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New Brunswick Board of Commissioners of Public Utilities

In the Matter of an application by New Brunswick Power Corporation dated January 8, 2002 in connection with a proposal for refurbishment of its generating facility at Point Lepreau.

Delta Hotel, Saint John, N.B.
April 30th 2002, 9:00 a.m.

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CHAIRMAN: David C. Nicholson, Q.C.

COMMISSIONERS: Robert Richardson
Ken F. Sollows
H. Brian Tingley

BOARD COUNSEL Peter MacNutt, Q.C.

BOARD SECRETARY: Lorraine Légère

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CHAIRMAN: Good morning, ladies and gentlemen. Before we carry on with cross-examination of this panel, do any of the parties have anything they wish to address the Board with?

MR. MORRISON: Mr. Chairman, I believe there was one undertaking coming from the evidence yesterday afternoon. It related to Mr. Marshall and he was being examined on page 39 of the DSM analysis. And I believe we were -- we undertook to provide the levelized avoided costs for the industrial sector. And I think Mr. Marshall has that evidence.

MR. MARSHALL: Yes. Mr. Chairman, we were asked about the levelized avoided cost for industry. There is an issue of -- just before I give you the numbers and the analysis, the -- avoided costs, as I said yesterday, are done starting out in 2006, so they are in 2006 dollars going forward. And they are levelized costs from that point in time, not escalating costs as actual industry rates are today. So they are really not comparable to industry.

The number out in that time frame for the avoided costs used to evaluate industry would be about 6.9 cents. If you bring that back to today and compare it to industry rates today, that avoided cost would compare to industry rates would be about 10 percent higher than industry rates. So the statement in the -- on page 39 that industry rates of demand and energy are comparable or equal to a avoided cost utility is not quite precise. It would be -- the rates -- the avoided cost would be about 10 percent higher. In the future we expect this gap to actually widen. Avoided costs are projected increase at CPI, which is 1.8 percent. But industry rates, we are confident that given the current cost structure of NB Power with Coleson Cove conversion and Point Lepreau refurbishment, should it go forward, and the current corporate structure of NB Power, that industry rates will

increase at rates over the long term lower than CPI, so that the gap between that avoided cost and industry rates would widen over time.

CHAIRMAN: Thank you. Any other matters? Is Mr. Craik here today? I don't think so. Okay. Is Mr. Gillis here today? IBEW Local 37 is not here. J.D. Irving have any questions?

MR. MOSHER: Mark Mosher for J.D. Irving. We have no questions.

CHAIRMAN: Thank you. Mr. LeBlanc. Mr. LeBlanc, if you would like to come up to the front table so that you are able to see the white of their eyes, as they say.

CROSS-EXAMINATION BY MR. LEBLANC:

Q. - Bonjour. Je vais faire mes interrogations en français ce matin pour ceux qui ne comprennent pas. J'ai l'impression que ça va durer entre quarante minutes et une heure. Mais si tout va bien, ça devrait aller rapidement. Alors, pour ceux qui ont besoin des écouteurs je veux simplement les avertir maintenant.

Je vais me préparer. Peut-être dans 30 secondes je vais commencer.

Ca nous fait plaisir d'être ici aujourd'hui pour poser des questions par rapport à la preuve.

J'aimerais commencer par faire un suivi à la

présentation de M. Coon d'hier où on a dénoté changement entre la prédiction qui était présentée à la table un de la preuve à la page trois, c'est-à-dire changement entre --

CHAIRMAN: Excuse me, Mr. LeBlanc.

MR. LEBLANC: Oui.

CHAIRMAN: Would you, when you say evidence, we have got a lot of it, would you refer to exhibit numbers if you could?

MR. LEBLANC: Okay.

CHAIRMAN: And give people an opportunity to get that volume. That would be A-1, I presume.

MR. LEBLANC: Oui. Et puis je dois signaler également que hier j'avais parfois un peu de difficulté à suivre parce que les pages n'étaient pas exactement les mêmes documents en français que les documents anglais.

Alors, c'est à l'annexe A, révisions des charges 2003, 2011. Ca va?

CHAIRMAN: I was simply thinking about that people tell me that the French language takes longer to explain something than English, that is probably why they don't match up.

Refer me again to the page, Mr. LeBlanc.

Q. - Alors de mon document c'est à la page trois à l'annexe A. Si vous voulez, j'ai une question, une précision à

demander avant d'aller vers les intérogations. Il y a quelque chose que j'ai un peu de difficulté à comprendre, puis peut-être que ça m'aidera à préciser mes questions.

Lorsqu'on a une capacité de 3 041, et puis la réalité échange soit avec la température ou un autre facteur et on réduit notre demande à 2 768, qu'est-ce qui -- que fait Energie Nouveau-Brunswick avec ce surplus de 273?

Est-ce que c'est un surplus qui n'est pas utilisé, ou est-ce qu'il est immédiatement envoyé vers le marché d'exportation?

MR. LARLEE: Mr. Chairman, I would like to take this opportunity to clarify the discussion that took place yesterday with relation to table 1 that Mr. LeBlanc has referred to and to the answer that was provided for CCNB-9 for Mr. Coon. I believe that there was some confusion not only with Mr. LeBlanc but with others in the room.

CHAIRMAN: All right, Mr. Larlee. You are going to explain or give the answer to Mr. LeBlanc's question and then go on to something else or is it all just the answer?

MR. LARLEE: It is all the answer.

CHAIRMAN: Okay.

MR. LARLEE: When we are developing the forecast for peak hour demand, we use the normal conditions that we would expect. And those are a January peak, average industrial

operations, and sustained temperature of minus 24 degrees C. When the actual peak hour demand conditions vary from that, from that situation, then we normalize the results to bring it into what we would expect under the normal conditions because as planners we have to plan for normal results. And perhaps Mr. Marshall can elaborate on that later.

