTH:
A. If you do that, that's – look, I have no problem with your math, Mr. Kelly, and, in fact, as I said three years ago, I recommended a fixed rate, I think, of 8.2 percent because I was taking the forecast and I actually believed that we would end up having increasing interest rates. Now I'm extremely pessimistic that that's going to happen. So the major change over the last

three years is I've become extremely pessimistic about future interest rate increases.

KELLY, Q.C.:
Q. Dr. Booth, you have been probably the principal proponent in Canada of the risk premium analysis, and this is the methodology that you've used, correct?

DR. BOOTH:
A. I'm very flattered that you said I'm the principal proponent. I wouldn't have said that.

KELLY, Q.C.:
Q. Well, I think you're well recognized as the major proponent for the –

(10:00 a.m.)

DR. BOOTH:
A. Flattery will get you everywhere, Mr. Kelly, but what I would say is that I know that my colleagues, and Professor Ralph Winter, Professor Bill Waters, have been – I mean, it's the standard model that we use. It's not as if I'm doing anything strange, but I would say just to sort of back up a little

bit, when I started testifying, I used four models. Half of them were discounted cash flow models, one was a CAPM model, and one was an estimate implying a rate of return using market to book ratios. So one quarter of my testimony was CAPM. The change in the number of companies that we've got in Canada has knocked out a lot of useful techniques and you're sort of forced back, what have you got, and the major thing we've got is CAPM, and 1994 – actually, I think it's 1993, the BCUC had a generic hearing where they adopted the automatic adjustment mechanism. That was nothing to do with us, we didn't – my colleague, Mike Berkowitz, and I, we didn't initiate that, we didn't say use the risk premium.

KELLY, Q.C.:
Q. I don't want to go back through the history too far.

DR. BOOTH:
A. No, no, but when you say I'm the proponent, I don't think that's true.

KELLY, Q.C.:

Q. That was a compliment. You can take it as a compliment.

DR. BOOTH:
A. I know, but I'm a humble guy, I'm not going to take compliments I don't deserve.

KELLY, Q.C.:
Q. Fair enough. As a matter of analysis, though, if we look at what you have on the screen, essentially what you have is a risk premium type formula analysis, isn't it?

DR. BOOTH:
A. That's right, it is a risk premium.

KELLY, Q.C.:
Q. And a formula type analysis. In other words, you start with what you take as the long Canada forecast bond yield, you make some adjustments to it, and then you come up with your final result?

DR. BOOTH:
A. That's correct. If I just did a simple CAPM, we'd be down to 6 percent.

KELLY, Q.C.:
Q. Oh, yeah, and this type of analysis, what you end up with is the type of formula, and

what I'm going to suggest to you is whether it's 770, in other words you add the 20, but make an adjustment, or it's 804, what your analysis is showing on this risk premium analysis which you do consistently is actually a somewhat higher cost of equity before you make any judgment, and at 770, it's still higher. In other words, the directional impact is higher, not lower. Agreed?

DR. BOOTH:
A. I'd say there's some truth to that, and just to come back again, the simple CAPM 6 percent, and it's not as if everything is sequential. I look at the full canopy of information, and I've been looking at DCF versus CAPM, and I'm being forced to look at other estimates; what does AON Hewitt say, what does Towers Perrin say, what does Duff & Phelps say to corroborate what's going on, and that informed my judgment to look at the CAPM and say that's not fair, it's not a reasonable rate of return. Then that's brought in, these adjustments that I think

are necessary to come up with a risk premium that makes sense.

KELLY, Q.C.:
Q. So your risk premium analysis takes us on the Canadian market directionally somewhat higher? We can debate whether it's 20 basis points or 50 basis points, but directionally higher on the analysis?

DR. BOOTH:
A. I would say that the core estimate is the same, if not slightly lower, which is the normal fair ROE. I'd have to go back and see what that was in 2012, and then the credit spread adjustment, you're correct, is 5 basis points up. The big one is operation twist, and the problem there is -

KELLY, Q.C.:
Q. You've used your best judgment to get there.

DR. BOOTH:
A. I've used my judgment, but there's huge uncertainty surrounding that adjustment now that was even bigger than it was three years ago because the U.S. is now finished and we've got all these other things going on,

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but you're correct, I mean, the estimate is what it is, it's higher.

KELLY, Q.C.:

Q. Now the next point I want to explore with you, because we've had a discussion about where the capital markets are, and you've told me they're substantially the same. We looked at your risk premium analysis and saw it's slightly directionally higher, I don't want to make a mountain out of a molehill, it's directionally higher.

DR. BOOTH;

A. No, that's fine.

KELLY, Q.C.:

Q. The way the Board approached this in its last Order was to take your 380, apply their judgment to the market risk premium and the beta, and if you use the Board's methodology from the last time in the current market conditions, the math would be the exact same. In other words, you'd be 380, assuming the same market risk premium and beta, you'd get the same math, correct?

DR. BOOTH:

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A. That's correct. From what I remember, the Board came up with a CAPM of 8.2, and then pushed it up to 8.8 by the use of other models.

KELLY, Q.C.:

Q. Right. We'll come to the other models. What I'm trying to set up to be sure we understand it, first of all, you say the overall market is the same, your risk premium analysis is directionally higher, and on the Board's methodology you would get the same result?

DR. BOOTH:

A. Yeah, I would – I mean, I just qualify directionally higher, but with a huge amount of uncertainty.

KELLY, Q.C.:

Q. Fair enough.

DR. BOOTH:

A. But otherwise, you're correct, I recommended 7.5 percent, as your data shows, ever since 2012 when we started these massive bond buying programs and it's disrupted the capital markets, and since then, I've said

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7.5 percent every hearing I've been in.

KELLY, Q.C.:

Q. Let's talk next then a little bit about DCF. We chatted about this in our last discussion in January, 2013, and I think you recognized at that stage that there'd been a shift by Canadian regulators, and that the use of multiple tests, including DCF, is now preferable?

DR. BOOTH:

A. I think it's fair to say that I'd been recommending looking at other models as well as simple CAPM models. Like myself, most boards still count it in terms of a CAPM, and then do this sort of hand wave and can say other models we add 50 basis points or 60 basis points, or 75 basis points, and that would be – the other models would primarily be DCF.

KELLY, Q.C.:

Q. Let me take you to page 40 of the transcript from our discussion the last time, and I take you down to about line 13 on page 40. "Can we agree that since the last hearing

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before this Board", in other words, 2009, "that there's been a shifting emphasis among regulators from CAPM towards DCF, and I'm not by the question suggesting that other regulators have simply embraced DCF, but that there'd been a shift in emphasis across the country in terms of the use of DCF with CAPM or risk premium analysis, if you like", and your answer was, "I agree with that", and then you go on to explain why.

DR. BOOTH:

A. Yeah, the –

KELLY, Q.C.:

Q. Do we agree?

DR. BOOTH:

A. That's true, I've seen more of these with 60, 70, 80 basis points adjustment for other models, that's correct.

KELLY, Q.C.:

Q. And if we go over to the next page to page 41, and if we come down to the question that begins at line 12, I take you to a particular RFI at the time, and at line 14, perhaps if you can take it back up to the top of it, there we go, if you go to line 19, you were asked to confirm that, "In arriving at its 9.5 percent ROE for TGI", this is the BCUC, "it gave most weight to the DCF approach, lesser weight to the ERP and CAPM approaches, and a very small amount of weight to the CE approach, comparable earnings", and the answer you gave, you confirmed that that's correct, but you thought at the time it was a bit of an outlier.

DR. BOOTH:
A. That's correct, and I said it's a bit of an outlier simply because of the way in which the BCUC framed that decision in 2009, and that was also the decision that led them to bump up the common equity ratio from 35 to 40 percent.

KELLY, Q.C.:
Q. Right, so the BCUC gives most weight to the DCF?

DR. BOOTH:
A. I wouldn't say that now. I'm not so sure. I'd have to go and look at the decision for

the 2013 one, but you're absolutely correct, in 2009, not only did they give weight to the DCF, but they also said that analysts' growth estimates, no reason to discount them. So that, I would say, was a little bit of an outlier compared to other Canadian boards.

KELLY, Q.C.:
Q. BCUC is a pretty experienced and competent board, isn't it, Dr. Booth?

DR. BOOTH:
A. Oh, absolutely. Look, I have a lot of respect for the BCUC. They had a major hearing, as you're probably aware, in 2012 where I think they had four or five commissions, and they brought in Ron Giamarrino, who was the former Chair of the Finance Group at UBC, as a special commissioner to deal with a lot of the witness testimony, because in that hearing, I think, there was about five expert witnesses and that was a really sophisticated hearing.

KELLY, Q.C.:

Q. That's exactly right. In fact, I was going to come to this later, but since we're on the topic, let's talk about it now. In fact, the BCUC had a very extensive examination before coming to its conclusions about the use of DCF and the fact that this analyst bias issue doesn't exist the way you suggest it has?

DR. BOOTH:
A. That was the 2009 decision where they made explicit statements about analysts' bias. I warned you - in 2013, they said they wanted to look at multi-factor models and more advanced models, and I told them beware of asking for what you might not – you may get what you're asking for.

KELLY, Q.C.:
Q. Right, in fact, to follow up on this let me take you to CA-NP-079, and this is about the use of U.S. data, and if we go down to line 19, in its 2013 generic cost of capital decision, the BC Utilities Commission accepted the use of U.S. data and made no explicit adjustments, agreed?

DR. BOOTH:
A. I'd have to check that, but I've got no reason to believe that that's not correct.

KELLY, Q.C.:
Q. In its 2009 generic cost of capital decision, which is the one you told us a few minutes ago was the last time the OEB looked at, the OEB also accepted the U.S. data without making any adjustments, correct?

DR. BOOTH:
A. Yes, so I said that was not a litigated hearing. There were on information requests and there was no cross-examination, so the evidence that the three utility witnesses put forward was never challenged.

KELLY, Q.C.:
Q. And there's some very good quotations there from the OEB. I'm not going to spend time on those. Come over to page 2, Samantha, line 22. In its TQM decision, which is 2008, so the National Energy Board as far back as 2008 found that, "U.S. market returns are relevant to the cost of capital for Canadian firms, and that the regulatory regimes in

Canada and the U.S. are sufficiently similar as to justify comparison. Moreover, the NEB found that Canadian utilities are competing for capital in global financial markets that are increasingly integrated. The NEB recognized that it is no longer possible to view Canada as insulated from the remainder of the investing world, and that doing so would be detrimental to the ability of Canadian utilities to compete for capital". So that's where the NEB, another main regulator in Canada, arrived in 2008?

DR. BOOTH:

A. That's correct, and that was a decision where the National Energy Board used ACWI and that's something that even the NEB has retraced its steps on, but there's actually no question, Mr. Kelly, that the capital markets are more integrated now than they were two years ago, five years ago, ten years ago, fifteen years ago, twenty years ago. We have seen fundamental changes in taxes and impediments, particularly for pension fund and tax preferred investments

that used to basically make sure that we invested in Canada. You probably remember at one point we had a 10 percent allowance for foreign securities in tax preferred plans. That's disappeared.

KELLY, Q.C.:

Q. So we have much more integrated capital markets than even two years ago?

DR. BOOTH:

A. I would say they're getting more integrated and right now, and for the last six to seven years, we've been in what we call a macro investing environment. It doesn't matter what stocks you pick, it's all macro, it's all basically where's the global economy going, what's going to happen with central banks, and capital markets have moved more closely together over the last six to seven years than they did in the previous time periods because we're all looking at fundamentally the same economic environment of slow growth, high debt and deficits in the public sector, and significant unemployment in the rest of the world.

KELLY, Q.C.:

Q. So is it your view that the financial situation which has existed over the last four or five years has actually facilitated or moved towards further integration, did I take that from your answer?

DR. BOOTH:

A. I would say that there's two things going on. One is that there is more integration, still difficult for Canadians to buy foreign securities that are not listed in U.S. exchanges, very difficult to buy German stocks if you're a Canadian, or Italian stocks, so we still have restrictions mainly due to securities regulations buying foreign securities, but there's no question that the capital markets themselves are getting more integrated, and there's also no question that the current problems facing investors in Germany, Italy, France, the U.K., the U.S., are all very similar, they're looking at the same problems of slow growth, massive government - central bank intervention in the markets. So it's those same economic

problems that result in the same reaction and result in the same sort of behaviour of security prices. Trying to say, well, that's because they're integrated versus you're looking at the same economic phenomenon is incredibly difficult.

KELLY, Q.C.:

Q. Yeah.

DR. BOOTH:

A. Academics will be looking at this for the next 30 years.

KELLY, Q.C.:

Q. A nice question as to what's the chicken and the egg, but what's important for this board to take out of it is we have more integrated markets than we did when you and I were having this discussion in 2013?

DR. BOOTH:

A. That's right, and when we come back in another three year's time, if there's still 2 percent long Canada bond yields, we'll probably have the same discussion because we're in – I think I mentioned three years ago, we got a long drawn out recovery, and

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we recovered and we're waiting for Godot, we're waiting for the rest of the world to get their act together.

(10:15 a.m.)

KELLY, Q.C.:

Q. Dr. Booth, we went through the apples to apples comparison on your risk premium analysis so that the Board can compare that. Now last time around, you also had a DCF analysis and the Board referred to that in its judgment, and you and I had a fairly extensive discussion over it the last time, and I want to take you to that, so we do an apples to apples comparison so the Board can see the directional changes that flow out of that, if any. If we go to your testimony the last time, it begins on page 14 – sorry, it's Appendix "D", my mistake. Okay, and this is where you start the discussion about your individual company estimates, and Samantha, if you could come over to page 15. Do you have that, Dr. Booth?

DR. BOOTH:

A. Page 15, yes.

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KELLY, Q.C.:

Q. And this is the DCF analysis that you did the last time, and just to refresh the Board's memory, we'll go to the transcript if we need to, the line we have to look at is the "K" line?

DR. BOOTH:

A. That's correct.

KELLY, Q.C.:

Q. We come down to the 873, correct?

DR. BOOTH:

A. Yes.

KELLY, Q.C.:

Q. The median, not the average?

DR. BOOTH:

A. Yeah.

KELLY, Q.C.:

Q. We add 50 basis points for flotation and we get the 923 that the Board referred to in its decision the last time?

DR. BOOTH:

A. I'll accept that.

KELLY, Q.C.:

Q. Okay. Now if you – and you did this DCF

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analysis the last time. If you come over, Samantha, to page 17, and come down to Dr. Booth's conclusion at about line 18, Dr. Booth, you write, "I would judge DCF estimates using analysts' growth forecast to be less reliable than the DCF estimates for the market as a whole, but they confirm the low risk nature of U.S. utilities and a fair return for them of about 873", which is what we just looked at. "This estimate is consistent with the average ROE of U.S. gas and electric utilities of just over 11 percent since 1993", correct?

DR. BOOTH:

A. What page are we looking at?

KELLY, Q.C.:

Q. Sorry, page 17 of Appendix "D".

DR. BOOTH:

A. Okay, sorry, I see that.

KELLY, Q.C.:

Q. I'll give you another minute to just have a quick look at that again.

DR. BOOTH:

A. That's right, and the fact that I show a

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market to book ratio significantly above 1.

KELLY, Q.C.:

Q. So the last time on this methodology, you got a 9.23 DCF with the 50 basis points added on?

DR. BOOTH:

A. That's correct.

KELLY, Q.C.:

Q. Now can we go to your evidence this time, which is again in Appendix "D", and we go to page 14, and you actually do DCF analysis this time on two different samples or two different proxy groups. The one on the top of the page are essentially gas utilities and I'm going to skip over those and go to the U.S. electric ones on the bottom. Are you with me, Dr. Booth?

