New Brunswick Board of Commissioners of Public Utilities

Hearing

In the Matter of an application by New Brunswick Power Corporation dated June 21, 2002 in connection with an Open Access Transmission Tariff

Delta Hotel, Saint John, N.B.
December 11th 2002, 9:30 a.m.

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CHAIRMAN: Good morning, ladies and gentlemen. Any preliminary matters?

Ms. MacFarlane, just before we start, I have a question. That is the Chairman's prerogative. I can go out of sequence, whatever I want to do.

Three times yesterday you indicated that the payment in lieu of taxes goes to the Province and that is your understanding of it. And I am here struggling with what I read in the newspapers and that sort of thing.

I had, I guess, envisaged that perhaps the payment in lieu of taxes would go to what I affectionately call Debtco, in other words, the company that will be responsible for the payment of the debt.

MS. MACFARLANE: Yes.

CHAIRMAN: Rather than to the Province. What is your understanding?

MS. MACFARLANE: I was using a global term. In fact, it does go to Debtco. That is a great name, Debtco. That is where it goes and it is the dividends and the taxes that effectively will be used as the cash streams to expunge the debt or expire the debt.

CHAIRMAN: Okay. Good, thank you.

MS. MACFARLANE: But it will be a Crown corporation, Debtco.

CHAIRMAN: Debtco will be, yes.

MS. MACFARLANE: So that was why I said the Province.

CHAIRMAN: Well there is the butterflies and there is Debtco and all sorts of things. Good.

Mr. Smellie, go ahead, sir.

MR. SMELLIE: Thank you, Mr. Chairman. Good morning, Ms. MacFarlane, Dr. Morin.

DR. MORIN: Good morning.

Q. - Doctor, we finished yesterday by discussing CRTC Telecom decision 98-2, concerning the implementation of price cap regulation and related issues. And just before I move on, are you able to tell me, sir, prior to the implementation of price cap regulation in the telecom industry, was the CRTC using traditional cost of service or rate of return methods of regulation?

DR. MORIN: Broadly speaking, they were using rate of return as a method of determining tariffs. And they were using a zone of reasonableness -- in other words, a range of allowed rate of return as opposed to a single point. But it was traditional rate base rate of return regulation, yes.

Q. - That was the 100 basis point range that we referred to yesterday?

DR. MORIN: That's correct.

Q. - Thank you. Now Doctor, we mentioned it earlier, but somewhat more recently than the cases we were discussing yesterday, I understand that you appeared on behalf of Hydro Quebec in support of that company's 2001 transmission tariff application, being docket 3401-98. Is that correct?

DR. MORIN: Yes.

Q. - My understanding is that the Regie issued its decision in that case on April 30th of this year and that it was the first such decision by the Regie in a Hydro Quebec rate application for transmission rates. Correct?

DR. MORIN: Correct.

Q. - In that respect you would agree with me that the decision was somewhat significant?

DR. MORIN: Well I think all decisions are significant, but --

Q. - Thank you. And you were asked, as I understand it, by Hydro Quebec to recommend a fair and reasonable return on equity and to assess a deemed capital structure for TransEnergie, being its transmission business unit?

DR. MORIN: Yes, sir.

Q. - Could the Secretary put before the Panel please, the excerpt that I have provided dated April 2000 from Dr. Morin's testimony concerning fair return on common equity for TransEnergie? You have that rather short excerpt, Doctor?

DR. MORIN: Yes, I have a document summary of Regie de l'energie.

Q. - No. You should have a document --

DR. MORIN: Yes, I have it.

CHAIRMAN: It will be JDI-15.

Q. - Thank you, Chairman. And I am looking at the last page of this exhibit, Doctor, being page 5 of your evidence under the heading "Summary of Testimony". You recommended a capital structure of 32 and a half percent for ratemaking purposes. Correct?

DR. MORIN: Yes. It was a range of 30 to 35 and I recommended the mid point, 32.5.

Q. - Do you recall, sir, what Hydro Quebec's position was?

DR. MORIN: They had a -- you mean their actual or -- they had an equity ratio consolidated of approximately 25, 26 percent.

Q. - What I am asking you is, your position was 32 and a half percent. What was your client's position vis-à-vis a deemed common equity wedge?

DR. MORIN: I just don't recall. Mine was a range of 30 to 35, with a mid-point of 32.5 for ratemaking.

Q. - My understanding that Hydro Quebec recommended to the Regie a 30 percent equity wedge. Is that correct?

DR. MORIN: I just don't remember that at all. In the end they granted 30.

Q. - All right. In response to JDI's interrogatory 19 -- I don't think you need to turn it up, I will just quote it to you -- you say this "Hydro Quebec's TransEnergie, a publicly owned utility, was recently imputed a common equity ratio of 35 percent by the Regie." That would be a --

DR. MORIN: That is an error. That should be 30 percent.

Q. - Thank you. And looking again briefly at the summary section of your testimony, which is JDI-15, you recommended a return on equity of 10.6 percent for ratemaking purposes?

DR. MORIN: Yes.

Q. - Let's turn then to the document you referred to earlier, Madam Secretary, that is a document entitled "R-3401-98, Summary Of Regie de l'Energie - Decision D-202-95".

CHAIRMAN: JDI-16.

Q. - And as the document indicates, Chairman, this is a summary reproducing the highlights of the Regie decision. And if I could ask you, Doctor, to turn to page 11 of 23 in that summary.

DR. MORIN: I have it.

Q. - I'm sorry, page 10 of 23. Just to clarify any confusion arising from our discussion a minute ago, you will see that at the bottom of page 10, the Regie accepted Hydro Quebec's proposal for a 30 percent equity wedge. Do you see that?

DR. MORIN: Yes. My recommendation was a range 30 to 35.

Q. - To be clear, Doctor, your evidence marked as JDI-15 in this proceeding was a recommendation of 32 and a half percent. Correct?

DR. MORIN: I recommended a range of 30 to 35 percent. And for ratemaking purposes I thought the mid-point would be reasonable.

Q. - Thank you. All right, page 11 of 23 then in the summary. With respect to the matter of beta, Doctor, did you recommend the use of adjusted beta on behalf of TransEnergie?

DR. MORIN: I used the Value Line betas, which are adjusted betas.

Q. - And the Regie concluded, you will see in the third paragraph under the heading "Return on Equity and on Rate Base", that a raw beta should be used to measure the provider's comparative risk?

DR. MORIN: No, that is incorrect. They did not say raw beta. They said beta. If you read the actual details of the decision, they gave some weight to the rising risks of the trends that we note in beta, the rising trends of betas. And they sort of took a mid-way position between raw betas and adjusted betas.

Q. - And the Regie concluded that it was reasonable to establish TransEnergie's beta at .53?

DR. MORIN: Correct.

Q. - Your recommendation and I apologize because I did not provide it in the excerpt of the evidence, was .65?

DR. MORIN: That's correct.

Q. - Thank you.

DR. MORIN: Yes, the raw betas in that decision were considerably lower than .53. And in the actual French translation or in the French order, the original order, they talk about the raw betas being .3, .4, the adjusted betas being .6 and they gave some weight to the rising trends that we notice for electric utility betas over time and arrived at .53.

And of course, those betas were estimated way back about three years ago. And the risks of the energy business have ascended even more dramatically in the last three years. So one would think that the risks would be higher today.

Q. - And your adjusted beta of .65 in that case would be consistent with what raw beta, Doctor?

DR. MORIN: Well, you can do the calculation. Probably around .5 something.

Q. - Thank you. Not lower than that?

DR. MORIN: Well, you can do the math yourself. I haven't done it. Because I don't believe in raw betas.

Q. - I understand that.

DR. MORIN: Yes.

Q. - Now as against your recommended return on equity we see at the bottom of page 11, that the Regie considered a return of 9.66 percent to be reasonable, which in turn gives an implicit risk premium of 3.66 percent.

Do you see that?

DR. MORIN: Yes.

Q. - Do you recall what your recommended risk premium was? I take it higher than that?

DR. MORIN: Higher than that, yes.

Q. - Now I understood from slide 26 of your presentation yesterday, Doctor, that you consider distribution utilities to be more risky than transmission utilities?

DR. MORIN: I think they are in the same risk class. It depends. If by distribution you include energy services like billing and metering, which would be more subject to competition than the traditional distribution services.

But I considered energy distributors as in the same risk class as electricity transmitters and distributors.

Q. - Would you turn up exhibit A-22 which is your presentation and turn to slide 26 please?

DR. MORIN: Yes. I have it.

Q. - And I understood the horizontal axis on that graph to imply that distribution companies were riskier than transmission companies?

DR. MORIN: Well, they are pretty close together. They are in the same risk class, the same zone if you wish. Disco in the context of this slide here, when we speak about distribution, particularly in the U.S. context, we include energy services, billing, metering and so on which are considered competitive.

And I think as we move forward in time, with the technological developments implied by distributed generation, I would not be surprised to find that in the next few years distribution might become more risky than transmission.

But at this point in time I consider them comparable or residing in the same risk class. You are taking much too literal an interpretation of my graph maybe. The word Transco and Disco should be much closer together.

Q. - So you want to amend slide 26 of your presentation?

DR. MORIN: No, I'm not amending anything. This slide was illustrative in nature. And there is no point in doing that at all.

Q. - To whom or who -- whose risk is in question in the presence of distributed generation?

DR. MORIN: Well, everybody's risk, particularly of course Disco, but also transmission. Because the risks of distribution in a sense spill over to transmission.

Q. - What about generation?

DR. MORIN: If there is technological change in generation, for example if we see the proliferation of combined cycle gas generation, and the facilities, the transmission facilities that were built and sited and located to be matched, technically speaking, with those generation facilities, and suddenly the generation facilities become obsolete or changed, well the transmission assets are subject to be left stranded in a sense.

So the risks of generation and distribution do indeed spill over on the transmission side of things. And it makes life very, very difficult for transmission to do any kind of planning. Because it becomes very, very difficult to do forecasting in the context of the technological developments that you are suggesting at the generation level.

So risks -- the conclusion is that risks at the generation and distribution level spill over or have an effect on the risk of transmission assets.

One way to portray it is to say that the economic depreciation of transmission asset is accelerated by technological developments at the generation level.

Q. - Thank you. You have listed for us, Doctor, in your evidence at exhibit RAM-1, which is found in exhibit A-2, Mr. Chairman, your areas of expertise.

And I'm thinking in particular of page 8 of 19 of exhibit RAM-1.

DR. MORIN: Yes.

Q. - It is indeed an impressive list, Doctor. My question to you is are they listed in some sort of order?

DR. MORIN: We are on page --

Q. - 8 of 19 in exhibit RAM-1.

DR. MORIN: No, there is no particular weighting or -- I think it is more chronological in nature than anything else. But I would probably agree with you that the top topics there are more prevalent than the ones at the bottom.

Q. - Thank you. And from this list I take it that you are not a bond rater and you don't hold yourself out as having expertise in that field?

DR. MORIN: No, I do not work for bond rating agencies. But I do participate with a lot of conferences and programs with bond rating people and do have a professional relationship with them. But I don't personally rate bonds.

Q. - And it is not one of your consulting areas of expertise?

DR. MORIN: No, it is not.

Q. - Thank you.

DR. MORIN: I do not rate bonds.

Q. - Would you turn with me please to page 5 of your evidence which is under the heading "General Background"?

DR. MORIN: Yes, I have it.

Q. - I understand it to be your view, Doctor, that the era of the vertically integrated utility is on the ropes, as it were, and that the paradigm of unbundled utilities and competition is unfolding in this country. Is that fair?

DR. MORIN: Albeit it at a slower pace than in the U.S.

Q. - Thank you. And you make some comments beginning at line 26 of page 5 as to the excellent competitive posture that you believe the Canadian electricity utility industry to be in in order to withstand restructuring forces, correct?

DR. MORIN: Yes.

Q. - Do you understand as I do, Doctor, that New Brunswick is a province which produces surplus power?

DR. MORIN: Yes.

Q. - And do you understand as I do that New Brunswick is currently limited in its intertie capacity, although New Brunswick Power currently has an application before the National Energy Board to expand its main intertie by something in the order of 50 percent?

DR. MORIN: Yes.

MS. MACFARLANE: Excuse me, Mr. Smellie. I would like just to clarify that NB Power does produce surplus energy but does not have surplus capacity. And that was demonstrated in the load forecast hearing last year.

Q. - Surplus intertie capacity?

MS. MACFARLANE: I'm speaking about -- this reference is to generation capacity. NB Power does not have excess generation capacity. We do have surplus energy as a result of the variations in load winter to summer.

Q. - Right.

MS. MACFARLANE: I just wanted to clarify. You used the word "power". I just wanted to clarify that it is energy, not capacity, that we have a surplus.

Q. - Thank you. At page 6, Doctor, line 4, you turn your attention to the specific circumstances of New Brunswick Power Corporation.

And you address several positive factors including its low cost advantage relative to the U.S. northeast, its proximity to the U.S. northeast and its regulatory environment.

Do you see that?

DR. MORIN: Yes.

Q. - What other positive factors do you say that New Brunswick Power Corporation has?

DR. MORIN: Those are the main ones that investors would be concerned with. Those are the ones that the investment community would cite as positive factors.

Q. - Yes. And the only reason I ask the question is by reason of your use of the word "including". I took it from that that there are others.

But what you tell me is that the ones that you have here are those which the investment community would look to?

DR. MORIN: Correct.

Q. - Thank you. And you refer at line 12 --

MS. MACFARLANE: Excuse me just a minute.

DR. MORIN: My colleague informs me that bond rating agencies consistently cite the company's stable cash flows as a positive factor.

Q. - Thank you.

DR. MORIN: And the government guarantee of the debt.

Q. - Ms. MacFarlane, please feel free to chirp in any time you want. I am dealing with Dr. Morin's evidence, but it is evidence on behalf of New Brunswick Power, so please feel free to assist.

You refer at line 12, Doctor, on the other side of the ledger to, "The growing competitive threat from Sable Island natural gas." Do you see that?

DR. MORIN: Yes.

Q. - Whatever the extent of that threat is, I take it from what I see at line 2 on that same page, that it is a constrained threat, because competition from natural gas is constrained by its high transportation cost?

DR. MORIN: That's correct. But it is a threat nevertheless.

Q. - Are you conversant, Doctor, or aware of the National Energy Board's decision in MH-2-2002 concerning gas supply issues in Maritime Canada?

DR. MORIN: No.

Q. - So you could not tell me whether that decision improves or diminishes New Brunswick Power's competitive ability to provide in province load?

DR. MORIN: No. I cited it as a threat, as a risk factor, no more, no less.

Q. - Are you familiar with that decision, Ms. MacFarlane?

MS. MACFARLANE: I'm not familiar enough with it to speak to the issue. Mr. Marshall could speak to that issue.

Q. - But we can agree, Doctor, can we that for there to be a competitive threat or even competition from natural gas, there needs to be an available competitively priced supply of natural gas?

DR. MORIN: That's correct.

Q. - We will come back to that a little bit later. Page 6, line 15 and 16 you refer to the major restructuring of New Brunswick Power announced by the government earlier this year.

Does your evidence, Doctor, and do your recommendations proceed on the premise of that restructuring?

DR. MORIN: No, they do not. I view NB Power Transmission on a stand-alone basis, the same way I would view it had it not been for this announcement.

Q. - Thank you. Turn then, please, to page 7 of your evidence which is entitled, Purpose of Testimony. And you explain to us there that the purpose of your evidence -- you explained that the purpose of your evidence includes recommending the various return on equity components for use in a price cap framework, right?

DR. MORIN: Correct.

Q. - And you set out at line 12 five criteria which you say these return components must meet?

DR. MORIN: Correct.

Q. - The return components must be fair to ratepayers. They must permit reasonable capital attraction. They must maintain the financial integrity of the company. They must be comparable to returns offered on comparable risk investments. And they must reflect the inherent risks in the plan, which I take to be the price cap framework?

DR. MORIN: Correct.

Q. - And you mentioned the capital attraction criteria and the comparable returns criteria in your presentation yesterday morning. Right?

DR. MORIN: Yes.

Q. - Turn to page 8, please. And broadly speaking, you refer there, amongst other things to the productivity factor in your price cap formula?

DR. MORIN: Correct. The so called X factor --

Q. - Yes.

DR. MORIN: -- of line 13.

Q. - Which you recommend as being one-half CPI. Do I have that right?

DR. MORIN: Yes.

Q. - I understand the effect of this to be that if during the period in which your proposal is in effect, if it is adopted should inflation be zero, then there is no reasonable expectation of productivity or no productivity improvement embedded in your formula. Have I understood that correctly?

DR. MORIN: Yes, that's correct. Half of --

Q. - And conversely, if inflation --

DR. MORIN: Half of zero is zero.

Q. - Good. And conversely, if inflation were to be 10 percent, then there is a 5 percent productivity improvement embedded in your formula?

DR. MORIN: Yes. You can think of it -- you can think of the X factor as a consumer dividend.

Q. - And even though on -- this occurs even though on its face the factor is not -- I'm sorry?

DR. MORIN: No. I was going to say this is one of the great virtues of the plan. If following your example of 10 percent inflation, which is very, very unlikely, but nevertheless let's take your hypothetical. Most price cap plans have a fixed X factor. Let's say 1 percent or 2 percent. And if inflation were 10, the consumers would be hit with an 8 percent rate increase.

Whereas under my plan it's -- it's inflation minus half of inflation. Which really protects ratepayers from very, very high degrees of inflation compared to a fixed X. And that's one of the virtues of having X equals to half of inflation.

Q. - Do I have it correctly, Doctor, that the X factor so-called is not in fact connected to anything by way of productivity?

DR. MORIN: Yes, it is. Because embedded in the inflation index is an implicit productivity factor for the economy as a whole. So the inflation rate reflects macroeconomic productivity of the Canadian economy. So there is an implicit productivity component in the X factor.

Q. - Thank you. Would you turn, Doctor, please in exhibit A-4 to page 371. That is the responses to interrogatories.

DR. MORIN: I have it.

MR. HASHEY: What page again, Mr. Smellie?

MR. SMELLIE: Page 371, which should be New Brunswick Power's response to PUB interrogatory 8.

DR. MORIN: I have it.

Q. - And I'm interested in particular, Doctor, in the very last paragraph of that response, which explains and gives some reasons why you have used the X value of one-half CPI, correct?

DR. MORIN: Yes.

Q. - And you offer three reasons. First, that there are not reliable calculations of industry productivity. Second, that it's difficult to measure historical productivity. And third, that the results obtained in empirical studies of industry productivity are divergent. Fair?

DR. MORIN: That's correct. It's very difficult to obtain a sample of comparable companies to NB Power Transmission.

Q. - So I conclude from this, Doctor, that it is your view that industry productivity is something else that cannot be benchmarked or observed reliably?

DR. MORIN: It can be benchmarked and observed. And I have participated in and seen a lot of such studies. And the estimates range from, you know, 0 to 2 percent. And if you take one historical period, you get one number. If you take another historical period, you get a different number. How do you measure productivity, output per input, labour, capital. It's a real can of worms. I don't want to get the Board to get into this mess.

And for all practical purposes my half of inflation captures the essence of those studies. And is much, much, much easier for the Board to implement. So the pragmatist in me here is clear.

Q. - Back we go to page 10 of your evidence, Doctor. And pages 10 to 12 are a summary of the evidence which follows?

DR. MORIN: Yes.

Q. - And at line 7 on page 10 you refer to your recommended return on equity of 10 1/2 to 11 percent, correct?

DR. MORIN: Correct.

Q. - And that is a return which you say will meet the criteria which you set out in describing the purpose of your evidence, that is to say attracting capital, maintaining financial integrity and providing a comparable return.

That is at line 9 and 10, right?

DR. MORIN: Yes. And compensate for risks.

Q. - And just to be clear, the company we are talking about is

New Brunswick Power Transmission?

DR. MORIN: Correct.

Q. - And do you believe such a return to be commensurate with the risks of the price cap plan, which was another one of your criteria?

DR. MORIN: Yes. The top end of the range is selective because of the increased variability or exposure to the company's returns under a price cap plan.

Q. - And is there a particular reason, Doctor, why on this page you don't tell us that your recommended return on equity will be fair to ratepayers, which was the first criteria which you mentioned at page 7 of your evidence?

DR. MORIN: I don't like to repeat myself and --

Q. - But you have?

DR. MORIN: Could you be more specific as to what you are asking me here. I didn't repeat the same thing that I articulated earlier.

Q. - Precisely. Look at page 7, Doctor. You said at lines 11 to 15 that "The return components to be employed on the equity invested capital of New Brunswick Power Transmission must meet five criteria", right?

DR. MORIN: Right.

Q. - And on page 10 you mention three of those criteria?

DR. MORIN: That's right. Those are the principal ones.

And if you meet those three that would mean that it is fair to ratepayers and automatically embodies number 5. It reflects the risks.

Q. - Another way of putting it is that if you said that 10 1/2 to 11 percent was fair to ratepayers it might capture the other criteria, correct?

DR. MORIN: That would be -- I would go along with that. I just don't like to repeat myself.

Q. - Indeed. Would you return please -- or not return -- yes, return to exhibit A-4, page 378?

Which should be, Mr. Chairman, NBP's response to PUB IR 12.

DR. MORIN: I have it.

Q. - And this is your response to a question which asked for all evidence that would support 11 percent as being a reasonable basis or reasonable return throughout the 2003 to 2006 period?

DR. MORIN: Correct.

Q. - And you refer to something called the Efficient Market Hypothesis. And I can assure you I don't want to go there.

But you tell us that in an efficient capital market current security prices and current interest rates provide the best estimate of future conditions.

Do you see that?