So in effect, the number we provided for CCNB-9 in response to what was the actual peak hour demand which was a February demand, February peak hour demand, is not the basis for this forecast. It is the result of a very unusual January where we had very, very mild conditions. And it is not what we would base a forecast on because our forecast would be based on a January peak under industrial conditions that are considered normal based on the history and on sustained cold temperatures.

Q. - Est-ce que vous pouvez répondre à ma question par rapport au surplus?

MR. MARSHALL: I can't specifically say where the 273 megawatts went. It is the practice of NB Power, we plan, as Mr. Larlee said, to have enough capacity to meet the peak and have a 20 percent reserve margin above that. We use all of those resources to meet the in-province load first and fulfil all of our obligations to firm customers,

uninterruptible customers in-province and any firm external contracts and any additional energy that is available we would sell into export markets if there was a buyer in those markets that would pay a price higher than our costs so that we could get a profit or contribution to fixed costs, that contribution rolls back in in order to help rates of all customers in the province be lower than they otherwise would be.

So some of that energy likely was sold on that day. How much of it at this point I don't know exactly. But the surplus energy above our requirements to meet in-province loads, any surplus energy that we have we would try to market in export markets profitably for the benefit of customers.

Q. - Merci. Est-ce que j'ai compris que vous avez régulièrement un surplus de 20 pour cent? J'ai peut-être mal compris votre réponse. Pouvez-vous clarifier cette réponse?

MR. MARSHALL: We -- there is I guess the confusion around the word "surplus" is we have surplus energy because in any one hour we need to meet the load in the province so any energy that is capable of being produced from the assets and generation facilities that we have would be surplus to our needs to meet New Brunswick load.

That energy is available for sale into export markets. That is when energy surplus is available. The 20 percent is a capacity requirement. We -- in order to supply electric customers in the province reliably, over the longterm we build 20 percent more capacity than the firm load. So that we have a reserve margin, it is like a spare tire in your car -- you don't go out just with four tires on the car and no spare on a long trip. You have a spare tire with you so that if one tire goes flat you can put the other tire on. We have a 20 percent reserve margin in the system to be assured that we can continue to supply power reliably to customers.

Now that capacity may be available -- energy that that capacity can produce we will sell if it is profitable to sell it. So we will sell the surplus energy but we do not sell at 20 percent of capacity, we would only sell capacity surplus to the 20 percent reserve margin.

Q. - D'accord. Je vais procéder avec les questions que j'avais. Et également lié à la réponse de M. Larlee hier par rapport à la température, le facteur température qui aurait pu occasionner une suite de la demande de -- je pense que j'ai compris 244 mégawatts.

Est-ce que selon vous c'était un élément isolé qui c'est produit ce mois de janvier ici dans les conditions

normales? Est-ce que c'est un élément exceptionnel qu'on a vécu au mois de janvier?

MR. LARLEE: The criteria we use for a sustained temperature of minus 24 is the temperature that we have seen the peak hour demand occur at in history. So yes, I would characterize January as being a very unusual month.

Q. - Est-ce que dans les prédictions que vous fournissez ici dans le tableau un, est-ce qu'il y a une possibilité qu'un autre événement de ce genre se produit? Est-ce que c'est dans ces projections ici, ou est-ce que c'est -- ce n'est pas compris?

MR. LARLEE: What we have before you is a forecast. There is always going to be the possibility of some variation. The forecast is based on normalized criteria that I have explained. So we have forecast for the normal conditions.

MR. MARSHALL: And the changes to that forecast could be an abnormal condition lower than the forecast as occurred this January or it could be an abnormal condition, extreme cold temperatures higher than the forecast.

So the forecast -- the results could occur in either direction from the forecast. But the forecast is based on average normalized numbers so that we can plan what is our obligation to meet requirements of the system in the future. And if there is an abnormal condition higher than

the forecast, that is part of the reason why we have a 20 percent reserve margin in our capacity so that we would have the ability to be able to continue to supply customers.

Q. - Et puis encore sur ce sujet, pour arriver à votre projection en terme de température, est-ce que vous vous êtes servi de facteur des dix dernières années, des 20 dernières années, les 50 dernières années pour prévoir les dix prochaines années?

MR. LARLEE: For the weather effects we use Environment Canada's 30 year normals. And that's -- that is our -- that is our normal consideration for weather.

Q. - D'accord. Et vous êtes également conscient que dans les 10 derniéres années la température a accroisé légèrement au Nouveau-Brunswick. Est-ce que c'est -- est-ce que c'est contenu dans ce facteur de projection que vous avez présenté?

MR. LARLEE: In this forecast we have used the most recent 30 years, so within -- within that most recent 30 years that is the decades of the 70s, 80s and 90s. It would include the two extremely warm winters that we have had in the -- in the 90s.

Q. - D'accord. J'ai maintenant une question par rapport à mes interrogations, si vous voulez à la page -- mon

interrogation trois. Alors, je ne sais pas si vous avez la bonne référence.

Alors, c'était une question qui avait rapport au plus récent recensement Canadien. Et le fait que au Nouveau-Brunswick on a enregistré un taux de décroisance au lieu de croisance. Et puis je demanderais si vous pouviez actualiser vos prédictions. Et puis la réponse que vous avez donné c'est que les donnés, elles n'étaient pas disponibles.

Est-ce que vous voulez nous donner une indication de quand normalement vous auriez accès à ces donnés pour faire une prévision révisée si c'était le cas?

MR. LARLEE: Your question relates to recently released census data which as our response to your interrogatory indicated only provides information for a particular point in time and doesn't give us the trending information that -- that we will need to include in -- in future forecasts.

It's very important to note that in the training information we need to know when exactly the change in population takes place and what -- what is happening in the near term.

As to when Statistics Canada will have available the new updated trend in population, I -- I can't comment on

that. But I believe it -- it would be 12 months from now or -- or longer.

Q. - Et puis dans les projections que vous avez préparées, est-ce que vous faites étaient d'un taux de croissance continu pour la province? En terme de population, je veux signaler, oui.