DR. BOOTH:

A. I am.

KELLY, Q.C.:

Q. And the proxy group which you used were Duke Energy, Allete Inc., Eversource, Great Plains, OGE Energy, Pinnacle West, and Westar Energy?

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DR. BOOTH:
A. That's right, I think they're exactly the same as Mr. Coyne's.
KELLY, Q.C.:
Q. And you chose those as the reasonable U.S. comparators, correct?
DR. BOOTH:
A. No, I chose them so that you wouldn't ask me about why did you choose those firms. I chose them because they're chosen by American experts, for the same reason I chose the gas companies.
KELLY, Q.C.:
Q. And you're trying to find as close a proxy sample as is useful?
DR. BOOTH:
A. Well, when you look at these companies, as I think I've said, you're looking at the capital market greater expectations and the capital market values for these utilities, and then you look at them and you consider whether or not they're reasonable comparators, and the capital market rates return are more useful than looking at the accounting rates of return,

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because they're adjusted by investors.
KELLY, Q.C.:
Q. Can I just point out one little thing for you, and you can – nothing really turns on this, but if you look at Pinnacle West under the first column, five year growth past, and you got –0.04, and -
DR. BOOTH:
A. Well, when you say "I've got", yes, it's the five year past growth reported by Yahoo.
KELLY, Q.C.:
Q. Just bear with me for a second. That looked like a very odd number for an electric utility, so we checked, and we think you simply misread the table you were taking it from. That appears to be the last quarter result as opposed to the five year result, and you can take, subject to check, that the correct number should be 7.59 percent.
DR. BOOTH:
A. I'll take that, subject to check.
KELLY, Q.C.:
Q. And nothing as far as I can see turns on that analysis. It's just one of those, we're

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all human, and I would want to draw it to your attention that the number doesn't seem right because as an electric utility, it didn't look right to us.
DR. BOOTH:
A. Well, as an electric utility, it doesn't look right on the Great Plains on 3.23 percent compound growth in their earnings either.
KELLY, Q.C.:
Q. Yeah.
DR. BOOTH:
A. What I was doing, just reporting this data, and, in fact, for the gas you find a large number of negative numbers.
KELLY, Q.C.:
Q. I'm not quarrelling about - I'm just pointing out to you we think you just misread a table.
DR. BOOTH:
A. Okay, look, I take that, subject to check.
KELLY, Q.C.:
Q. Sure, and nothing turns on it, so just so you're aware of it because, otherwise, it

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just makes the table look odd. Now to compare apples to apples, we have to come over to mid column, the "K" line again, correct?
DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. We come down to the 8.90, the median again?
DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. We add 50 basis points, so we'd be at 9:40?
DR. BOOTH:
A. Correct.
KELLY, Q.C.:
Q. 8.90 and 50 is 9.40, correct?
DR. BOOTH:
A. Correct.
KELLY, Q.C.:
Q. So the comparison with the 9.23 the last time would be 9.40 this time?
DR. BOOTH:
A. No, I don't think that's correct. I think, as you said, the comparison three years ago

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was with the gas companies.

KELLY, Q.C.:

Q. No, it was with a proxy sample that you took back then, a different proxy sample, I agree.

DR. BOOTH:

A. That's correct. I mean, if you just say, well, it's a proxy sample when you're picking that sample, then you're correct. If you look at it and say gas companies to gas companies, then you're not correct, because the gas companies to gas companies, this is 8.38 percent median.

KELLY, Q.C.:

Q. These are your samples, though. So that we're not at cross-purposes, Samantha, let's go back to the top of the page and here's your gas sample, in which case if we look at the same set of numbers, we'd be at 8.38 for the median?

DR. BOOTH:

A. That's right.

KELLY, Q.C.:

Q. And then we'd be at with 50 basis points,

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8.88?

DR. BOOTH:

A. That's right, so down by 30/35 basis points.

KELLY, Q.C.:

Q. A small down there, a small up on the bottom?

DR. BOOTH:

A. Yes.

KELLY, Q.C.:

Q. And what I'm taking out of that, Dr. Booth, is directionally I'm not seeing any material change in the U.S. market for the cost of equity between 2013 and where we are today. Do you agree with that?

DR. BOOTH:

A. No, I would not agree with that. I mean, first of all, I don't put a great deal of stock on individual point estimates, but having said that, directionally the gas utilities are down compared to three years ago, although as I said, I wouldn't put a great deal of faith in that, and the other thing you can look at this is the fact that the median gas utilities is 8.38, the median

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electric utilities is 8.90. So you can look at that and say, well, there's 50 basis points higher cost of equity for the electrics and the gas, and that actually confirms the fact that the betas for the U.S. electric companies is significantly higher than the betas for the U.S. gas companies.

KELLY, Q.C.:

Q. But these are the comparisons that the Board will have to look at between the 9.23 that you had the last time, and 9.40 or 8.88 this time?

DR. BOOTH:

A. Well, what I would recommend the Board do is say, well, it's 9.23 percent for the U.S. gas samples that I used last time, and they were basically, from what I remember, based upon Ms. McShane's sample and the Brattle Group sample, and again designed to avoid a lot of cross-examination of why this company, why not that company, and on that point, it was 9.23 three years ago, and now it's 8.38 plus 50 basis points, 8.88.

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KELLY, Q.C.:

Q. The sample is not exactly the same either.

DR. BOOTH:

A. No, that's true, the sample is not exactly the same because life changes.

KELLY, Q.C.:

Q. As we saw when we looked at the market as a whole, when we look at these numbers, these are minor variations from the 9.23 that we saw the last time, a few basis points higher on one, a few basis points lower on the other, agreed?

DR. BOOTH:

A. 30/50 basis points, is that minor? I would suspect if you say that to Newfoundland Power, they would say 50 basis points is not minor on the ROE.

KELLY, Q.C.:

Q. It's an interesting approach that you take because on CAPM, when we were talking about 50 basis points difference in your CAPM, or I should call it your equity or your risk premium analysis, you were quick to say, oh, 50 basis points, I can take 33 of it away

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just as a judgmental matter?

DR. BOOTH:

A. No, I think that's not a correct assertion. As I said, the big problem with that analysis is simply the preferred share yields and the fact that we've seen this demonstrable increase in volatility. All I'm saying here is if you believe these numbers, and these are straight from the analysts' forecasts and they're mechanical calculations, then the U.S. gas sample indicates a reduction from 2013 to today, and it also indicates that the U.S. electrics have got a higher cost of equity than the U.S. gas companies, which is consistent with their beta estimates. So what I would tell the Board to take from this is that directionally the DCF indicates a reduction in the U.S. equity cost, and the fact that U.S. electric companies are riskier than U.S. gas companies.

KELLY, Q.C.:

Q. Okay, so your advice to the Board, and we talked about Canadian direction earlier,

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your advice to the Board, you think, is that the U.S. market is slightly directionally lower?

DR. BOOTH:

A. I would say –

KELLY, Q.C.:

Q. That doesn't seem to fit, frankly. We just talked about integrated capital markets. One would logically expect that we have a slightly higher – directionally higher in Canada, directionally higher in the United States, or at least equal in the U.S., which is what I'm seeing in the data?

DR. BOOTH:

A. Well, are you seeing in the data the fact that the U.S. bond yields are 70 to 80 basis points higher than Canada? If you believe in industry graded market, the borrowing cost for the U.S. Government should be the same as the borrowing cost for the Government of Canada.

KELLY, Q.C.:

Q. But you've already explained how that's driven by public policy differences across

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the different governments?

DR. BOOTH:

A. That's exactly right, but all I'm doing is pointing out that when you look at integrated capital markets, the basis proposition is the same thing sells for the same price in two markets. So the classic example is gold, because we run the gold standard for 120 years, so we saw movements in gold and we saw exchange rates driven by the price of gold. It's a commodity, it has to sell for effectively the same price in different markets. Equities are not a commodity. Equities are different between the U.S. and Canada, and in particular, as we know, Canadian utilities are not traded in the United States, and they have very little non-Canadian ownership, and they're restricted from selling securities into the U.S. So claiming that it's integrated on the big level, particularly in the massive flows in government bond markets, and then saying, well, that means it's fully integrated in all the different components

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of the markets is a bit of a stretch.

KELLY, Q.C.:

Q. Dr. Booth, I gave you as a cross-examination aid a copy of the recent FERC decision in the United States, June, 2014.

DR. BOOTH:

A. Yes, I enjoyed reading that.

KELLY, Q.C.:

Q. Did you enjoy reading that?

DR. BOOTH:

A. I'm being facetious.

KELLY, Q.C.:

Q. Well, you accused me of being facetious earlier and -

DR. BOOTH:

A. Well, I'm facetious as well, Mr. Kelly.

KELLY, Q.C.:

Q. I see.

MS. GLYNN:

A. We'll enter that as Information 32.

KELLY, Q.C.:

Q. Thank you. I don't intend to go through this, but can we agree that FERC, Federal Energy Regulatory Commission in the U.S., is probably the pre-eminent regulator in the United States, or do you know?

DR. BOOTH:

A. I would expect so, in the same way that we always used to treat the CRTC regulated telephone companies, and the National Energy Board regulating inter-provincial pipelines as being the major regulators, and we know that provincial regulators listen to the decisions of national regulators.

KELLY, Q.C.:

Q. So they use a DCF model and they have now essentially streamlined it with the same model applying to both gas and electric utilities in the U.S.?

DR. BOOTH:

A. Yeah, I was struck by how formal this is, and how – we all know the United States is litigious, but this reads like a Supreme Court decision with all these footnotes. I'm not a lawyer, Mr. Kelly, but I looked at this and I thought, wow, this doesn't look like anything that the National Energy Board would produce.

KELLY, Q.C.:

Q. But we'll agree that DCF is the methodology commonly employed in the United States?

DR. BOOTH:

A. That's true, and I read this and there were all sorts of challenges and referrals back basically from previous decisions, and my overriding implication from looking at this, as I said, is how litigious the U.S. is, and also the fact that they're referring to the presiding Judge rather than a tribunal.

KELLY, Q.C.:

Q. I take it, you're not that familiar with how the FERC regulatory mechanism works in the U.S., are you?

DR. BOOTH:

A. I'm not very familiar with the United States, but I'll give you an example, Mr. Kelly, I was testifying before the Ontario Energy Board in the early 90s, and a prominent U.S. witness came in, and he looked at the Board, and I'm paraphrasing, and he said, "Professor Booth's recommendations are unconstitutional, they

constitute a theft of property", and I think the phrase was, "They're against the Constitution", and on the break, I said what country do you think you're in. The U.S. is an extremely litigious country, and when I read this, I couldn't help but think that in Canada we give a huge leeway for tribunals and as long as they come up with what is a fair and reasonable, Appellant courts are extremely unwilling to impose a standard on the Board and say you have to do this or you have to do that. They trust he judgment of regulatory boards. I read this, and I saw this is how we do it, and there will be an appeal if you don't do it exactly the way everything is laid out.

KELLY, Q.C.:

Q. You may not totally understand the way the FERC system works in the States because they have hearing judges, and then it goes to the Commission, but I don't need to get into that discussion with you.

DR. BOOTH:

A. It's true, like, I mean, I would certainly

not hold myself out either as a legal expert or as an expert on the United States. All I'm saying is my impression of reading this, it just reminds me how litigious the United States is.

KELLY, Q.C.:

Q. Okay, now something closer to home, I also gave you a cross-aid which is some extracts from the textbook that you and Dr. Cleary have written?

DR. BOOTH:

A. Can't we talk about this decision?

KELLY, Q.C.:

Q. I don't need to spend more time on it, Dr. Booth.

DR. BOOTH:

A. Oh, because I've got all sorts of things flagged.

KELLY, Q.C.:

Q. Not necessary.

DR. BOOTH:

A. Okay, fine. I've wasted four hours of reading this last night, Mr. Kelly.

MS. GLYNN:

A. We'll enter the excerpt as Info 33.
KELLY, Q.C.:
Q. Thank you. You referred in your opening, Dr. Booth, to your textbook, and you'll be pleased to know I've acquired your third edition most recent -
DR. BOOTH:
A. Oh, you'll be pleased to know there's a fourth edition coming out, and I hope you buy that one, Mr. Kelly.
KELLY, Q.C.:
Q. I couldn't get the fourth edition. It's not out yet, but I did get the most recent.
DR. BOOTH:
A. Oh, it is out, and I hope you paid full price, you didn't buy it on Amazon or somewhere.
KELLY, Q.C.:
Q. Can we look at – I'm not going to go through a lot of this. Can we look at page 263 of this?
DR. BOOTH:
A. Yes.
KELLY, Q.C.:

Q. And the paragraph – this is talking about the dividend discount model, which is essentially a DCF analysis, correct?
DR. BOOTH:
A. That's right. Yeah, it's exactly – I mean, you discount whatever you think you're going to receive as an investor. So if you're looking at companies, you look at free cash flows; when you look at investors, you look at the dividends.
KELLY, Q.C.:
Q. And this is what Dr. Booth and Dr. Cleary say about limitations of the DDM. "Although the DDM provides significant insight into the factors that affect the valuation of common shares, it is based on several assumptions that are not met by a large number of firms, especially in Canada. In particular, it is best suited for companies that one, pay dividends based on a stable dividend pay-out history that they want to maintain in the future; and two, are growing at a steady and sustainable rate. As such, the DDM works reasonably well for large

corporations in mature industries with stable profits and an established dividend policy. In Canada the banks and utility companies fit this profile, while in the United States, there are numerous NYSE listed companies of this nature, correct?
DR. BOOTH:
A. Correct.
KELLY, Q.C.:
Q. So a use of a DCF for a utility company is in fact what you'd expect?
DR. BOOTH:
A. Yeah, I mean, this is from the point of view of invested value in the stock, then all we're doing is saying that you value the string of dividends, which is true. If you don't have dividends, there's nothing to value.
KELLY, Q.C.:
Q. Come over with me to page 353 and come down to "Lessons to be Learned" where you write, "Estimating required returns using the CAPM is fraught with difficulties. We need estimates of beta as well as the expected return on the market. Generally, betas are

estimated using past data with two years of weekly data or five years of monthly data being the most commonly employed approaches. Of course, what we really want is an estimate of beta for future periods so beta estimates can and do vary through time, as illustrated in Table 9.1." And I stop there, when we're talking about betas in CAPM or in risk premium analysis, it's actually a future beta that we're trying to capture, correct?
DR. BOOTH:
A. That's right, the discussion that I had yesterday, if you look back at what happened during estimation period, you have to estimate a reasonable number of things that could happen. If nothing happened during that estimation period and you use that for a future period, you're committing an error, it's a bias.
KELLY, Q.C.:
Q. If we come down to the last part of that section there, it says, "The realistic approach is to recognize that CAPM does a reasonable job of predicting returns on

average over the long run."

DR. BOOTH:

A. That's correct.

KELLY, Q.C.:

Q. So not terribly useful for looking out over a shorter test year period?

DR. BOOTH:

A. No, I would say the critical thing there is that if you actually use the beta estimates, they can be high, they can be low and you're going to make errors unless you actually use judgment in estimating and taking those betas and applying them towards the future. But if you mechanically do anything, whether it's DCF of risk premium or multi-factor models or anything without exercising judgment, in the short run you're going to make errors. Even though in the long run these errors may even out.

KELLY, Q.C.:

Q. Which is the point the BC Utilities Commission was making to you, a lot of judgment in your risk premium analysis.

DR. BOOTH:

A. Well no, I would not say that. I think what

I would say to you, Mr. Kelly, is the same as I think I've said to this Board and every board in Canada, if you want somebody to add up a bunch of numbers, go and hire a statistician. If you want somebody to tell them what was the economic scenario that generated those numbers and what those numbers mean, go and get a professor of finance or a professor of economics. Every data point we observe is a reflection of something that's gone on in a capital market and the economy, and if we had gone through, back in 2003 and said, well the betas for utilities are zero, because during that period Nortel was going up and utilities weren't varying and I had recommended a zero risk premium for a utility, I would have been laughed out of the room, but that's what the statistics tell us and if you hired a statistician, they'll tell you, well, that is the statistic, but an economist or a professor of finance, somebody who understands what's going on would be able to inform the Board and say, don't look at that, and that's exactly what I do.