DR. MORIN: Yes.

Q. - Do you say that current returns on equity reflect the best estimate of future returns on equity, Doctor?

DR. MORIN: Well, it is difficult enough to figure out investors' expected rate of return here today as we speak, let alone two or three or four years down the road. And in an efficient market the best estimate of tomorrow's rate of return is today's.

In the same way that if you toss a coin a hundred times, you are likely to get 50 heads and 50 tails. So the best estimate would be, you know, half the time you get heads, half the time you get tails.

It is the same idea for returns on stocks. The best estimate of tomorrow's return is today's. If that were not true, you and I would make a lot of money capitalizing on any patterns. If we knew that returns were going to go up or go down, we would all be wealthy, and we would be making a lot of money on that prediction.

And because markets are competitive there is sort of no free lunch and no such bargains out there. So that is why I say that the best estimate of tomorrow's rate of return is today's.

Q. - And do you say, sir, that current rates of inflation provide the best estimate of future rates of inflation?

DR. MORIN: It's probably not -- well, the economic literature on this is kind of split. Some people argue that the best forecast of inflation is the so-called naive method of the current rate of inflation.

The track record of economists is rather dismal in forecasting interest rates and inflation and so forth. So we can talk about inflation forecasts if you want.

My best forecast of inflation is to look at the long-term Canada bond rates on very long-term bonds versus the ones that are indexed to inflation. And the difference between those two would be what the market thinks inflation is going to be.

So suppose that bonds are yielding 6 percent today and the ones adjusted for inflation are yielding say 4 percent. It follows therefore that the inflation premium that the market believes in is 2 percent. That would be my best forecast of inflation, if you want to get into that.

But my comment here was in terms of stock returns being predictable, and they are not, according to the efficient market, which some people have referred to as the random walk hypothesis.

Q. - I mentioned a minute ago, Doctor -- and perhaps you could just turn to slide 4 of your presentation, exhibit A-22?

DR. MORIN: Yes, I have it.

Q. - And not only in here but in your evidence you refer to the two standards, the two legal standards which you say inform the regulatory challenge, correct?

DR. MORIN: Yes. The notion of a fair and reasonable rate of return rests in part on those standards that were promulgated by landmark court decisions.

Q. - And you tell us that those -- that the criteria of -- the standards of comparable earnings and the standard of capital attraction emerge from two Supreme Court of Canada decisions and two Supreme Court of the United States decisions, right?

DR. MORIN: Right.

Q. - And you acknowledge I think in your evidence that the Northwest Utilities case, from our Supreme Court, also stands for the proposition that rates must be just and reasonable to the consumer?

DR. MORIN: Correct.

Q. - And will you agree with me, Doctor, that the Hope decision also stands for the important proposition that ratepayers are entitled to service at the lowest reasonable cost?

DR. MORIN: I would agree with that.

Q. - And would you also agree with me that the Hope case stands for the important proposition that it is the result and not the methodology which is important in the matter of just and reasonable utility rates?

DR. MORIN: Yes. The court did state this philosophy of economic positivism, that you should not judge a model by the narrowness or stringency of its assumptions but rather by its ability to predict and produce reasonable results.

And that is the so-called end result doctrine that, you know, the end justifies the means. That is basically what they were trying to say.

Q. - As you put it, no one single methodology provides a foolproof panacea?

DR. MORIN: Oh, I totally agree with that. You are quoting --

Q. - I'm quoting you.

DR. MORIN: -- from my book, yes.

Q. - Actually from page 23 of your evidence?

DR. MORIN: Also my testimony, yes.

Q. - Thank you. Jump forward a few pages, Doctor, would you, in your evidence to page 15 where you begin your discussion of price cap regulation which carries on to page 20. And there is also of course appendix A-4 to your evidence which discusses that subject.

You told us yesterday, and I haven't had a chance to look at the transcript, that there are various indirect costs of rate of return regulation?

DR. MORIN: Yes.

Q. - And I think I heard you to say yesterday that in that environment everybody gets laptops and what we have is the breeding of a cost plus mentality?

DR. MORIN: I didn't say that. I said there was a potential for inflated, inefficient operating costs, a potential, as there is a temptation to overcapitalize.

Q. - There is the potential if not the tendency for utilities under rate of return regulation to pad their costs?

DR. MORIN: To?

Q. - Pad their costs?

DR. MORIN: There is a potential for that. And that is why regulators have to be extremely careful and scrutinize company expenses. And that is their responsibility and that is why they do that.

Q. - And what sort of regulatory regime, Doctor, do you say that New Brunswick Power is subject to today?

DR. MORIN: Under the status quo it is traditional rate of return rate base regulation.

MS. MACFARLANE: Excuse me. If I could just add to that. I believe again that was a starting point for the current rate plan, shall we say.

But for some time the corporation has been operating beyond that under a legislative permission system whereby our rates are no longer tied to our costs. They are adjusted periodically either by inflation or by 3 percent.

Q. - Have you read the transcript, Ms. MacFarlane, of the Panel A testimony?

MS. MACFARLANE: The transcript of Panel A testimony?

Q. - Yes.

MS. MACFARLANE: I have read parts of it.

Q. - Have you read in particular at about page 211 of the transcript for November the 18th the exchange that I had with Mr. Marshall where he asserted that today New Brunswick Power's rates fall under a rate cap scheme whereby the company can raise its rates 3 percent or less without Board approval, and in that sense New Brunswick Power is today subject to a form of price cap regulation and indeed a quasi performance-based ratemaking scheme?

MS. MACFARLANE: And what is your question?

Q. - Do you agree with that?

MS. MACFARLANE: I believe there is some controversy over the use of the term "price cap". But if one uses it not in the sense of it representing a term commonly used in the industry, that term does reflect the fact that our rates are able to go up to a certain cap.

The quasi PBR mechanism that is being referred to there is the same as the comment that I made yesterday, that as the corporation moved into business units, it set specific objectives and developed performance targets for those units so that they were subject to scrutiny on certain performance targets by our Board and by our senior management group.

And to that end we have been practicing moving toward a performance-based measurement system.

Q. - But we agree, do we, that it is a form of price cap methodology?

MS. MACFARLANE: Do I dare say that? It is a methodology where prices are capped at a certain level.

Q. - Have you, Dr. Morin, had occasion to review and analyze that current methodology?

DR. MORIN: I'm familiar with its broad outlines. And the global tariff is under a price ceiling.

Q. - And to that extent, Doctor, have you determined whether that methodology has led to cost reductions or has achieved efficiencies since it has been in place?

DR. MORIN: I have not investigated that, because I was concerned with NB Power Transmission. And we are concerned in this room with establishing the tariff for transmission services under the auspices of traditional rate of return rate-based regulation.

But I'm aware that the overall tariff for electricity is on a regime of price ceiling, which is essentially similar to inflation minus an X factor of zero.

Q. - Under the current methodology, Ms. MacFarlane, who takes the benefit of any cost reductions that you are able to achieve?

MS. MACFARLANE: In the sense that we annually go through a budget process and determine how rates have to be effected as a result of that, to the extent that our rate determination each year is one that is tied to what our expected costs will be just as a managerial practice, our ratepayers would.

I believe the philosophy at NB Power we pay attention to the mandate in the Act that says that we are to provide basically electricity at the least cost possible. And to that end ensuring that rates are as low as possible is important at NB Power.

Q. - Doctor, under a price cap methodology, where there is no specific provision for the sharing of cost savings, in his view -- in your view what would an appropriate interval be for a review of a utility's actual revenue requirement?

DR. MORIN: Well I have always advocated five years. See, two, three years is a bit short to see the effects of the system, to incorporate the effect of the price cap and the planning, particularly for large industrial customers, like your client, to have a bit of experience with the system. Three years is really the minimum that I would see.

After five years, I would get concerned with recalibrating the parameters of the system should they not function perfectly.

Without sharing, it could be that the earned returns would be extremely high or extremely low and we would need to recalibrate the price cap system. And one of the reasons for having the safety net that I propose, the sharing mechanism, this guards against the possibility of the company over-earning or under-earning. The ratepayers will share in any over-earning and to some extent in under-earning as well.

Q. - And in the event of such a review in that scenario, Doctor, can we agree that the utility's historical incurred costs should be on the table for review?

DR. MORIN: Yes, I would think that is a reasonable proposition, that the Board should entertain that in three years from now all bets are off and we review the entire plan.

Q. - And have you reviewed New Brunswick Power's historical cost data since its last rate review?

DR. MORIN: No, I have not. I know their financial performance, ROE has been rather dismal. But I have not reviewed specific cost items. I have looked at the global results which are not very attractive.

Q. - And when a new rate methodology, such as your price cap framework, is proposed, would you agree with me that such information should be on the table because it is relevant?

DR. MORIN: In any regulatory setting, we have to examine the company's costs. Even if I had not proposed any price caps, it still behooves us to scrutinize the company's costs. That has nothing to do with price caps. It is the obligation and the purpose of this hearing, and the obligation of this Board, to supervise and monitor such costs to make sure that the company has been operating efficiently regardless of the price cap plan.

Q. - That being so, Doctor, I take it it is not your experience that price cap regimes are introduced without a complete and thorough review of actual cost and revenue data?

DR. MORIN: Normally what precedes the implementation of price cap plan is a -- either we set rates at their existing levels, without a full blown rate case, or we have a hearing such as this one to establish going in rates. And then the price cap kicks in.

Q. - So let me just make sure I understand that. Option 1 is to set rates at existing levels. Option 2 is what you say we are doing here.

And so the answer to my question as to whether or not it is appropriate to have a complete and thorough review of actual cost and revenue data, is yes?

DR. MORIN: Yes, it should precede. That's what we are doing here. It should precede implementation of price caps.

Q. - Let me ask you this, Doctor. Do you think it appropriate for a regulatory authority that is assessing a proposed price cap framework to be fully conversant with how the costs of an applicant utility are caused?

DR. MORIN: This Board, after this hearing, will be indeed fully conversant with the company's costs.

Q. - So the answer to my question is yes?

DR. MORIN: No, this has nothing to do with price caps. Whether we have a price cap regime or a zone of reasonableness regime or any kind of incentive, regulation or PBR, the Board has to examine the company's costs going in to such regimes.

Q. - And the Board has to be fully conversant with how the costs of an applicant utility are caused, correct?

DR. MORIN: The Board has to establish the fair and reasonable cost of service and set rates going in.

Q. - And a Board, in order to do that, has to be conversant with how the costs of an applicant utility are caused, correct?

DR. MORIN: What do you mean by conversant?

Q. - Familiar with, understand.

DR. MORIN: Yes.

Q. - Thank you.

DR. MORIN: Like it is doing right now. We are looking at the cost of service.

Q. - And similarly, do you believe that a regulator in these circumstances should be satisfied that the assets of the applicant utility are used and useful?

DR. MORIN: Yes, that's pretty standard practice to make sure that the company's investment decisions were deemed prudent and wise for ratepayers in a prospective manner. And that is pretty standard responsibility of a Board and this Board has done this well in the past.

Q. - I understand from your response, Doctor, to -- and I don't think you need to turn this up -- the company's response to Province of New Brunswick-6(24), which for reference, Chairman, is at page 280 of A-4, that you, Doctor, have not surveyed price cap regimes to determine whether they contain quality standards?

DR. MORIN: I have not conducted a formal comprehensive survey of all the price cap regimes in the world to see the quality factors. But I know that in the telecommunications business, where price caps prevail, sometimes -- in some jurisdictions there are some service quality factors that are at work here. And I don't have a problem with that.

Q. - Sorry, Mr. Chairman, I misspoke the reference. It is part 29 of that response actually.

DR. MORIN: Page 280.

Q. - Yes. Well let's come at it this way. It is not your recommendation with respect to your price cap regime -- or your recommendation, I should say, for a price cap regime, does not in fact contain service quality standards? Correct?

DR. MORIN: That's correct.

Q. - Thank you.

DR. MORIN: But under the price cap regime it is pretty clear that a utility has all the incentives in the world to provide high quality service at the lowest cost in order to maximize profitability. Happy customers and attractive profits go hand in hand.

Q. - Are you able to tell me, Doctor, whether benchmarking is a common feature of incentive based regulatory models?

DR. MORIN: No, it is not.

Q. - You say it is not?

DR. MORIN: No, not really.

Q. - I will come back to that. Can you and I agree, Doctor, on a simple definition of benchmarking as being the comparison of some measure of actual performance against a reference or benchmark performance?

DR. MORIN: That's correct. Benchmarking is a common practice in both regulated and unregulated companies, to compare yourself against your peers. Whether you are under incentive regulation or not, you should do that anyway.

Q. - Could the Secretary hand up to the Panel a document -- it is actually a paper, Mr. Chairman, entitled "Benchmarking and Regulation: International Electricity Experience", the authors of which are Jamasb and Pollitt, dated 2001.

CHAIRMAN: JDI-17.

MR. HASHEY: Mr. Chaiman, on this paper I have no problem. I have not interrupted at all on the cross examination of the witnesses. So long as it's used for purpose of questioning the witnesses and not is there as an exhibit, as an authoritative exhibit as accepted as such. I want it on the record that we don't necessarily accept these things as such when you get into papers.

Now, mind you, cross examine the witness. I don't know what he will say on it. I have not talked to him on this to see if he agrees. I have no problem with that. But the caveat is I don't want it just to be put in and then to be used in argument later, parts that aren't cross examined on.

CHAIRMAN: Mr. Smellie?

MR. SMELLIE: Well that's a curious position, Mr. Chairman. My intention so far as I'm aware of it at this point is that the record at the end of the day is the record. And I am quite confident that you and your colleagues will give appropriate weight to all evidence that is cited to you in argument whether or not it has been cross examined upon.

There are many aspects of the applicant's case that I suspect won't have been cross examined upon by the time we get finished. In my respectful submission it's a matter of weight and nothing else. I think that's responsive to my friend but --

CHAIRMAN: Mr. Hashey?

MR. HASHEY: No, I don't -- I don't completely agree with that. It's a matter that obviously we are not able to cross examine T. Jamasb and M. Pollitt in relation to their document. And it just seems to me that this in the normal evidentiary course, and this may not be the normal evidentiary course, that we would have that opportunity to challenge it. Now mind you, that may be something that if the ruling is it's there, it's part of evidence, that we may want to do some rebuttal on, I'm not sure.

MR. SMELLIE: Well, precisely, Mr. Chairman. My friend of course can adduce whatever rebuttal testimony he wants. But let's be clear here. We can't cross examine Ibbotson on whom Dr. Morin has relied. We haven't been given an opportunity to cross examine Rudden. So let's be careful here because I think it cuts both ways.

My short submission on the point is that there is rebuttal evidence. There is argument. There is reply to that argument. And of course ultimately there is the expertise of you and your colleagues to give evidence the weight that it deserves in the particular circumstances. At that point --

MR. HASHEY: Mr. Chairman, just in response to that. I will shut up after that. Is we had some rules. I have not objected to the fact that Booth and Berkowitz seem to be the witness that is not here but that is being relied upon by Dr. Yatchew. I have not objected to that and I will not object to that.

However, we did have rules as to when evidence was to be presented in this hearing so we had appropriate opportunities to deal with that evidence. And this seems that this is a little late in the way this is going in. But if it's only for cross examination, only is used for the purpose of the responses that are given on cross examination, I don't have a problem.

CHAIRMAN: We will take our mid morning 15 minute break and rule when we come back.

(Recess)

CHAIRMAN: The Board has taken the opportunity of the break to consider the introduction of further exhibits. And, frankly, it appears to the Board we have got to go back to the law of evidence again. Gentlemen, you are hearing more about the law of evidence in this administrative proceeding than you normally do in the court system I know.

But the ordinary way to approach this would be to have this excerpt from a journal marked for identification. You show it to the witness, see if the witness is familiar with it or with any of the theories that are set forth in it. And then depending upon if you believe you have established enough to put it into evidence, then you request that it be given an exhibit number and accepted in evidence. And then, of course, the entire document can be used as part of the record. So that's the fallback. That's the way in which the Board will ask you to proceed, Mr. Smellie, in reference to any of these documents that Mr. Hashey has difficulty with from the point of view of them being from a learned journal, et cetera.

So I erroneously had given the exhibit which is, "Benchmarking and Regulation: International Electricity Experience", I gave it an exhibit number of JDI-17. I will remove that from the exhibit list at this time, but I will mark it for identification, Mr. Smellie. And I will mark it for identification JDI-1 for ident.

Go ahead, Mr. Smellie.

MR. SMELLIE: Not wishing to prolong the matter, Mr. Chairman, I appreciate what you have just said. What I will wish to do, of course, is to consider your ruling in the context of materials that the applicant has produced, and we will see where we go.

CHAIRMAN: I should for sake of counsel here. The Board considered that as well. If a document, you mentioned the Rudden Report for instance --

MR. SMELLIE: Or Stone and Webster or whatever.

CHAIRMAN: If that has been -- if that was part of the prefiled evidence, and was therefore subjected to the interrogatory process, I think we would put that on a different level than something that is introduced at this late date through a witness. So I just -- however, you go ahead and consider what we have had to say and we will deal with it later.

MR. SMELLIE: Thank you, sir.

Q. - Just before we return to this issue, Dr. Morin, Ms. MacFarlane, just with respect to your opening discussion with the chairman this morning, do I have it correctly that the notion of remitting a payment in lieu of taxes or the dividend to an entity which was referred to earlier today as Debtco is not mentioned in New Brunswick Power's evidence anywhere?

MS. MACFARLANE: That's correct.

Q. - And do I also have it correctly that such a notion is neither to be found in the White Paper nor in any announcement made by the government of New Brunswick to date, either in the legislature or elsewhere?

MS. MACFARLANE: I don't know how else you would interpret the Minister's statement that the Corporation would be required to earn a return and to pay dividends and taxes. I don't know how else you would interpret that, but the fact that those -- that the Corporation in the future would be paying dividends and taxes.

Q. - To Debtco?

MS. MACFARLANE: To another Crown utility who will be the intermediary for financing the debt.

Q. - Which you have referred to as Debtco?

MS. MACFARLANE: For -- for ease of reference.

Q. - For purposes of identification?

MS. MACFARLANE: Yes. Yes.

Q. - Thank you. Doctor, JDI-1 for identification, the Jamasb and Pollitt paper was given to your counsel on Monday. I am wondering if you have had an opportunity to review it?

DR. MORIN: Yes, I did.

Q. - Would you for purposes of the record read the first two sentences of the abstract for me, please?

DR. MORIN: "An increasing number of countries are adopting incentive regulation to promote efficiency improvements in electricity transmission and distribution utilities. Incentive regulation almost invariably involves some form of benchmarking or comparison of actual versus some reference performance."

Q. - Thank you. Do you agree with the first sentence?

DR. MORIN: Yes.

Q. - But you don't agree with the second sentence?

DR. MORIN: Well, it's not a question of agreeing or not agreeing. This Board is performing this exercise right now by scrutinizing the costs of NB Power Transmission.

Q. - Before the break, Doctor, I asked you --

DR. MORIN: Can you please let me finish my answer.

Q. - I'm sorry. I didn't mean to interrupt you.

DR. MORIN: The purpose for this hearing is in part to scrutinize the company's costs. And we have already had some benchmarking activities it's my understanding through the Stone & Webster report and other studies that have been done in the past. So this Board is quite cognizant of its responsibilities to scrutinize costs for efficiency.

Q. - I appreciate your comment. I asked you before the break whether in your view benchmarking is a common feature of incentive based regulatory models, and you said it was not. Correct?

DR. MORIN: Well the two are completely separate things. Benchmarking is something that all companies do. They compare themselves to their peers and see where they can improve and cut costs and be more efficient. Whether you are regulated or not, most companies do this.

And regulated utilities do it sometimes at the prodding of a regulator too.

Q. - Do you disagree with the second sentence that you read into the record of the abstract?

DR. MORIN: I don't agree with the sentence.

Q. - Thank you.

DR. MORIN: And, again, why would you spend all this time, all these resources, hiring all these consultants to do all these cost studies when the price cap regime that I suggest has nothing to do with the company's costs by design. We are designing a system where the benchmarks are external to the company in order to provide the company with incentives to surpass those thresholds. That is the gut, that is the crux of the whole price cap recommendation.

So why would you engage in a very burdensome, costly, long, protracted study of the company's costs?

Q. - We will deal with that in argument, Doctor. Look at page - the second page of the document, page 108 of the publication. I refer you to the second full paragraph on the page, beginning "Regulators have adopted". And in the eighth line of that paragraph I find this. "A common feature of the incentive based regulation models is the use of some form of benchmarking of utilities." I take it you disagree with that observation?

DR. MORIN: Under my plan, the thresholds of inflation and productivity are external to the company and do not involve the company's costs, by design.

Q. - Cast your eyes down to the bottom of the left-hand column of that page. Doctor, do you agree and I quote "That the main objective of the incentive regulation method is to promote efficiency improvement by rewarding good performance relative to some predefined benchmark."

DR. MORIN: Yes. And defined benchmarks are the inflation rate minus half inflation. That is how high you have to jump under my recommendation.

Q. - The next sentence reads, "As the rewards are based on performance, two key issues are the choice of appropriate benchmarks and techniques used to measure the performance." Do you agree with that?

DR. MORIN: I have lost you, I'm sorry. Where are you?

Q. - The bottom of the page.

DR. MORIN: 108?

Q. - Yes. The second sentence in the last paragraph. "As the rewards are based on performance, two key issues are the choice of appropriate benchmarks and techniques used to measure the performance." Do you agree with that?

DR. MORIN: Yes, I agree. And I have defined such benchmarks as inflation index minus half of inflation index.

Q. - You have some experience, sir, with incentive-based, performance-based price cap frameworks in the United States, do you?