MR. LARLEE: I believe if we -- if we look at the forecast document in the section under the residential forecast, it -- it goes into what -- what was used for the forecast for population. And it is essentially stagnant. There is a very -- forecasts a very small change in population.

It's important to -- to note that included in the forecast as well is the change in household size. And it's this that's actually driving the increase in residential customers.

The trend has been and continues to be a decrease in the household size in the province of New Brunswick. And that is driving the increased number of residential customers.

Q. - Bon. Une autre variété du dernier sondage c'est que le nord de la province connait une certaine décroissance, alors que le sud, spécialement la région de Moncton a un facteur de croissance assez élevé. Est-ce que ces changements de migration internes au Nouveau-Brunswick ont

des impacts sur la production ou la distribution à long terme d'énergie?

MR. MARSHALL: The load forecasts forecast the total requirements for the whole province. The regional effect of loads in particular areas doesn't have an impact on the total load requirement. It doesn't have an impact on the amount of generation capacity required to meet the system total load issue.

It does however have an impact on transmission. Because you have to get the power to the area that is growing. It does have an impact on distribution. So there would be increased distribution assets required in the Moncton area with an increasing population and a more rapid rate of growth.

And there may be some considerations for transmission. And in the current forecasts I think we responded to one of the interrogatories in terms of the transmission plan.

Some of the transmission construction plans that are undergoing now and in the next two years are targeted to the Moncton area to improve transmission supply into the Moncton area.

So in that sense the regional parts of the province are affected. It affects the distribution assets and possibly some transmission, but not generation.

Q. - Donc vous ne prévoyez pas d'économie au niveau de la charge, parce que les gens vivent dans un endroit plus concentré au lieu d'être dispersé?

MR. MARSHALL: The only impact of redistribution of customers or load around the province would or could possibly have would be on the estimate in the forecast for system losses. We look at that.

We have a very robust transmission system today with 345 KV transmission all the way around the province. So we can move power from south to north, north to south and around the province.

So we really see small impact in losses. And I don't think there is any specific consideration in the forecast for changes of system losses out in the longer term.

Q. - Merci. J'ai une autre question par rapport à la question sept dans mon interrogation. Alors c'est évident que votre plus grosse source de clientèle c'est le secteur de transport, et particulièrement le secteur de pulpe et papier pour 24 pour cent.

Pouvez-vous expliquer, lorsque vous faites des projections pour les dix prochaines années, si vous prévoyez une croissance de la demande de ce secteur-là, ou bien plutôt une décroissance?

MR. LARLEE: The forecast for the industrial transmission

sector is built up in a two-step process. The first year the forecast is done using what we call a customer by customer analysis, essentially using the information that we have from those customers, what their plans are. And we forecast what the first year of the forecast is going to be.

From there we use the economic -- econometric model to forecast growth in the sector over the period of the forecast. And that is described in some detail in the Load Forecast document. So there is an increase in industrial transmission requirements in the forecast period.

Q. - Bon, c'est un peu -- un des défis ici dans cette audience c'est de pouvoir avoir accès au même information que vous avez, également avoir devant nous des alternatives.

Vous avez dans l'annexe présenté un rapport qui avait été préparé en 1992 par la firme Marbeck. C'est à l'annexe, "Appendix A-5", a la page 24. Oui, c'est ça.

Et je pense que c'est surtout -- et bien, étant donné que c'est en anglais ici je vais devoir me servir des termes anglophone. Mais il me semble qu'une des choses qui consome beaucoup d'énergie c'est la question de "pulping", "technology pulping -- technology pulping, technologies advanced".

Et puis le fait que -- je pense que dans les dernières années quelques clients au Nouveau-Brunswick ont fait une conversion à "Turbal Mechanical Pulping" qui consomme des quantités assez important d'énergie.

Est-ce que dans vos projections que vous venez de présenter dans votre preuve, est-ce que vous prévoyez qu'il va avoir d'autres firmes, d'autres compagnies qui vont demander le service de "Turbo Mechanical Pulping", ou bien prévoyez-vous plutôt que ces compagnies-là vont chercher à réduire leurs coûts au niveau de -- en employant des technologies avancées pour réduire leur frais au niveau de cette activité?

MR. MARSHALL: The -- I think Mr. Larlee explained yesterday -- there was a discussion about the 1.55 percent correlation from goods producing sector to industrial growth.

And we had a long discussion with Mr. Secord about the effect of development of that correlation in terms of past history. And it has been developed. It includes in it the fact that a number of pulp mills have converted to thermal mechanical pulping in the past.

And that makes the pulp and paper industry in New Brunswick very energy intensive. We project that that would continue into the future and use the same

correlation into the longterm future.

We have had discussions with more than one customer who is considering increases in thermal mechanical pulping in the province today.

And if any one of those customers go forward with the plans that they are considering, that one establishment alone could provide the total increase in industrial sales in the forecast period.

Q. - Donc, si je comprends bien les projections que vous avez présentées dans ces preuves incluent le scénario qu'il y aurait une ou deux de ces compagnies qui chercheraient à faire cette conversion au "Mechanical -- thermal mechanical pulping"?

MR. MARSHALL: There is no specific provision for one company or two companies to convert to thermal mechanical pulping.

There is a correlation from the past growth of industry that has included that in order to get to the level of intensity, energy intensity that we are at today. That level of intensity is projected to continue.

The discussions with more than one customer simply bear out the fact that that projection and inclusion in the forecast is reasonable and may come about.

Q. - Alors, c'est ça que je voulais simplement confirmer que

dans vos projections il est prévu que cette demande se fasse et quand même exigé du niveau de l'industrie, et puis c'est un peu contraire à ce qui était préconisé ou prévu, par exemple, dans le rapport Marbeck où on prévoyait plutôt qu'il y aurait des économies dans ce secteur-là au tournant du nouveau siècle et mainenant.