KELLY, Q.C.:

Q. Can we go over to 774 finally, there we go, a little bit further down, Samantha, please, another bit. There we go. In this section, Section 206, you write, "In the previous section we saw that the DCF model could be rearranged to estimate the investor's required return on a firm's common shares. We also discussed how the model performs poorly when applied to growth stocks which pay low dividends and/or display high growth rates. In these situations, it makes sense to rely more heavily on risk based models, the most important risk based model is the capital asset pricing model, the CAPM which we discussed in Chapter 9." So CAPM, while you don't say it's only for firms which display high growth rates and pay low dividends, more useful for that because you can't use DCK over there?

DR. BOOTH:

A. Well that's right, if you're going to look at them and say, well conceptually DCF and CAPM are estimating exactly the same thing, conceptually you say, well, we start out and

we assume that there's 50 percent weight on each. If you then go and look at Apple and try to do a DCF on Apple or even worse, you try and do BlackBerry, try and do a DCF analysis on BlackBerry to estimate the equity cost, you can't do it. There's no dividends, difficult to come up with growth estimates, incredibly difficult. So instead of 50/50 in that case, you say forget about DCF, 100 percent weight on the CAPM.

KELLY, Q.C.:

Q. And one of the problems that you have and what kind of motivates looking to the United States is the fact that you have a small sample in Canada that you could do a DCF analysis on?

DR. BOOTH:

A. That's true, as I mentioned, when I started doing this 1985, the first time I entered testimony before the CRTC, we actually had Newfoundland Telephone, it was called Newtel at the time, it created a parent, but we had Island Telephone, we had New Brunswick Telephone, we had BC Telephone, we had Bell Canada, we had Quebec Telephone, we had

Maritime Electric, we had Consumer's Gas, we had Unicor, which owns Uni Gas, we had Specific Northern Gas, we had a lot of utilities, we could do a lot of things. Now we're stuck with a sample of five companies, TransCanada and Enbridge are rapidly moving into the United States. Fortis is now buying U.S. regulated assets with abandon, so we've got Canadian utilities, we've got Emera. The AUC basically said the only companies they're bothered about in terms of doing a DCF analysis are Emera and Fortis. The rest of them is just, that's what we got left.

KELLY, Q.C.:

Q. So consistent with this Board's approach we look at a risk premium analysis and we look to a DCF analysis incorporating U.S. utilities because it gives us perspective, it gives us a broader sense of what's happening in the equity markets, agreed?

DR. BOOTH:

A. That's right. Conceptually, Mr. Kelly, you can look at anything. You can look at the cap asset price model allows you to make

risk adjustments for any securities. So you can actually look at Apple and if you wanted to estimate the fair return on Apple and then make a risk adjustment from Apple to the regulated utility. That's what the cap asset pricing model and other factor models do, they make risk adjustments. So I have no problem, in fact, I would say that we now have to look at U.S. evidence more than any other time since I've been testifying simply because even the Canadian companies are less useful than they were even three years ago and I suspect that when we come back, if we come back in three years' time, we'll probably have to say, well Fortis is now 80 percent U.S. and we have to knock out Fortis if we're going to do that and Enbridge and TransCanada, there could be even bigger problems. So our Canadian sample is just getting smaller and smaller and smaller, so I agree with the National Energy Board, with the BCUC, we have to look at the U.S. or the U.K. or Germany or Japan, other countries, and estimate and see what they're doing for their utilities and make appropriate risk

adjustments.

KELLY, Q.C.

Q. Right, that's the quotes which we had on the screen earlier from CANP-079, about the use of American data, correct?

DR. BOOTH:

A. That's right, I have no problem with looking at American data as long as we make appropriate adjustments.

KELLY, Q.C.:

Q. Okay. Mr. Chairman, making good time, I'm about to move to another area. I can start now or we can break now and continue after the break.

CHAIRMAN:

Q. What would you prefer to do?

KELLY, Q.C.:

A. I'm in your hands.

CHAIRMAN:

Q. What do you guys want to do, want to break now or carry on?

VICE-CHAIR WHALEN:

Q. We'd rather carry on.

CHAIRMAN:

Q. Carry on.

KELLY, Q.C.:

Q. Thank you. Dr. Booth, I want to change gears a bit now and talk a bit about business risk and the last time we were here, I guess in 2012, the Canadian economy was doing pretty well and you were kind of referring to it as running on all cylinders?

DR. BOOTH:

A. No, Mark Carney, the Governor of the Bank of Canada was describing the financial system as firing on all cylinders. We still have a little bit of spare capacity in the economy, but Canada was in pretty good shape.

KELLY, Q.C.:

Q. Right, and would it be fair for me to observe that at least since then we seemed to have lost two of the spark plugs, Alberta and Newfoundland due to the collapse of oil and commodity prices?

DR. BOOTH:

A. I think Saskatchewan would say they're a little bit of a spark plug.

KELLY, Q.C.:

Q. Well let's put Saskatchewan in there too then.

DR. BOOTH:
A. I think it's fair to say the concerns over China over the last 18 months has really led to a decline in commodity prices that's leading to a readjustment of the Canadian economy back to where it was, say ten years ago if those prices continue at a level they're at the moment.

KELLY, Q.C.:
Q. Right, and in this province we have not only oil which has certainly decimated the provincial treasury, but minerals, in particular iron ore and the Labrador economy has been devastating on this province.

DR. BOOTH:
A. Yeah, nickel prices particularly in Labrador, I suspect, I mean, I haven't tracked nickel for awhile, but basically all commodities are coming down. As I mentioned in my direct yesterday, until a short period ago China was adding electrical capacity of the U.K. every year. I found that statistic absolutely amazing and all of that electrical capacity needs cooper, needs fuel, needs everything.

KELLY, Q.C.:
Q. And we had the conference board report on the screen earlier when Mr. Coyne was testifying where they called the situation in Newfoundland grim with the government looking at austerity measures. Do you share that view?

DR. BOOTH:
A. Unfortunately—I'm aware of that, Mr. Kelly, unfortunately governments have a habit of thinking the good times last forever, so when they get extra revenues, they spend it and then when the poor times come along, they go deficits and the situation is grim.

KELLY, Q.C.:
Q. Right, okay, and in terms of business risk, you would agree that business risk is based on the Newfoundland economy, business risk for Newfoundland Power is based on the situation in the Newfoundland economy, not the Canadian or global economy.

DR. BOOTH:
A. That's correct, I mean they're worried about how the local economy affects the ability of the utility to earn its allowed ROE.

KELLY, Q.C.:
Q. Right, and there's an RFI on that, but I don't think I need to take you there. Now, let's go to Report 4 in the Newfoundland Power evidence and Samantha, if we go over to page 5, there we go. Bear with me for a second. If you come over to page 5 and you come down to the second paragraph, Dr. Booth, energy sales under proposed rates, this is towards the end of the paragraph, "energy sales under proposed rates, which includes the elasticity effects of the proposed 2.5 percent increase are forecast to be .6 percent in 2016 and 0.1 percent in 2017." Agree?

DR. BOOTH:
A. Well I'm still trying to find it, but I have no problem with that. No, that's okay.

KELLY, Q.C.:
Q. I do want you to have a look at it.

DR. BOOTH:
A. So where are we on the page?

KELLY, Q.C.:
Q. We're in the second paragraph down on the screen.

DR. BOOTH:
A. It starts, "Given the province's struggling economy"?

KELLY, Q.C.:
Q. Yes.

DR. BOOTH:
A. Okay. Yeah, I think, look, there's no question that the problem with natural resource prices has hit Newfoundland and the economy is not as strong as it was a few years ago. That's indisputable.

KELLY, Q.C.:
Q. And this is the forecast, sales forecast which is being accepted, so were you here for Mr. Smith's testimony earlier in the hearing or did you read the transcript in which he explained, together with Ms. Perry, that Newfoundland Power has historically had about a one percent sales growth year over year?

DR. BOOTH:
A. Well I can't remember who mentioned that one percent, but my understanding is one percent sales growth, yes.

KELLY, Q.C.:

Q. Yeah, okay. So we're going from one percent sales growth to essentially no sales growth in 2017?
DR. BOOTH:
A. So is that sales volume or is that dollars?
KELLY, Q.C.:
Q. No, that's kilowatt hours.
DR. BOOTH:
A. Okay, fine, so it's volume.
KELLY, Q.C.:
Q. It's volume.
DR. BOOTH:
A. It's energy use.
KELLY, Q.C.:
Q. Energy use, okay. Now, Mr. Smith also explained and we can go to the transcript if you want to see it, that one percent equates to about 6.5 million in revenue, but you got to talk out the purchase power cost or about 2 million dollars once you remove the purchase power expense, so you'll accept that?
DR. BOOTH:
A. I have no reason to doubt it.
KELLY, Q.C.:

Q. Okay. Now, would you agree with me that that revenue, that contribution in sales growth is important because it offsets increases in operating costs between test years, that's one of the things that that sales growth allows.
DR. BOOTH:
A. Let's back up a little bit. The question is how does the growth affect the business risk and the utility, which I think is what you're saying, and what you're doing is pointing out that when a utility grows, the bulk of its assets are fixed and the bulk of its expenses are fixed, so if you happen to sell more kilowatt hours and sales grow up, you're spreading them over, the costs over a large number of units, so the cost of the unit of power goes down and that makes the energy source more competitive in in fact there is any competition. So growth, given in a fixed cost production, results in lower costs.
KELLY, Q.C.:
Q. And if you don't have growth over, let's say you're talking about a three-year time

horizon, once you get out of the test year, you don't have that contribution to offset increases in operating expense, agreed?
DR. BOOTH:
A. That's right, as a result prices go up.
KELLY, Q.C.:
Q. Then you got to come back in and make an application if you're going to go down that road.
DR. BOOTH:
A. Well that's right, but I mean, it's the job of the utility to forecast these things and build them into rates.
KELLY, Q.C.:
Q. Okay, so hold that thought because I do want to come back to that one. The second thing that the contribution gives you is that it helps cover the cost of financing the capital improvements until the next general rate application when they get incorporated in the rate base because in this jurisdiction, you don't get any compensation for it until it gets in the rate base.
DR. BOOTH:
A. That's right, normally you don't want to

charge current customers for assets that are not in use.
KELLY, Q.C.:
Q. Well they got to get built, but even when they're built and in service, they don't get compensated for it until the next GRA, so that incremental growth helps cover those two factors between GRAs.
DR. BOOTH:
A. Yeah, I think it's fair to say, Mr. Kelly, that growth is generally a good thing.
KELLY, Q.C.:
Q. Okay, and so we can agree on those two principles to start off with, can we?
DR. BOOTH:
A. Well I would have to think a little bit more about the impact of the kilowatt hours, but the general proposition that growth allows the spreading of fixed costs and as a result, minimizes increases in rates for customers is correct.
KELLY, Q.C.:
Q. Right. So one of the risks or problems of the deteriorated economy is the loss of contribution that you're going to get

between test year periods or until the next GRA?

DR. BOOTH:
A. It depends how good the company is who forecast it.

KELLY, Q.C.:
Q. Well the forecast will only cover the test year.

DR. BOOTH:
A. That's correct.

KELLY, Q.C.:
Q. If you're going to be beyond the test year, you lose that contribution.

DR. BOOTH:
A. I'd have to think about that, Mr. Kelly, it's not something that I've gone into, but –

KELLY, Q.C.:
Q. Well that's a good point to pick up because this is not something that you've looked at in terms of utility analysis, I take it?

DR. BOOTH:
A. Well when you look at these issues, Mr. Kelly, you have to look at it in the context of is there anything unusual about this, and

going back over the last 25 years for the province, we've had periods of very good economic growth; we've had periods of not very good economic growth. We've had periods of bad winter storms; we've had periods where we had mild winter storms. We've had, I would suspect most of the underlying risks that affect the utility, so I don't look at an individual factor, I just look at, well, what is the upshot of these, what does it really mean in terms of the performance of the utility, which is why I look at the ability of the utility to earn its allowed ROE. So I would grant you that there may be some issues, I'd have to get into these in more detail, but the upshot is this must have been seen before over the last 25 years.

KELLY, Q.C.:
Q. But you haven't really analyzed this, I take it, from your answer?

DR. BOOTH:
A. No, and there's no need for me to analyze it. I've been involved in hearings where utility witnesses produce all of these

qualitative risk assessments, sort of like the one that you're assessing here, and it sounds like it's incredibly risky and I have to admit, the first time I testified I listened to the grand old man of utility witnesses at that time, someone called Steven Sherwood and I thought, God, that's convincing, this utility must be incredibly risky and then I looked at it and I heard it again the next year and I just kept looking at the ability of the utility to earn its allowed ROE, so you can come up with these scenarios and posit increasing risk and you say, well, this is normal, these are the normal sort of risks faced by utilities, has this caused problems for the utility in the past, and that's what I look at, has there been any significant problems in the ability of Newfoundland Power to earn its allowed ROE either from its forecasting areas and in the forecasting areas we tend to be conservative or I tend to see utilities being conservative or I tend to see utilities being conservative. So if you're pushing this forward as a risk, I would

suspect Newfoundland Power has been in the situation before over the last 25 years.

KELLY, Q.C.:
Q. We're going to continue that discussion, but I want to get the elements out there first. One is the lost of contribution and we know the order of magnitude, one percent is about 2 million dollars. Now the next thing and you've alluded to this already, is forecast risk, if the forecast turns out, if the economic impacts turn out to be worse than anticipated, let's say we had a further, a one percent reduction, not flat but a one percent reduction, then not only would we lose the 2 million in contribution, we'd lose the 2 million for the one percent reduction; basic math, agreed?

DR. BOOTH:
A. Yeah, assuming the utility doesn't react and the utility reacts.

KELLY, Q.C.:
Q. Well you keep that point in mind because we're going to be coming to that one.

DR. BOOTH:
A. Okay.