DR. MORIN: Yes.

Q. - Can we generally agree that regulators in the United States have had the benefit of dealing with a history of utility cost information upon which to base initial or going-in cost estimates?

DR. MORIN: Yes. Are we done with this article?

Q. - And in the U.S. experience, Doctor, is it the case that most firms under incentive regulation are private sector or profit oriented companies?

DR. MORIN: Are we finished with this article?

Q. - No.

DR. MORIN: You are not quoting anymore?

Q. - I get to ask the questions, Doctor. I am not finished with the article.

DR. MORIN: I am just trying to figure out where you are, because I am still trying to find a quote. I thought you were reading an excerpt.

Q. - Oh, no. No, no. Just put it to the side, but keep it handy. Let me ask my question again --

DR. MORIN: Repeat the question? I'm sorry.

Q. - That's fine. In the U.S. experience, is it the case that most firms under incentive regulation are private sector or profit-oriented companies?

DR. MORIN: Most firms under?

Q. - Price cap regulation are private sector or profit-oriented companies?

DR. MORIN: You mean investor owned?

Q. - Yes.

DR. MORIN: Yes, I would think that's correct. Because most utilities in the U.S. are investor owned, so that follows.

Q. - Based on your experience, Doctor, can we agree that generally speaking, Canadian regulators that have implemented price cap regulation have been able to do so on the basis of established or approved revenue requirements or a history of costs on which to base going-in cost estimates?

DR. MORIN: The CRTC before implementing price caps did conduct a going-in tariff study based on traditional cost of service.

Q. - What about energy regulatory bodies that you are familiar with?

DR. MORIN: I cannot answer that. I don't know.

Q. - Is it also your understanding that many Canadian firms under price cap regulation are also private sector firms?

DR. MORIN: Well clearly the telecom companies are investor owned.

Q. - Union Gas?

DR. MORIN: No, I said the telecom.

Q. - Right.

DR. MORIN: Canadian telecom companies are investor owned. Union Gas is investor owned. Hydro Quebec Generation would be public. So I guess it's a mixed bag. Predominantly investor owned -- predominantly.

Q. - Thank you. Do you know, Doctor, when this Board last approved a revenue requirement for New Brunswick Power?

DR. MORIN: I believe it was 1993.

Q. - Thank you. You have told us, Doctor, that in your view New Brunswick Power has achieved high levels of efficiency?

DR. MORIN: That is my understanding.

Q. - The reference for that, Mr. Chairman, is the response to NSPI, IR 2, found at page 216 of volume -- sorry, exhibit A-2.

And in that regard --

DR. MORIN: Did you say page 216?

Q. - I think so. I did.

DR. MORIN: Well this has to do with the Z factor, so --

Q. - Well what you say at this page with respect to the Z factor, and I will quote it for the record, "Not only does the plan assure that New Brunswick Power Transmission's rate will be declining in real terms, but the company has already achieved high levels of efficiency and the attainment of more will be increasingly difficult."

Have I read that correctly?

DR. MORIN: Yes.

Q. - Right. And if you could just -- well let me put it to you this way. It's also your view that because of New Brunswick Power Transmission's operating leverage that there is very limited managerial manoeuvrability to reduce costs, is that correct?

DR. MORIN: Yes. It's going to be very difficult for them to achieve even the threshold of one-half of inflation productivity gain.

Q. - Ms. MacFarlane, with respect to those two items do you agree with Dr. Morin?

MS. MACFARLANE: I'm sorry, could you be more specific?

Q. - That the company has achieved high levels of efficiency and it will be difficult to achieve further gains and that there is limited, or very limited managerial manoeuvrability to reduce costs?

MS. MACFARLANE: Both of those statements are judgments and they can be interpreted with degrees of certainty or latitude.

I do believe that NB Power is a well run company. And

I also believe that there have been significant efforts to deal with efficiencies in costs and that it becomes increasingly difficult just by the nature of the fact that most of our costs are fixed. I have believed from the outset that half of CPI as a factor is going to be difficult to attain.

MR. SMELLIE: I wonder if Mr. Hashey could put before the witnesses exhibit JDI-7, which for identification purposes, Mr. Chairman, is the supplementary response to NB Power interrogatory number 9, which was introduced on Monday, Mr. Chairman.

MR. HASHEY: Yes. I think they have it.

MR. SMELLIE: I am just waiting for the panel to get it.

Q. - I just want to take you briefly, Ms. MacFarlane, to the last page, the pretty coloured page of the exhibit.

Do you know what AMPCO is, Ms. MacFarlane?

MS. MACFARLANE: No, I do not.

Q. - Let me tell you what it is. It's the Association of Major Power Consumers of Ontario.

And leaving aside for the moment anything else, you will agree with me that this graph shows a trend increase in New Brunswick Power's large industry power costs since 1992. Correct?

MS. MACFARLANE: That's what the labels indicate that it says.

Q. - Right. And do you agree that New Brunswick Power's large industry power costs have increased since 1992?

MS. MACFARLANE: Yes.

Q. - Why is that given the levels of efficiency that have been achieved under the current price cap regulatory framework?

MS. MACFARLANE: These, Mr. Smellie, are all in costs and they are driven largely by generation. For New Brunswick Power, as an integrated utility, 75 percent of our costs are generation-related and we are very subject to the vagrancies of commodity prices, foreign exchange, what have you, on those fronts.

The chart, I don't think anyone has ever made any contention NB Power is able to compete with hydro, the electric utilities across Canada that largely supply their fuel through water that has little or no cost to it. From that perspective, we are more likely to be in a cost range similar to those provinces that do not have the advantage of significant hydro assets and you see that we are in those ranges. DBRS regularly reviews our costs compared to other Canadian utilities and makes that conclusion. That based on the resources that we have available as a province, NB Power does well in its generation cost, because we have a diverse generation mix. Given the resources that we have available. We do not have major sources of hydro.

Q. - Tell me if you can, Ms. MacFarlane about TransAlta? TransAlta have a lot of hydro?

MS. MACFARLANE: I can't answer that definitely.

Q. - Can you answer the question with respect to any of those utilities that appear on this graph?

MS. MACFARLANE: Newfoundland Hydro, Hydro Quebec and BC Hydro are predominantly water-based, hydro-based. And I believe Manitoba Power also has a very strong hydro operation.

Q. - Thank you. Dr. Morin, are you able to point me to empirical evidence which suggests that price cap regulation works well in the public sector?

DR. MORIN: There is such a scarcity of such price cap plans that it would be difficult to make such a study. But it certainly works very well in the private sector. And let's not forget that the idea of the goal -- the principal goal of regulation is trying to emulate the competitive result so --

Q. - If there is such a dearth of empirical evidence, Doctor, how do you know that price cap regulation will work in the public sector?

DR. MORIN: Well I see no reason why it shouldn't. It works very well in the private sector and we are supposed to try to emulate that result and why wouldn't it.

Q. - Thank you. Will you agree with me, Doctor, that benchmarking is a well-established concept in economics?

DR. MORIN: Yes.

Q. - It's a practice that economists have pursued for many years?

DR. MORIN: Well businesses in general benchmark their operations against their peers and to try to augment their performance and their profitability. So it's fairly common in the business world.

Q. - And it is a practice that economists have pursued for many years, is it?

DR. MORIN: Businesses have pursued it.

Q. - And economists have not?

DR. MORIN: There is a lot of studies about benchmarking and cost functions and those sorts of things, so yes.

Q. - Thank you.

DR. MORIN: But it's very, very academic in nature. I am more concerned with the business practices of benchmarking.

Q. - Yes. And indeed your evidence repeatedly refers to benchmarking, doesn't it?

DR. MORIN: I wouldn't -- could you point me to, repeatedly refers to?

Q. - Well, I'm going to suggest to you, Doctor, that particularly with respect to the subject of capital cost, the word "benchmarking" appears about 20 times in your evidence, give or take?

DR. MORIN: Well, we speak in finance of benchmarks. Like the long-term Canada bond yield is a benchmark for the risk-free rate.

Q. - Yes.

DR. MORIN: That is pretty standard terminology. But you are using the word "benchmarking" in a context of economics which is a little bit different.

Q. - Would you agree with me, Doctor, that benchmarking is commonly undertaken for a wide range of costs, be they capital costs, labour costs, material costs, energy input costs and so on?

DR. MORIN: Benchmarking to me means comparisons. And it is standard practice to compare --

Q. - I will take that as a yes?

DR. MORIN: -- costs and performance measures to those of your peers.

Q. - And is it your understanding, as it is mine, Doctor, that when benchmarking is undertaken, economists or those who undertake benchmarking studies estimate models of costs or cost functions?

DR. MORIN: Yes, they do. Consultants have been known to do that in the past.

Q. - And I imagine that over the course of your lengthy career you have seen papers on cost estimation?

DR. MORIN: Yes, I have. And the results are always basically the same. They are all over the place.

Q. - Are you able to give me a sense of the quality of fit or the R squared in such cost estimation models?

DR. MORIN: Now you are outside my terrain here. I'm not an econometrician or an economist, I'm a finance person. And I'm unable to answer your questions.

All I know is that I have scrutinized all these studies. And the results depend on the historical period, the choice of measures of input, the choice of measures of output, how big your sample is, how heterogenous the companies in the sample could be. And the results are all over the place.

Q. - Have you ever published any work on cost estimation for network utilities?

DR. MORIN: No. I'm a finance person. I'm not an economist.

Q. - Do you understand, Doctor, as I do that benchmarking can incorporate data from different geographic and economic and regulatory environments?

DR. MORIN: Yes. Wherever you can find comparables you should try to do so.

Q. - And, Ms. MacFarlane, New Brunswick Power as I understand it is a member of an organization called the Electric Utility Benchmarking Association, correct?

MS. MACFARLANE: The document that you distributed to us indicated that. I am not personally aware of that but the document that you gave us indicated that we were a member.

Q. - And so New Brunswick Power would know that EUBA is a benchmarking association with hundreds of utility participants?

MS. MACFARLANE: I would suggest that in the operating units that have made their membership -- enroled in membership they would be aware of that. I'm not familiar with those studies.

Q. - Would that include the transmission business unit?

MS. MACFARLANE: That may include the transmission business unit. I know that benchmarking as it goes to comparing to other utilities has been an issue of real concern for the transmission business unit. And we worked hard through the Stone and Webster Study to try and find reasonable comparators. The vagrancies of climate, the rural nature of our transmission assets relative to other utilities, and the necessary strength of our interconnections and support for industry relative to other utilities of our size, makes it very difficult to find benchmarks that emulate NB Power Transmission.

Q. - Would you undertake through your counsel, Ms. MacFarlane, to make inquiries of the business units to find out for how long New Brunswick Power has been a member of the Electric Utility Benchmarking Association?

MS. MACFARLANE: Yes, I will.

Q. - Can you tell me, Ms. MacFarlane, what percentage of New Brunswick Power's payroll is incentive or performance based?

MS. MACFARLANE: I can't tell you off the top of my head. I can certainly find that for you. But the -- generally speaking it is at director level and above that are eligible for an incentive program at NB Power.

Q. - Would you then undertake to provide to me through your counsel the percentage of the director and above payroll that is incentive or performance based?

MS. MACFARLANE: Yes, I will.

Q. - Thank you. And you understand that I'm asking for the percentage of payroll costs not just base salary?

MS. MACFARLANE: Okay.

Q. - And just following up on your last answer, Ms.

MacFarlane, would you refer please to page 508 of exhibit A-4, which should be the response to Saint John Energy information request 33?

MS. MACFARLANE: Yes.

Q. - I don't know whether it is you or Dr. Morin that can answer this, but as I understand it you were asked to list productivity improvements that could be made to a transmission system and to indicate why only some of them can realistically be achieved by New Brunswick Power Transmission, correct?

MS. MACFARLANE: That's correct.

Q. - And as you did a minute ago you cited -- you cite in the answer such matters as customer density, asset location and asset vintage as reasons as to why some of these productivity improvements may be less available to your company than others, correct?

MS. MACFARLANE: That's correct.

Q. - And indeed you go so far as to say that these reasons or certainly low customer density and location of assets and difficult terrain -- and I'm looking at the bottom of page 508 and the top of page 509 -- make, and I quote, "Benchmarking metrics meaningless".

Do you see that?

MS. MACFARLANE: Yes.

Q. - Now by that do you mean that in the case of New Brunswick Power Transmission that benchmarking is impossible or that benchmarking can be done but you just toss the results because they are meaningless?

MS. MACFARLANE: Benchmarking in any organization is difficult to do. It's very difficult to understand what is behind the numbers in these benchmark surveys. That's no different for NB Power than it is for any other organization.

In our case in particular, even when one can understand what is included in the numbers, it is difficult to use them as a comparison for what NB Power's costs should be because they have different circumstances.

As I said we have struggled to find a benchmark that is one or a group of benchmarks that are truly able to be used as good comparators against our costs.

Q. - Should the Board in your view or your opinion, Ms. MacFarlane, ignore the Stone and Webster report?

MS. MACFARLANE: No.

Q. - So the results of the Stone and Webster report are not meaningless?

MS. MACFARLANE: The results of the Stone and Webster report are not meaningless. We have taken great counsel from that report and in fact it forms the foundation of our reliability improvement program, which is leading to significant investments over the test period, over the ensuing three years.

Q. - Would you please look at page 116 of exhibit JDI-1 for identification? And that is the Jamasb/Pollitt report or paper, Mr. Chairman.

And what you should have in front of you, Ms. MacFarlane, is a table which sets out power sector reform and benchmarking features for some 20 or so jurisdictions around the world. Is that a fair description?

MS. MACFARLANE: I am not -- I have not familiarized myself fully with this table.

Q. - You said you had --

MS. MACFARLANE: So I will take --

Q. - -- an opportunity to familiarize yourself with it, Doctor. Is that a fair description of what this table says?

DR. MORIN: Yes.

Q. - It includes Hungary, correct, at the bottom of page --

DR. MORIN: Yes.

Q. - -- the first page. It includes Tasmania, page 118?

DR. MORIN: Yes.

Q. - It includes India, do you see that?

DR. MORIN: Yes.

Q. - Are either of you prepared to tell me that none of the transmission segments in these jurisdictions suffer from any of the same factors which you say render benchmarking metrics meaningless for New Brunswick Power Transmission?

MS. MACFARLANE: No, I'm not prepared to say that. I haven't studied any of this.

DR. MORIN: I think our position on this is best expressed -- or at least my position is best expressed on page 128 of that document. On the left-hand side, the second paragraph, starting with the second sentence, "However, regulators use different benchmarking methods for setting the X factors. The choice of method may be influenced by the number of utilities. Efficiencies, of course, can be sensitive to model specification and choice of input and output variables and sample size. This raises questions as to the robustness of calculated X factors based on unstable rankings."

And that is the core rationale for me recommending half the CPI index as a threshold. I don't want the Board to be confronted with these difficulties. And those are particularly difficult for New Brunswick Power given the complications or the territory type of complications that my colleague outlined a few moments ago. The rural density and the vintage of the assets, et cetera, et cetera would aggravate the problems cited in this article.

Q. - Well firstly, Mr. Chairman, on that note I am going to ask that this document now be marked as exhibit JDI-17, unless my friend has an objection, which I didn't think he did at the beginning in any event.

MR. HASHEY: I have no problem.

CHAIRMAN: JDI 1 for identification will become exhibit number JDI-17.

Q. - And just so I'm clear, Doctor, the undertaking that we are currently engaged in is to determine the initial prices going into the regime that you propose, correct?

DR. MORIN: Correct.

Q. - Can I ask you to turn, Doctor, to appendix A-4 of your evidence?

DR. MORIN: I have it.

Q. - Was this paper or appendix, I guess, written specifically for the purpose of this hearing, Doctor?

DR. MORIN: A lot of it is generic in nature.

Q. - So it has been adapted for use in this proceeding?

DR. MORIN: That is a good way of describing it.

Q. - Thank you. At page 1 under the heading "Introduction" at line 16 you say this: "The cohabitation of competition and regulation to the extent that it exists is unhealthy."

Do you see that?

DR. MORIN: Yes.

Q. - You understand, do you, that New Brunswick Power Transmission will remain a regulated monopoly whereas the generation function of New Brunswick Power, at least in wholesale markets, will not?

DR. MORIN: I understand that.

Q. - You don't think that the Government of New Brunswick is pursuing an unhealthy course, do you?

DR. MORIN: No. I agree with the restructuring efforts and the unbundling initiatives entertained by the government.

Q. - If you could turn to page 5 please of this appendix. I'm looking at the paragraph that begins at line 13 and extends to line 18, Doctor, in which you set out a number of compelling reasons to seek alternatives to return --

DR. MORIN: Rate of return.

Q. - -- sorry, rate of return regulation, such as price caps, one of which is so that a utility might be more responsive to competitive market pressures.

Do you see that?

DR. MORIN: Yes.

Q. - Do you include New Brunswick Power Transmission in this category?

DR. MORIN: That's -- number 1 and 2 would probably be more applicable, particularly number 1, in the very narrow case of NB Power Transmission.

From a marketing perspective the company does have the discretion to offer discounts, for example, and respond to marketing challenges.

Q. - Excuse me, Mr. Chairman. At page 5, line 23 you say, and I quote, that "Entry restrictions have been liberalized. And the level and intensity of regulatory controls have been reduced."

Do you see that?

DR. MORIN: Yes.

Q. - You aren't referring to New Brunswick Power Transmission in that regard, are you?

DR. MORIN: It was a generic statement.

Q. - Yes. And with respect to the reduction of regulatory controls or the level and intensity of regulatory controls, are you prepared to agree with me, Doctor, at least generally that such reductions have not been universally successful?

DR. MORIN: You would have to be a little bit more specific on that. Do you mean the electric restructuring in general? Are we talking about the California experience?

Are we talking about the success stories of deregulation or some of its obstacles or some of its failures? Can you be just a little bit more specific?

Q. - No. I think you have answered the question.

DR. MORIN: Generally speaking it has been successful. But we have had some notable failures along the way, particularly in California.

Q. - Right. At page 14 of this appendix, Doctor, you suggest at line 11 that the incentive for cross-subsidization under price cap regulation disappears, correct?

DR. MORIN: Yes. And that is because there is no connection between tariffs and profitability. So there is really no incentive to cross-subsidize within the envelope of the price cap.

Q. - I don't think you need to turn it up. You also say that at page 18, line 1 of your evidence. Will you agree with me, sir, that reductions in New Brunswick Power Generation's costs would enhance that company's ability to compete for wholesale markets?

DR. MORIN: Yes.

Q. - Would you agree with me that increased transmission costs on the part of New Brunswick Power Transmission will not enhance the ability of third party generators to compete with New Brunswick Power Generation?

MS. MACFARLANE: If I understand your question correctly, I don't believe that there will be any disadvantage.

Because NB Power generator -- NB Power Generation company will be paying the same transmission tariff as any third party generators. That is the whole basis of non-discriminatory access.

Q. - My specific question didn't so much concern New Brunswick Power Generation as whether or not increased transmission costs for New Brunswick Power Transmission, whether in that scenario the ability of third party generators to compete with New Brunswick Power would be enhanced?

MS. MACFARLANE: Well, as I say, the whole objective of the restructuring is a level playing field. Third party generators will pay the same transmission tariff, whether it is high or low, as NB Power Generation will be.

So it should be a non-factor as it goes to competing with NB Power Generation.

Q. - And they will be competing with New Brunswick Power Generation, as that company currently stands, existing generation in the ground, some costs, depreciation, et cetera, et cetera, correct?

MS. MACFARLANE: That is correct. Yes.

Q. - Thank you.

MS. MACFARLANE: But I don't understand why transmission tariffs would have any impact on NB Power's competitiveness or a third party generation's competitiveness as it goes to generation costs.

The embedded costs of generation might have an impact on it. And fuel costs and other variable costs of generation would have an impact on it.

But the cost of the transmission tariff is the same for both parties. It is a level playing field.

Q. - At line 20, Doctor, of page 14 you say, and I quote, "If the company shifts costs from competitive services to monopoly services, any profits earned are reduced."

Do you see that?

DR. MORIN: Yes.

Q. - Is that a generic statement?

DR. MORIN: That is a generic statement. It would be more applicable to distribution, where some services such as billing and metering would be more competitive.

But in a case of transmission, that statement would not be as applicable as to distribution.

Q. - Let's see if I can understand it in the present context. If New Brunswick Power determined to shift costs from competitive generation services to monopoly transmission services, would it be your view that the profits earned by New Brunswick Power Transmission would be reduced?

DR. MORIN: Now this statement is applicable to NB Power Transmission.

Q. - So it would be, in that scenario -- I'm sorry. Perhaps you can explain that to me. I didn't follow.

DR. MORIN: The statement that I made here is that they are within a price cap system because there is no connection between rates and costs.

Why would a company engage in cross-subsidization in an attempt to shift costs from the competitive to let's say the regulated? Because under traditional regulation you recover the costs of the regulated component.

But now the incentive to do that disappears. Because there is no connection between rates and such costs.

Q. - All right. I had understood you to be referring here, Doctor, to in the present circumstances, the competitive services of New Brunswick Power Generation as opposed to the monopoly services of New Brunswick Power Transmission.

But you are telling me I shouldn't read it that way?

DR. MORIN: Correct.

Q. - Thank you. I understand and invite you to agree with me, sir, that relative to generation, transmission is a relatively small portion of the delivered cost of power?

DR. MORIN: That's correct.

Q. - And relative to your evidence where you talk about the disappearance or elimination of cross-subsidies, Doctor, can you tell me why yesterday morning in your presentation which is marked as exhibit A-22 at slide 44 you said that one of the advantages of price cap regulation was, and I quote, "reduced incentives for cross-subsidization."