MR. MARSHALL: And I think there is a little confusion. The Marbeck report looked at the state of industry at the point in time back in 1991, and said how is energy used in these processes in industry in 1991. And what are the potential to save energy given the process don't change.

What is happening with thermal mechanical pulping is that the pulp and paper industry undertake thermal mechanical pulping because it may use more energy, but it's more efficient for the business that they are in. Their business is to produce paper. And they can produce paper cheaper by -- from a total resource point of view by using thermal mechanical pulping as a process to do it, than they can by other traditional processes.

So the move to thermal mechanical pulping is not a move away from the state of the art technology. It's a move to the state of the art technology in the pulp and paper industry. And it -- the reason that they do that is that with thermal mechanical pulping you can take the wood

fibre that comes into the mill and you can extract more paper out of the wood fibre through thermal mechanical pulping than you can through chemical pulping or other processes. And so they extract more useable product, more paper, and can sell that into the world markets. In doing so they need more electricity.

Q. - Donc, tout simplement, on va conclure sur ce point-là. Vous prévoyez que au niveau de la demande du secteur transport Nouveau-Brunswick c'est une augmentation contenue au niveau des dix prochaines années, et que vous ne prévoyez pas que aucuns de ces clients-là vont soit demander -- identifier des mesures de conservation -- ou bien identifier d'autres sources d'approvisionement en énergie?

MR. MARSHALL: No. Well, the -- currently the use of motors in the province is regulated to high efficiency motors. As a result of the Marbeck study back in the early 90s, they identified industrial motors as a clear opportunity for improved efficiency in the industrial sector.

On the basis of that, NB Power undertook a motor program. And we went out and we provided subsidies to encourage and to drive greater efficiency in the use of motors.

Following that program there was a significant change

in the infrastructure in the industry. And the provincial government was then able to institute legislation in 1995 that required high efficiency motors be utilized throughout the province. And that is what is going on today.

So included in the forecast is the fact that industry is using energy more efficiently through their motors today than they were in 1990. And that -- that increased efficiency is already included in the load forecast.

Q. - D'accord. J'ai une autre question par rapport à mon interrogatoire huit. Hier lorsque vous avez fait votre présentation vous avez signalé que les facteurs qui pourraient rendre vos projections hautes, "forecast high", il y aurait deux points, une "severe economic slow down" et puis "-- generations becomes becomes very inexpensive".

Ce qui n'était pas clair pour moi c'est si une campagne d'éducation soutenue était menée au Nouveau-Brunswick par la province par exemple, que si l'effet d'éducation n'aurait pas un effet à long terme sur l'économie? Par exemple, si on encourage les gens à conserver un 10 pour cent ou 20 pour cent, et puis il y avait des incitatifs.

Une des choses qui est difficile à accepter souvent c'est les pertes d'énergie qui résultent dans -- par

exemple, la combustion du mazout.

Vous notez ici que 73 pour cent de votre mazout est perdu lorsque vous produisez de l'énergie, alors que à domicile - par exemple, moi-même si j'ai un élément de chauffage, ma perte est plutôt de l'ordre de 10 à 40 pour cent. Et puis je dirais que c'est plus près de 10 si j'ai une fournaise au --

Pensez-vous que si on avait une campagne d'éducation et de conversion plutôt aux fournaises -- que les gens ne seraient pas porté à faire le changement pour réduire les pertes en mazout?

MR. MARSHALL: First of all, the example that you used for a combustion turbine plants efficiency at 27 percent where 73 percent of the energy is lost, those power plants are not constructed as plants to provide energy to customers. They are constructed as the plants that provide the reserve capacity, the 20 percent reserve capacity that's necessary.

They are the spare tire that we carry with the car. We don't expect to run on them. And they may only be -- in an analogy of the spare tire, they are one of the small little tires that will help you limp along to the next station to get a new tire to put on the -- on the car.

They are not intended to operate all the time to

provide energy. So they are a low cost capacity but they are very high cost energy. And we operate those plants only in as needed as is required in order to supply electricity. So they operate at very low capacity factors.

The plants that operate on the margin are the more -- the natural gas combined cycle plant at Bayside which operates at higher efficiencies of 50 percent would be on the margin.

The other -- other factor that you have to consider is not just the efficiency of the fuel, it's the price of the fuel and the nature of the fuel.

Our power plants -- Coleson Cove power plant the fuel that it burns is residual oil that can be used for only two purposes. It can be used to make asphalt to pave roads. Or it can be used as a residual fuel in power plants. That is not the fuel that is used in oil furnaces in homes.

Now your question about would a campaign to convert customers to move away and to be able to use energy more efficiently. The issue here is the actual use of the energy may be more efficient in converting it into heat, but what customers really want is heat. And the question is they look at and say what is the cost of providing the

heat. And you have to look at the costs of the equipment that go into the furnaces and the fuel that goes into the furnace and how much heat comes out the other end. So it's not a matter of the efficiency of conversion. It is what is the cost of providing the heat that will drive customers to move to one type of heating or another.

Q. - Je suis d'accord avec vous pour la question de ce qui motive les gens à choisir. Une autre chose qui motive les gens à choisir c'est des incitatifs.

Par exemple, si chaque habitant du Nouveau-Brunswick avait accès au même problème aujourd'hui qu'on avait accès 20 ans passé pour faire l'inverse de ce qui a été fait 20 ans passé, c'est-à-dire, plutôt que d'encourager les gens de convertir de l'huile à chauffage vers l'électricité si c'était l'inverse, il y aurait des incitatifs financiers. Je pense qu'on pourrait probablement voir une tendance qui demanderait au gens de sortir -- qui demanderait à les gens de transferer du côté de l'électricité vers le chauffage.

Parce que je pense que une chose qui est importante de soulignée ici, le taux d'électricité au Nouveau-Brunswick est assez élevé au niveau du chauffage. On parle de 60 pour cent des résidences au Nouveau-Brunswick qui sont alimentées en chauffage électrique par rapport à un taux

réduit au niveau du chauffage à l'huile.