KELLY, Q.C.:
Q. Now, that's just with the current costs, right?
DR. BOOTH:
A. Yes.
KELLY, Q.C.:
Q. The Board would be quite knowledgeable of its regulatory agenda and it has before it already a host of costs related to Newfoundland and Labrador Hydro. Do you have any familiarity with that, those operating and –
DR. BOOTH:
A. Are you referring to the Hydro costs?
KELLY, Q.C.:
Q. Newfoundland and Labrador Hydro, which eventually flowed through to Newfoundland Power rates, do you have any knowledge of the regulatory agenda involving the Board over that?
DR. BOOTH:
A. I would imagine it's extensive given the fact that it's such a huge project.
KELLY, Q.C.:
Q. Well quite apart from Muskrat Falls there

are a host of cost applications before the Board over the existing system.
DR. BOOTH:
A. I would expect that, Mr. Kelly.
KELLY, Q.C.:
Q. Let me just give you some order of magnitude on the capital side, 119 million for 100 megawatt gas turbine; 230 million for 230 kV transmission line; 77 million in Hydro's 2015 capital budget; 184 million for Hydro's 2016 capital budget which is 610 million or .6 billion coming, that have either been approved or pending before the Board, bulk of it already approved, right? So that cost pressure, quite apart from Muskrat Falls, approved by the Board with one minor qualification, is coming into the system over the next number of years. Do you have a sense of that?
DR. BOOTH:
A. I had some idea that there were significant projects and I know the company's forecasting capital expenditures in the order of 100 million dollars a year when depreciation is about 50, so there's a net

improvement in the system for the next several years, I'm aware of that.
KELLY, Q.C.:
Q. And so those costs, that .6 of a billion is 24 percent, approximately, of the existing rate base of the province, so it's a big impact just in that, even before we get to Muskrat Falls, agreed?
DR. BOOTH:
A. Well that's generally true and generally a utility is like that.
KELLY, Q.C.:
Q. Mr. Chairman, this is now a good time to break. We'll pick up afterwards.
CHAIRMAN:
Q. Okay.
(RECESS – 11:00 A.M.)
(RETURN – 11:34 A.M.)
CHAIRMAN:
Q. So, Mr. Kelly, once more into the breach, sir.
KELLY, Q.C.:
Q. Thank you, Mr. Chairman. Dr. Booth, we were talking about costs coming on the system when we broke for the break and when we were

doing that, I hadn't included the almost 12 million dollars which are coming for the problems we've had over the past winter for replacing the boiler tubes out at Units 1 and 2 on the Holyrood Plant, do you have any familiarity with that?
DR. BOOTH:
A. No.
KELLY, Q.C.:
Q. And of course, all of that pales in comparison to what's coming on the hill, which is Muskrat Falls, 9 billion or so and projected price increases in the price of electricity of 50 percent or more, do you have a general familiarity at least with that?
DR. BOOTH:
A. I have a general familiarity with that.
KELLY, Q.C.:
Q. Okay, can I take you, it's still on the screen, can I take you back a page in the forecast to the top of page 4, there you go. And if you come down to the second line, it says "overall customer response to changes in the price of electricity is relatively

inelastic. A one percent change I the price of electricity will result in a change in energy sales of less than one percent. Current analysis indicates that a one percent increase in the price of electricity will result in a 0.2 percent decrease in energy sales." Do you agree with that?

DR. BOOTH:
A. I do.

KELLY, Q.C.:
Q. And if that's one percent, the statistician in me tells me that a 50 percent increase is a 10 decrease in sales?

DR. BOOTH:
A. Mr. Kelly, the statistician will tell you, and you would tell you it's probably a nonlinear relationship.

KELLY, Q.C.:
Q. Right, which is exactly the point, Dr. Booth, that what that introduces is a whole bunch of uncertainty, doesn't it?

DR. BOOTH:
A. Well I would say –

KELLY, Q.C.:
Q. Because you can't tell me what that

relationship is going to be, can you?

DR. BOOTH:
A. No, that's absolutely correct, I'd have to do a demand analysis and I haven't done one.

KELLY, Q.C.:
Q. No, and it would be very difficult to predict that because you're trying to judge how people are going to react psychologically to this problem, as well as economically?

DR. BOOTH:
A. That is true, that's why I put out the cost of power for 1000 kilowatt user across different jurisdictions because we can say, for example in New York, the cost of power is ridiculous compared to St. John's and we can see that St. John's is cheaper than Toronto, so there are significant differences across different metropolitan areas.

KELLY, Q.C.:
Q. So one of the other risks that we know is coming is at least a sales risk as we have to deal with this problem, can we agree on that much?

DR. BOOTH:
A. Oh I think there's absolutely no question that going out to 2018 and beyond, there may be problems with the cost of power coming through as a result of Muskrat Falls, there's no question about that.

KELLY, Q.C.:
Q. Okay, can we go to NPCA-036 and this is a question which was put to you about the impact of the Newfoundland economy and you make the observation, beginning at line 10, "Dr. Booth judges it to have relatively little impact as the demand for electricity is not very price or income sensitive." And first of all, I take it you haven't specifically studied the price elasticity of electricity.

DR. BOOTH:
A. No, the last time I looked at that was about 15, 20 years ago when there was a study done and published by the Government of Canada, but the fact is people don't turn their lights out and there may be an immediate impact when, whoa we're paying a lot, but people adjust to it which is why in part I

look at the cost of 1000 kilowatt hours across Canada. People adjust to it and they're not going to freeze because the price of electricity has gone up and they're not going to stop paying—they're not going to kick their son off playing video games in the den because of, hey, that's costing a lot of money. There's a temporary phenomena that may be price shock and then there's the long-run impact.

KELLY, Q.C.:
Q. But you haven't studied it? Then you go on –

DR. BOOTH:
A. All I can say is that I'm surprised that it's .2, I would have thought it was less than that. I would have thought it was even less price sensitive.

KELLY, Q.C.:
Q. Utility has studied it.

DR. BOOTH:
A. Yeah, I know.

KELLY, Q.C.:
Q. Then you go on to say, "the only way it could directly affect Newfoundland Power's

business risk is either through short-run forecasting errors"--and we talked about that a minute ago, "or the long-run death spiral if the customer rate base can no longer support Newfoundland Power's infrastructure." You then say "The former is covered by the band around Newfoundland Power's allowed ROE." And if I can just stop you there, we know there is a 40 basis points band around the Newfoundland Power's rate of return, agreed?

DR. BOOTH:
A. Approximately, yeah.

KELLY, Q.C.:
Q. Approximately, and essentially what you are saying is the risk that we talked about for contribution risk, deteriorating economy, could result in Newfoundland Power, the earnings being reduced at least into the lower band of the ROE?

DR. BOOTH:
A. That's correct, it could actually be that Newfoundland Power doesn't earn its allowed ROE and instead of –

KELLY, Q.C.:

Q. And may go under the band?

DR. BOOTH:
A. It may go—exactly, the risk is supposed to be symmetrical, Mr. Kelly, it's supposed to be, you possibly gain, you possibly lose. As I indicated, except for the CRA assessments that caused it to under and then over earn, it's difficult to see that Newfoundland Power has actually experienced any risk.

KELLY, Q.C.:
Q. So one of the risks that you identify in this ROE is that—or in this RFI is that Newfoundland Power has a risk to its earnings from what they have been.

DR. BOOTH:
A. What I'm indicating is and I look at—I asked Newfoundland Power to provide copies of the risk assessment done in the 1990s, rate hearings at that time, so that I could see what the experts were saying at that time and they tended to say that there's increase in competition, there's increase in power costs, there's less competition—sorry, there's increase in competition, there's

less of cost advantage and yet during that period, NP continued to earn its allowed ROE. And when we look at this, as I indicated before, it's a question of utility witnesses and counsel say, well this time it's different. We've faced these risks for 25 years but they haven't materialized so far, but this time it's different.

KELLY, Q.C.:
Q. One of the points that you've flagged yourself, in this answer to this RFI, is that this risk can result in Newfoundland Power's earnings being reduced, as we just talked about?

DR. BOOTH:
A. There's a possibility that if these risks are material and that they fail to forecast and manage those risks properly, which would be a first compared to the last 25 years, then they may actually under earn for the first time.

KELLY, Q.C.:
Q. And the Board will be in a good position to judge the nature of these risks as opposed to yourself because they are the regulators

sitting with these applications before it, obviously.

DR. BOOTH:
A. Oh that's correct. Look, I mean, this Board sits in on all of these facilities' expansions and all of the cost analysis and everything else. The Board will have access to a lot of detailed knowledge than I've got access to. All I'm saying is that after 25 years looking at NP, none of the risks that have been flagged previously have actually materialized. This time it may be different, but that's what utility witnesses always say, this time is different.

KELLY, Q.C.:
Q. Could be. Now the other factor which would fall out of this if I follow the discussion we just had, is more frequent GRAs seem to be what you're suggesting; in other word, the utility will just come back more often?

DR. BOOTH:
A. Well I would say that there's a asymmetry that if a utility flags something that's materially going to affect its performance, then it can come before the regulator and

say, look, there's something seriously going on here, please we need to re-examine this particular risk and that's the regulatory bargain. As I point out in my testimony that if a competitive firm loses sales, it can't suddenly turn around and charge more for everybody else or go back and say, well look, the widget I sold you last year, I'm sorry, you're going to have to pay more for it because I didn't sell enough widgets; whereas that can happen for a regulated utility.

KELLY, Q.C.:
Q. Tell me about the death spiral, what does that mean?

DR. BOOTH:
A. Well the death spiral is TransCanada Mainline. The TransCanada Mainline is a bullet pipeline from Alberta into central Canada and it basically requires gas to flow from Alberta into central Canada. Unfortunately, they are alternative supply bases that have developed that can serve central Canada, principally the Marcel's Field in the eastern United States. And the

TransCanada Mainline saw a significant drop off in its load and it came before the, as any utility does, it came before the National Energy Board and says we're in danger of not earning allowed ROE, we've got some assets that are under utilized, help us. And there was a major hearing, 2011 where the National Energy Board gave the Mainline the tools it needed in order to compete.

KELLY, Q.C.:
Q. But the reason they call it a death spiral, it kind of goes like this, isn't it, as the price goes up, people use less, so you then have to jack up the price again to cover what you didn't get causing a further increase in price of on fewer people.

DR. BOOTH:
A. That's exactly right.

KELLY, Q.C.:
Q. That's the problem.

DR. BOOTH:
A. And that's exactly what the Mainline faced.

KELLY, Q.C.:
Q. And so as we're facing Muskrat Falls, you're

flagging up the prospect at least of this death spiral is you have to increase the price on fewer people going forward, fewer units?

DR. BOOTH:
A. I'm saying there's two elements of risk for a utility, one is the short-run forecasting risk which generally utilities manage that very well in a sense that they over earn because they forecast things that don't actually happen. They forecast spending money that they don't actually spend. And then the fundamental risk is that the utility faces fundamental changes in supply and demand that threatens its ability to recover its costs and the standard procedure is to reallocate those costs and it can result, as you said, as it did for the Mainline, higher costs, causing other people to say I don't want to renew. I don't want to renew and ship on the Mainline, I'll find some other way of getting my gas to market, it's too expensive.

KELLY, Q.C.:
Q. So that's a risk we have. Now let's come

over to –

DR. BOOTH:
A. That's a risk every utility has. It's a question of whether or not it's a realistic risk.

KELLY, Q.C.:
Q. Right, but we don't have anything else, like Muskrat Falls coming with 9 billion. Let's go over to NP –

DR. BOOTH:
A. Yeah, but I'll correct you on that, Mr. Kelly, we do have, I asked Newfoundland Power what the situation was like in the '90s and they said there was a period when they had a 40 percent cost disadvantage relative to fuel oil and they lost about 3.7 percent of their customers, but they still earned their allowed ROE. And during the '90s there was significant testimony before this Board on the problem that they faced into fuel completion with fuel oil, so that's a 40 percent cost disadvantage. If Muskrat Falls comes along and it ends up being 50 percent, well you have to say, well is it going to be--suddenly become material

when it wasn't material in the 1990s.

KELLY, Q.C.:

Q. I'm going to come back to that one. Let's go to NPCA-061 and you were asked in this RFI about Moody's and their comments. If we come down to line 14, you say "Dr. Booth makes no comment on Moody's assessment of the impact of Muskrat Falls, except to note that the Board has a number of regulatory tools to manage that exposure and if the risks materialize, he expects the hearing to consider how to deal with any problems. Regulatory precedent in Canada rather than the United States is that there is no reason to believe that NP's shareholders bear this risk, rather than ratepayers." So if I understand your testimony correctly, this is all the ratepayers' risk?

DR. BOOTH:

A. Ultimately it is the ratepayer's risk, it's the ratepayer who is going to pay the higher cost of electricity and if the Board passes those on, as it currently does, then it's ratepayers who are going to pay those higher electricity costs and they're the ones that

are going to be faced with the higher cost of Muskrat Falls.

KELLY, Q.C.:

Q. And that assumes, of course, doesn't it, that you can pass on whatever the cost consequence is and the ratepayer has the ability to pay it.

DR. BOOTH:

A. That's correct. And if that's the case, there's no death spiral. The only situation where that can materialize if electricity costs become so expensive that Junior can't play video games in the den and you have to turn the thermostat down and turn the lights off.

KELLY, Q.C.:

Q. And that's the presumption that you're making in the answer that you've given that this is a problem, not a problem for the company because you're assuming that customers have essentially an unlimited ability to pay.

DR. BOOTH:

A. That's what we call price insensitive demand which is what electricity is.

KELLY, Q.C.:

Q. That's why we talked about how big that is and the uncertainty around it. Now, let's go to CA-NP-062 and this is another question—no, sorry, it should be NP-CA, sorry, I got the things backwards. Now if we go down to—this is another question about the death spiral and Moody's and at line 10 you say, "Dr. Booth's understanding is that the legal requirement in Canada is the equity cost is a cost and that it cannot be reduced to share the pain; hence, he does not accept that any Canadian regulator would allow an unfair or unreasonable ROE. He also cannot see what costs the Board could disallow as a prudent that would make any material difference since the main concern is not NP's cost but the flow-thru of Hydro's commodity costs." So if I stop there, that's the point that we've already talked about, assuming an unlimited ability for customers to pay.

DR. BOOTH:

A. That's correct, as I've said, as long as the underlined commodity is competitive and

there's no alternative to electricity, then the costs are going to be passed on.

KELLY, Q.C.:

Q. Let's go to the next sentence, "If this flow-thru becomes material, he expects that the provincial government and the Board to take appropriate action." Now, I don't know how familiar you are with Muskrat Falls, but Nalcor is building it, they're the unregulated entity, there's going to be a power purchase agreement with Newfoundland and Labrador Hydro. What action has this Board set up to be able to take in relation to that? Have you studied that issue?

DR. BOOTH:

A. No, all I'm saying here is let's just follow along and read the quote that I referred to from the Ontario Energy Board, "regarding the risks of future events, the Board agrees with CCC that the relevant future risks are not going to likely affect Enbridge in the near term. Any risk that may materialize over a longer term can be taken into account in subsequent proceedings. In considering the risk of future events, the Board would take into account the fact that generally the more distant a potential event, the more speculative of any conclusion or the likelihood that a risk will materialize." All I'm saying here is that in the test year, this is not a factor and in fact, neither 2016 or 2017, the risks that you mention, a factor for Newfoundland Power, probably 2018 is not a factor. We're looking at the future and all I'm saying is that I would expect that if there is a significant supply shock that affects the price of electricity and that affects people dropping off the system for Newfoundland Power deciding to convert to oil, I would expect the Province and this Board, the Board to use its degree of regulatory protection and I would expect the Province to say it doesn't make sense that we've got all this electricity coming out of Muskrat Falls and everyone is converting to heating oil which is not environmentally satisfactory. So there's a variety of tools the Province can go to, as well as this Board in order to think through how to best

handle that risk.

KELLY, Q.C.:

Q. But you haven't analyzed that and I take it from the answer you gave me a few minutes ago, you don't have concrete proposals as to what this Board would do?

DR. BOOTH:

A. No, but I know what every other board in Canada has done, which is when there's anything that comes up to jeopardize a utility, they have a hearing, that's the Canadian regulatory compact and if the incidents you are talking about is severe enough to seriously affect Newfoundland's ability to earn its allowed ROE, I fully expect the company to come before the Board and this Board to hear the evidence and think about what can we do to make sure that Newfoundland Power can continue to have an expectation that it's going to earn its allowed ROE. That's what happened every time I've seen it in Canada. I don't have to know exactly what the Board is going to do, all I know is if this Board just sits idly by and says we're not doing anything,

that's a risk that NP is going to have to suffer, that's a significant change from what I've seen elsewhere in Canada.

KELLY, Q.C.:

Q. But you're relying on somehow the Provincial Government and the Board to do something and can I suggest to you that that introduces a question of legislative and regulatory uncertainty as to how this is going to work, regulatory and legislative risk?

DR. BOOTH:

A. No, I wouldn't say that at all. I would say it introduces the possibility that, I mean, not every action is a risk, Mr. Kelly. Utilities might like to think every action is a risk, but this is an action on the part—expect in an action on the part of the Province if it becomes serious to take steps to protect the utility. I can't conceive for one minute that the Provincial Government is going to say, well, we'll allow all these people to switch to heating oil and we'll see Newfoundland Power have all these problems earning its allowed ROE, we can see the death spiral and everyone is

just going to hold their hands up and say, well we're not going to do it.