Do you understand my conundrum here?

DR. MORIN: Yes. Well, perhaps eliminate would be equally applicable here. Again there is no incentive to shift costs around because there is no connection between rates and company costs.

Q. - So what you meant to say in your presentation in the last bullet on page 44 is that incentives for cross-subsidization are eliminated?

DR. MORIN: Well, there is certainly no temptation to engage in that for the purpose of augmenting profits. Because your rates are disconnected from your costs.

Under traditional regulation there is a temptation or a potential to shift costs from the competitive, so as to make you more competitive, towards the regulated.

But under price cap regulation, since there is no connection between rates and company costs, that temptation disappears.

Q. - I understand what you are saying, Doctor. Can we add a caveat to that, however, provided you get the starting point costs correct?

DR. MORIN: That's correct.

Q. - Thank you.

DR. MORIN: The going-in rates have to be set properly --

Q. - Yes.

DR. MORIN: -- which is what we are doing here.

Q. - Just to finish this appendix off, Doctor, could you look at page 16 under the heading "Risks of Price Caps".

There you say, and I quote, "Price caps which govern aggregate prices may also result in inefficient pricing on individual services."

Do you see that?

DR. MORIN: Yes. That would be true in the case of a utility that has a wide portfolio or baskets of services. In the case of transmission, NB Power Transmission, there is really only one service. That is basically transmission.

So that comment is again more generic and applies more to let's say distribution, where there is a broader array of baskets of services that are being regulated.

Q. - And just generically, Doctor, can we agree that an inefficient price is one that doesn't reflect the cost of providing the service?

DR. MORIN: Yes, that's correct. A price that does not reflect marginal cost is deemed to be inefficient because it provides wrong signals to consumers for consumption.

Q. - Thank you. Let me ask you to turn back to your evidence then please at page 18 and your continuing discussion of price caps.

I'm referring to line 7 and 8 where you refer to the notion or concept of rate shock which we discussed briefly yesterday. You had a discussion with Mr. Gillis on that.

Ms. MacFarlane, where does the recovery of payment in lieu of taxes and return on equity fit in your understanding of the concept of rate shock?

MS. MACFARLANE: Rate of return and taxes are two of the elements of the revenue requirement. The revenue requirement is what is used to determine the tariff. It is an aggregate calculation.

And rate shock is a concept that applies to the tariff itself and to any large shifts in the tariff that are unexpected.

Q. - You said yesterday, and again I haven't had a chance to read the transcript, when Mr. Gillis asked you the question that in the context of the regime that the company has been operating under for many years now, that is to say the 3 percent limit, that rate increases beyond that magnitude were something that, at least in your mind, triggered the concept of rate shock.

Those weren't your words. But that is what I took from your evidence. Would that be fair?

MS. MACFARLANE: I would say that that's a stretch. I believe I said that that might be an indicator of some people's judgment of rate shock. The fact that it exists might indicate that it is some people's judgment of rate shock.

Q. - I know you have told me this earlier. It is your understanding, Ms. MacFarlane, is it, that each of the operating entities under Holdco are going to be required to earn a positive return?

MS. MACFARLANE: That is what was in the Minister's statement, yes.

Q. - And to be clear, and so my clients understand, have you or has New Brunswick Power undertaken any study of the appropriate levels of return for the other butterflies?

MR. HASHEY: I think this may be something that goes beyond what we are doing here.

CHAIRMAN: Well, it depends upon how far we go, I guess. Ms. MacFarlane, can you answer that?

MS. MACFARLANE: I indicated yesterday that the restructuring is being driven by the Province of New Brunswick.

The rate of return requirements will be dictated by them as owner. And they have engaged investment bankers to assist them in making those decisions.

And we have been working with the investment bankers. We have not engaged our own consultants in that matter.

Q. - My colleague Mr. Nettleton, Ms. MacFarlane, has given me a copy of page 910 of yesterday's transcript where you said, and I quote, "The current regulatory regime which speaks to rates being constrained within inflation or 3 percent would suggest that the judgment of the current regulatory regime would be that anything in excess of inflation or 3 percent might lead to rate shock or be getting into that range on an annual basis."

What you tell me now or today is that that in your view might be a bit of a stretch?

MS. MACFARLANE: No. I think -- and perhaps I misheard you, Mr. Smellie. But I think you said that I believed that anything in excess of 3 percent or inflation was rate shock. And I did not say that.

Q. - What is your opinion, as a policy witness for New Brunswick Power and New Brunswick Power Transmission, as to a rate increase that would qualify as rate shock?

MS. MACFARLANE: I would go back to what Dr. Morin talked about yesterday, that being the ability of different sectors to be able to bear price increases.

And from that perspective I'm not prepared to give you a definitive answer. I believe it is a matter of circumstance and range.

But again I go back to the fact that at the end of the day it is the regulatory regime that is in place to try and prevent rate shock. And our regulatory regime gives us an upper limit of 3 percent or inflation.

Q. - I think it is in the evidence somewhere, Ms. MacFarlane, that there has not been formal consultation with stakeholders concerning this application, correct?

MS. MACFARLANE: As far as I know, that is the case.

Q. - So it would be the case then that New Brunswick Power has not consulted with its stakeholders as to what they might think rate shock would amount to?

MS. MACFARLANE: Certainly as it goes to the large industrial customers, NB Power has constant engagement, shall we say, regular contact with our large industrial customers.

And we strive to understand their needs and their position on matters such as rate shock.

Q. - So what have you learned from your industrial customers as to what they think rate shock might be?

MS. MACFARLANE: Our industrial customers are in New Brunswick because we have competitive energy prices. The province of New Brunswick has been able to attract large industrial customers in part for that reason.

Electricity in general has a very big impact on the economy of New Brunswick, not only because there is a large industrial base that is dependent on it but also because of the high home heating load.

So energy prices are very important to the province and to the province's economy and to the citizens and industries in the province.

Q. - With respect, Ms. MacFarlane, would you answer my question. What have you learned from your industrial customers as to what they perceive rate shock to be?

MS. MACFARLANE: If you are asking me for a specific number, I'm sorry, I can't give you one. What we have learned is that electricity prices, their stability and predictability is essential. It is very, very important to our large industrial customers.

Rate shock is not a happy thing, particularly for industrial customers. And we are striving to ensure that for the transmission tariff we are putting in place a tariff that allows customers predictability and stability of rates.

I might mention, as an example, that one of the risks of the transmission business unit under the proposed tariff is forecasting risk.

In other regimes all of the costs of transmission are in one way or another passed on to the customers through some sort of true-up mechanism. That is not the case in our proposal. And it is not the case because our large industrial customers have made it clear to NB Power over the years that predictability and sustainability are what is important to them.

Q. - So you have no information that would be of assistance to this Board emanating from your ongoing discussions with your industrial customers as to what they might think would amount to rate shock, correct?

MS. MACFARLANE: I believe that the information that I have just put on the record would be informative to the Board.

Q. - You would agree with me I take it that a regulator as a matter of course can and should take into account the impact of utility rate proposals?

MS. MACFARLANE: I would agree with that, yes.

Q. - It would in your view and in the company's view be a relevant consideration for this Board in this case?

MS. MACFARLANE: Well, if you go back to the comments that Dr. Morin made earlier there in the opening part of his evidence about what criteria you judge a regulatory regime by, impact -- or certainly fairness to the customer is one of them.

And rate shock would have to be part of the fairness equation, I would assume.

Q. - Thank you. Would you turn please to exhibit A-6, page 123. Just pursue this question, Mr. Chairman, and then perhaps it would be appropriate to rise for lunch. Exhibit A-6 , page 123, and you should have before you, Ms. MacFarlane, your response to Saint John Energy's supplemental interrogatory number 8.

MS. MACFARLANE: Yes, I have it.

Q. - And I don't want to go too far into this. But the response to the question indicates that the proposed tariff rate for network integration transmission service, excluding ancillaries, are based on revenue requirements -- sorry, based on a revenue requirement. And there then follows a table. Do you see that table?

MS. MACFARLANE: Yes.

Q. - And I understand what this table does is to tell us all what the current cost of service component of the company's bundled rate is relative to what it is going to be for that service, excluding ancillaries under the open access tariff. Is that fair?

MS. MACFARLANE: That is fair.

Q. - Right. And subject to check, would you agree with me that the proposed rate shown on this table is approximately 15 percent higher than the current cost of service for the services described?

MS. MACFARLANE: With the exception of you using the word "rate", I would agree with you that the cost as exhibited there under open access tariff are approximately that range higher than the costs exhibited there under cost of service, yes.

Q. - Excluding ancillaries?

MS. MACFARLANE: Yes.

Q. - Thank you.

MS. MACFARLANE: I did just want to add though that if your comment was one that was to support rate shock --

Q. - Do you think this is rate shock?

MS. MACFARLANE: If your comment was one that was in support of your comments about rate shock, I might mention that the announcement by the Minister indicates that standard offer services will continue in the current form and format under the same terms and conditions. So bundled rates will not be affected in this way.

I might also mention that the proposed tariff is significantly lower than the existing tariff that is in place today. So from that view as well we are proposing that tariff rates go down under this proposal, as compared to what they are today.

MR. SMELLIE: Thank you for that comment. 1:30, Mr.

Chairman?

CHAIRMAN: 1:30, Mr. Smellie.

(Recess - 12:00 p.m. - 1:30 p.m.)

CHAIRMAN: Good afternoon. Any preliminary matters?

MR. HASHEY: Not for me, Mr. Chairman.

CHAIRMAN: Mr. Smellie?

MR. SMELLIE: Thank you, Mr. Chairman.

MS. MACFARLANE: Mr. Smellie, I wonder if I might add to my answer of your last question. We were speaking to SJE supplemental 8. And you were asking me about the two columns.

Something that I neglected to say was that under the column "Cost of Service", interest of .55 cents per kilowatt month, that number does not include an interest coverage.

So in that sense this column is incomplete in that regard. Even if we were to use the interest coverage of 1.25 which is the currently approved amount, that would add about 14 cents to that column.

So the difference is much smaller than what is here on that basis. And that is with just a 1.25 times interest coverage. You would appreciate that cost of service should include interest coverage.

Q. - I'm looking at the second column in the table, Ms.

MacFarlane, headed "Cost of Service"?

MS. MACFARLANE: Yes.

Q. - And I think what you have referred me to is the third line of that column?

MS. MACFARLANE: That's correct.

Q. - And you are saying to me that that is incorrect?

MS. MACFARLANE: I'm saying that that is a raw number and does not include interest coverage as it should. Because part of the cost of service should be an adequate interest coverage, and it is not reflected there.

So if we were to add even interest coverage at 1.25 times, that would increase the 1.60 to 1.74 or so. And I should have added that when I was speaking to you earlier.

Q. - What about the 36 cents immediately to the right of that? Does that include an interest coverage?

MS. MACFARLANE: The interest coverage in this case is included in the return on equity.

Q. - That is to say the 25 cents immediately below the 36 cents?

MS. MACFARLANE: That's correct.

Q. - So -- I'm sorry, Ms. MacFarlane.

MS. MACFARLANE: Yes.

Q. - Let's go back to the 55 cents under the "Cost of Service" column. What does that reflect?

MS. MACFARLANE: I'm sorry. Could you repeat the question?

Q. - What does the 55 cents in the "Cost of Service" column reflect?

MS. MACFARLANE: That is the interest on the debt itself, the finance charge on the debt itself embedded. But it does not reflect an interest coverage which is a cost of service, and should have been reflected there.

I was just raising the point because it illustrates that the difference between the two columns is not as great as may be suggested there for that reason.

Q. - Would you undertake, because I don't want to take the time of the panel at the moment, to provide me through your counsel with a corrected or revised response to Saint John Energy supplemental 8, and to show in the line item for interest under "Cost of Service" the various components which you think should make up the total?

MS. MACFARLANE: Yes, I will.

\Q. - Thank you. Dr. Morin, we didn't mark it as an exhibit because it is a decision of this Board. But we discussed or I discussed with Ms. MacFarlane briefly yesterday the Board's decision in 1993.

And my simple question to you, sir, is when did you become aware that that decision was NB Power's last rate case?

DR. MORIN: No exact recollection on that. Sometime between the time of filing the testimony and answering data requests.

Q. - Thank you.

DR. MORIN: I don't recall the exact date.

Q. - I want to come back to the matter of incentives. Have you, Doctor, undertaken any analysis that leads you to conclude that the price cap framework proposed will create incentives that will ensure efficiency gains?

DR. MORIN: Well, by nature if a -- to put it very bluntly, if you smell the cheese you will sort of -- it is human nature to seek the cheese.

And by virtue of the design of the price cap, if there is any possibility to exceed the productivity targets in order to attain superior profitability, the company will do so. So it is just human nature.

I haven't conducted a poll and asked executives look, are you going to be incented if we do this? And I think by virtue of the price cap itself the company is incented to surpass those thresholds that I have defined.

And coupled with that of course, if the internal managerial reward penalty system is linked to financial performance, you have an added complement here to attain superior performance.

Q. - Have you reviewed New Brunswick Power's human resource policies?

DR. MORIN: Not at all. It is completely outside the purview of my mandate here.

Q. - Well, you just mentioned something that caught my attention.

DR. MORIN: Well, to the extent that managerial compensation is linked to profitability, the price cap plan will produce that incentive along with the managerial reward system.

Q. - So you don't know, sitting here today, if those policies contain provisions which reward or penalize good or bad performance?

DR. MORIN: Well, to the extent that there is variable compensation that is related to financial ratios or profitability metrics, the company will try to attain such lofty performance.

Q. - You would agree with me though that generally speaking in the private sector, those types of policies are proper and necessary, are they not?

DR. MORIN: Yes. I have just written a whole book entitled "Shareholder Value" which discusses compensation systems and executive compensation systems as a way of aligning managerial interests with shareholder interests.

And to the extent that you compensate people for value creation they will behave in that direction. And the old adage, what gets measured gets done, I think is quite relevant here.

Q. - Just before we leave this topic, I just want to be clear that your ultimate return on equity recommendation of 11 percent reflects as against the lower end of the range 10 1/2 percent the risks which you say are involved with the price cap framework?

DR. MORIN: Yes. There is additional variability that is induced by the price cap regime. And compensation for that added risk is the top of the range.

That and the need to bolster the company's capital structure led me to recommend the top end of the range rather than the lower end.

Q. - So the 50 basis points between the bottom and the top is on account of those two factors?

DR. MORIN: That's correct.

Q. - Thank you. I want to talk to you now, Doctor, about risk.

And for that purpose I would ask that, Madam Secretary, you give to the panel the excerpts from the National Energy Board's decision of June 2002, TransCanada

Pipelines Limited, RH-4-2001.

CHAIRMAN: Mr. Hashey, you have no problem with this going in?

MR. SMELLIE: It is a decision of a tribunal, Mr. Chairman.

MR. HASHEY: I think the Board decision is fair game to be put forward. I don't really think it even needs -- it could be referred to probably by the Board.

Ask me whether I know whether this, the parts of it that are here are complete, I couldn't answer that for a minute. But I obviously trust my learned friend to be dealing with it for a purpose and not leaving things out. So I have no objection.

I don't think the witness had any direct involvement in this. I have not objected earlier on the basis of direct involvement. But this is a little different. This is a pretty open decision.

CHAIRMAN: JDI-18.

Q. - Doctor, are you familiar with this decision?

DR. MORIN: Yes, I have read the decision. I was not a participant in that docket.

Q. - No. I understand that. And I haven't provided it to you for any devious reason because you weren't involved. I haven't even provided it to you to discuss many of the merits. But what I want to do --

DR. MORIN: Are you suggesting that the previous ones that you provided me were for devious reasons?

Q. - One for you, Dr. Morin.

DR. MORIN: Well I guess it's one-nothing. I'm just being --

Q. - I'm not sure.

DR. MORIN: I'm just joking. I don't really mean that.

Q. - What I want to do is take a look at this very recent decision of the National Energy Board of Canada on issues which concern risk. And I want to solicit your comments.

And you will see from page -- on the second page which is the table of contents, that the matter of business risk and investment perspectives was a significant issue for the Board in this case.

They dealt with business risk, market risk, supply risk, financial risk, all of the things that you dealt with in your evidence, correct?

DR. MORIN: Yes.

Q. - And the excerpt in fact begins at page 21 of the Board's decision. And you will see that the title there is "Regulatory Risk".

And I would ask you to turn to page 24 under the heading "Views of the Board." Do you have that?

DR. MORIN: Yes.

Q. - And the Board says that in its view, "Business risk represents the risk attributed to the nature of a particular business. It is made up of all the risks to which the income-earning capability of an asset is exposed."

Do you agree with that characterization, Doctor?

DR. MORIN: Yes.

Q. - And turn then with me to page 27 of the Board's decision. And in the middle of the page you will see that the Board says, and I quote, "Regulatory risk is the risk to the income-earning capability of the assets that arises due to the method of regulation of the company."

Do you see that?

DR. MORIN: Yes.

Q. - Do you agree with that characterization?

DR. MORIN: Yes, I do.

Q. - And at page 34 of this decision you will see in the middle of the page that the Board says this about financial risk.

"Financial risk is the risk inherent in a company's capital structure. Financial risk increases as the proportion of debt increases in relation to shareholders' equity because debt interest and repayment obligations must be met irrespective of the overall profitability of the business."

And I take it you have no difficulty with that characteristic?

DR. MORIN: No, I do not. It is a classic definition of financial risk.

Q. - Now just turn over to the next page, Doctor. At the top of the page under the heading "Globalization of Financial Markets" you will see that the National Energy Board acknowledged the trend of capital market globalization but expressed its view that Canadian market data remains the most relevant benchmark in assessing the cost of capital for Canadian pipelines.

Do you agree with that characterization?

DR. MORIN: I certainly agree that Canadian data should be considered heavily in the Board's decision along with U.S. relevant evidence.

Q. - Considered heavily. Does that mean most relevant, Doctor?

DR. MORIN: It means it should consider, as far as possible, all the reliable statistical studies that were performed in the Canadian context.

But it should also take into account U.S. studies on similar subjects that typically rely on much larger samples, and that benefit from hindsight in the sense that the deregulation has already happened to some extent over there. So there is a lot to be learned from that.

And investors do consider U.S. securities and mutual funds and pension funds and retirement plans, bank trusts. And all these portfolio managers consider a wide array of candidates for inclusion in their portfolio.

So therefore we should consider both the U.S. and the Canadian results. But as much as possible we should rely on Canadian market evidence if it is reliable and relevant.

Q. - If it is reliable and --

DR. MORIN: And relevant.

Q. - Thank you. At the bottom of this same page, Doctor, you will see that the Board noted that higher level risks faced U.S. pipelines. And that comparisons with their return might be of limited relevance due to the more favourable tax treatment of dividend income in Canada and the typical investor in TransCanada PipeLines who is Canadian. Do you see that?

DR. MORIN: Yes.

Q. - And do I take it from your evidence, Doctor, that you would not subscribe to this conclusion?

DR. MORIN: No, I do not. Because most of the heavy players in terms of buying equity are nontaxable institutions such as pension funds. So taxation would be irrelevant for those investors. And the fundamental determinant of return really is risk. And taxability is really a secondary issue.

And as a practical matter, when you look at the bottom line taxation rate of those investors that are taxable, there really isn't much difference between a U.S. investor and a Canadian investor.

And there is a response to a interrogatory that I think exemplifies that and shows very little tax differences between the two.

Q. - Ms. MacFarlane, who is the typical investor likely to be in New Brunswick Power Transmission?

MS. MACFARLANE: The transmission tariff is submitted, supported by Dr. Morin's evidence, that the investor is irrelevant. Any investor should receive an equivalent return for the opportunity cost of their money. In fact, the Corporation will be owned by the Province of New Brunswick. Were it privately held, it would probably be held largely by institutional investors.

Q. - Thank you. I'm going to turn to page 23 of your evidence, Doctor, where you begin your discussion of risk and return.

And I understand you to be telling us in general terms that risk is relevant to the matter of investment because it is risk that will determine the level of return that an investor will require before he or she or it parts with his or her or their capital. Correct?

DR. MORIN: I agree with that.

Q. - Thank you. And your view in this case is that risk for New Brunswick Power Transmission comprises three components, business risk, regulatory risk and financial risk?

DR. MORIN: Correct.

Q. - And you believe as I read your evidence, that New Brunswick Power Transmission principal business risk is forecasting risk. I'm looking at page 33, line 19.

DR. MORIN: That's correct.

Q. - Turning over the page to page 34 and I'm looking at line 6, Doctor. Just one second. Actually I'm looking at the entirety of that paragraph. And I understand you to be commenting on what I will call revenue risk for New Brunswick Power Transmission. Is that a fair characterization?

DR. MORIN: That is fair.

Q. - Over what horizon do your comments extend in this paragraph?

DR. MORIN: No specific horizon in mind. It would make sense that it would apply to the next three years after which the price cap regime is subject to review.

Q. - And what I understand you to be saying is that in your view 10 percent of the company's transmission revenue associated with sales of power to the export market are subject to some degree of risk?

DR. MORIN: Yes, there is forecasting risk.

Q. - What you say is that 30 percent of the company's revenues come from interconnection sales, and two-thirds of those are derived from long term firm commitments, and so therefore I get 10 percent left over?

DR. MORIN: That's correct.

Q. - Okay. And the remaining 90 percent I read you to be saying falls into the category of stable, relatively stable?

DR. MORIN: Relatively stable.

Q. - I think this has been mentioned. But do I have it correctly, Ms. MacFarlane, that standard offer service is going to be available to wholesale customers who do not elect to purchase power from a competitive supplier?