La réponse que vous avez -- la réponse que vous avez fournie à mon interrogation quatre, j'avais demandé si -- quel était l'effet du transfert de 90 000 maisons à partir du chauffage électrique au chauffage soit à l'huile, soit au gaz naturel.

Vous avez répondu que -- je pense que vous avez compris que je parlais uniquement du gaz naturel, mais je parlais également du chauffage à l'huile.

Vous avez parlé d'une augmentation ou je pense que vous voulez dire une réduction de 180 mégawatts. Est-ce que c'est bien votre réponse, l'impact de convertir à 90 000 maisons de l'électricité au chauffage -- chauffage à l'huile, pardon.

MR. LARLEE: The 90,000 homes are the homes near the gas distribution network. Of that we have 60 percent of them that are electrically heated. What we did to answer your interrogatory is we provided you with the impact of all of those 60,000 homes converting to natural gas. That was our response.

Q. - Okay. J'ai -- la question se posait de façon générale au Nouveau-Brunswick, pas seulement dans les zones où les latérales de gaz naturel sont planifiés. Et puis les gens avaient l'option de choisir entre le gaz naturel pour ceux

qui sont près des lignes d'approvisionement ou bien de convertir à l'huile de chauffage.

Alors c'est un impact global pour la province. Ce que j'essaie de comprendre c'est vous avez suggéré que l'impact serait de 180 mégawatts. Est-ce que c'est ça que j'ai compris? Est-ce que les 90 000 maisons c'étaient pour 180 mégawatts ou bien c'est 54 000 maisons qui obtiendraient cette réduction?

MR. LARLEE: 54,000 homes converting to natural gas. That is what the 180 megawatts, 549 gigawatt hours represents. Which is the absolute maximum electrically heated homes near the distribution network.

In terms of oil heat, perhaps Mr. Marshall could talk a little bit about the economics of that.

MR. MARSHALL: You have said that these customers would benefit from lower cost. Our analysis is that it is not lower cost to heat your house with oil and I would refer you to page 60 of Appendix B where we present the results for alternate heating of different conversions of electricity to oil and electricity to natural gas. It is the very last page in Volume A-1, exhibit A-1 it is the absolute last page of the book.

CHAIRMAN: I am going to interrupt just for a moment, if I might. Mr. LeBlanc, your question concerns your

interrogatory number 4 and as I get the drift of what you were asking of the witnesses had to do with the impact if 90,000 residences rather than 41,370 converted to -- off of electricity to some other form of fuel. Is that correct?

MR. LEBLANC: That is correct.

MR. MARSHALL: Mr. Chairman, he said if they would gain economic advantage in fuel savings by conversion.

CHAIRMAN: I am trying to -- witness, I am trying to bring it back to the original question. We were getting off the point, I think here. And that is what I am trying to clear up.

Mr. LeBlanc, what you want to know is how much saving of electrical energy and capacity would occur if 90,000 homes switched. Is that correct?

MR. LEBLANC: Oui. C'est ça la question.

CHAIRMAN: Okay. Could you answer that please?

MR. LARLEE: If all 90,000 homes went off electricity, just doing some quick calculations, the -- what we had in the response to interrogatory, 264 megawatts, would increase to approximately 420.

Q. - Donc, le total de 90 000 maisons c'est 420 mégawatts?

MR. LARLEE: Could you repeat the question please?

Q. - J'essaie de comprendre quel est l'impact du transfert de

90 000 maisons, un changement entre -- de l'électricité au chauffage à l'huile ou au gaz naturel ou à un autre source.

Mais plus simplement, j'essaie juste de comprendre l'impact d'un transfert de 90 000 maisons sur votre capacité?

MR. LARLEE: 420 megawatts, some of which is already contained within the forecast however.

Q. - Oui. Alors, c'est ça que j'essaie de comprendre, c'est qu'elle était votre "forecast" original? Est-ce que c'était 264 la perte?

Je pense que vous aviez estimé 41 000 maisons. Est-ce que je comprends que c'est à l'annexe A des preuves, page 18?

Vous avez prévu dans votre -- 23 000 résidences?

MR. LARLEE: Can I answer your previous question first? And then I will ask you to repeat what you just said. I didn't have the equipment on.

The approximate number is about 85 megawatts, what is contained in the forecast for the switching.

Q. - D'accord. Puis 85 mégawatts c'est pour 23 000 résidences. Est-ce que je comprends bien?

MR. LARLEE: You referred us to page 18 of appendix A. The last line at the top of the page there, "It is expected

that 13,710 homes will convert to natural gas over the forecast period."

Q. - Okay. D'accord. Donc pour 85 mégawatts c'était l'équivalent de 13 710 maisons. C'était ça votre réponse?

MR. LARLEE: Yes. That is correct.

Q. - D'accord. Et puis pour 90 000 maisons, 420 mégawatts. Avez-vous les écouteurs?

Tout simplement pour confirmer de nouveau, pour 90 000 maisons on parle de 420 mégawatts?

MR. LARLEE: Just to clarify my last response, that was just the -- that was just the heating load. Or sorry, that was just the heating system conversion load.

It didn't include fireplaces. We have allowance in there for natural gas fireplaces as well.

MR. MARSHALL: To go back to clarify, on page 18, the 13,710 homes would convert to gas in the forecast period. It is 13,710 out of 23,000 that have heat transfer systems that would be easy to convert.

In addition there were significant -- if you look on page 19, in terms of displacement of electric heat, the 90,000 homes went to 54,000 that had electric heat.

Of the 54,000 with electric heat 35 -- and this is over the 15-year period of the forecast -- 35 percent or 19,000 would convert to -- with heat transfer systems

convert totally to gas.

Those -- that 19,000 is over 15 years. And it is the same number as -- in the 10-year period the number is 13,710.