KELLY, Q.C.:

Q. So you're optimistic that the government is going to take steps to protect the utility in this province?

DR. BOOTH:

A. I'm optimistic—no, I'm optimistic, in the province, the government is elected by people who vote and when people who vote see their power costs going up –

KELLY, Q.C.:

Q. They might take steps to protect the ratepayer, the customer.

DR. BOOTH:

A. Well exactly, but by protecting –

KELLY, Q.C.:

Q. Not the utility.

DR. BOOTH:

A. By protecting the ratepayer, they're going to protect the utility. Look, all I'm saying here, Mr. Kelly, is that I do not have any precedent whatsoever for a regulator to sit idly by when something comes up that damages the utility's ability to earn its allowed ROE. I saw it with Specific Natural Gas down in the northwest of B.C. and that, I think it was in my 2009 testimony, where the BCUC took a number of measures to try and protect PNG when it lost almost all of its industrial load and we saw it in the National Energy Board when there was a huge hearing, people intervened and they wanted to write off a big chuck of the Mainline's assets. They said they're stranded, they're no longer needed, wipe them all out and let the TransCanada shareholders bear the costs. The National Energy Board didn't do that, they took a reasonable approach to get the utility and to TransCanada the tools necessary for it to continue to earn its allowed ROE and in fact, it has continued to earn its allowed ROE.

KELLY, Q.C.:

Q. Now if we go down to line 26, you also say this, "He"—which is Dr. Booth—"would expect that in an extreme situation Newfoundland Power, like any competitive organization, will look to cut costs wherever possible if

its basic business model was under threat." So one of the things that you're putting up here is that Newfoundland Power, going forward, will have to consider what costs to cut as it tries to balance financial integrity versus system maintenance reliability, agreed?

DR. BOOTH:

A. No, no, not at all. I would say that nearly every other utility in the world has been a performance base regulation, so if there is a huge shock to the system, all I'm saying is this Board has a number of tools that it can look at in order to manage those risks. One of them may be to put some sort of PBR and say to Newfoundland Power, we're going to impose a one percent cost or efficiency gain, which is usually the "X" factor in PBR and we'll give you the potential to actually generate savings and become efficient and it's amazing what efficiencies utilities can generate.

KELLY, Q.C.:

Q. That's a really interesting comment because at the beginning of your testimony

yesterday, you talked about PBR in terms of FAC electricity and squeezing efficiencies out. Newfoundland Power, I think, has a very good record before this Board of very efficient operations, so when you're trying to figure out what you're going to squeeze out to balance financial integrity versus system maintenance and reliability, that's quite a fine balance, isn't it?

DR. BOOTH:

A. Mr. Kelly, I remember vividly in 2004 before the Ontario Energy Board, one of the commissioners asked me why do we have to give these guys an incentive to be efficient? Why do we have to go to a PBR, they should be efficient and do their job. But when I look at what's happened in Alberta, when I look at what's happened in B.C., when I look at what's happened in the Régis where they put the utility on a performance base or incentive regulation, or in Ontario where they're being under settlement, it's amazing the efficiencies that utilities have been able to generate. Perhaps this time is different, perhaps

Newfoundland Power is the one utility in Canada that is already operating incredibly efficient and there's no fat.

KELLY, Q.C.:

Q. So one of the risks that you are, I'm going to call it a risk, one of the risks that you're putting up is that there may be a change in the whole regulatory legislative structure?

DR. BOOTH:

A. Yeah, could be that, look, all I'm saying is that in three years' time if this scenario comes about, there's a number of measures that the Board and the province can do to make sure that this is not a big shock to the system and I think a performance based regulation is not exactly a structural change, as far as I'm aware just about every utility in Canada is under some form of PBR or settlement.

KELLY, Q.C.:

Q. Now, you talked about the cod moratorium and I did promise you we would come back to this and you've heard the testimony before that during the cod moratorium in order to

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balance that financial integrity with system reliability, the company had to cut system maintenance and reliability so that by the time we got to the end of the 1990s, 1999, the system had suffered significantly in terms of reliability, are you aware of that?

DR. BOOTH:

A. Well I wasn't aware of that, but I'm not surprised, I mean, you're probably aware the brownouts we had in eastern Canada were caused because a U.S. utility cut back on its maintenance when it was on the PBR.

KELLY, Q.C.:

Q. And more recently, I don't want to go too far into this, but more recently in this jurisdiction we've had the issue with Hydro, the generating utility and its problems in maintaining the system, so there's a trade off between maintaining financial integrity and reliability if you have declining sales, lack of contribution, growth, et cetera. It's simply the corollary, agreed?

DR. BOOTH:

A. Well I wouldn't say it's simply the corollary, I would say that whenever you

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sort of look to cut costs, first of all there shouldn't be any costs to cut in the first place if in fact it's operating efficiently, but there's always a danger that you may cut a little bit too much. I mean, that's what competitive firms do and you got to remember, Mr. Kelly, that we're basically looking at, regulation is designed to emulate the impact of competition for the utility to operate as efficiently as possible, minimal to low run average cost so ratepayers don't pay more than they should do if in fact it was a competitive environment. And unfortunately a competitive environment, sometimes here are things that wouldn't happen with a regulated utility with a gold plated rate base, that's inevitable.

(12:00 p.m.)

KELLY, Q.C.:

Q. Samantha, can we put up Dr. Booth's slide No. 3, please? If you can take us over, Samantha, you might be able to enlarge the 1990s or 2000 part or is that—that's as good as it gets is it? Okay. Now, Dr. Booth, we

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have on the screen your graph from yesterday with the allowed and actual ROEs, and you will see during the 1990s, that the ROE, the company under earned its allowed ROE, correct?

DR. BOOTH:

A. That is correct, my understanding, I asked the company to explain that and they said it was CRA assessment.

KELLY, Q.C.:

Q. No, I think you're mixing up a little bit.

DR. BOOTH:

A. Oh there was a severe sleet storm.

KELLY, Q.C.:

Q. No, that comes a little bit later. Let me help you along here. In the 1990s, what happened to long Canada rates in bond rates?

DR. BOOTH:

Q. They came down.

KELLY, Q.C.:

Q. They came down, exactly. And what does that do? It reduces your cost of capital, doesn't it?

DR. BOOTH:

A. Well hopefully as long as the regulator

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actually passes through their financial costs, then the ROE should come down.

KELLY, Q.C.:

Q. And so if you look at 1991 through 1996, the Board held the allowed return up as we went through the very difficult proposition of the cod moratorium, it didn't reduce.

DR. BOOTH:

A. Yes.

KELLY, Q.C.:

Q. That's the clear observation, and yet even in that circumstance with an allowed ROE held up, the company was forced into the position of trying to balance financial integrity versus system reliability and system reliability got deteriorated. So we've been through this experience, nobody wants to go back there.

DR. BOOTH:

A. But what you're actually telling me is the allowed ROE is probably excessive in the early '90s, so in fact they didn't under earn, actually they probably over earned if their allowed ROE had been set properly, is that what you're telling me?

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KELLY, Q.C.:
Q. And that helped balance the financial integrity, so maintaining an ROE that enables you to manage through the problem is what the Board did back then. You're in here saying cut the ROE—or from your testimony this morning, at least maintain it.
DR. BOOTH:
A. My recommendation is 7.5 percent, the same as three years ago.
KELLY, Q.C.:
Q. Maintain it like last time.
DR. BOOTH:
A. And my recommendation as well, Mr. Kelly, is that if there are any serious risks outside the test year, they should be dealt with at that appropriate time. My understanding is there is nothing significant within the next, the test years, 2016 to 2017 and all I'm saying is that the Board has the regulatory tools to manage these risks should they materialize.
KELLY, Q.C.:
Q. Haven't quite been able to tell us, though,

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how it's going to do that.
DR. BOOTH:
A. Because that's the job of the Board. I'm not going to go to them and say do this, do that, do that. All I'm saying is that what will happen is there will be a hearing if anything significant happens and out of that would come a judgment on the part of the Board and I've never, as I say, I've never seen a regulator not responsive to any serious concerns raised by the utility. If you're telling me this time it's different, all I could say is I've heard that for the last 30 years and it hasn't been different so far.
KELLY, Q.C.:
Q. Dr. Booth, can I take you to your surrebuttal testimony to page 16, beginning at line 8, I'm going to give you and the Board an opportunity to read down through the first paragraph, that's essentially the discussion we just had and in lines 14 and 15, you point to the role of the Provincial Government and the Board to protect the utility. Okay, with me so far?

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DR. BOOTH:
A. That's correct.
KELLY, Q.C.:
Q. Then at line 17, you say this, "I agree that the Board might in the future take actions that hurt the bondholder." Now, which bondholder are you talking about?
DR. BOOTH:
A. The people that buy Newfoundland Power's bonds.
KELLY, Q.C.:
Q. Would they be our existing bondholders, the 550 million outstanding?
DR. BOOTH:
A. Generally it's the existing bondholders because if the Board takes action, the new bondholders will price that into the yield that they expect.
KELLY, Q.C.:
Q. So I'm not quite sure I understood your answer. Is it the existing bondholders, those who already hold the bonds who would be hurt or new bondholders?
DR. BOOTH:
A. The old bondholders.

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KELLY, Q.C.:
Q. But how would they be hurt? So we're going to hurt the old bondholders, the existing debt owners?
DR. BOOTH:
A. I didn't say we were going to hurt the old bondholders, all I said is that when the bondholders—all I said is the Board may take actions that are not necessarily in the best interest of the bondholders, which is, I mean, a change in the common equity ratio is not particularly in the interest of the bondholders. They would like as much equity as possible, lower the financial risk and an upgrade of their bonds so they pick up a capital gain.
KELLY, Q.C.:
Q. Okay, so existing bondholders could be hurt by the type of tools that you are suggesting could be used and would it not also follow from that that future bondholders would be negatively impacted?
DR. BOOTH:
A. Why would future bondholders be negatively impacted?

KELLY, Q.C.:
Q. Well let me put the question slightly differently, that if steps are taken which affect—that it may affect the company's ability to be able to borrow at the same rates that it otherwise would have been.
DR. BOOTH:
A. I think that's correct in the sense that if this Board decides to replace 5 percent common equity with 5 percent debt, then the bondholders are going to say with a little bit more financial leverage and they're probably going to want a few basis points on the Euro and the debt.
KELLY, Q.C.:
Q. So the cost of debt will rise?
DR. BOOTH:
A. No, I didn't say it will rise, I said it could rise.
KELLY, Q.C.:
Q. It could rise from what it otherwise would have?
DR. BOOTH:
A. Probably that's the case, correct.
KELLY, Q.C.:

Q. Right, so one of the things you are postulating is to deal with the risks we've talked about, the Board might have to take actions which would be serious enough to hurt existing bondholders and negatively affect future bondholders?
DR. BOOTH:
A. No, I'm saying that if any of these risks materialize, the Board is going to look at its overall tool kit and it's going to take appropriate measures. The bondholders when they buy Newfoundland Power's debt have got a contractual agreement that agrees that they think Newfoundland Power can do certain things, that's where they protect them, in the bond contract. That's why there's an interest coverage shown restriction. Everything else is part of the risk of investing in bonds. You can't look at this and say, well the Board can never take an action that possibly hurts the bondholders. I mean, you can say that for the equity holders as well, they can't lower the allowed ROE because that hurts the equity holders. It's the job of the Board to set

fair and reasonable rates. That may result in some equity holders saying, well, I didn't expect that, I'm going to lose money and it may be that some of the bondholders can say, well I didn't expect that, now I'm not quite so happy with those bonds. That's part and parcel of the investment risk.
KELLY, Q.C.:
Q. So if I put all that together, I'm looking at a picture in which even, never mind the shareholders, but we're down to bondholders could be negatively affected as you've said in your –
DR. BOOTH:
A. Sure, you're acting like Mr. Sherwin saying it's against the constitution if you expropriate property.
KELLY, Q.C.:
Q. No, I was surprised to read your words when you said "I agree that the Board might in the future take actions that hurt the bondholder", which is, like that, to me, rings pretty serious.
DR. BOOTH:
A. No, it doesn't, it's not serious at all.

All I'm saying is the Board is going to look at everything and do its best to protect the utility to give it an opportunity to earn its allowed ROE. That may involve putting the Board on—sorry, the company on performance base regulation, it may involve going through more tax efficient capital structure, it may involve changing the depreciation rate and stretching out the amortization of the utility's assets. I don't know what the Board is going to do if it ever materializes and I'm not making any recommendations whatsoever. All I'm saying is that if this situation every materializes and is perceived to be serious, there are measures, there is a tool kit that the Board's got in order to manage all those risks and I do not expect it just to sit idly by and not take measures to protect the utility and changing the depreciation rates is exactly what TransCanada wanted in the TransCanada Mainline, so that's a standard tool that is used to moderate risk.
KELLY, Q.C.:
Q. Okay, let's go back for a moment to NP-CA-

062 because you referred a number of times to this OEB comment. Now is the OEB there talking about the rate of return?

DR. BOOTH:
A. No, it's talking about capital structure.

KELLY, Q.C.:
Q. Okay, well if we look at capital structure, would you agree with me that Newfoundland Power has had a stable capital structure for decades?

DR. BOOTH:
A. That's correct, 40 to 45 percent in the early '90s and 45 percent for at least the last 15 years.

KELLY, Q.C.:
Q. And if I take you to the company's finance evidence, let's go to page 421.

MS. PIERCEY:
Q. What was the page again?

KELLY, Q.C.:
Q. 421. And if you go to the middle of the page, Samantha, and then kind of scroll down. And in fact, you'd be familiar with the Stated Case decision from our Court of Appeal which our Court of Appeal has dealt

with the importance of the stability in capital structure management.

DR. BOOTH:
A. Oh, I generally agree with that completely.

KELLY, Q.C.:
Q. Okay, you would.

DR. BOOTH:
A. Yeah, I'd generally recommend that you don't change capital structures unless there's a significant change in business risk, which is the policy of the National Energy Board, the Ontario Energy Board and most boards in Canada, except the Albert Utility Commission.

KELLY, Q.C.:
Q. Right, and so what you just said is you don't change capital structures unless there's a material change in business risk. If the risk increased, ordinarily you would increase the equity in the capital structure, correct?

DR. BOOTH:
A. Generally you would, it depends what you're doing. If you're like the National Energy Board, the Ontario Energy Board and the

Alberta Utilities Commission where you apply generic ROES to a wide range of companies, it's then efficient to look at the common equity ratio within the GRA of an individual company and change that to equalize the risk such that they can continue to get exactly the same ROE.

KELLY, Q.C.:
Q. That's when you got multiple investor owned utilities within the same regulatory umbrella?

DR. BOOTH:
A. That's correct. Where you don't have multiple utilities, as in the case, for example of the BCUC, the BCUC actually changes the common equity ratio and has changed the common equity ratio and the ROE at the same time and set differential premiums on the ROE and the common equity ratio.

KELLY, Q.C.:
Q. But if you're going to change the ROE, because this is their language a few minutes ago, for a change in the risk, if the risk goes up, it's the equity component that you

would increase. The response to increasing risk is an increase in equity component.

DR. BOOTH:
A. Well it can be, it can be an increase in the ROE.

KELLY, Q.C.:
Q. Or it could be an increase in the ROE, but in terms of capital structure, if you're going to adjust the capital structure because of a change in risk, increasing risk increases equity, decreasing risk decreases equity, agreed?

DR. BOOTH:
A. Agreed, yeah. And in this case with this company regulated by the Board, it's not into the problem of the generic ROE, it can regulate, it can change the ROE and the capital structure.