MS. MACFARLANE: That's correct.

Q. - And to the extent wholesale customers elect to leave New Brunswick Power, or to leave the system, to be correct in my interpretation, it is the case that New Brunswick Power will be compensated by way of exit fees?

MS. MACFARLANE: I believe the announcements that the Minister has made indicated that there will be an opportunity for NB Power to collect an exit fee. That, too, is a matter subject to legislation.

Q. - And it is, of course, the case that the wholesale customer who opts for competitive supply will not necessarily depart the transmission system?

MS. MACFARLANE: That's correct.

Q. - And, Ms. MacFarlane, at the Board's load forecast hearing earlier this year, do I understand that the company's position on the matter of competition was that its generation costs will remain attractive? Let me help you.

MS. MACFARLANE: Okay.

MR. SMELLIE: Perhaps the secretary could hand up to the Panel what I understand to be a summary of evidence on updated load forecast, dated April 29, 2002.

MS. LEGERE: There is no date on the document.

MR. SMELLIE: It's on the second page, Madam Secretary. This is a New Brunswick Power document, Mr. Chairman. Never mind the fact that I'm sure it's one you are familiar with. Could it be marked as the next exhibit, please.

CHAIRMAN: JDI-19.

Q. - This is a document with which you are familiar?

MS. MACFARLANE: Yes.

Q. - Yes. And I am looking at -- it's the back side of the page that's numbered 9. It's headed, "Key Issues Self-Generation Third Party Supply"?

MS. MACFARLANE: Yes.

Q. - And my simple question, Ms. MacFarlane, is it still your view -- is it still the company's view that NB Power's generation costs are expected to remain attractive compared to new generation and regional market prices?

MS. MACFARLANE: That is the case under the assumption that the load forecast was prepared on which included conversion of Colson Cove and refurbishment of Point Lepreau.

Q. - I understand. Now, Doctor, at page 34 -- I will be coming back to this, Ms. MacFarlane, so if you could keep it handy.

At page 34 of your evidence at line 20 you refer as you did at page 7, to the issue of alternate fuel competition, mainly natural gas. Do you see that?

DR. MORIN: Yes.

Q. - And here you reference a further restraint on gas competition being conversion costs. Correct?

DR. MORIN: Correct.

Q. - Gas in New Brunswick, Ms. MacFarlane, is dependent upon the Maritimes & Northeast Pipeline, is that correct?

MS. MACFARLANE: Yes.

Q. - Would you agree with me then, Doctor, that Maritimes & Northeast Pipeline is therefore part of the competitive threat of Sable Island gas?

DR. MORIN: Yes.

Q. - And subject to check, will you agree with me that New Brunswick Power and the Government of New Brunswick recommended to the National Energy Board that it establish a capital structure for Maritimes & Northeast Pipeline of 75, 25?

DR. MORIN: Which is equity and which is debt?

Q. - Fair enough. The first is debt.

DR. MORIN: I will agree subject to check.

Q. - You will find a reference for it if you need it at page 33 of exhibit JDI-18, Mr. Chairman. Not that that was the position of New Brunswick Power and the Government, but that's what the debt equity structure of Maritimes & Northeast Pipeline is.

And here, Doctor, you are recommending a deemed capital structure for New Brunswick Power Transmission of 65 debt, 35 equity. Correct?

DR. MORIN: That's correct.

Q. - And that, Ms. MacFarlane, is considerably different than the 80, 20 target which was last approved by this Board for New Brunswick Power, correct?

MS. MACFARLANE: It's significantly different because the circumstances are significantly different. If you recall, we discussed this yesterday. In the circumstances of an 80, 20 debt equity ratio, the ruling of the Board that we looked at yesterday was that the benefits of ownership of NB Power by the Province of New Brunswick should go to in-province customers. That is no longer the case.

Under open access the benefits will not accrue to NB -- New Brunswickers. And from that perspective we believe that in order to ensure that outside parties pay full cost, they should also pay full cost on the basis of a proper capital structure that reflects the risks of the company.

DR. MORIN: And if and when the company goes on its own trying to reach capital markets under acceptable rates under the auspices of an investment grade bond rating, it will need a very solid capital structure. And the 35 percent that I recommend is -- might even be perceived as being conservative in the current environment in capital markets and the concerns that investors have on the energy industry.

Q. - Thank you for telling me that again. Really, I just wanted to get your comment on this, Ms. MacFarlane.

Do you believe that swapping low cost capital for high cost capital is an effective means of fighting competition?

MS. MACFARLANE: I believe that companies should look to find the most efficient point on the cost of capital curve as demonstrated by Dr. Morin yesterday.

DR. MORIN: Yes, don't forget, that 75, 25 that you alluded to does not necessarily mean it's lower cost because it has more debt. There is a hidden cost associated with debt and that is the higher risks associated with debt and the repercussions on equity costs. Remember that U-shaped function yesterday in my presentation, where we discussed the trade-off between risk and return? And the important target is to be at the minimum point of that cost curve. And that does not necessarily occur at 75, 25.

Q. - Thank you. Excuse me, sir. Exhibit JDI-19, Ms. MacFarlane, the update to the load forecast. I am at page 9, which is the front side of the page we were just looking at.

MS. MACFARLANE: That's correct.

Q. - And the forecast update at that time and I assume today as well, continues to be premised upon the construction of three natural gas laterals by Maritimes & Northeast, correct?

MS. MACFARLANE: Mmmm.

Q. - I'm sorry, yes?

MS. MACFARLANE: Yes.

Q. - One of those is the Saint John lateral, which is in place?

MS. MACFARLANE: Yes.

Q. - And the other two are the northeast and northwest laterals?

MS. MACFARLANE: That's correct.

Q. - And if those laterals are not built, would that affect your forecast?

MS. MACFARLANE: It would have some impact on the forecast. The forecast is, if you have looked through it, as I assume you have, the supply or the capacity is very, very tight out over the next decade. And these assumptions in fact are required assumptions in order to ensure that the generation that is currently built will be able to supply the load.

In the absence of these assumptions we have a capacity problem. Even with these assumptions we find that the load is flat going out over that period of time.

Q. - Now Doctor, at the bottom of page 35 of your evidence, you refer to Standard & Poor's business risk ranking system. Do you see that?

DR. MORIN: Yes.

Q. - And I don't know very much more about it other than what you have told me here, but there is a range of 1 to 10. The higher you are the riskier you are?

DR. MORIN: Yes. 1 is complete absence of risk, 10 would be very, very, very risky. And we are talking about business risk here.

Q. - Yes. And it is your view in light of the evidence you have given us, that NB Power Transmission would be, if it were, ranked in the 3 to 4 range?

DR. MORIN: That's correct based on the rankings that I have seen of wires only type of energy companies, they typically have a score in the 3 to 4 range. And the reason for my statement here is that S&P or Standard & Poor's has recently acquired CBRS, the Canadian Bond Rating System. And one surmises that it will adopt similar scoring systems for a newly created company like NB Power Transmission, if and when that comes to fruition.

Q. - I don't think you need to turn it up, but my understanding is you think that Newfoundland Power would be ranked in the 3 to 4 range as well? That is in your evidence that is marked as JDI-12 in this proceeding?

DR. MORIN: Probably from a business risk perspective it would be somewhere in the 4 range, because Newfoundland Power, even though it is a vertically integrated utility, has very, very very little generation activity. The generation portion is really from Newfoundland Hydro. So it is more of a wires company than it is a vertically integrated company.

Q. - And it is not in the record yet, and I will try to do this without further cluttering the record, that is the same ranking, as I understand it, that you have given to Hydro Quebec Distribution in the evidence that you have filed before the Regie in support of Hydro Quebec Distribution's application for rates?

DR. MORIN: That is correct. Low business risk T&D, which means transmission and distribution utilities, are typically ranked in the 3 to 4 area on the business risk scale.

Q. - Do you know Dr. Evans?

DR. MORIN: Yes, I do.

Q. - Are you aware that in a recent filing before the Alberta Energy and Utilities Board for rates, that AltaLink has proffered evidence of Dr. Evans where he puts AltaLink as a 2 on the Standard & Poor's scale. Are you aware of that evidence?

DR. MORIN: No, I am not familiar with that.

Q. - Turn over the page please, to the topic of regulatory risk. At the bottom of that page you tell us that the newly formed -- if, as and when, I guess I should say -- New Brunswick Power Transmission will be subject to regulatory scrutiny for the first time?

DR. MORIN: Yes.

Q. - That is because it is a new company?

DR. MORIN: Because it is a new transmission unbundled entity.

Q. - You are not suggesting that New Brunswick Power hasn't been subject to regulatory scrutiny before?

DR. MORIN: No. My testimony addresses the transmission company.

Q. - And I assume the brand new legislation that you are referring to at line 29 to 30 is the brand new legislation that we are all waiting for?

DR. MORIN: That's correct. The impending legislation would be more accurate.

Q. - Your evidence, sir, is that you consider the brand new company to be of above average regulatory risk, correct?

DR. MORIN: That's correct.

Q. - You are not suggesting, are you sir, that New Brunswick Power Transmission will not be able to recover its prudently incurred costs?

DR. MORIN: I am not suggesting that, no.

Q. - When you say at the last line of page 36 that investors are understandably sceptical, who are you referring to?

DR. MORIN: A compendium of interested parties, including bond rating agencies, institutional investors, pension funds, bank trust departments.

Q. - This is a generic type statement, Doctor? You haven't had discussions with these investors, have you?

DR. MORIN: No. But it is understandable when there is a newly created utility that investors are very understandably apprehensive and a little bit sceptical as to the regulatory regime that will be in place and how everything will fall out.

Q. - And I think it is clear, but I will just mention it, it is the Province of New Brunswick that holds New Brunswick Power's debt today?

DR. MORIN: That is correct. But the identity of an investor is really irrelevant when measuring a return. Any investor, regardless of his or her or its identity, is entitled to a fair rate of return following the opportunity cost principle of economics.

Q. - Can I ask you to refer to exhibit A-4, at page 408, Dr. Morin?

DR. MORIN: I have it.

Q. - You should have before you the response to PUB IR-37.

DR. MORIN: Yes, I do.

Q. - And I just want to ask you a couple of questions about this response. The response suggests that New Brunswick Power Transmission's regulatory risk will in fact be perceived as increasing in the next couple of years due to the multiplicity of issues which it faces.

Have I understood that correctly?

DR. MORIN: Yes. It basically means it is going to be high at first and then we get our feet wet a little bit with the price cap regime and is likely to diminish over time.

Q. - And since we are talking about regulatory risk, do I understand you to be telling us that there are issues which the new company will face on which the views of this Board are uncertain?

DR. MORIN: Could you repeat that please?

Q. - Do I understand you to be telling us, because we are talking about regulatory risk here, that because of the issues that face New Brunswick Power Transmission on which the views of this Board are uncertain, that the risk will be higher than it would otherwise be?

DR. MORIN: No, it is not the views of the Board that are uncertain. It is the views of investors that are uncertain about the future regulatory regime to be put in place and how it will work, and do we need to recalibrate it and do we need to revise it and are the benchmarks appropriate, is it functioning well.

Q. - You will see at 196, Dr. Watters suggested much lower returns on equity, or return on equity levels?

DR. MORIN: That's correct.

Q. - I apologize for that. But it is a new company under a new regime and the regulatory risk which investors may be concerned about, in your view is the way in which this Board is going to deal with these issues. Correct?

DR. MORIN: Yes, you could put it that way.

Q. - But none of those issues, Doctor, as I understand it, require a hearing by this Board, do they?

DR. MORIN: Elaborate a little bit. Just give me a clue or two as to what you are asking me.

Q. - Why don't you turn up exhibit A-6, which is the supplementary interrogatory responses. And have a look at Saint John Energy 35, which is at page 151. You were asked to expand on the multiplicity of issues and you did so. You laid out quite a number of issues.

And what I was concerned about, Doctor, was the concluding part of that answer which says there are no issues contemplated that will require a PUB hearing within the next three years.

DR. MORIN: The only exception to that is the applications for the so-called Z factors or exogenous factors that require separate filing and have to be approved by the Board. And there is also some safety net provisions, if those provisions are triggered, the Board would be involved again.

For example, if long-term Canadas fall outside of range of 4 to 8 percent for 20 business days, either the Board or the company has the discretion to revisit the whole regime. So there are opportunities for the Board to intervene definitely.

MS. MACFARLANE: Or, I might add, if the total return drops below 9 percent, again the whole thing can be looked at.

Q. - Let me switch gears on risk here for a minute, Doctor. We discussed yesterday your various appearances at the National Energy Board for TQM in the latter part of the 1980s and early 1990s. That was at a time not long after FERC's Order 636?

DR. MORIN: Yes, that's correct. It has already been almost 10 years.

Q. - It is like NAFTA. Am I correct, Doctor, that in your role for TQM at or around that time, you would have taken into account the industry restructuring that had been initiated in the United States pursuant to FERC Order 636?

DR. MORIN: Not to the extent that I would today. TQM was completely unaffected by that at the time. As I said yesterday, its cost of service was just rolled into TransCanada's cost of service and was passed on. So there was really at the time no immediate impact of restructuring on the company's risk profile.

And the company was already rated triple B which is at a dangerous level in my view. So there really was no need to discuss that at the time for TQM.

Q. - Oh no, no, no. I wasn't asking whether you discussed it. I was trying to get across -- again I apologize -- that in terms of the whole environment that you would have been considering as an expert in the matter of rate of return at that time, the consequences of the gas industry's restructuring under FERC Order 636 is something that you would have been familiar with?

DR. MORIN: Yes, I was familiar with it. But it didn't -- it wasn't all that relevant for TQM, for the reasons I described. TQM had a very, very low business risk.

Q. - Let's drop TQM for the moment.

DR. MORIN: Well you brought it up.

Q. - Am I correct, Doctor, in my recollection that FERC Order 636 required renegotiation of transportation contracts on transmission pipelines subject to FERC's jurisdiction?

DR. MORIN: Yes, it did. I recall that.

Q. - Would I also be correct that any view you may have had at the time of transmission pipeline risk in the wake of FERC Order 636 would have likely concluded that the risk of those entities had gone up in that regard?

DR. MORIN: Yes, that would be a fair statement.

Q. - Are you aware, sir, of any similar deregulation risk that is at play in the wake of FERC Order 888 as it applies to electricity transmission companies?

DR. MORIN: No, I am not.

Q. - We discussed it earlier, and so it is common ground, that some 30 percent of New Brunswick Power's revenues are earned via export sales?

DR. MORIN: Correct.

Q. - And in assessing risk in this case, Doctor, have you taken into account any regulatory risks which might affect that revenue?

DR. MORIN: Regulatory risk is treated as a separate item. My views were -- we described them a little bit earlier on page 36. And the main component of regulatory risk is the absence of a track record for the new NBPT transmission unit.

Q. - But my having asked you the question, can you think of any regulatory risk which might affect the 30 percent of

New Brunswick Power's revenue which is earned by export sales? You have got a free run at me, Doctor. Time is up.

DR. MORIN: I am trying to figure out what you are asking. I don't have an opinion on that.

Q. - Thank you. I would like now to turn, Doctor, to rate of return estimates which in large measure occupy the bulk of the balance of your evidence. Just give me one minute please.

Can we agree, Doctor, that the determination of the risk premium is essentially an empirical exercise and is something that must be inferred from data to the extent that that is possible?

DR. MORIN: Both from data, results of empirical studies, and judgment.

Q. - And that insofar as it is an empirical exercise, the determination of risk premium is based upon a statistical analysis of that data?

DR. MORIN: It is based on that and it is based on informed judgment on the data and its relevance and its reliability.

Q. - Thank you. Now the first step in your capital asset pricing model or CAPM risk premium estimate, Doctor, is a determination -- sorry in ultimately determining a return on equity is to select an appropriate beta for New Brunswick Power Transmission. Correct?

DR. MORIN: Correct.

Q. - And beta is, as I understand it, a measure of market risk or the relative risk of a security's return to the returns of the overall market?

DR. MORIN: That is correct.

Q. - And the beta that you have chosen to use for New Brunswick Power Transmission is .67?

DR. MORIN: Correct.

Q. - And in layman's terms, I understand that to mean that you thing that New Brunswick Power Transmission is just slightly more than two-thirds as risky as the overall market. Correct?

DR. MORIN: That's correct. That is what the data on page 44 suggests.

Q. - The data on page 44?

DR. MORIN: Yes, the summary of the various estimates.

Q. - Yes, your recapitulation?

DR. MORIN: Yes.

Q. - Yes, we will come to that. And my advisors, Doctor, tell me that you used adjusted beta as distinct from raw beta because, as you say at the top of page 40 of your evidence, the textbooks recommend it, investment services provide it and the literature supports it?

DR. MORIN: That is a pretty good case for adjusted betas. You have summarized my arguments very well.

Q. - Let me take you to appendix A-3 of your evidence, Doctor, please, entitled "Betas, CAPM and the empirical CAPM".

And again, this is -- well I shouldn't assume that. Was this appendix written specifically for this case, Doctor, or again is it an adaptation of something that is generic?

DR. MORIN: It is an adaptation of chapters from my book "Regulatory Finance".

Q. - Yes. The thesis, as I understand it, is that betas tend to regress. That is to say high betas tend to decline and low betas tend to rise towards unity or 1, correct?

DR. MORIN: That is correct. Companies behave very much like human beings. Over time they mature. So through dividend policy, through financing policy, through investment policy, through diversification policies, companies tend to gravitate towards the mean of 1.

Q. - And the thesis proceeds in part on the basis of the literature, which includes the several studies that you have cited at page 2 of this appendix?

DR. MORIN: In part, yes. And also based on the graph at page 4, where you can see the risks of electric utilities steadily increasing over time. But it is based on these empirical studies as well, yes.

Q. - And --

DR. MORIN: And the very fact that investment services like Value Line and Merrill Lynch and others supply these adjusted betas and that is what investors are looking at when they make investment decisions.

Q. - And as I think we agreed upon yesterday, firms like Bloomberg and Merrill Lynch supply other kinds of betas as well, right?

DR. MORIN: Merrill Lynch relies on adjusted betas. Bloomberg gives you the luxury of using raw or adjusted betas on the computer screen.

Q. - And you cite at page 2 in particular, Doctor, a study of beta measurement methodology -- and I am referring to line 12 -- by Kryzanawski and Jalilvand, entitled "Statistical Tests of the Accuracy of Alternative Forecasts: Some results for U.S. utility betas". See that?

DR. MORIN: Yes.

Q. - And the conclusion of their study was that raw unadjusted betas is one of the poorest beta predictors and is outperformed by the Merrill Lynch style Bayesian beta approach, correct?

DR. MORIN: Correct. In other words Value Line betas or adjusted betas are a lot better than unadjusted raw betas. That's the punch line.

MR. SMELLIE: Could I ask the Secretary to hand up to the panel the article cited by Dr. Morin in his evidence, Mr. Chairman, which is contained in publication called the Financial Review.

MR. HASHEY: Is this the same article?

MR. SMELLIE: I beg your pardon?

MR. HASHEY: I'm sorry, Mr. Chairman. I'm just wondering if this is the same article referred to. And I have no problem dealing with these authors.

But I note that the Financial Review I have is May 1986. And the one referenced is Fall 1983. I don't know if they are different or what the significance might be.

DR. MORIN: I think counsel is referring to the correct article. It is May '86 not Fall '83.

MR. HASHEY: No objection.

DR. MORIN: Fall '83 was the working paper. And May '86 was the formal publication.

CHAIRMAN: Thank you. JDI-20.

Q. - That all sort of went around me. We are dealing with a May 1986 article in Volume 21 of the Financial Review, Doctor, are we?

DR. MORIN: That's correct.

Q. - Thank you. The authors of the article were at that time at Concordia University in Montreal?

DR. MORIN: That's correct.

Q. - And am I right, Doctor, that in technical language the conclusion that you referred to in your evidence is to be found in the last three lines of the abstract, that is to say, "The ordinary least squares predictor was consistently ranked as one of the poorest beta predictors for all of the forecast horizons"?

DR. MORIN: Yes. The ordinary least squares is a statistical regression technique where you simply look at the relationship without any adjustment whatsoever. It is what is commonly referred to as the unadjusted or raw beta.

And one of the bases for my conclusions was this abstract that says that that is the worst predictor of them all or consistently one of the worst predictors of them all most of the time.

Q. - I thought I was being educated, because I finally, in looking at this article, found out what OLS meant.

DR. MORIN: It means ordinary least squares. It is a standard statistical technique that measures relationships between variables.

Q. - Raw beta, correct?

DR. MORIN: Yes, unadjusted.

Q. - Can you briefly explain, Doctor, because you don't on page 2 of your evidence, what a Merrill Lynch style Bayesian beta approach is?

DR. MORIN: It is an adjusted procedure where you give the weight of one-third to the market beta of 1 and a weight of two-thirds to the raw beta. And that way you account for this regression tendency of betas to gravitate towards 1.00.

So you give two-thirds of the weight to the real unadjusted raw beta that you observe and measure and one-third of the weight to a beta of 1.

The exact same procedure is used by Merrill Lynch and the -- excuse me, by Value Line. And the same procedure is used by Bloomberg and its investment services on the T.V. screens.

Q. - Could you turn please, Doctor, to page -- well, first of all, as I understand this study, and I'm looking at 322, the authors took a sample of 50 public utility companies for the purpose of doing their study?

DR. MORIN: Correct.

Q. - And they utilized six forecasting methods?

DR. MORIN: Correct.

Q. - And can you tell me, looking at table 1 --

DR. MORIN: Maybe I can help you just a little bit. What they are trying to do here, Mr. Chairman, is they went back to the future. They went back in time.