In addition all houses that don't have heat transfer systems, of those 43 percent are assumed to put in natural gas fireplaces and get supplemental heat from natural gas fireplaces.

When you add them all up the number in the forecast period is about the 85 megawatts that Mr. Larlee said is already included in the forecast.

Q. - Okay. D'accord. Juste pour clairifier. Le 90 000, je le prenais à partir du 300 000 abonnés que vous avez, et puis je cherchais à comprendre le pourcentage des 300 000, peu importe s'il était près d'une latéral à gaz naturel ou non, s'il pouvait faire la conversion vers soit le gaz naturel ou le chauffage à l'huile.

MR. LARLEE: If you look at page 17 of appendix A you can see in figure 8 there is the breakout of the 300,000 homes. So 135,000 of those homes are in the gas service territory.

And that was done based on information from the natural gas provider on where the pipelines would go and our analysis of populations of nearby cities and towns.

And then within those -- within that 135,000 there will be a significant number of homes that, although are near the laterals and the main pipeline, are not near the distribution network.

So from that we have our estimate of 90,000 homes that will actually have access to natural gas. That is how that comes about.

Q. - Ah oui, j'ai compris la preuve. Mon interrogation n'était pas spécifiquement à propos du gaz naturel, c'était le gaz naturel également les autres sources, donc l'huile à chauffage.

Parce qu'il y a quelque chose que j'ai de la misère à comprendre. C'est que vous rejetez systèmatiquement l'option de l'huile à chauffage comme option viable.

Est-ce que le coût de transfère en terme d'équipement est quand même assez près de celui du gaz naturel. J'essaie de référer à votre -- ce que vous nous avez fourni hier, la comparaison pour comprendre exactement quel était le coût pour une résidence --

CHAIRMAN: Excuse me, Mr. LeBlanc. What are you referring to? Is that an exhibit?

Q. - Oui. C'est --

CHAIRMAN: Do you have the number?

Q. - Oui. Bien j'ai pas le numéro dans -- mais de toute

façon. Je pense que -- ce que j'essaie de comprendre de M. Marshall c'est -- il rejète constamment l'option du gaz.

MR. MARSHALL: A-8, Mr. Chairman, A-8.

CHAIRMAN: Okay. Go ahead, Mr. LeBlanc. Finish what you were saying.

Q. - Excusez-moi. J'essaie de comprendre pourquoi vous rejetez constamment la comptabilité du chauffage à l'huile pour ceux qui ne sont pas servi par le gaz naturel ou qu'ils vivent près des latérals du gaz naturel?

MR. MARSHALL: We did an assessment of all end use heating options. And they are provided on that replacement page 53 and also on page 54.

The alternative fuel technology, the switch from electricity. Page 53 deals with all types of electric heating options. Page 54 deals with alternative fuel technologies.

And if we look at item number 34, a high efficiency oil furnace in a new home --

Q. - Pouvez-vous attendre un instant. Excusez. Je n'ai pas la page 54.

MR. MARSHALL: It's on page 54 of exhibit A-1, Appendix B.

Q. - Okay. J'ai la page 54.

MR. MARSHALL: Okay. If we look at the item 33 and 34, 34

is a high efficiency oil furnace in a new home. Over under the column total resource perspective you can see that the benefit cost ratio is .74. So it's -- it's not economic compared to alternative costs.

If you look at a conversion -- and from a customer point of view, if we look under the participant point of view, we can see that the conversion to -- of that new home to oil is at .61. So the economics from the customer's point of view is that he is not going to save any money by putting an oil furnace in a new home.

If you look at items 33, the two items 33, if you do a conversion of an existing electrically heated home that has baseboard heat in the home today, the benefit cost ratio from the customer is .63.

If you do a conversion of a -- of an oil -- of an electric heated home that has a central heat transport system, a forced air furnace or a water type transport system furnace, then the -- the benefit cost ratio improves, but not enough to get it up above 1 in order to make it economic for the customer to switch.

Q. - Puis lorsque vous affirmez que ce n'est pas économique, est-ce que ça tient compte -- je veux dire -- lorsque vous affirmer que ce n'est pas économique, ça tient compte du fait que un programme de subside pourrait alléger le

fardeau, le conversion particuliere?

Par exemple, est-ce que le rendement que vous qualifiez d'être pas économique c'est plutôt pour la conversion, ou bien est-ce que c'est pour l'approvisionement à la source en l'huile à chauffage?

MR. MARSHALL: The issue of -- of a subsidy, a subsidy is a transfer payment within society. A subsidy will improve the participants' perspective if they get some money to assist them in doing the furnace. But governments will give a subsidy only if it's in the overall policy of government to achieve a specific end.

If we look at the total resource tests, the total resource tests look at the costs of this heating system against the alternative expenditures and costs of the utility on a go forward basis.

In the base case the total resource perspective shows that the benefit costs of oil heating are .77, .83, and .74 depending upon whether it's a new house, an old house with what system is in it.

If we go over to the second column from the right, the total resource column with the environmental externalities, into that column we have added in $15 a ton for C02. We put that in to evaluate to say if the reductions in CO2 are worth it to society and the cost is

$15 a ton, that would simulate a subsidy that government, be it provincial government, be it the federal government, be it NB Power through this, but as a strategy to reduce CO2 emissions in Canada, if there is additional monies put into that at the investment of $15 a ton for the credits that would get paid to a customer, what would it look like. And under the total resource cost here it improves the economics but it doesn't make it up to 1. So in order -- in order to get a subsidy to pay to a customer to make this economic from society's viewpoint, the costs of CO2 emissions have to be more than $15 a ton.

CHAIRMAN: Okay. We are going to take a 15 minute break now.

(Recess)

CHAIRMAN: Before we begin, anything preliminary from the objectors or the applicant?

All right, Mr. LeBlanc, go ahead.