KELLY, Q.C.:
Q. Now if we go to NP-CA-026, the question asks you – it gives this quote, "In our judgment", referring to Dr. Booth, which would be you and Dr. Berkowitz, "in our judgment, capital structures should be long lived, as they are primarily a function of

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the business risk of the firm. In particular, it is not standard practice to change equity ratios on an ongoing basis", and you were asked, "Does Dr. Booth still agree with the above statement regarding the long lived nature of capital structures", and you answered, referring to certain other ones, "Yes, while noting the word "primarily". So you generally agree with the statement that you've got on the screen?

DR. BOOTH:
A. Absolutely. I disagree with the policy of the Alberta Utilities Commission where they're changing their capital structure couple of years. I personally don't think that makes a lot of sense.

KELLY, Q.C.:
Q. Now in terms of capital structure, if you know you have a risk problem that appears to have material and significant components to it, and you know that that is coming, is it not good financial management to maintain your existing capital structure, or maybe even strength it to be ready for it?

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(12:15 p.m.)

DR. BOOTH:
A. Not particularly. Right now, as I said, if we were going back to Muskrat Falls, as I've said, that is not within the test year, it's not a factor for 2016, 2017, or 2018. I'm not convinced that the dire prospects will actually happen. If it does happen, I would fully expect in the 2020 GRA, that that will come up as an issue and probably if it is serious, then there will be a lot of discussion and a lot of analysis at that point in time. If that does materialize, I would expect the company to put forward its case that a whole bunch of things need to change.

KELLY, Q.C.:
Q. And as we talked about before, the Board will be in the best position to determine the extent of that risk?

DR. BOOTH:
A. That's correct. They'll receive expert evidence by the company and by other witnesses, and the Board will judge that and

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make recommendations.

KELLY, Q.C.:
Q. Let's go to CA-NP-050, and go to page 4 and see if we can come to some agreement on some practical points here as well. If we could go to page 4, and this deals with – come down, Samantha, a little bit lower on the page, if you could. We begin at line 26 and 27, "Newfoundland Power has consulted with its investment bankers concerning the current Canadian preferred share market". Line 30, "The company has been advised that preferred shares with a fixed coupon rate and perpetual term are not currently marketable in Canadian capital markets. Preferred shares, which have a coupon rate which is reset at the predetermined time, typically five years, are currently marketable in Canadian capital markets". Do you agree with that statement?

DR. BOOTH:
A. Yes, at the moment most of the preferred shares are these rate reset preferred shares.

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KELLY, Q.C.:
Q. If we go on, "Preferred shares which have a coupon reset provision are exposed to changes in market interest rates. This makes them similar to debt financing and distinguishes them from preferred shares with perpetual terms and fixed coupon rates. Preferred shares", go to the next page, Samantha, "which have a coupon reset provision are not treated simply as equity for accounting and credit rating purposes". Do you agree with that statement?

DR. BOOTH:
A. I agree with part of that statement, not all of that statement.

KELLY, Q.C.:
Q. Can you tell me what you agree with?

DR. BOOTH:
A. Preferred shares rank behind debt, so they provide equity support for the bond holders regardless of whether the preferred share dividend is a rate we set or whether it's a fixed rate preferred share. So, for example, in the restrictions in Newfoundland

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Power's first mortgage bonds, there's the interest restriction. Generally gas utilities particularly have a similar restriction, but the restriction applies to the funded debt, not to preferred share dividends. So that you can finance with preferred shares and that provides an after tax expense that increases the overall operating income without affecting the interest income, so the interest CAPM ratio goes up for purposes of the first mortgage bond.

KELLY, Q.C.:
Q. Do you agree that credit rating agencies view these as similar to debt?

DR. BOOTH:
A. It depends on what the terms of the provisions are. Basically, if you get what we call a hard retraction where it's a five year retractable preferred share in cash, they treat it as bonds. If it's a soft retraction where you can't get your money back, but we'll give you more shares, then they treat it as equity. So the thing about

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preferred shares is they're similar to debt in the sense that they've got contractual provisions and you can structure them to mimic equity, to mimic debt, to mimic a variety of securities. We even had at one point a company trying to issue 30 day preferred shares, and Revenue Canada said this is ridiculous, you can't have 30 day preferred shares, they're supposed to be - equity is supposed to be a permanent part of the capital structure. So instead of 30 day preferred shares, you issue long-term preferred shares where the dividend fluctuates with a short-term interest rate, and Fortis, for example, has issued long term preferred shares where the dividend fluctuates every quarter with the Treasury Bill rate.

KELLY, Q.C.:
Q. The statement then goes on, "Newfoundland Power has also been advised that a minimum issue of 100 million would be required for a utility preferred share issue with a coupon reset to be marketable in the current

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Canadian capital markets". Do you agree with that?

DR. BOOTH:
A. I'm not an investment banker, but I think if you went to an investment banker and said, look, we want to issue 50 million dollars' worth of preferred shares, the investment banker would say, well, I'll see what I can do, and the investment banker – 50 million dollars is a lot of money. I'm sure the investment banker would be able to do it.

KELLY, Q.C.:
Q. You're not an investment banker, so you can't take issue with this statement?

DR. BOOTH:
A. I would say that – you know, of course, Newfoundland Power does have preferred shares outstanding and it has about .8 percent of its capital structure in preferred shares.

KELLY, Q.C.:
Q. Very old ones, long historical basis.

DR. BOOTH:
A. That's true, but their long historical basis

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where those were issued at one point in time, and there were a small amount of preferred shares were issued. So in terms of being available in the capital market, we do have increased concentration in the capital market, so we tend to get big issues because they're sold through a relatively few number of big institutional purchasers.

KELLY, Q.C.:
Q. Have you examined or do you have any evidence that Newfoundland Power could market preferred shares of less than 100 million dollars?

DR. BOOTH:
A. I'm 100 percent convinced that if they went through an investment banker and said we want to issue 50 million dollars' worth of preferred shares, they could get it done.

KELLY, Q.C.:
Q. You didn't answer my question. Have you studied it or got any evidence before the Board?

DR. BOOTH:
A. No, that's not – my recommendation –

actually, it's not even my recommendation, Mr. Kelly. My recommendation is that this Board deem the preferred shares for the next three years, so they don't actually have to issue them.

KELLY, Q.C.:
Q. Just hold that, I'm going to come to that one. The company goes on, if I can come down to lines 19 through 22, "The Board has recognized that Newfoundland Power's relatively small size reduces its financial flexibility. The minimum issue size of the utility preferred share issue of 100 million highlights this point. 100 million represents approximately 10 percent of the company's forecast rate base". That's statistically about right?

DR. BOOTH:
A. I think that's true. The 5 percent is 55 million, so 100 million, that's approximately correct.

KELLY, Q.C.:
Q. And the last time around we had this discussion where you were suggesting that

somehow Fortis could mirror these shares down?

DR. BOOTH:
A. That's exactly what CU does with ATCO Electric, ATCO Gas, and ATCO Pipelines.

KELLY, Q.C.:
Q. And we had that discussion the last time, those shares would then carry a Fortis credit rating, agreed?

DR. BOOTH:
A. That's correct. If Fortis issues these shares, then basically – when we're talking about mirroring down, all it means is that Newfoundland Power would issue a matching preferred share to Fortis.

KELLY, Q.C.:
Q. And that would breach the ring fencing requirements that the Board has set up?

DR. BOOTH:
A. Oh, I don't know about that. That's a legal question that if the Board thinks it breaches its policies, then that's a Board decision. All I'm saying is that ATCO Electric, ATCO Gas, ATCO Pipelines, have no

problem with that. The Alberta Utilities Commission has no problem with that.

KELLY, Q.C.:
Q. And that takes us then back to the question of deeming, and essentially what you're suggesting to this Board is that 5 percent of the common equity be treated by the Board and remunerated as if it was a preferred share, correct?

DR. BOOTH:
A. That's correct.

KELLY, Q.C.:
Q. So they would get about half the rate of return on those common shares as they would on the other 40 percent?

DR. BOOTH:
A. Depends what rates of return that you're assuming.

KELLY, Q.C.:
Q. I'm just using your –

DR. BOOTH:
A. Well, that's true. I mean, see the statement here, "preferred shares typically carry a higher coupon than debt issue,

preferred shares have largely been displaced by lower cost debt and utility capital structure", I'm actually proposing a halfway house, I'm not proposing that they replace the 5 percent preferred shares with debt at the moment. Sorry, the 5 percent equity with debt at the moment. The preferred shares are more expensive than debt. They're less expensive than equity, but they're more expensive than debt.

KELLY, Q.C.:
Q. So on your proposal, that would lock in 5 percent of the common equity, but only remunerated at, let's say, approximately half the common equity rate of return?

DR. BOOTH:
A. Yes. Actually, that's what the Regie does with Gaz Metro.

KELLY, Q.C.:
Q. And you told me a minute ago you're not a lawyer, but I'm going to suggest to you that that would not be in accordance with our Public Utilities Act, which requires an appropriate rate of return on the common

equity?

DR. BOOTH:
A. Well, it wouldn't be common equity. It would be 5 percent deemed preferred shares.

KELLY, Q.C.:
Q. But they would – they would still be common equity shares.

DR. BOOTH:
A. I'm saying that the Board would deem 5 percent preferred shares.

KELLY, Q.C.:
Q. And you haven't studied that legal issue in this jurisdiction?

DR. BOOTH:
A. No, that's correct, Mr. Kelly, I'm not a lawyer. I'm just telling the Board what the Regie does for Gaz Metro, what the AUC does for CU Inc. If you tell me that there's specific legal problems that restrict the actions of this Board, then we're back to saying, well, issue 50 million dollars' worth or preferred shares. If we were forced into that situation, then I would tend to agree with Dr. Cleary and say, well,

perhaps in those circumstances we should take advantage of current low interest rates and go directly to refund that 5 percent equity as debt, but at the moment, my recommendations are a lot more flexible. It's basically deem the equity for three year period until we see what happens with Muskrat Falls, and then think about how the Board can take actions to protect the utility and protect rate payers.

KELLY, Q.C.:
Q. And then the question that the Board has to address is, is it good regulatory practice and judgment to do that and pay out, as Ms. Perry explained, 55 million to increase the debt in the capital structure at a time when these additional risks are coming forward? That's the question that the Board would have to consider, agreed?

DR. BOOTH:
A. Yeah, it's an interesting situation where utilities – when they say, well, we got all these risks, we're not competitive, therefore, we need to have higher costs and

we need to have higher prices. Normally when a firm is under any form of competitive threat, which is what you're implying for Muskrat Falls, the – actually, the competitive firm is not to increase cost, it's to reduce cost, but you're proposing essentially to increase cost.

KELLY, Q.C.:
Q. So do we agree with my question, that the question the Board has to consider is that good regulatory practice to be doing that at this point in time? That's the question the Board has to address. Do we agree on that point?

DR. BOOTH:
A. I think it's good regulatory practice at the current point in time if the Board tells the rating agencies and the company that the common equity ratio, they reaffirm that the range is 40 to 45 percent, and for the next three years they're going to deem 5 percent of the equity as being preferred shares, and keep its flexibility open to deal with an possible problems in the next GRA.

KELLY, Q.C.:
Q. Okay.

DR. BOOTH:
A. I would say that's a reasonable halfway house between taking what is currently the most generous common equity ratio almost of any utility in Canada, and not going immediately to the most tax efficient capital structure, but taking a halfway house as a wait and see to see what happens with Muskrat Falls.

KELLY, Q.C.:
Q. And the Board will have to weigh where's the right regulatory judgment in terms of what to do with that, agreed?

DR. BOOTH:
A. It always has to do with that, Mr. Kelly. I'm recommending a halfway house for the Board. I'm not recommending it immediately go to debt. I'm recommending that it keep its flexibility open, such that if there is any problem in three years' time beyond the test year for the next three years, that it's got as much regulator flexibility as

possible.
KELLY, Q.C.:
Q. Thank you, Dr. Booth. Once again, I've enjoyed our discussion.
DR. BOOTH:
A. As have I too, Mr. Kelly.
CHAIRMAN:
Q. I think we're over to you, Madam.
DR. LAURENCE BOOTH – CROSS-EXAMINATION BY GREENE, Q.C.:
Q. Thank you, Mr. Chair. Good afternoon, Dr. Booth. I just wanted to talk to you for a few moments with respect to your unadjusted CAPM, and Mr. Kelly did bring you there earlier this morning, but if we could go to page 42 of your report, please.
MS. PIERCEY:
Q. Page 42 of his current report?
GREENE, Q.C.:
Q. His original report filed in this Application. While we're waiting for it to come up, perhaps we can cover a few –
DR. BOOTH:
A. This is 2012.

GREENE, Q.C.:
Q. It's the current – this proceeding. I think we firmly established by now, Dr. Booth, that you believe that CAPM is the most appropriate method to use to determine the ROE for the utility because it most properly reflects the financial -
DR. BOOTH:
A. Under normal circumstances, yes.
GREENE, Q.C.:
Q. Okay. So that normally the CAPM is the appropriate method, but give the current situation which has continued from when we were talking about it before, with the low Canada bond rate and the current interest environment, it needs to be adjusted, is that correct?
DR. BOOTH:
A. That's correct.
GREENE, Q.C.:
Q. And I just wanted to take you through what your unadjusted CAPM was, and then compare it to Mr. Coyne's. So when you did your normal approach – or the CAPM approach using

the current risk free rate, and your market risk premium, and your beta, the ranges, you came up with the unadjusted CAPM for 2016 at 5.56 to 6.61, as shown there on lines 11 and 12, is that correct, Dr. Booth?
DR. BOOTH:
A. That's correct.
GREENE, Q.C.:
Q. And as Mr. Kelly reviewed with you this morning, if you looked at 2017 as well seeing that this is a two year test year for this GRA, and increased the risk free rate to be the average of the two years, that would add approximately 20 basis points?
DR. BOOTH:
A. That's correct. If you believe that finally interest rates are going to increase, and finally the forecasters are going to be right, but they've been persistently wrong for the last six years, and I personally would judge them to be wrong for the next three years as well, including my colleagues at the University of Toronto.
GREENE, Q.C.:

Q. But I'm just going – we understand the theory. I just wanted to compare. So your unadjusted CAPM is that range there, and there is a question as to whether the Board will accept a two year forecast at least seeing that it is a two year test year of the risk free rate. Now I wanted to now look at Mr. Coyne's unadjusted CAPM which we actually looked at with him, which is PUB-NP-064. You were here when I had some discussion with Mr. Coyne about that.
DR. BOOTH:
A. I was.
GREENE, Q.C.:
Q. So his unadjusted CAPM, and we accept that he uses a different beta than you do, would be – when you look down below, it is 6.8 percent, but that includes his 50 basis points for flotation, and your range we just looked at did not, is that correct?
DR. BOOTH:
A. That's correct.
GREENE, Q.C.:
Q. So if we compare the two, you're very close

on the unadjusted CAPM, within the same range. His 6.3 would fall within your range we just looked at of 5.56 to 6.61?

DR. BOOTH:
A. That's correct.

GREENE, Q.C.:
Q. Okay, and we've already established, I believe, today that given the current market conditions, that's not appropriate and I think you also said earlier today that, in fact, when you're looking at how it should be adjusted, more judgment is required today than even when we talked about it last time, is that correct?

DR. BOOTH:
A. That's correct. Last time, I was reasonably confident in the data for the preferred share yields. This time, I'm not.

GREENE, Q.C.:
Q. And when we go through your adjustments, which you've already explained with Mr. Kelly, so I don't think it's necessary to do it, you do add the credit risk – the spread for the credit risk?

DR. BOOTH:
A. That's correct.