And they said if we are going to forecast utility betas using the six different techniques, which of the six techniques best predicts what actually happened in the subsequent period? They went back to the future.

And the table 1 that you refer to is the six different techniques. Does that help a little bit?

Q. - Where on that table, Doctor, do I find the adjustment that you have just described?

DR. MORIN: That would be the third one, the Bayesian beta which was initially proposed by Vassezack. And there is a complicated mathematical expression there.

But essentially that produces about one-third the weight to the OLS beta and two-thirds weight to the beta of 1. So it would be under the Bayesian classification.

And also on the next page a similar technique would be the last one. It is entitled "Naive Bayesian" or "ML" which stands for Merrill Lynch type of adjustment, where they give half the weight to the raw beta and half the weight to the beta of 1.

And then they simply measured data using those six techniques and compared the forecasts with the actual results and concluded that the OLS beta, which means the raw beta, did the worst job basically.

Q. - Looking at the Merrill Lynch type method, Doctor --

DR. MORIN: Yes.

Q. - -- the first part of the equation is half of the raw beta, correct?

DR. MORIN: Yes. Whenever you see OLS that usually refers to a raw unadjusted beta.

Q. - And the next part of the equation is half of the mean predicted beta for the sample based on the OLS procedure, is it not?

DR. MORIN: Correct.

Q. - Is that what you said?

DR. MORIN: Well, the Merrill Lynch procedure that they looked at is half and half. But the Merrill Lynch procedure that is actually being used today is one-third, two-thirds, the same as Value Line, the same as Bloomberg.

The point of the article is that the worst predictor is the raw beta. That is the main conclusion from the article on which I relied in part for my judgments.

And then of course there is a much more fundamental problem, that this study is very, very stale, 1986. And of course right after that was an explosion in energy risk.

Utility betas just basically escalated upward, as I show in my own appendix and that graph on page 4. So all of this led me to conclude that there was a shift upward in beta risk that should be accounted for.

Q. - So this article that you have cited to us in your evidence and on which I assume you rely is stale, is that it?

DR. MORIN: It is the only study that I know of that has been done specifically for electric utilities. There has not been any subsequent revision or other studies on utility -- on the U.S. electric utility betas that were sort of in the last couple of years, when the electric utility risks intensified.

Again if you look at that graph in my appendix on page 4 you can see a pretty clear gradual ascent or increase in the electric utility business risk beta.

Q. - We will get to that. Let me ask you to refer to page 331, Doctor, of the article?

A. I have it.

Q. - And am I correct in my understanding, looking at this table, the upper panel of this table, that the predictor that is consistently the most accurate over the forecast horizon shown is the N1 beta predictor?

DR. MORIN: Yes. And the worst one of course is OLS which is the unadjusted raw beta. It is always ranked fifth, whether you got one year, three years or five years.

Q. - And the Naive 1 approach is not the Merrill Lynch type approach, correct?

DR. MORIN: No, it is not. At the very bottom of that page, the last two lines, is I think the punch line. The OLS beta predictor is consistently ranked statistically as the second worst predictor over all forecast horizons. That sort of shattered my own confidence in relying on OLS betas.

Q. - And can you explain to me, Doctor, what the Naive 1 predictor is?

DR. MORIN: Usually in statistical studies in finance and economics, naive means that tomorrow's estimate is the same as yesterday's, no change.

Q. - Isn't this -- isn't the Naive 1 approach, Doctor -- doesn't it use the average of the sample group?

DR. MORIN: Yes. Naive says the beta for NB Power in 1987 would be the sample average of all the other electric utilities period, no adjustment for time trend, no judgment, no adjustment of any kind.

Q. - And that is the best one in this study? That is the best predictor?

DR. MORIN: That's correct. Prior to the escalation of the industry's risk.

Q. - Does this study, Doctor, deal with the accuracy of the adjusted beta which you are using in this case?

DR. MORIN: Well, the Bayesian style betas --

Q. - Which of -- let me ask it this way, Doctor. Which of the six predictors shown in the upper panel of table 3 is the beta that you are using in this case?

DR. MORIN: Well, the closest one would be BT and ML, Merrill Lynch and BT.

Q. - So yours is a hybrid of those two, is that it?

DR. MORIN: Well, mine is what Value Line uses. This is not Roger Morin's homemade beta. This is beta produced by Value Line, Merrill Lynch and Bloomberg today in 2002. That is what they use. That is what investors look at. That is what they see. They don't see Dr. Morin's homemade betas or your betas or anybody else's beta. This is the procedures followed by Merrill Lynch, Value Line and Bloomberg.

The closest parent here to this would be the ML, Merrill Lynch type betas and the Bayesian betas. Those would be the closest to what is the current practice today.

Q. - All right. And the beta predictors that you just referred to, Doctor, take a weighted average of raw beta and the utility average beta, is that not correct?

DR. MORIN: In this study, yes, they do.

Q. - Thank you.

DR. MORIN: And then subsequent to more research, Merrill Lynch, Value Line and Bloomberg gave two-thirds weight to the raw beta and one-third weight to the market beta of 1.

Q. - Am I correct in my understanding, sir, that the adjusted beta which you are recommending or you are using in this case was based on findings by Bloom?

DR. MORIN: In part, yes. The genesis of all these studies is the Bloom findings that raw betas or the beta of a company tends to 1 as companies mature over time.

Q. - And are you aware of literature and/or studies, Doctor, which show that the beta supplied by commercial vendors which used that sort of an adjustment have little predictive value?

DR. MORIN: No, I'm not.

Q. - You are not aware, sir, of a 1983 paper by Harrington entitled "Whose Beta is Best?"

DR. MORIN: I vaguely remember that. But again you are going back 20 years here, so --

Q. - So you don't want me to go back --

DR. MORIN: You can if you want to.

Q. - -- too many years for beta?

DR. MORIN: No. Because the betas of electric utility stocks have exponentially increased in the last decade or so because of the rising risk of the industry.

Q. - And Bloom's findings, as I am advised, Doctor, concern the U.S. market?

DR. MORIN: That's true. Yes.

Q. - And are you aware of any empirical evidence which suggests that the betas of Canadian stocks revert to the sample mean?

DR. MORIN: I haven't seen any publications in the Journal of Finance to that effect.

Q. - Have you seen any publications?

DR. MORIN: No, I don't recall seeing any. I have seen it in testimony. But I haven't seen it in published format.

Q. - Whose testimony?

DR. MORIN: Oh, I have a recollection of Booth and Berkowitz in prior cases submitting evidence that betas had gone down, you know, for the electric utility stocks, which is complete nonsense in my view.

If you know anything about the electric utility industry, it is hard to make the case that the betas have gone down.

Q. - Would you undertake through your counsel to provide me with a copy of that evidence, Doctor, please?

DR. MORIN: Yes. I think it is probably already available. Because it is my understanding that your witness relies on the Booth and Berkowitz evidence for his recommendation.

So it is part of the record already, isn't it, in the answers to data requests?

Q. - So you are referring to the evidence that was provided in response to an Interrogatory by New Brunswick Power --

DR. MORIN: Yes. That's correct.

Q. - -- to J.D. Irving?

DR. MORIN: I am referring --

Q. - Thank you.

DR. MORIN: I think that is the Booth and Berkowitz testimony from -- well, let's say Trans Energie's case a couple of years ago. I think there is some evidence --

Q. - If it is not the evidence, Doctor --

DR. MORIN: If it is not, I will provide you --

Q. - -- will you please provide me with the evidence that you are referring to?

DR. MORIN: Right.

Q. - Thank you.

DR. MORIN: I'm almost sure that is the one.

Q. - Thank you.

CHAIRMAN: This is probably a good time for us to take our 15-minute break before we go back 20 years.

(Recess)

CHAIRMAN: Go ahead, Mr. Smellie.

Q. - Thank you. Mr. Chairman. Doctor, let's see if we can finish with the Kryzanowski paper in this way. That paper, I think we agree, concludes that raw beta is not a good predictor. Correct?

DR. MORIN: Correct.

Q. - The issue that you and I have been discussing is not whether an adjustment to raw beta is necessary, but how the adjustment should be made, correct?

DR. MORIN: What is the best way to do a forecast.

Q. - Thank you. And you recommend adjusting to 1, that's the nature of the adjusted beta that you use. Correct?

DR. MORIN: Well, you keep ascribing to this beta. This is not Dr. Morin's beta.

Q. - I understand that.

DR. MORIN: It's Value Line. It's Merrill Lynch. It's Bloomberg. This is the current investment practices of institutional investor information providers. That's what they use. And that's what I used too. And I don't -- I would like to take credit for it, but I can't. This is what the investment community sees.

Q. - I wasn't giving you any credit at all, Doctor. I was simply saying that that's what you are recommending in your evidence to this Board?

DR. MORIN: I am using Value Line beta.

Q. - Thank you. And Kryzanowski and Jalilvand in this paper recommend adjusting beta to an industry beta, correct?

DR. MORIN: Well, they are -- I don't -- I'm not sure what they are recommending here. That are basically saying that raw betas are the poorest predictor. And I don't know which one they would recommend if put on the spot here. Probably according to table 3 the one that's ranked number one would be the ML betas, Merrill Lynch beta, which puts half weight on the raw beta and half weight on the industry beta of the sample average. So they would recommend ML, if they were here.

Q. - And what you -- well you cited the paper, Doctor?

DR. MORIN: Yes, I did. But that's not the only evidence on which I relied.

Q. - Oh, I understand that. And what they find is that the best predictors differ only in that they use different weighted combinations of the average beta of their sample of utilities and the raw beta. Correct?

DR. MORIN: That's correct.

Q. - Thank you.

DR. MORIN: They don't use raw betas. Well, they use them, but they find that they are not very good.

Q. - At page 8 of your -- it's actually your appendix. And you have referred in your evidence, Doctor, to Professor Sharpe and his 1990 Nobel Prize for his work on the CAPM model, of which he was one of the main architects?

DR. MORIN: That's correct, he was.

Q. - I am advised, Doctor, that Professor Sharpe believes that the appropriate adjustment to beta to improve its accuracy is to adjust towards the industry beta rather than 1. Is that your understanding?

DR. MORIN: I'm not familiar with that. I guess if that's the case, Value Line is wrong. Bloomberg is wrong. Merrill Lynch is wrong. And all of the other institutional providers of beta are wrong so --

Q. - At lines 6 to 8 of page 3 of appendix 3, Doctor, you refer to a study by -- forgive my pronunciation, Gombola and Kahl?

DR. MORIN: Correct.

Q. - Which suggests a regression tendency for betas towards their grand utility mean and not toward the grand average of one. Do you see that?

DR. MORIN: Yes.

Q. - And you have some difficulty with that which you express at lines 10 to 13?

DR. MORIN: Yes. Because after their study, electrical utilities stocks have escalated in risk so it's no longer true that risks gravitate towards the old historical mean.

Q. - Right. And you refer to that as the profound transformation that has occurred in the electric utilities risk in the last decade?

DR. MORIN: Yes, the next paragraph line 10 to 13.

Q. - And absent the types of changes in the industry to which you refer, do you agree that adjusting beta to the utility mean is a better way of adjusting?

DR. MORIN: It's better than using raw betas. But it's not the best technique. It's not what investors seek in their investment decisions.

Q. - So let's look at the graph then, Doctor, at page A-4 of appendix -- sorry, page 4 of appendix A-3 because you have referred us to it.

DR. MORIN: Yes.

Q. - This graph depicts your assessment of the trend increase of adjusted betas from 1992 to 1997, correct?

DR. MORIN: It is not my assessment. It is the Value Line betas that are published for electric utilities costs. And I have merely depicted them on the graph. And they show a pretty obvious trend. And those are adjusted beta. Those are Value Line betas. If we were to use raw betas, the assent on the graph would be even more dramatic.

Q. - When did you put this graph together, Doctor?

DR. MORIN: I think I put it together in the context of Edison International case in California during the restructuring proceeding two or three years ago.

Q. - The adjusted beta on the graph rises to just short of .7?

DR. MORIN: Yes, that's correct. And I used .67 in my testimony.

Q. - Am I right that the average unadjusted beta, if you did the calculation, would be about .55 in 1997? Do you accept that from me subject to check?

DR. MORIN: That's reasonable if you -- arithmetically you are right.

Q. - And can we agree, Doctor, that betas may change over time? That is to say that they may have a time series pattern to them?

DR. MORIN: Well there is certainly one in that graph that we are looking at. They do rise over time. I think everyone will agree that the electric utility business has escalated in risks and the data shows that pretty clearly.

Q. - Because you say at page -- at line 12 on that page, "The future may well differ from the past".

DR. MORIN: It could. But the best predictors we have right now is .67 of the future.

Q. - With respect to the profound transformation that you refer to at the foot of page 3, have you, sir, done any causal analysis to determine whether it is that profound transformation which has caused the upward trend shown in the graph?

DR. MORIN: Restructuring is the main culprit here and the uncertainties over the industry's restructuring and eventual regulation. And the forces of competition that are slowly penetrating each part of the value chain of the electric utility business. The fact that generation is deregulated. The fact that distribution has a competitive component. So all of these factors put together have produced this rising trend in utility risks that you see on that graph.

Q. - Could you turn, please, to exhibit A-4 at page 421 and 422 which is response to PUB interrogatory 50.

DR. MORIN: I have it.

Q. - As I understand it, Doctor, the list of firms on page 422 are those which are represented on the graph?

DR. MORIN: Yes, those are electric utilities that have the smallest component of generation assets. In other words, if you ranked all of the electric utilities in descending order of magnitude of distribution and transmission assets, this would be the top group in terms of distribution. And the idea was to try to minimize the impact of generation here.

Q. - So you have determined, have you, what portion of each company's revenues were attributable to transmission or distribution in that period?

DR. MORIN: Yes. Excuse me. That's available in FERC form number 1 for electric utilities, the breakdown of assets as between generation, transmission, distribution and other.

Q. - And the top ranked -- well, is that -- they appear to be in alphabetical order. So I take it Bangor Hydro is not the top ranked?

DR. MORIN: No, no, it's not. You are right. It's alphabetical order. This is the top quintile of companies in terms of magnitude or importance of distribution assets. Excuse me, and transmission assets.

Q. - Can you comment for me, Doctor, on the quality of fit or the R squared and models which estimate beta?

DR. MORIN: When you do it for individual companies, there is a lot of noise in the data. So the R square -- R square is -- R square is a measure of explanatory power. The R squares tend to be very, very low for individual companies. But when you do an analysis of beta for a industry or a portfolio of companies, the R squares are remarkably high, in the order of 70 to 80 percent explanatory power.

So one can be very confident about the estimate of beta for a group of companies. But one is not so confident about the beta estimate for one individual company.

Q. - I am advised that for individual companies explanatory power might be in the order of 10 to 20 percent?

DR. MORIN: Oh, yes, that would be my concurrence as well, the order of 20 percent. For portfolios or groups of companies, it rises to 80 and 90 percent because you are removing all the noise in the data. The law of large numbers and the underestimates cancel out the overestimates.

Q. - Can we turn back then, Doctor, to page 40 of your evidence proper?

DR. MORIN: I have it.

Q. - I actually begin on page 39. And as I understand it in estimating or selecting beta for your CAPM analysis because NBT is not a -- NBPT is not a publically traded entity, what we have to do is infer beta from some comparable risk publically traded companies?

DR. MORIN: Correct.

Q. - And the first proxy that you selected was the average beta for a sample of Canadian Energy Utilities that you got from Value Line?

DR. MORIN: Correct.

Q. - And in order to see that, we look at your exhibit RAM-2?

DR. MORIN: Correct.

Q. - And as I understand the narrative which goes along with this exhibit, the average of the 11 companies you used was .58?

DR. MORIN: Correct.

Q. - But then what you did was you stripped out two thinly traded companies Fortis Inc. and Pacific Northern Gas Ltd.?

DR. MORIN: Correct. But there is a well known phenomenon in the finance literature referred to as thin trading that really contaminates the beta estimates, so to avoid that problem I took those two out.

Q. - And by removing those two thinly traded companies, the average beta of the group goes from .58 to .60?

DR. MORIN: Correct. It's very similar.

Q. - And indeed that is the beta that you carried forward to your recapitulation on page 44?

DR. MORIN: Correct.

Q. - And I think it's clear in this record that Canadian Natural Resources and Nova Chemicals Corporation are not utility companies?

DR. MORIN: They are not, but Value Line for some reason puts them into that group.

Q. - So Value Line would be wrong --

DR. MORIN: Well Value Line --

Q. - -- in putting them into that group?

DR. MORIN: Value Line has been known to be wrong.

Q. - And would you agree with me, Doctor, subject to check that if we took Canadian Natural Resources and Nova Chemicals out of the group because they are not utility companies, that the average beta of the remaining seven would be .54?

DR. MORIN: I agree. Arithmetically you are right.

Q. - But if we are trying to have a proxy group that consists of Canadian utilities, you would also agree with me that .54 would therefore be a more accurate beta to carry into your recapitulation and not .60?

DR. MORIN: Well I'm not ready to hang my hat on the results of one study. I prefer to look at a variety of proxies for betas instead of relying on just one.

Q. - Of course you do.

DR. MORIN: Yes.

Q. - But I'm asking you whether it would be more accurate given what we have just discussed to record in your recapitulation on page 44 of your evidence, which after all ultimately is what you derive the beta which you use in your CAPM estimate, to show there, subject to check, for Canadian energy utilities a beta of .54 and not .60?

DR. MORIN: I will stick to the .60.

Q. - Why?

DR. MORIN: Because Value Line -- you start fooling around with a group of companies, where do you draw the line? Cut this one out, cut that one out, cut this one out. Then it becomes a futile exercise in arbitrary judgment, so to avoid that I just took the group as they define it.

Q. - All right. Your next proxy group for NB Power Transmission was a group of US natural gas distribution utilities, correct?

DR. MORIN: Correct.

Q. - Indeed that's the title of your exhibit RAM-3?

DR. MORIN: Correct.

Q. - And you did this on the basis of your view that it is reasonable to postulate that natural gas distribution utilities are of comparable risk profile to New Brunswick Power Transmission?

DR. MORIN: That's correct. And I explained the reasons for that in my testimony. It's quite common practice to make that assumption, because we don't have any pure transmission companies that have been publically traded for several years on which meaningful data is available. So we have to take these proxies. There is no other choice.

Q. - And the average of the 15 companies shown on exhibit RAM-3 is .64?

DR. MORIN: Yes, sir.

Q. - And you carried that forward to your recapitulation on page 44, except you recorded it as .63, correct?

DR. MORIN: Correct. And it may be a rounding error here, I will check into that.

Q. - Which way?

DR. MORIN: I said it may be a rounding error and I will check into that.

Q. - Thank you. And your third proxy for New Brunswick Power Transmission was a group of US wires utilities prior to deregulation. And you refer to that at line 16 and forward on page 41, correct?

DR. MORIN: That's correct.

Q. - And you show that group in exhibit RAM-4?

DR. MORIN: Correct.

Q. - A group of some 20 utilities?

DR. MORIN: Correct. That's the same group you and I were discussing earlier.

Q. - Exactly.

DR. MORIN: And the reason for stopping the clock in '97 is because this was prior to restructuring when all these electric utilities were fairly homogenous in risk because they were all under the umbrella of rate of return regulation.

Q. - And you tell us that while they are in the same class -- and you told us in your presentation that distribution utilities, which we know these to be, are riskier than Transcos?

DR. MORIN: By virtue of the fact that they may have and a lot of them do have energy services which are competitive, they could be a little bit riskier than transmission.

Q. - And the 1997 average beta for these 20 companies is .70?

DR. MORIN: Correct.

Q. - And you carry that forward into your recapitulation and you record it as .68?

DR. MORIN: That's correct.

Q. - A rounding error?

DR. MORIN: I have to check on that one.

Q. - Your fourth proxy for New Brunswick Power Transmission was a group of natural gas transmission utilities whose risk profile you consider to be comparable to NBPT? And that is referred to at page 41, beginning at line 26?

DR. MORIN: Correct. Yes. Those companies on RAM-5 are the companies that appear in Value Line's investment survey under the caption "Natural Gas Transmission Utilities".

Q. - Right. And I note firstly that since 1997 there appears to have been a decline trend in the betas for this group, is that correct?

DR. MORIN: Yes. A slight decline. From .7 to about .65

Q. - Right. And the .65 is the number in this case that you carried over to your recapitulation on page 44?

DR. MORIN: That's correct. It's the most current estimate.

Q. - Would the Secretary hand up to the Panel the next exhibit which is a collection of website excerpts beginning with a company called Atmos Energy.

Now this is publically available information, Mr. Chairman. I'm going to take the witness through it and we will see where we go with it. If you would like to just hold off marking it for any purpose at the moment, that's just fine.

CHAIRMAN: All right.

Q. - What I was wondering, Doctor, when I looked at RAM-5, I asked myself the question whether the companies in your sample are actually transmission companies. And I couldn't think of a better way to do this, but you do have this collection of materials?

DR. MORIN: Yes.

Q. - Atmos Energy Corporation holds itself out as the largest pure natural gas distributor in America, according to the first page of this exhibit?

DR. MORIN: Correct.

Q. - So is it true to say then that it is a transmission utility?

DR. MORIN: Well, natural gas distributors and natural gas transmitters are very, very similar, as explained extensively in my testimony.

They are capital-intensive. They are involved in distribution of energy products. They have weather-related volatility. They are very, very, very high operating leverage. They are all regulated.

So there is a lot of similarities between them. So I view distribution and transmission as roughly in the same risk class.