Q. - Merci. Alors, je vais résumer mes interrogatoires, la question de transfert de combustibles. Et puis -- mais d'abord je veux simplement vous demander. Vous êtes -- vous connaissez bien la politique du Nouveau-Brunswick pour l'énergie, la politique énergie du Nouveau-Brunswick?

MR. MARSHALL: Yes.

Q. - Et puis vous êtes également familier avec la

recommendation 3.4433 qui parle de transfère de combustibles. Je fais simplement vous donner un bref résumé. Je vais le faire en anglais parce que ça sera peut-être plus facile pour la traductrice.

MR. MARSHALL: Yes.

Q. - The Province will work with distribution of utilities to develop a fuel switching strategy as part of the energy efficiency strategy.

Vous connaissez cette recommendation?

MR. MARSHALL: Yes.

Q. - D'accord. Alors, je suis sûr que mes interrogations précédentes avant la pause étaient directement liées à cette recommendation à savoir que la province compte préparer une stratégie pour -- en niveau des transfèrts des combustibles qui pourrait d'une certaine façon changer vos prévisions.

Est-ce que vous avez tenu compte de cette politique-là à venir dans les prédictions que nous avons ici devant nous?

MR. MARSHALL: Yes.

Q. - D'accord. Même si vous n'avez pas vu encore cette politique --

MR. MARSHALL: I was part of a committee that developed the paper. I'm very familiar with the policy. The issue with

the strategy is that the government has not yet developed the fuel switching strategy. But the fuel switching strategy is not an end into itself. The fuel switching strategy is one element of an overall strategy to address environmental impacts and CO2 emissions and other -- other types of emissions in the province. The province has yet to develop its plan in terms of addressing CO2 emissions over the long term. And we are working with the government in that aspect of that plan. And as it's developed we will have input and work with it.

In the current forecast we have a projection of fuel switching in the gas areas. And we said a number of times we think is aggressive and will likely require incentives even to achieve what is in the current forecast.

Q. - D'accord. Puis comme vous l'aviez précisé avant la pause, votre projection est qu'il y aurait 13 710 foyers uniquement qui seraient touchés par ce transfèrt?

MR. MARSHALL: Yes, that's the number of homes that have heat transport systems that can be readily converted in the fuel territory that we project by 2010 to convert.

Q. - D'accord. Puis j'aimerais maintenant revenir sur les interventions par rapport à l'efficacité du rendement de l'huile au chauffage comme une de ces alternatives-là parce que vous l'avez immédiatement rejeté de vos options.

C'est-à-dire, ça parrait assez évident dans votre preuve que ce n'est pas une option que vous envisagez dans les prochaines années. Est-ce que c'est vrai?

MR. MARSHALL: No. What we have provided are the economics of end use of heating with oil. A decision in order for it to be achieved is a question of how much money is the government willing to provide to achieve CO2 reductions. And I said if the reductions will cost more than $15 a ton, and they are willing to invest $30 a ton, $50 a ton, then it may become an option at that point in time.

Q. - D'accord. Et puis étant donné que les projections que nous avons ici c'est jusqu'à 2010, 2012 possiblement, c'est également la période dans les prochaines années où les décisions vont étre prises à ce niveau là, au niveau provincial, au niveau national et international.

Alors, en tenant compte de ça, je pense qu'il est quand même important de le considérer qu'il y aura possiblement des scénarios différents que celui que vous avez proposé dans la preuve, c'est-à-dire si le gouvernement fédéral ou provincial investissent des sommes importantes pour encourager les gens à faire une conversion.

On a seulement besoin de faire un calcul assez simple de dire si chaque -- 50 000 de résidences reçoivent 2 000

$ pour faire un transfèrt au coût de 100 000 000, si cette somme-là est utilisée soit pour produire de l'énergie par Energie Nouveau-Brunswick ou par le consommateur de réduire sa consommation, il y a des --

CHAIRMAN: Excuse me, Mr. LeBlanc, I'm sorry. But what we are doing here is that you have the opportunity to question the panel, not to speculate about things. You can say what if the federal government were to put up $2,000 per unit, what do you anticipate that the result would be. But not to -- in effect, what you are doing is giving evidence yourself. And so your job is to ask questions of the panel.

Q. - Okay. Merci. Alors, c'était peut-être pour préciser sur ce sujet là encore. Vous n'avez pas dans vos prévisions tenu compte du fait qu'un programme agréssif pourrait être mis en place dans les prochaines années.

MR. MARSHALL: In the forecast there is no -- no projection for fuel switching to oil in the forecast.

Q. - D'accord. Je veux maintenant demander une question de précision. Hier vous avez parlé de -- de la somme d'énergie qui était utilisé par Lepreau qui était 635, mais dont 605 était au Nouveau-Brunswick et 30 à L'Ile-du-Prince-Edouard. Pouvez-vous tout simplement préciser encore c'est qu'elle -- le 30 mégawatts qui aient utilisé

par L'Ile-du-Prince-Edouard, il est comptabilisé où?

Est-ce qu'il est comptabilisé ici, ou c'est un autre -- un autre endroit dans le domaine des exportations?

J'avais mal compris votre réponse hier.

MR. MARSHALL: The 30 megawatts contract from Point Lepreau to P.E.I. would be an export contract. None of the energy or capacity under that is included in the load forecast. The load forecast here is of end use electricity consumed in New Brunswick.

Q. - D'accord. Et puis l'impact du retrait ou non de l'Ile-du-Prince-Edouard n'a absolument aucune impact sur ces preuves. C'est ça que je voulais confirmer.

MR. MARSHALL: I'm not certain. But subject to check I believe that the P.E.I. contract is a life of the station contract.

And whatever decisions get taken they will take on those obligations as well with Point Lepreau. So it is not an issue here.

Q. - D'accord. Pour terminer, j'avais des questions encore par rapport à votre -- vos remarques. Dans votre présentation d'hier vous avez indiqué qu'il y avait seulement deux facteurs qui pourraient faire changer votre prévision, soit une récession assez importante, récession économique, ou bien que les "self generation becomes very

inexpensive", alors que la co-génération devient assez économique.