GREENE, Q.C.:
Q. And the Operation Twist adjustment to reflect the global bond buying program of the various global governments, you came up with 7.5, so if we could go over to page 45 just to have a look at your adjusted CAPM and take those two conditions into account. So here we see your range has increased based upon how you believe the CAPM estimate should be adjusted to reflect the market conditions. So that is your best expert opinion to the appropriate adjustments to make to CAPM?

DR. BOOTH:
A. Yes, the adjustment here is simply that when you use run averages for the market risk premium, even though the survey data does take into account current capital market conditions, you're going to end up with the same risk premium all the time, and I don't think it's as reflective of current capital market conditions as it should be, and a

credit adjustment does pick up the changes in the spreads for utility debt, and that has been accepted just about everywhere as a reasonable adjustment. I call it the conditional CAPM pricing model simply because we have a long literature on the conditional CAPM, and the idea is simply that we try and incorporate data to indicate and make it more sensitive to current capital market conditions.

GREENE, Q.C.:
Q. And your adjustment for it to reflect the current market conditions turns out to be about 175 basis points?

DR. BOOTH:
A. That's right. The major one is the 45 basis points for the credit spreads. That's objective. The research of the Bank of Canada says it shouldn't be 50 percent, it should be a little bit lower. Almost every board that I'm aware of that's thought about an automatic adjustment mechanism has incorporated 50 percent adjustment to spreads, so I'd say that's reasonably

acceptable. The BCUC, the OEB, the Regie, have all accepted a 50 percent adjustment to the spreads, and I've never had any serious objection to that because over a business cycle you would hope the average to work out to be the average, which is 100 basis points. Since 2012, I've begun to suspect seriously that we're never going to get back to 100 basis point spreads on "A" bonds, that's no longer normal, unless we get the long Canada bond yield up to normal levels. So it's not going to average out to zero over a business cycle. So my original acceptance of that 50 percent adjustment didn't anticipate the bond buying by all of the central banks around the world.

GREENE, Q.C.:
Q. So when we look at the results of your judgment, we see that adjustment of about 175 basis points, and when we went through with Mr. Coyne, we saw that his was about 250 basis points from his unadjusted CAPM to his adjusted Canadian CAPM.

DR. BOOTH:

A. Well, I'd qualify that and say that not the full 175 basis points is judgment. I think the 45 basis points for the credit spreads is just basically the same as the OEB, the same as the Regie, the same as the BC Utilities Commission, so I would say that that – I'm not imposing significant judgment there. I'm just making the estimate a little bit more sensitive to the business cycle. The major area of judgment is this attempt to try and handle the bond buying, the implications of the bond buying program, and 130 basis points now, 80 basis points three years ago, 80 basis points I was comfortable with, 130 I'm not comfortable with, but that is certainly the major area of judgment.

GREENE, Q.C.:

Q. And again you have agreed that more judgment even is required this time when looking at how CAPM should be adjusted for the marketplace?

DR. BOOTH:

A. That's correct, but I'll just point out

there that it's not just me saying this, I mean, the Duff & Phelps report that I sent around, they've recalibrated the market risk premium at 5.5 percent, which is right in the middle of my 5 to 6 percent range, except that it's based upon a normalized long term U.S. government bond yield, and they use 4 percent, I tend to think 3.8 percent, but the point is they accept the normalized bond yield when they do their risk premium analysis. AON Hewitt looks at a normalized or a long run – they call it a long run target bond yield of 4.18 percent. So I think everybody will recognize that the current long term bond yields are not anywhere close to normal equilibrium, however you want to define it, so 3.8, 4, 4.1, I think it is from the AON Hewitt, that's where my judgment comes in, but it's not just my judgment, it's the judgment of almost all market participants.

GREENE, Q.C.:

Q. And what I'm trying to do is compare your judgment to Mr. Coyne's for the purposes of

this proceeding, and when you look at those results, you've already explained why you were conservative in pulling it towards your adjusted CAPM or your conditional CAPM to the low end of the range, is that correct?

DR. BOOTH:

A. That's correct.

GREENE, Q.C.:

Q. So that is one difference you would have as well with Mr. Coyne?

DR. BOOTH:

A. That's correct.

GREENE, Q.C.:

Q. Now you also looked at DCF to, I'll say, validate or to inform your judgment with respect to your recommendation, is that correct?

DR. BOOTH:

A. That's correct. All my estimates inform my judgment, but the DCF, I started doing this analysis four years ago that shows that they should be the same, but under periods of very low real returns, real bond yields, which is what we've got at the moment, the

risk premium models underestimate DCF models unless you go into the sort of adjustments that I'm making.

GREENE, Q.C.:

Q. And in terms of looking at how the board should look at your DCF analysis to see the adjustments, I want to talk to you first about, while you have agreed with Mr. Kelly on the capital markets are more integrated now than ever, you still believe there should be some adjustment made to reflect differences between the economies and take that into account, is that correct?

MR. BOOTH:

A. Sure. I mean, the capital markets between the U.S. and Canada are reasonably integrated. They're reasonably integrated even more so between the U.S. and the U.K. You can also say they're integrated with Brazil, Mexico, Thailand. The global capital markets are becoming more integrated all the time, but if I was to come before the Board and take a tied back rate of return and say, well, I'm going to use this tied back rate of return for Newfoundland Power, I think a lot of eyebrows would be raised. So integrated doesn't mean to say the rates of return are exactly the same. It just means to say that the capital markets trading amongst those securities is basically free of impediments.

GREENE, Q.C.:

Q. So in terms of the Board and what it must do when it's considering what the fair return is, what would your opinion be with respect to the type of adjustment the Board should make when looking at the U.S. data?

DR. BOOTH:

A. Before the BCUC, I recommended adjustment – I can't remember whether I recommended 50 or 100, but the BCUC, I think, took 50 to 100. This Board took 50 to 100 in 2013. When we look at what's going on in the U.S. versus Canada, I would say there's absolutely no question that U.S. utilities, and I'm referring to U.S. utility holding companies, the ones that we're using to get insight into the fair rate of return for

Newfoundland Power, there's no question in my mind that the electric holding companies in the U.S. are riskier than Newfoundland Power, because they're predominantly integrated utilities, they've got generation, they've not nuclear plants, they've got all sorts of things going on, and the empirical evidence in terms of their betas is the betas are consistently .1, .15, more than the utilities in Canada. If you take this Board's 6.5 percent risk premium, market risk premium, and you've got a .1 beta difference, straight off the bat you're saying a 65 basis points adjustment for risk, and then I think it's acknowledged, Mr. Coyne said that U.S. "A" bond yields were 11 basis points higher than in Canada, I have a slightly bigger number, but if you take that as indicative rather than the Government bond yields, you're looking at 70/80 basis points, which is not much different from what Mr. McDonald and I recommended three years ago and this Board took a 50 to 100 basis points discount to

U.S. DCF estimate.

GREENE, Q.C.:

Q. And I understand then that you believe that would be a reasonable adjustment to make this time as well if that's where the Board decides to make an adjustment?

DR. BOOTH:

A. I would probably say it's even more appropriate now because the evidence in terms of the gas companies in the United States is less clear than the evidence in terms of the electric companies in terms of the risk comparisons. I have real difficulty in taking Duke Energy, with all those nuclear plants, and saying it's comparable to a T & D company in Canada.

GREENE, Q.C.:

Q. Now the other adjustment that we talked about already is the influence of analysts' bias with respect to how DCF is used. Again I gather from your evidence today, you believe that it still continues to be an issue, still influencing analysts' growth estimates. What do you believe the – do you

believe the Board should consider that and make any adjustment when looking at DCF results?

(12:45 p.m.)

DR. BOOTH:

A. First of all, I don't think it's an issue. I think there's absolutely no question analysts are biased. I'm not aware of any significant academic research that indicates that they're not biased. There is some evidence that the bias went down in the mid-2000s, but I prefer – I mean, I can give you lots of academic articles. I've not given those. What I've given is McKenzie and the Royal Bank of Canada, and I've given them those because McKenzie is not sort of academic on a small group of academics arguing about it, McKenzie is absolutely categorical that analysts are biased. When we're talking about biased, it just means they're optimistic. They get attached to their stocks and they tend to see good in them, and as a result they tend to be optimistic. I was struck by the fact that as I was preparing this testimony, RBC's Playbook comes out with all of these pictures, and it's basically a compendium of graphs, and RBC accepts and they've got a graph, a little table that looks almost exactly the same as McKenzie, which is that the analysts start out optimistic, and as you get closer and closer and closer to the date, they get more information from the company, and generally their estimates are brought down until eventually they're pretty close, but they start out optimistic. Now when the economy is rising and earnings are rising, the bias isn't as great as it is in the opposite when it's going down. When we talk about the bias in analysts' forecasting going down in the 2000s, 2004, 2005, 2006, these are years when the equity market was doing very well. So the bias went down probably not because of any implicit change in their approach, but simply because earnings ended up being better than they anticipated. Those were good years for the stock market. So I deliberately try in my

evidence to put information that is out there being told to investors. RBC is telling investors in its Playbook that analysts are biased. McKenzie is telling people that analysts are biased. Parkinson of the Globe and Mail is reporting on McKenzie saying, well, look, not much has changed, Wall Street is still biased. I could give you a lot of academic articles, but I prefer to give you things that are in the public domain that are more likely to influence investors.

GREENE, Q.C.:

Q. So in terms of that, the constant growth has the more opportunity for that to be an influence, and for that reason, you do not believe it should be used, is that correct?

DR. BOOTH:

A. I would agree with the AUC, that when you're getting estimates from DCF estimates so significantly above the long run growth in GDP, and you're assuming that these are going to go on forever by utility, that just doesn't make any sense. I have never, as

far as I can remember, at least for the last ten years, used analysts' forecasts within a Canadian setting or a U.S. setting without actually trying to make adjustments to make sure that they make sense. It's unreasonable to think of 13/14 percent returns in the Canadian capital market. The Chairman pointed out the world is 72. I mean, if I thought that was really going to happen, I mean, we'd just close up shop, I'd just make enough money and I could retire, but that hasn't happened, and I don't think it will happen. You have to bear in mind that overall we're constrained by the growth rate in the economy. Some firms may grow faster than the economy for a period of time, but not indefinitely, not forever, and certainly not utilities.

GREENE, Q.C.:

Q. So if we come back to the multi-stage model and if that's the one the Board considers and takes into account in weighing the evidence before it, what is your opinion of the magnitude of the adjustment that the

Board should consider making?

DR. BOOTH:

Q. Well, here's an interesting question. If the Board thinks that the short run five year growth rates are biased, and as a result it puts greater weight on multi period, then you look at it and you say, well, if you think the first five years are overoptimistic, and then you taper to the long run growth rate and the GDP as saying that the next five years are overoptimistic, straight off the bat it's saying that the first ten years of a multi-stage DCF analysis are optimistic. So you get into bind. If you reject constant growth, you also reject the first ten years of a multi-stage model, and then there's no evidence whatsoever that utilities grow at a growth rate of GDP. The AUC mentioned this, and, in fact, if I picked up the tabs from the FERC, the FERC recognizes it as well. They've got a hearing, a hearing to consider whether or not it's reasonable to assume U.S. utilities can grow at the rate of GDP,

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and I've yet to see any witness show any evidence whatsoever that U.S. utilities can over a long period of time grow their earning to the growth rate and GDP.

GREENE, Q.C.:

Q. So coming back, if you looked at the multi-stage results, is there a specific basis point adjustment that you would recommend to the Board they should use to adjust for analysts' bias?

DR. BOOTH:

A. I'd have to think about that. Off the top of my head, I can't tell you 50 basis points, 100 basis points. I tend to believe that what's important is the growth sustainable. Oliver Wyman says 3.3 percent growth. I wasn't aware of that until the document came out in this hearing room, but it's similar to the growth rate that's sustainable from the profitability of the utilities in the amount that they've retained within their rate base. So I would suggest the Board looks at sustainable growth rate. If it rejects the constant

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growth models, as it has in the past, then implicitly it has to think that the multi-stage models are also biased, not to the same degree, but by definition, they're regarded as overestimates, and think about the sustainable growth rate and the multi-stage model somewhere in between there might be a reasonable number.

GREENE, Q.C.:

Q. At this point you're not in a position to actually be specific on the basis point adjustment.

DR. BOOTH:

A. No, I tend to believe that, as I just said, if analysts growth rates are biased, optimistic as I think they are, then that means the first ten years of a mortgage stage model are overestimates by definition. You can't have it any other way. If you reject the constant growth model, you're rejecting the first ten years of the mortgage stage model.

GREENE, Q.C.:

Q. Moving onto my last questions, Mr. Kelly

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took you through your recommendations in other proceedings in the actual and the result there is an RFI on record with respect to it. And obviously it demonstrates that you would tend to be somewhat lower than what the allowed ROEs would be. And you've already indicated in how you came up with your estimate, now that you tend to be conservative, is that correct?

DR. BOOTH:

A. I think I'm very conservative. I could have just come in and given a CAPM and said, 6, 6 ½ percent, that's a fair ROE. And when you look at the utilities you have to think in terms of how does the market value the utilities which is the market to book ratio and I've constantly referred to that as the dirty window problem, the investors are looking through a dirty window to get an idea of what the true profitability of the utility is. But we don't see any public utilities. They've all been traded on the market. They're all been taken over by

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holding companies and then we discover the holding company doesn't have the utilities capital structure; it has a lot more debt in its capital structure whether that's Enbridge Inc., whether it's Fortis and Fortis is not that bad. And then you wondering what's going on here? And they're using the cash flows from the utilities to fund a corporate empire. This has been going on for the last 25 years in Canada. So, if, in fact, these utilities were regulated as—I wouldn't say as they should be—but if they were regulated in terms of a fair ROE and common equity ratio, there'd be no value whatsoever for another company buying them as part of a corporate empire. But the fact is that there's a little bit of gravy on the table and the holding companies buy utilities because they can leverage out the assets and then use the proceeds to buy another utility. That's what Fortis has been doing for the last 20 years.

GREENE, Q.C.:

Q. And so for those reasons you've expressed you would recommend that the Board also be concerned when looking at the data that's been presented, is that correct?

DR. BOOTH:

A. I would say that I would not recommend the Board give an allowed ROE of 6, 6 ½ percent. I think the utilities in Canada could be financed on ROEs even that low. I recommended 7.5 percent and I'm not recommending that we push Newfoundland Power down to the 36 to 38 percent of other distribution companies in Canada. I'm recommending 40 percent and even there I'm recommending the 5 percent equity basically be deemed as preferred shares. I'm not recommending what I would regard as a harsh situation, I would regard my recommendations as pretty moderate. And I think—I'm well aware of Muskrat Falls and I'm well aware that beyond the test year there may be some issues that the Board has to deal with. So, be as flexible as possible.

GREENE, Q.C.:

Q. Okay. Thank you, Dr. Booth. That's all my

questions.

CHAIRMAN:

Q. So, I think I'm –

DR. BOOTH, RE-EXMAINATION-IN-CHIEF BY THOMAS JOHNSON, Q.C.

JOHNSON, Q.C.:

Q. Just to me for one brief redirect. Doctor Booth, when Mr. Kelly was cross-examining you, you indicated momentarily in relation to the FERC document that you had made a couple notes about it, but then the cross-examination moved on. And I just wanted to ask you whether there was anything further that you wanted to add in relation to the FERC document.