Q. - You view Atmos Energy as a natural gas transmission utility, correct?

DR. MORIN: Well, it is a natural gas distributor. But for some reason Value Line inserts it into gas transmissions because they presumably must have some operation in gas transmission as well.

Q. - The third page of the exhibit, Doctor, is an excerpt from the website of BC Gas Inc.?

DR. MORIN: I have it.

Q. - And do you understand BC Gas Utility Ltd. to be a gas transmission utility?

DR. MORIN: It is probably more a gas distributor.

Q. - And what is Trans Mountain Pipeline Company Limited?

DR. MORIN: Pipeline.

Q. - An oil pipeline?

DR. MORIN: Which one is this now?

Q. - Trans Mountain Pipeline Company, one of the operating subsidiaries of BC Gas Inc.?

DR. MORIN: Well, that is correct, yes. None of these companies are pure electricity transmission electric utilities. I know that, because there is no such animal that has been around for any length of time.

Q. - The next pages tell us that Cascade Natural Gas Corporation is a natural gas distribution company?

DR. MORIN: Correct.

Q. - And nevertheless Value Line has included it as a natural gas transmission utility?

DR. MORIN: Yes. Probably because of the second line on that page. "The company distributes, stores and transports natural gas."

So they have some gas transmission activities, enough for Value Line to include them in that group.

Q. - All right. And Delta Natural Gas, on the next page of the exhibit, appears to be an integrated utility of sorts?

DR. MORIN: Yes. Line 2 suggests that they distribute, store, transport, gather, produce natural gas. But again Value Line has inserted it into the gas transmission group.

Q. - And El Paso Corporation, the next page? That I think, at least in my understanding, is a transmission utility?

DR. MORIN: Yes, it is, yes.

Q. - Turn to the next page please. KCS Energy Inc. which is number 6 on your list and which has I notice a beta of 1 last year, appears to be an acquisition, exploration and production company.

Why would Value Line include that company in a list of natural gas transmission utilities?

DR. MORIN: I don't know.

Q. - Do you think it is an appropriate inclusion with a beta of 1?

DR. MORIN: Well, it is not the beta that defines whether it is appropriate or not. It is the extent of its natural gas activities.

Q. - Which sort of natural gas activities?

DR. MORIN: It should be distribution mainly and transmission. I don't have the asset breakdown of these companies.

Q. - And we know from the material that I have put in front of you that according to the company's information it drilled some wells?

DR. MORIN: Mmmm.

Q. - It replaced its net production. It has working interests. It is engaged in the acquisition and production of natural gas and crude oil?

DR. MORIN: Mmmm.

Q. - And there is nothing in this material about transmission or distribution, is there?

DR. MORIN: Not on this page.

Q. - Or the other page?

DR. MORIN: I only have one here.

Q. - Do you know anything else about KCS Energy?

DR. MORIN: No, I don't. All I know is that Value Line has inserted it into the natural gas transmission group.

Q. - Turn over the page of the exhibit to Key Span?

DR. MORIN: Yes. That is the old Brooklyn Gas Company.

Q. - And it is the largest distributor of natural gas in the northeast?

DR. MORIN: Yes, it is a very large distributor.

Q. - And then we go to National Fuel Gas. And that does have transmission. Interstate natural gas transmission is part of its activities?

DR. MORIN: Yes, it does.

Q. - As does, forgive my pronunciation, ONEOK?

DR. MORIN: That's correct.

Q. - And the second page of the material on that indicates it is a transportation and storage undertaking in part, correct?

DR. MORIN: Correct.

Q. - And it is a little hard to find. But in the material available to me from Questar, which would be the fourth page in of the material concerning that company, it is both -- and I'm looking at the bottom right-hand corner under "Regulated Services" -- it is both a retail natural gas distribution service, and at the very bottom of the page and over to the last page, it conducts gas transmission and storage operations?

DR. MORIN: Correct.

Q. - Now Doctor, I didn't produce -- I'm sorry, Mr. Chairman. Could we mark this please, subject to my friend's view?

MR. HASHEY: Subject to weight, relevance, no problem.

CHAIRMAN: JDI-21.

MR. SMELLIE: Thank you, sir.

Q. - Now just looking at this list, Doctor, I didn't -- you may not have noticed it as we went through it -- but I didn't produce any material for Pacific Northern Gas.

Because as I understand it, it's the same Pacific Northern Gas that you stripped out of exhibit RAM-2 because it is thinly traded?

DR. MORIN: Correct.

Q. - Should it come out of this one as well?

DR. MORIN: It's probably not a bad idea, to be consistent. Again this was in the Value Line official transmission group.

Q. - And subject to check, Doctor, would you agree with me that if you remove KCS Energy from this group, the 2001 average beta would be .63 and not .65?

DR. MORIN: That is probably arithmetically correct in the same way that if you remove Pacific Northern Gas with a beta of .5 the average probably goes back up to .65.

Q. - Subject to check?

DR. MORIN: Yes.

Q. - Your fifth group, Doctor, the fifth proxy group that you used is a little bit different than where we have just been. You mentioned it yesterday in your presentation. And you discuss it at page 42 and 43 of your evidence, was to calculate an unlevered pure business risk beta for Canadian energy utilities?

DR. MORIN: That's correct. In other words if those companies had absolutely no debt at all, they were all stock, all equity finance, they would have the betas shown in the last column of RAM-6.

Q. - And for consistency, and this appears in RAM-6, you used the same group that you used in RAM-1?

DR. MORIN: Correct.

Q. - And it produces an average unlevered beta of .22?

DR. MORIN: That's correct. That would be the beta of those companies if they were all equity.

Q. - Right. And at the top of page 43, I understand what you then did is you take the average beta for that sample group, and using your -- the range of your deemed capital structure of 30 to 35 percent, you then calculate what you refer to in the fifth line of the recapitulation on page 44 as a unlevered-levered beta, correct?

DR. MORIN: That's correct.

Q. - Which you record. And you show the calculations at the top of page 43 as .63 to .81?

DR. MORIN: .63 to .73.

Q. - Oh. So you are looking at lines 8 and lines 10 of page 43, correct?

DR. MORIN: Correct.

Q. - Well, when I look at page 44 --

DR. MORIN: Yes. I will have to check that. I think that is a typo.

Q. - I'm sorry. A typo?

DR. MORIN: Yes, I think.

Q. - I see.

DR. MORIN: I will have to check that.

Q. - Let me ask you this. Looking at RAM-6, is it appropriate, and I suppose it is -- well, maybe it isn't.

Should we have Fortis and Pacific Northern Gas in there? Shouldn't they be stripped out because they are thinly traded?

DR. MORIN: Yes, we could do that.

Q. - Right. And you are going to stick to your knitting that Canadian Natural Resources and Nova Chemicals are still Canadian energy utilities?

DR. MORIN: Well, they are labeled as such in the minds of Value Line standard group, so --

Q. - Would you agree with me subject to check, Doctor, that if you removed Canadian Natural Resources, Fortis, Nova Chemicals and Pacific Northern Gas, that the unlevered beta average would be 17.4 subject to check?

DR. MORIN: Yes.

Q. - And that if you then did the calculation using that number that you do at the top of page 43, assuming your deemed capital structure, that the range would be .49 to

.58 subject to check?

DR. MORIN: Yes. As a matter of pure arithmetic you are right. You can remove, insert, delete, add, play games, you get different numbers.

Q. - Is that what you think I'm doing, Doctor?

DR. MORIN: Well, I don't know. It is awfully close to it.

Q. - I would have thought that I was just checking the accuracy of your work.

DR. MORIN: Not by taking out companies and adding others and subtracting one and adding another one.

Q. - Well, the Fortis and Pacific Northern Gas companies, you say we should take out?

DR. MORIN: Yes, I think we should because they are thinly traded. And I said so.

Q. - And your position is that Canadian Natural Resources and Nova Chemicals Corporation, because Value Line says so, are Canadian energy utilities, correct?

DR. MORIN: That's correct.

Q. - What utilities businesses does Nova Chemicals Corporation conduct?

DR. MORIN: I have no idea. I just took the group of Value Line on faith.

Q. - And do you know of any utility undertakings that form part of the business of Canadian Natural Resources?

DR. MORIN: I don't know the details of the company's activities.

Q. - Now, Doctor, is it your understanding that when the Federal Energy Regulatory Commission is determining a return on equity for electricity transmission companies that it makes use of proxy groups, just as you have?

DR. MORIN: The FERC approach to determining ROE for transmission companies is very, very, very much discounted cash flow, I will abbreviate that, DCF. They use that methodology almost exclusively and they applied this to various utilities. They don't use this beta type of technology here at all. They rely on the DCF technique. And the reason is that there is so much more companies that we can do some analysis in the United States compared to Canada.

So they rely principally on the DCF approach that they apply to fairly wide groups of electric utilities in the US. And we don't have that luxury up here, so we cannot really implement DCF methodologies with any kind of faith.

Q. - So is it your evidence to me, Doctor, that they don't use proxy groups or you don't know?

DR. MORIN: Oh, they do use proxy groups.

Q. - Thank you.

DR. MORIN: Of course.

Q. - And will you agree with me that FERC does not use natural gas transmission or distribution companies as proxy groups for electricity transmission returns on equity in light of the significant differences between the gas and the electric utility industries?

DR. MORIN: Yes. In the testimonies that I have seen for FERC they use electric utility companies and they typically come up with ROE awards of 11-and-a-half percent, 11.2, 11.6, 11.7 percent. Those are the kinds of numbers that FERC produces.

Q. - Have you had an opportunity to review the FERC decision that I provided to you through your counsel concerning Southern California Edison Company dated July 26th, 2000?

DR. MORIN: Yes, I have looked at it.

Q. - Right. And see if we can short-circuit this. There was a debate about proxy groups in that case. A number of different proxy groups had been suggested. Pacific Gas & Electric proposed a proxy group consisting of natural gas LDCs regarding the determination of a return on equity for Southern California Edison, and the FERC rejected that given significant differences that exist between the gas and the electric utility industry --

DR. MORIN: Correct.

Q. - -- is that a fair summary of that case, Doctor?

DR. MORIN: Yes, it's a fair summary.

MR. SMELLIE: Could this be marked, Mr. Chairman.

CHAIRMAN: Would you tell the Secretary again which one you are referring to, sir?

MR. SMELLIE: I'm sorry. I'm getting a little bit out of order, Madam Secretary. It should be towards the bottom of the few documents that remain. Mr. Nettleton will help you.

DR. MORIN: I also noted in that decision that FERC found an ROE of 11.6 percent for ratemaking purposes on page --

Q. - As you say, using a DCF methodology?

DR. MORIN: Yes. But, you know, if you are going to quote one part of the decision, the other is fair game too. The conclusion of this particular order is 11.6 percent ROE.

CHAIRMAN: That will be JDI-22.

DR. MORIN: That's just below footnote 51.

Q. - Turn to page 45, Doctor, of your evidence. I would like to talk about market risk premiums for a bit.

DR. MORIN: Yes, I have it.

Q. - Your estimate of the market risk premium in this case is 6.7 percent?

DR. MORIN: Correct.

Q. - And you rely in order to arrive at that estimate firstly on the published results of studies authored by those which I will suggest to you are prominent and credible researchers published in authoritative publications?

DR. MORIN: Yes. The results are summarized on page 48 in that summary table.

Q. - And you include in particular two studies by Ibbotson Associates?

DR. MORIN: Yes.

Q. - And the four that are shown on page 45, that is to say the Hatch White Canadian Institute of Actuaries and the two Ibbotson studies are historic.

DR. MORIN: That's correct. There is two ways of estimating the market risk premium. We can look at history or we can do it prospectively. On the table at page 48 four of the studies are historical, looking back, and two of them look forward.

Q. - Yes. You refer to -- well secondly, as I understand it, you applied a prospective DCF analysis, as I think you explained to us yesterday morning, to the Canadian and US aggregate equity markets?

DR. MORIN: That's correct.

Q. - And that's described on pages 47 and 48.

DR. MORIN: That's correct. Dividend yield plus the growth prospects of these aggregates.

Q. - And the basis of those prospective studies again were

Value Line, correct?

DR. MORIN: The growth forecasts were obtained from Value Line, correct.

Q. - Yes. Let's go back to the historical studies, Doctor. The first three studies that you refer to on that page each use varying time periods which share a common feature, they are all reasonably lengthy, and secondly they all overlap each with the other to some degree?

DR. MORIN: That's correct. They are different studies, long periods, in some cases overlap, that's correct.

Q. - And you tell us, and I have come to understand how important it is that long historical time periods are important in this determination of a risk premium.

DR. MORIN: Long periods are much better than short periods because over short periods investor expectations do not get realized. As long as the data is reliable, historical data is fine.

Q. - And have you had an opportunity, Doctor, to review Dr. Yatchew's evidence that has been filed on behalf of J.D. Irving in this proceeding?

DR. MORIN: Yes.

Q. - And you know therefore, and you will agree with me that he has also relied on various studies in his evidence?

DR. MORIN: Well he has used only one method and that's the

CAPM, and --

Q. - Has he relied on various studies in his evidence?

DR. MORIN: He has relied on one technique, the CAPM, and one of the inputs for the CAPM is the market return, and for that piece he has looked at various historical studies.

Q. - And are you prepared to agree with me, sir, that the authors of the studies on which Dr. Yatchew has relied are reputable economists, in some cases leading economists?

DR. MORIN: Yes.

Q. - And their studies are published in leading journals?

DR. MORIN: Some of them, yes.

Q. - Would you agree with me that the models and techniques used by the authors on which Dr. Yatchew relies are well recognized?

DR. MORIN: Yes.

Q. - But the results and the market risk premium estimates which they proffer are not included in your estimates of a market risk premium, are they?

DR. MORIN: Well my studies are here and that's it. I don't go back to 1800s. I don't think the data is reliable. And I tend to rely on historical studies that begin when the stock market trading activity was significant.

Q. - Let's go there for a bit shall we, Doctor. Can you agree with me that Princeton University Press is a prominent academic publisher?

DR. MORIN: Yes.

Q. - Can you agree with me that the London Business School is one of the top such institutions in the world?

DR. MORIN: You are putting me on the spot with that one, having visited there. Yes.

Q. - Are you familiar, sir, with the recently published text, Triumph of the Optimist, authored by Dimson, Marsh & Staunton, all of that institution?

DR. MORIN: I am now. I wasn't before.

MR. SMELLIE: Perhaps the Secretary could pass up to the Panel the third and maybe second last document that I'm going to refer to. It's a document entitled "Triumph of the Optimist, 101 Years of Global Investment Returns", and it is an excerpt, Chairman, of chapters 12 and 13.

MR. HASHEY: I believe this is one that falls into that classification of a document not by a party here nor having been included as part of the evidence. A couple of chapters of a document, I'm not saying it's misleading but I just reserve at this point and would ask that it be marked for identification.

CHAIRMAN: Do you want to mark it for identification?

MR. SMELLIE: Well, Mr. Chairman, may I respond briefly?

CHAIRMAN: Yes, go ahead.

MR. SMELLIE: It has certainly been referred to by a party in this proceeding. It's been referred to by Dr. Yatchew in his evidence, as well as in an interrogatory response asked by my friend.

CHAIRMAN: Is that correct, Mr. Hashey?

MR. HASHEY: That I don't know. That I apologize --

CHAIRMAN: I presume that it is if Mr. Smellie --

MR. HASHEY: I don't -- if my friend tells me that then I accept what he says. I haven't seen this before Monday. Is this something we asked to be produced? Maybe you can refer to the interrogatory it was referenced, please?

MR. SMELLIE: Just one minute, Mr. Chairman.

MR. MORRISON: Yes, we have it.

MR. SMELLIE: I don't know that I have the exhibit number, Mr. Chairman, but if somebody could help me with the --

MR. HASHEY: Oh, it is in the evidence.

MR. SMELLIE: -- responses to interrogatories --

MR. HASHEY: Oh my apologies. It has been included, I believe. It's with part of your answers.

MR. SMELLIE: To be precise, Mr. Chairman, the question in JDI NBP IR-17 was please provide the original Dimson document cited at the bottom of tables 2, 3 and 4 of your evidence.

The response was the Dimson document is a 338 page monograph entitled, et cetera, et cetera, et cetera. The book is publically available. Attached as appendix A are the specific pages from which tables 2, 3 and 4 are drawn.

CHAIRMAN: We actually have it in our library. So if you would like some light reading tonight, Mr. Hashey, why we will provide it.

MR. HASHEY: Well I have already read a couple of books on betas. That is all right. No problem.

CHAIRMAN: JDI-23.

MR. SMELLIE: Thank you, Chairman. As I said, this is an excerpt from the lengthy text. It includes two chapters, 12 and 13. The first dealing with equity risk premium and the second dealing with prospective risk premium.

Q. - And, Doctor, have you had a chance to familiarize yourself with this material given to your counsel on Monday?

DR. MORIN: Yes.

Q. - And I think we have already agreed that in trying to establish an equity risk premium, it is best to consider the longest possible period for which data are available. Correct?

DR. MORIN: As long as the data is reliable.

Q. - And it is my understanding having reviewed this material, Dr. Morin, that one of the things that Dimson et al set out to do was to determine over a period of 101 years world wide risk premia relative to bonds?

DR. MORIN: That's correct.

Q. - And at page 171 and 172 we see the result in figure 12-6 of that work, where they conclude that the geometric mean risk premium for Canada over bonds for the last century was four and a half percent, correct?

DR. MORIN: Over bills?

Q. - No, over bonds.

DR. MORIN: Over bonds.

Q. - Page 172.

DR. MORIN: Yes. That's the geometric mean, but of course as shown on page 173 in a table there for purposes of estimating the cost of capital -- and I'm sure we will get into that later -- the arithmetic mean is much more relevant and it's shown as 6.0 percent for Canada and 7 percent for United States. And that's quite consistent with my range, which is roughly between six and seven percent. A little closer to seven.

Q. - And at page 182 of the exhibit, Doctor, in discussing prospective risk premium, the authors observe in the third full paragraph on that page that the least volatile equity market in the 20th century has been Canada, which also has the smallest gap between its arithmetic and geometric means, correct?

DR. MORIN: That's correct.

Q. - Do you take issue with that?

DR. MORIN: What page are we on?

Q. - 182.

DR. MORIN: Oh sorry. Yes, I agree. Well, it's there.

Q. - And with respect to the conclusion reached at page 172, the annual equity risk premium from 1900 to 2000, we agree, Doctor, that if 2001 and what has passed us by in 2002 so far were to be included, the Canadian market risk premium would certainly not be higher than what Dimson et al have concluded, would it?

DR. MORIN: No. I agree with the Dimson conclusion that -- basically on page 173 that -- on that table there that for Canada the risk premium is 6.0 percent, for the US it's 7.0. And a 6 to 7 range to me is quite reasonable.

Q. - All right. Is it correct for me to say, Doctor, that there is a distinction between historical market risk premiums and the market risk premium which would be required to attract investors?

DR. MORIN: Well the historical risk premium is a proxy for the prospective risk premium. We are trying to use history as a guide, because over very, very long time periods investor expectations do get realized or else nobody would ever invest any money. So by looking at long periods we are using historical premium as a proxy for expectations.

Q. - And it is the expectation which needs to be estimated?

DR. MORIN: That's right. We are trying to get a handle on this elusive expected return in the minds of investors. And we rely on history in part to do this.

Q. - And do you acknowledge, to come back to my original question, Doctor, that the historical market risk premium and the market risk premium which would be required to attract investors, may be different?

DR. MORIN: They may be different but we can test for that. And this has been done extensively by Ibbotson, the same Ibbotson you quoted earlier. And they find that the -- in the historical data that there is no pattern, there is no serial correlation, to employ a technical term, between successive risk premiums from year to year. And that means in layman's language that the best estimate of tomorrow's historical risk -- or tomorrow's risk premium is the average over very long time periods, because there is no pattern in the data.

Q. - And --

DR. MORIN: So I don't have a problem with the 6 to 7 range in the Dimson study. It's quite consistent with what I use.

Q. - Are you familiar with Professor Blanchard, Doctor?

DR. MORIN: No, I'm not.

Q. - You don't know his work?

DR. MORIN: Oh I know his name and I know who he is, but I'm not familiar intimately with his work, no, I'm not.

Q. - Are you familiar with his paper cited in Dr. Yatchew's evidence entitled "Movements in the Equity Premium", in which he concluded that the market risk premium has declined over the course of the last century, and by the early 1990s was in the range of two to three percent?

DR. MORIN: Well, I would contradict Professor Blanchard in that regard, because if you look at the year to year market risk premiums in the Ibbotson data, you find a 0.0 serial correlation in successive stock market returns.

In other words, there is no history. There is no pattern in the risk premiums. And therefore the best estimate of tomorrow's market risk premium is the historical average. It's sort of like a coin tossing game. If you toss a coin 100 times, on average you expect 50 heads and 50 tails. But in any given successive toss you might find a sequence of three heads or four tails.

But if you toss the coin long enough you will find on average 50/50.

It's exactly the same thing we are trying to do here. If we look at the long, long, long historical record -- and we see no pattern in the data. In other words, we don't have a loaded dice or a loaded coin, I should say. We can rely on the average historical as a proxy for the future.

Q. - Do you know Dr. Blanchard to be a recognized economist who works at MIT, a top institution?

DR. MORIN: It's not somebody I'm thoroughly familiar with.

Q. - All right. Now as you told us yesterday and as we have alluded to earlier -- and maybe you can't help me with the second question I'm about to ask you -- but you did use a DCF or a dividend growth model in two of your six estimates of the market risk premium?

DR. MORIN: Yes. One way to measure the risk premium is to do it prospectively. Look at the dividend yield on the aggregate stock market plus the growth expectation on the stock market. Add the two together and that will give you an estimate of expected return.