DR. BOOTH:

A. I just point out that on page 11 of that document, the Commission reversed the presiding judge's sole reliance on five year growth estimates. So, they went with some sort of tapering, as in the multi stage model. Page 16 they highlight wide gap between short term and long term natural gas pipeline growth rates which is a real

problem. Short term dividend growth rates for public utilities did not differ significantly from GDP growth rates. On page 17, the FERC said, as long ago as 1983 when it first adopted the constant growth DCF model for gas pipeline causes, the projections by investment advisor services of growth for relatively short periods of time cannot be relied on without further consideration. So, we're talking about analyst's growth forecasts. 1983, 33 years ago FERC said it can't be relied upon. So, it's not just me saying there's a problem with growth forecasts. Then as I said, I was pointing out that, if I read it correctly, the FERC has a paper hearing into looking at whether or not U.S. pipelines can grow at the growth rate of GDP. Because if you take these analysts forecast and taper them to GDP, as far as—as I've said, I can't see any evidence on the record anywhere that utilities, low risk stable utilities can grow at the growth rate in GDP. Having said that, there is a difference in the United

States because they've had this huge roll out of infrastructure in the transmission grid after the big brownout that we had in Eastern—in Canada and Eastern United States. So, there was all sorts of incentives in the United States to modernize their infrastructure which was not in a good shape.

JOHNSON, Q.C.:

Q. That was my question, thank you very much, Dr. Booth.

DR. BOOTH, CROSS-EXAMINATION BY MR. CHAIRMAN

CHAIRMAN:

Q. Do you have any? I just got a few questions. I'll be ask quick as I possibly can. You said in you 2013 evidence and I was taken by it, the cost of capital is not as complicated as experts make it. There's public information available from such sources as they list a bunch of them. And there's no reason to change that opinion now, is there?

DR. BOOTH:

A. No. I think it's not one of the most

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difficult problems we deal with in finance courses.

CHAIRMAN:

Q. In 2013 I think you testified or you provided us with returns on the TSE of around 9.1/9.5.

DR. BOOTH:

A. And I've still got that data. That's on Schedule 1.

CHAIRMAN:

Q. That hasn't changed significantly?

DR. BOOTH:

A. Well, no, when you add just three more years of data, it doesn't make a huge difference. It's come down a little bit because we've lost some of the profitability from the energy companies.

CHAIRMAN:

Q. How many shares, how many stocks are on the TSE?

DR. BOOTH:

A. Good question. I used to ask my students, how many firms in the TSE 300 and they'd say 300 and I'd say no, sorry, 254. And we

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change it from the TSE 300 to the TSE Composite precisely because we wouldn't find 300 companies to put in the TSX index. And then I'd ask them how many firms in the S&P 500 and they'd all think that was a trick as well, but I would say no, there's 500. The problem is that we have seen a hollowing out of the Canadian stock market. How many firms on the TSX, probably 2500 on the TSX and the Venture. How many to actually invest in? A lot of those are really junior mining stocks where they'll highly liquid; they're rarely traded and you can buy them, but you can't sell them.

CHAIRMAN:

Q. I guess my point is if you wanted to start looking at cost of capital, you can start with—the return on the TSE is a good marker.

DR. BOOTH:

A. I use the TSX Composite. I use the dividend yield on the TSX Composite as indicative of –

CHAIRMAN:

Q. And Ektors Utility (phonetic) so you've got

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a good marker there, you're saying.

(1:00 p.m.)

DR. BOOTH:

A. It's not as good as it used to be, but I think that when you—and the AUC accepted this, they said well, if we got these estimates for the overall equity market and they accepted my estimates, then they say, well, we're comfortable that the utilities expected return, required return has to be less than that. And basically it's why I put all this information for AON Hewitt and Duff & Phelps and my own estimates, it's difficult to see how the overall equity market return can exceed 7 percent long run, 8/9 percent short run, arithmetic returns. And I would suggest to anybody, look at their portfolio and say, what does it do for me, if I get 7 percent on the TSX from now until I retire? And I promise you if you did that compounding exercise, you'd be very, very happy. And I also promise you, you're not going to get it.

CHAIRMAN:

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Q. And you're still saying the Fernandez survey is accurate with respect to market risk premium?

DR. BOOTH:

A. When I started looking at Fernandez, I looked at the historic estimates in Canada and then along comes Fernandez and he surveys all these people. So, I can tell and I think I said this in 2009, I can tell you what my opinion is, but I can also, just list the Fernandez survey where it's got 90 responses from Canada and thousands and responses from United States.

CHAIRMAN:

Q. I think you said 7000 in 2013.

DR. BOOTH:

A. Yeah, I think it's gone down. I think people got tired of filling out his survey. So, the numbers have actually, as I said, gone down. It's like everything else, if you get a survey, the first time you do it you're happy and then every year it becomes a bit of a chore. So, the number of responses has gone down, but I don't think it can be dismissed. And particularly the way he's asking it now which is, what's your overall return on the stock market? We can argue about the risk premium and say, well, is that over what—risk free rate or whatever. But just asking people who do you estimate the overall equity market return to be? That's a question that's difficult to, sort of, say well, it's a bias question, it's a fudge question. And when you look across all of the major markets, Canada actually has 8 percent—Canada and the U.S. has the highest expected equity market return

CHAIRMAN:

Q. And, I guess, the same thing applies to the concept of beta. There's publically available data there too, you don't have to do all these elaborate calculations if you don't want to.

DR. BOOTH:

A. Sure. You can go and look at the Globe and Mail and you can—Financial Post is a little bit more difficult to get the data. And you

can go and look at Yahoo and FERC uses Yahoo because the estimates are from IBESE, Institution of Brokers Estimation Service for Earnings. But I mean a lot of this isn't rocket science. You can go to Yahoo; you can go to Google; you can go to Globe and Mail; you can go to Financial Post and you can get this post. And I tell my students that when I started out in this business I had to pay 25 cents a data point and they look at me as if I've got two hears. Nowadays all of this data is there. So, it's not difficult to go in and get this data on the betas. It's not difficult to look at the market risk premium. And as I've said judgment constrained by the facts. You, first of all, have to present the data to utility regulators which I do. I don't present one data; I present you with all the data for the last 25 years on all of the companies, U.S. and Canada. You can see whether my estimate, you think, is off the wall. You don't have to just take one estimate and, that's been adjusted in some

way. I'm giving you all of the betas for the Canadian and U.S. stocks. I'm giving you the historic evidence for the Canadian equity market. I'm giving you stuff from AON Hewitt. I'm giving you stuff from Duff & Phelps. I'm giving you stuff from TD Economics. I try to give as much data as possible to supplement my own work. And the amount of data and reports out there now compared to 20 years ago is night and day.

CHAIRMAN:

Q. Um-hm. So, this quantitative easing business, how is that different from counterfeiting? Let's cut to the chase here now. What's the difference between what Janet Yellen is doing or Mario Draghi or any of these characters, say, well then, my favourite is John Law and the Mississippi—you know that one, don't you?

DR. BOOTH:

A. Yes.

CHAIRMAN:

Q. I mean, what's the difference between—they're just printing money, aren't they?

It's ex-nihilo money they call it.

DR. BOOTH:

A. That's exactly what they're doing. What they're doing is basically coming in—what they were doing was buying 85 million dollars of, billion, I forget, billon –

CHAIRMAN:

Q. I think I got a figure here that's 225 trillion out there now. I mean, that's not right, is it?

DR. BOOTH:

A. No, I think that's excessive. The U.S., I'd say, 3 ½ to 4 trillion; the UK is probably a trillion.

CHAIRMAN:

Q. That's just the FED, I'm talking about all the other stuff that's out there.

DR. BOOTH:

A. We don't worry about the other stuff; that's all basically one person's assets and another person's liability, they nets out. I'm not worried about the global amount of debt. I'm worried about the fact that the FED is paying for the U.S. government bonds it buys with cash. But the trick to all of that is the people who get the cash are just depositing it at the FED. They're not going out and spending it. And that's my monetary policy has been dead for the last five years. It's such an extent at the European Central Bank, all the money has been coming back to the ECB. They're now saying we're going to charge you 50 basis points for every dollar you put on deposit with the ECB. And the Bank of Japan is doing exactly the same thing because they want to get that cash out into the system. They want people to spend it because at the moment people aren't spending all this cash, all this money they're creating. We got a bath full of liquidity, but nobody is taking a bath.

CHAIRMAN:

Q. I just got some figures here on the European Central Bank that's kind of interesting. An interest rate increase of less than 2 percent to as little at 1 ½ percent would under mind the value of bonds and related risks at the ECB and in the Euro system to

the point they would require further capital injections. And this would lead to a deflating asset bubble and take down the European Central Bank and their wider European system. Do you agree or disagree with that?

DR. BOOTH:

A. I disagree with that. There's a lot of people out there talking—there's always people saying, prepare for the coming doom. I tend to be optimistic. These books have bene around there for the last 30 years about the coming doom. I've got a very good friend of mine who's a certified financial planner. He's incredibly pessimistic, but he's been incredibly pessimistic ever since I met him. And his clients are all incredibly pessimistic because they're heading what they want to hear. And there's people out there who are certified financial planners who are incredibly optimistic and guess what, all their clients are incredibly optimistic. You gravitate –

CHAIRMAN:

Q. So, you wouldn't agree with Peter Schiff, for instance, who says that we're waiting for a monetary Pearl Harbour.

DR. BOOTH:

A. No. These guys are there to sell popular books and you don't sell popular books by just doing what academics do. You sell popular books by having Armageddon.

CHAIRMAN:

Q. So, you think it's possible, for instance, for Janet Yellen to start raising interest rates without bringing the system down.

DR. BOOTH:

A. I think the U.S. is going to be extremely careful of increasing interest rates. And we've seen, just in the last month that the probability of the four interest rate hikes that were predicted back in December, she's backing off of them because once she's done increasing interest rates, bond values are going to go down.

CHAIRMAN:

Q. But I guess that's the point, that will have a knock on effect, won't it?

DR. BOOTH:

A. Exactly. And it's going to have—it's—I own bank shares because I think interest rates should go up. Banks are in serious trouble because of bond buying because their interest spread is disappeared. And –

CHAIRMAN:

Q. So, wouldn't you get a run if interest rates rise on the banks?

DR. BOOTH:

A. No, if the interest rates increase by banks because their interest rate spreads will increase and as long as they're handled in the default risk, the banks will make a lot more money. It is incredibly difficult for the banks to be profitable in the current environment. And I'm talking here not so much about the Canadian banks, but the European banks, how can they make money when you got negative interest rates? It's why in Europe they want abolish the 500 Euro note because they want to charge negative interest rates. Well, if I'm charged negative interest rates, I would take the

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cash out in 500 Euro notes and I'm going to put them in the safety deposit in my house and I'm not going to suffer half a percent loss. I'm going to have all these 500 Euro notes. So, the reaction of the regulatory authorities, let's get rid of the 500 Euro note. Let's force people into the financial system, force them to suffer losses if they put the money on deposit, force people to spend money. I means that's the desperate straits that Europe is into. Basically close all of the avenues and for people to spend money. And you're probably aware that Corbyn the UK is talking about quantitative easing for people. Instead of having the central bank buying the debt in the capital market from the government, why don't we have the Central Bank directly investing in real projects like infrastructure and everything else and just creating the dollars to straight away the finance quote for people, instead of banks. And that's very similar to what Bernie Sanders has been saying in the United States. But he's got

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to that level that we're actually talking about things that we used to say, well, this is what Argentia does; this is what Brazil does; this is what irresponsible countries do, but we're seeing serious discussion about the similar sort of policies.

CHAIRMAN:

Q. So, what about a collapse of the—my last question—what about a collapse of the Chinese currency? What happens there? I mean, there's people who say that China is, as I said to you earlier, the Red Ponzi, it's a Potemkin economy, it's totally false. There's no real—it's just quantitative easing, massive printing of all this money and there's nothing to back it up. And if there's—the Shanghai Index is down now 45 percent since last June, what about if the Yong (phonetic) collapses, will that take down the system? If that happens, what would happen to Canadian interest rates? How would it hit us here in Newfoundland, if something like that happened? That's the question I can't get my little head around?

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DR. BOOTH:

A. Well, you're going to have to deal with 15, 20 dollar oil if that happens and you're going to have to look at copper and nickel and coking coal prices going down even further. But China is real, I wouldn't buy Chinese shares because they treat financial statements in a cavalier way –

CHAIRMAN:

Q. They're not reliable. How can they be reliable; they're communists.

DR. BOOTH:

A. Okay, I was being moderate, a cavalier way, but they basically say well, equity holders will give us money and we'll give them a piece of the paper; that sounds like a pretty good deal. So, when you look at that—but I went to China in 1988 before China opened up and at that point I got a limo picking me up at the airport, I was the only car on the road all the way from the airport into central Beijing, the rest were bicycles. And I went down to Shanghai and along the bullet in Shanghai they had

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bicycles everywhere. You couldn't cross the road on the bullet because of bicycles. I was last in China in 2003, cars everywhere and you still can't cross the road on the bullet down in Shanghai because they're not bicycles anymore, they're cars. They got cars all over the place. They didn't learn a thing. They put flyer—they didn't learn a thing—they put flyers (phonetic) and dumped all of these cars right onto the bullet in Shanghai. So, they replicated a lot of the mistakes that western economies made, but China is real. As I said, they're adding the electrical capacity of the UK every year. The problem is they're on this conveyor belt of producing more coal, producing more steel, producing all these electric plants and somehow they have to get those resources into consumption. And they're trying to switch from an export industrial based model with very, very high savings rates into pleasing their population. And the growth rate is going down; there's no question about that. But the most important thing is they're dumping all of the excess stuff that they've got because they're not using it in China anymore. So, they're dumping all of the steel in Europe and the UK; they're dumping a lot of their exports wherever they can. So, the big question is going to be when people start to respond to the excess supply that China is dumping on the world, and what the implications are going to be. If they then start no longer producing all of these extra coal mines or all these extra steel factories that they don't need. And then that's going to have a knock on impact on commodities.

CHAIRMAN:

Q. And finally, in Europe last year, I read there was 15,000 died because they couldn't –

DR. BOOTH:

A. A lot more than that.

CHAIRMAN:

Q. Was it more than that?

DR. BOOTH:

A. 15,000 people of what?

CHAIRMAN:

Q. I'm sorry—getting late—died from the cold, lack of electricity, lacking of heating. A serious people emerging in Germany, emerging in—well in most European countries now people are actually dying because they can't afford to pay their electricity bills. They're up to these huge increases and people are eating versus heating. They're riding busses. They're going to malls. They're trying to stay warm. And there was tens of thousands of deaths, that's what I read in one of my web pages that I go to. Are you familiar with that?

(1:15p.m.)

DR. BOOTH:

A. I've got a regular trend who is an investor banker and he thinks the smartest move Ontario government are doing is selling off Hydro 1 because he thinks the distributed generation is a realistic scenario that we're going to get these micro grids that Mr. Coyne talked about and possibly within

the next five years it's going to be economic to put solar panels on without need subsidies in many areas of Canada and particularly North America. And once you're into a distributed grid, distributed generation and if the batteries come down, we strand all of the transmission network.

CHAIRMAN:

Q. Well –

DR. BOOTH:

A. I mean, that's not a risk that has been raised at the current point in time, but –

CHAIRMAN:

Q. I disagree with your assessment of solar and wind, but I'm not going to debate it here with you, but I'd sure like to have a crack at you.

DR. BOOTH:

A. Well, look, my son wants to support solar.

CHAIRMAN:

Q. If I tried that here now, I'd probably be assassinated in the back office, so I think we're going to adjourn. Thank you very much. It's always entertaining and

educational, more important, to listen to you.

DR. BOOTH:

A. Thank you.

CHAIRMAN:

Q. Thank you. We're adjourned now until Monda morning at 9:00.

Upon conclusion at 1:17 p.m.

CERTIFICATE

I, Judy Moss, do hereby certify that the foregoing is a true and correct transcript of a hearing in the matter of a General Rate Application by Newfoundland Power Inc. to establish customer electricity rates for 2016 and 2017 heard on the 8th day of April, 2016 at the Public Utilities Commission office, St. John's, Newfoundland and Labrador and was transcribed by me to the best of my ability by means of a sound apparatus.

Dated at St. John's, NL this
8th day of April, 2016

Judy Moss
Discoveries Unlimited Inc.