Q. - Do you know, Doctor, whether in his 1993 paper that I have made mention, of whether professor Blanchard used a dividend growth or a DCF model?

DR. MORIN: I'm not familiar with that. But that's a fairly standard technique to estimate an expected return is to use the DCF method.

Q. - And are you familiar with the 2001 paper by James Claus and Jacob Thomas entitled "Equity Premia as Low as Three Percent?, evidence from analyst's earnings forecast for domestic and international Stock Markets", which is found in the Journal of Finance?

DR. MORIN: No, I'm not familiar with that. I did my own study on that dividend yield plus growth, and it showed about 7 percent risk premium. The same as the historical studies.

Q. - Do you subscribe to the Journal of Finance, Doctor?

DR. MORIN: Yes, I do.

Q. - And you are not familiar with this article?

DR. MORIN: No, I'm -- increasingly over the years I'm having a hard time trying to understand the Journal of Finance.

Q. - Well if that's your feel then I certainly understand it from my perspective, Doctor.

DR. MORIN: And I don't have the time to --

Q. - So you are not aware --

DR. MORIN: I don't have the time to read every single article in the Journal of Finance.

Q. - You are not aware that Claus and Thomas conclude that the market risk premium from 1985 to 1998 was between 3 and 4 percent?

DR. MORIN: Well that's not what the studies that we are quoting here suggest.

Q. - Well you are suggesting that that's not what Claus and Thomas concluded?

DR. MORIN: No. I'm suggesting that the Dimson thing that we went on and on and on from 1900 until today suggests 6 to 7 percent.

Q. - Are you familiar, Doctor, with the 2002 paper by Eugene Fama and Kenneth French entitled "The Equity Premium"?

DR. MORIN: Yes, I am familiar with that one.

Q. - Also published in the Journal of Finance?

DR. MORIN: Yes.

Q. - They are both leading economists?

DR. MORIN: Yes, they are. They are leading finance people.

Q. - And that publication in that journal, recalling our discussion yesterday, would have undergone a thorough peer review process?

DR. MORIN: Yes.

Q. - And do you understand that their conclusions are based on data for the period 1951 to 2000?

DR. MORIN: Yes.

Q. - And that they conclude that the market risk premium is in a range from 2.55 to 4.32 percent?

DR. MORIN: Yes, I have read that. I don't agree with it obviously. It simply does not explain investor behaviour over the last several decades.

Q. - You did some ranking in one of your exhibits, Doctor. Would you consider that Eugene Fama is one of the top 10 economists in the world?

DR. MORIN: He is certainly one of --

Q. - Finance, excuse me.

DR. MORIN: Yes. He is not an economist.

Q. - No.

DR. MORIN: He is financial economist.

Q. - Right. Subject to that you would agree with me?

DR. MORIN: Yes, I would agree that he is one of the leading scholars in the field. And has published many, many, many controversial articles and is a very, very -- a good word would be provoking scholar that questions status quo and generates a lot of subsequent studies, following his own studies. And it always turns out it seems that some of his conclusions are sometimes a little bit extremist, but not always.

Q. - At least as we have it, Doctor, in our last discussion, or our discussion over the last few minutes, your prospective study leading to a seven and a half percent market risk premium in the US is markedly different than the estimates that we have just been discussing, correct?

DR. MORIN: Yes. I was looking forward and dividend yield plus growth of analysts suggests just add the two numbers together, seven and a half percent risk premium.

Q. - And the studies that we have been talking about, at least to the extent that you are familiar with them, are also forward looking?

DR. MORIN: They are prospective in nature, yes.

Q. - I am advised, Doctor, and I would ask you whether or not it's the case that the historical equity risk premium levels of which that appear in four of your studies have been questioned for some time. Is that your understanding as well?

DR. MORIN: Well the historical data is what it is. Those results are observed realized results. In that sense you really can't question it. The results are what they are over these long time periods.

Q. - Excuse me, one second.

DR. MORIN: What has been questioned maybe is playing around with years and sub-periods and the like, but the results are what they are.

Q. - Forgive me, Doctor, I misstated my question. What I am trying to get at it is whether or not it is your understanding that the historical risk premiums have been questioned as expectations or estimates of risk premiums going forward?

DR. MORIN: That's a very difficult pill to swallow, because you would have to assume that investors for the last hundred years have been essentially completely wrong. That their expectations were never, never, never realized and yet they continue to invest money in stocks and bonds. I don't subscribe to that notion that investors are sort of masochistic in nature. Realizations must match expectations if we expect people to invest money. So that's a difficult case to make that we have been wrong for all these decades.

Q. - Are you familiar with a paper by Mehra & Prescott called the equity premium a puzzle?

DR. MORIN: Not really. Not enough to discuss it with you.

Q. - Do you know who Prescott is?

DR. MORIN: No, I don't.

Q. - Now at page 49 of your evidence, Doctor, in discussing the weight that should be given to US risk premium estimates, you make reference at line 26 to another study by Ibbotson Associates entitled, "Stocks, Bonds, Bills and Inflation, The 2002 Yearbook"?

DR. MORIN: Yes, that publication is pretty standard and well known and widely used in our business.

Q. - Indeed. And you have relied on other Ibbotson studies in arriving at your estimate of a seven and a half percent historical Ibbotson Associates' US estimate of the market risk premium?

DR. MORIN: That's correct. It's a very well known and widely cited number.

Q. - It appears immediately to the left of where we are looking now on page 48. Correct?

DR. MORIN: Correct. Yes, that's the same number you see there under Ibbotson US 7.5 percent.

MR. SMELLIE: Could I ask the Secretary to hand up to the panel a document that looks like this, black front cover. This is a very brief excerpt, Chairman.

CHAIRMAN: Pardon me?

MR. SMELLIE: This is a very brief excerpt from the document that Dr. Morin and I have just been discussing. And having been referred to in the evidence of the witness, could it be marked as the next exhibit?

CHAIRMAN: JDI-24.

Q. - I want to refer you, which is easily done, Doctor, given the size of the document, to page 181 of the study, which in turn cites work by Ibbotson and Chen, in which they conclude or calculate that the equity risk premium based on the supply side earnings model is calculated to be 3.97 percent, 1.25 percentage points lower than the straight historical estimate. Do you see that?

DR. MORIN: Yes, I was puzzled when I read that because the historical estimate is well known. It appears in most of the textbooks. It's 7.5 percent. And 3.97 is not 1.25 lower than the straight historical estimate which is widely known to be about seven and a half. I would have to read all the details here. You have skipped 20, 25 pages. I would have to read that. But that puzzled me a little bit.

Part of the -- I think answer to this seemingly puzzling result is the use of geometric means as opposed to arithmetic means. That might be the culprit here explaining this inconsistency. If we were to use the arithmetic mean, we would probably see something closer to six percent. But I would have to check that. Do you understand what I am saying?

Q. - Oh no. Oh no, I understand.

DR. MORIN: You just --

Q. - Surprisingly, I do.

DR. MORIN: You and I agree that it has historically been 7.5.

Q. - So let's see if we can't --

DR. MORIN: So I can't reconcile --

Q. - Let's see if we can't clarify that, Doctor, by asking the Secretary one last time to produce the last of the papers I will be referring to. This is a document, Doctor, which you have a copy of from the Yale International Centre for Finance. It is a March 2002 working paper, "Stock Market Returns In The Long Run: Participating In The Real Economy." Robert G. Ibbotson and Peng Chen.

CHAIRMAN: Any difficulty with that, Mr. Hashey?

MR. HASHEY: What is the reference to a working paper? That bothers me a little bit. And it doesn't seem to be an authoritative article.

MR. SMELLIE: Well it's authoritative, Mr. Chairman, in the sense that exhibit JDI-24 references it, which is a document that New Brunswick Power relies upon in the evidence of Dr. Morin.

MR. HASHEY: It is referenced as a working paper?

MR. SMELLIE: Yes.

MR. HASHEY: Okay.

MR. SMELLIE: Thank you.

CHAIRMAN: JDI-25.

Q. - I have come to understand this, Doctor, but Ibbotson's name comes first, so that means he is the senior author in this tandem, is that right? Is that the usual norm?

DR. MORIN: Yes, usually the alphabetical order would be in order, but Ibbotson must be the leading author here since his name comes first, despite the fact that alphabetically it should be second.

Q. - Where I would like to take you, Doctor, is to page 15 of the paper. And there we find the answer to the conundrum that you were kind enough to point to me, but also confirmation of what appears in exhibit JDI-24. I'm just about in the middle of the page, Doctor. And I find this statement under Conclusions. "The equity risk premium is estimated to be 3.97 percent in geometric terms and 5.90 percent on an arithmetic basis." Conundrum solved?

DR. MORIN: Yes, it is. Yes. On page 1, the very front page there in the abstract he repeats that same assertion, the next to the last line. "The long term equity risk premium is estimated to be about 6 percent arithmetically and 4 percent geometrically."

So, indeed, we have solved the puzzle.

Q. - And you will also observe, having had a chance to familiarize the paper with -- yourself with the paper, that with this statement, Doctor, at the bottom of page 15 and over 16, "Due to our lowered equity risk premium estimate (compared to historical performance), some investors should lower their equity allocations and/or

increase their savings rate to meet future liabilities."
Do you see that?

DR. MORIN: Yes, that's the implication of their result.

Q. - Now at page 50, Doctor, of your evidence where you carry on with your discussion of the weighting of U.S. results, and in particular with respect to the integration of markets, at lines 5 to 6 you say, and I quote, "The long run tendency for real interest rates and exchange rates to revert to parity suggests an integrated capital market."

Do you see that?

DR. MORIN: Yes.

Q. - You are referring there to Canada and the U.S.?

DR. MORIN: No, I'm referring to world markets. There is a convergence between real interest rates and exchange rates to always come back to parity. And that suggests that there is growing integration on capital markets.

Q. - Can we talk about the U.S. and Canada, Doctor?

DR. MORIN: This refers to a world market phenomenon, not U.S., Canada.

Q. - Thank you.

DR. MORIN: The differences right now between long term Canadas and long term U.S. treasuries are virtually zero.

Q. - And I suppose I should have asked you this, Doctor, and I will give you the opportunity. Ibbotson and Chen get 5.9

percent arithmetically?

DR. MORIN: Yes. 6 percent.

Q. - About 6 percent?

DR. MORIN: Yes.

Q. - And you get 7.5?

DR. MORIN: I get 6 -- no, I don't. I use a range of 6 to 7 and closer to 6.7. I used five studies, remember. Ibbotson is one of them.

So if you look at the summary table of my results --

Q. - At page 48?

DR. MORIN: -- at page 48 --

Q. - Yes.

DR. MORIN: -- the results -- the low is 5.5. The high is 7.5. Average about 6.7.

Q. - Right.

DR. MORIN: And all the studies that you and I have been talking about for the last two hours, you know, 6 to 7 percent is not a bad range.

Q. - Ibbotson gets about 6 percent arithmetically?

DR. MORIN: And 7.5 historically.

Q. - And you get in your prospective --

DR. MORIN: Oh, I see, okay.

Q. - -- Value Line U.S. study 7 1/2 percent?

DR. MORIN: That's correct. Dividend yield plus growth forecast of analysts. The return is equal to the dividend plus the capital gains.

The dividend is something like of the order of 2 percent. Growth prospects are higher than that. You subtract the bond yield. And you get about 7.5 percent.

Q. - So are you saying that the methodologies are different and that is the explanation?

DR. MORIN: That could be one explanation, yes, and the sample. I'm using the Value Line composite index of 1,800 stocks for which growth forecasts are available. So maybe a different index.

Q. - All right, sir. And the reason I ask the question, Doctor, is that both you and Ibbotson and Chen are using prospective methodologies. You understand that?

DR. MORIN: Yes, I do. I suspect that they use the S&P 500. And I use a much broader aggregate of stocks which includes higher growth stocks. That may -- higher risk stocks as well -- that may explain the higher risk premiums. Because you are including a lot more stocks that are high growth and therefore riskier. In other words I'm using a broader index of equities.

Q. - Dr. Morin, is it the case that options on stocks provide information to investors on what the market thinks the value of the asset or stock may be in the future?

DR. MORIN: Futures markets and options markets provide price signals about possible futures prices, yes. Some people view futures markets or commodity futures markets as a forum for expectations about future prices. So the answer would be yes.

Q. - Are you of the view, Doctor, that options may assist in establishing return on equity, given that they --

DR. MORIN: I have never done that before. And I don't know of any witness that has done that before. It is not something that I have ever seen before, but --

Q. - Just to be clear, you haven't examined the possibility of using option prices to infer the risk premium for firms?

DR. MORIN: No, I have not.

Q. - And you are not aware of any recent work on the subject?

DR. MORIN: I'm not aware of any witness that has used this in regulatory proceedings.

Q. - Are you aware, aside from witnesses in regulatory proceedings, of any recent work on the subject?

DR. MORIN: No, I'm not. I haven't followed that.

Q. - Doctor, does the coupon rate of issued debt reflect what the investor in the marketplace feels is a satisfactory return on its investment?

DR. MORIN: For a newly issued bond you will establish a coupon rate that reflects current interest rates. And if that new bond that is going to be issued tomorrow morning is issued at par, then one can conclude that the coupon yield or coupon rate is a good proxy for expected returns on the bond, provided it sells at par.

Q. - Doctor, will you confirm for me that your recommended return on equity for New Brunswick Power Transmission does not include any adjustment for floatation costs associated with the procurement of equity capital?

DR. MORIN: That's a good question. Yes, it does not. Because the company in the past has not raised equity through a public offering with an investment banker, incurring all these fees.

And for that reason I did not include floatation costs in this particular proceeding. But I normally do that in the case of a company that has issued stock in the past and incurred those costs. So the answer is yes.

Q. - I take it however --

DR. MORIN: So the answer, it is confirmed.

Q. - Typically, Doctor, a floatation cost adjustment would be in the range of how many basis points?

DR. MORIN: Roughly 20, 30 basis points. The recommendation inclusive of floatation costs would be roughly 11.3.

It is sort of like closing costs on a home mortgage.

If you include those in your home mortgage rate it is costing you a little bit more than what the stated rate is. It is the same idea here. But this is not relevant here in this proceeding. So I did not include it.

MR. SMELLIE: That concludes my cross examination, Mr. Chairman. Thank you, Ms. MacFarlane, Dr. Morin. I'm obliged for your patience and answers.

DR. MORIN: Thank you.

MR. SMELLIE: Subject to -- I think there may be a couple of undertakings.

MR. HASHEY: Yes. We will try to have those for you in the morning if possible.

CHAIRMAN: Okay. I think we will break now.

DR. MORIN: Mr. Chairman, I do have one response to the undertaking. I have it already.

CHAIRMAN: Okay. Please go ahead.

DR. MORIN: Do you remember, Mr. Smellie, when you asked me to produce the exact reference to the Booth and Berkowitz evidence on the betas?

MR. SMELLIE: Yes.

DR. MORIN: And that appears in -- I found it during the lunch break. It is in JDI-2 which is the response to Interrogatories submitted by NB Power, IR 16, appendix B, page 36.

And you will find there some raw betas that we discussed, you and I earlier today.

MR. SMELLIE: Thank you, Doctor.

DR. MORIN: Excuse me, Mr. Chairman.

CHAIRMAN: No. Thank you. We will break. But just before we do, looking at tomorrow -- if my memory serves me correctly we are down now to Maine Public Service Company, is that correct? I think so.

Then I saw Mr. Belcher here previously. I don't -- he is not here now. But I'm just wondering. Does anyone know if the Northern Maine Independent System Administrator has any questions?

MR. SCOTT: Mr. Chairman, I was talking to him earlier today. And he was interested in questions for the next panel.

CHAIRMAN: The next panel? Okay.

So Mr. Zed, you have no questions of this panel?

MR. ZED: No, Mr. Chairman.

CHAIRMAN: So I guess it is the Province of New Brunswick? You don't have any questions either?

MR. KNIGHT: No, we don't.

CHAIRMAN: So it is Saint John Energy?

MR. YOUNG: No questions, Mr. Chairman.

CHAIRMAN: How about WPS Energy Services Inc.? And Board counsel?

MR. MACNUTT: Yes. I have about an hour to an hour and a half.

CHAIRMAN: Well, knowing Mr. MacNutt's track record we will certainly break now then.

Yes, Mr. Smellie?

MR. SMELLIE: May I just ask a question. You will appreciate that Mr. Nettleton and I have been focusing on Panel B matters this week. And he is concerned with Panel C matters. And I'm just wondering if there are any preliminary thoughts on how far we might intend to get with Panel C.

What I'm driving at, sir, is Mr. Nettleton could usefully be in Calgary tomorrow afternoon. And if it was necessary to accommodate him in that regard, could JDI, if we were reached, and I suspect we won't be, simply drop down the order in the cross examination of Panel C, as I say, should we get that far tomorrow?

CHAIRMAN: Certainly the Board has no difficulty with that. You will have to speak to your fellow Intervenors.

MR. SMELLIE: Mr. Hashey has already told me, sir, that he has no difficulty with that.

CHAIRMAN: No. But somebody else will be put further up the ladder if you --

MR. SMELLIE: Which is why I mention it on the record, Mr.

Chairman --

CHAIRMAN: Yes.

MR. SMELLIE: -- as to whether any other Intervenors have a problem with that.

CHAIRMAN: Mr. Zed?

MR. ZED: I would certainly be prepared to ask questions in the Nova Scotia Power slot but not in the Emera Energy slot if we happen to reach that juncture tomorrow.

CHAIRMAN: Okay. Well, let's just look at it for a moment then. Because certainly Bayside Power has not been here or has not participated.

And you, Mr. Smellie, and your client have been representing the Canadian Manufacturers and Exporters. The City of Summerside has not been here. Mr. Zed doesn't want to go ahead in the Emera slot. We are looking at Energie Edmundston, and they haven't participipted actively. Then we are looking at Mr. Gillis.

MR. HASHEY: Mr. Chairman, I attempted to reach Mr. Gillis at the break this afternoon to see if he would be asking questions.

And I left a message with his secretary on her answering machine, which I thought would be helpful. And I am quite willing to call him back to see if he will be participating. None of us have any idea that I know of on that.

CHAIRMAN: Okay.

MR. HASHEY: And I thought that might help, because that would obviously fill in a piece of it.

MR. SMELLIE: So I guess, Mr. Chairman, what I'm asking for is your indulgence, rather than simply being dropped down the list.

We are not -- if we are first up, either in the CME or the JDI slot, I'm afraid, sir, that we have a problem in terms of being ready to go with cross examination for Panel C tomorrow. That is really what I'm saying to you.

CHAIRMAN: Well, we seem to be moving right along, to say the least. I have no sense of it at all. But counsel certainly probably does.

Do you think that we will have sufficient time next week to deal with Panel C? No problem?

MR. HASHEY: That is something I can't estimate obviously. But maybe Mr. Nettleton could give us an idea of the time, based upon his experience here on this panel as to how long he might be. And that will probably give us a pretty good direction, I would expect.

I have, by the way, Mr. Chairman, spoken to Mr. Nettleton indicating that I anticipate he would be cross examining on Monday, did indicate to him that, as indicated to the Board, that Ms. MacFarlane cannot be here on Tuesday morning and he has graciously agreed that he would direct his questions to her on Monday and the questions to the other members of the panel could continue so that we wouldn't lose that half day.

MR. NETTLETON: Mr. Chairman, at this time I believe I'm going to be at least a full day. I can't see the areas of cross examination that I wish to pursue take more than a half day further than the first.

So as my friend here has indicated, I am planning my cross examination such that the questions can be directed to Ms. MacFarlane on Monday and the other areas, if necessary, could be pursued on Tuesday.

CHAIRMAN: Good. Thank you, Mr. Nettleton. It's just Tuesday morning that you are not available. Mr. Nettleton, you are going to miss the Mayor's breakfast you know on Friday morning. I just don't know how you can possibly do that.

MR. NETTLETON: I am sure you are shocked and dismayed at that and I apologize in advance and feel admonishment is a proper thing.

CHAIRMAN: All right. Well we will adjourn then and reconvene tomorrow and may you have a safe journey home, Mr. Nettleton.

MR. NETTLETON: Thank you, sir.

MR. HASHEY: Mr. Chairman, maybe I should get some direction, because we do have one panel member who is not here who will be giving the presentation, namely Mr. Marshall. He can be here. But if the desire is not to do the presentation until Monday and not to proceed with Panel C, we can certainly put people to work on their other, as you can imagine, things that are pressing them at the moment.

CHAIRMAN: Well I don't want to -- I would like to see the panel here and have it make its presentation.

MR. HASHEY: That's fine.

CHAIRMAN: So we have got that done, and there may be some matters that the Board has been holding its tongue in reference to some things that Ms. MacFarlane said yesterday or today that we may want to pursue at that time just in anticipation. I don't know.

MR. HASHEY: That's fine.

CHAIRMAN: Let's carry on with what we can do tomorrow. I think that's what --

MR. HASHEY: Just so that I know. That's no problem.

CHAIRMAN: All right.

MR. GORMAN: Mr. Chairman, on behalf of Saint John Energy we will have some questions for this panel but we would not be ready to go tomorrow and we would also want to get put off until next week. If the order gets changed --

CHAIRMAN: You mean this panel, Mr. Gorman, or --

MR. GORMAN: No, no. The next panel.

CHAIRMAN: The next panel.

MR. GORMAN: Panel C. Sorry.

CHAIRMAN: I don't understand you lawyers, but -- all right.

We will adjourn until 9:30 tomorrow morning.

(Adjourned)

Certified to be a true transcript of the proceedings of this hearing as recorded by me, to the best of my ability.

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