Pouvez-vous donner un exemple de qu'est-ce que vous entendez par une récession économique importante?

MR. LARLEE: I think what we are talking about here is something in the order of what we saw in the early 90s in the recession in the economy.

MR. MARSHALL: Economic growth in the forecast is -- has the provincial GDP at 2.1 percent. So if the economic growth is zero percent for five years then that would have an impact. That would be a severe economic slowdown in the economy.

Q. - Donc, tous les preuves ici dans le -- pour les dix prochaines années sont basés sur un facteur de croissance de 2.1 pour cent?

MR. LARLEE: Yes, that's correct.

Q. - Et puis, il y a une autre chose que j'ai eu un peu de difficulté à comprendre hier. C'est lorsque vous avez fait allusion à la différence entre le -- dans le tableau un, à l'annexe 1, du changement de 3 041 à 2 786. Vous avez parlé d'un -- des incidences climatiques, également des incidences économiques.

Est-ce que c'était économique ou c'était -- c'était des incidences autres?

MR. LARLEE: The impacts I was referring to there and talked a bit about earlier this morning are the fact that the peak occurred in February, that the temperature was not at the sustained minus 24 degrees for the provincial average temperature and that customer operations were at normal with the maintenance shutdowns and so forth.

I do not believe there is any economic factors directly related to the reduced peak.

Q. - Est-ce que l'automne dernière après les événements des Etats-Unis, est-ce que vous avez remarqué un changement dans la demande à cette période-là?

MR. LARLEE: I'm sorry. Could you repeat the period of time you are referring to?

Q. - D'accord. J'ai référé aux événements après le 11 septembre, donc aux mois de septembre et octobre. Les périodes où il a eu un certain ralentissement temporaire, est-ce que vous avez eu -- est-ce qu'il y a eu un impact sur votre demande?

MR. LARLEE: The outlook in the forecast contains changes to the budget that were done to reflect what we saw was an economic slowdown at the time. And that included some of the effects of September the 11th.

As a result the forecast also includes short-term economic adjustments in the first couple of years of the

forecasts which are completely recovered. So that is how we responded to what we felt were forecasts for an economic downturn.

Q. - D'accord. Et puis ma question spécifiquement était à savoir si vous aviez remarqué un impact à court terme l'automne dernier suite aux événements?

J'ai compris que vous aviez fait vos projections d'une certaine façon. Mais la question c'est spécifiquement si vous avez connu un impact au niveau de la demande suite à ces événements?

MR. LARLEE: Yes. In doing our variance analysis between what we had in our budget for last year and what actually occurred, there are certain differences in the general service in the industrial budgeted amounts that we attribute to an economic slowdown.

Q. - D'accord. Je ne suis pas sûr si j'ai bien compris votre réponse. Mais est-ce que vous avez un certain pourcentage que vous pouvez avancer sur cette impact là qui nous aiderait à comprendre si oui ou non il y a eu un impact assez important des événements?

MR. LARLEE: I don't have those numbers with me. But as I said earlier, when we adjusted our sales, our preliminary sales for the year-end and in the gigawatt hour sales for weather, we came very close to the budgeted amount. But

the actual breakdown by sector, I don't have that with me.

Q. - Alors, bon, c'est difficile pour moi de comprendre exactement si oui ou non il y a eu un impact, et si un tel événement se répéterait si c'était bien réflété dans vos prédictions à long terme.

MR. LARLEE: There was an impact. We made an adjustment in the forecast for the short term. But this is a long-term forecast. And we have used a long-term forecast of 2.1 percent for GDP.

MR. LEBLANC: Okay. Je vous remercie. J'ai terminé mes questions.

CHAIRMAN: Thank you, Mr. LeBlanc. If you would like to regain your seat to the rear.

And I believe it is the Province of New Brunswick is next up with cross. And they will move up.

CHAIRMAN: Go ahead, Mr. Hyslop.

CROSS-EXAMINATION BY MR. HYSLOP:

Q. - Thank you, Mr. Chairman. Mr. Marshall and Mr. Larlee, to start off I just want to follow-up on a few questions Mr. Coon asked about the Load Forecast and why it's done.

And I understand you do the Load Forecast on a regular basis to determine the capacity of electric power that's needed to supply the power requirements in New Brunswick.

Is that generally an accurate statement?

MR. LARLEE: Yes, that's one of the uses of the Load Forecast.

Q. - Yes.

MR. LARLEE: It's also used as a planning tool for financial operations.

Q. - Sure. And what you try to do is to determine the amount of electricity that will be consumed in New Brunswick and to that you add a 20 or 25 percent. And that tells you the capacity of the production you have to have in New Brunswick to meet requirements, is that correct, Mr. Larlee?

MR. MARSHALL: The -- yes. We would determine the peak hour demand and add 20 percent to the peak hour demand or the largest unit on which we rely.

Q. - And the issue before the Board at this hearing, as I understand it, is based on the Load Forecast you are presenting, is it necessary or will it be necessary to replace the 605 megawatts of power that would result from a shutdown of Point Lepreau in 2006/2007?

MR. MARSHALL: No. The -- we understand the point of this hearing to be to review the Load Forecast and the demand side management economics to see if the demand side management included in the forecast is reasonable as a starting point to go forward to the next hearing where we

will evaluate whether or not Lepreau is necessary.

Q. - Okay. And so at this time in your view it's just a matter of determining whether your Load Forecast is accurate and whether you have made the proper allowances for naturally occurring energy efficiency in demand side management?

MR. MARSHALL: Yes, that's correct.

Q. - And the issue of whether you replace or not, in fact, in your view, is being deferred to the next hearing?

MR. MARSHALL: The issue is the amount of capacity required, what kind of capacity, the economics of that capacity are subject of the integrated resource analysis which is the issue at the next hearing.

Q. - So the question of -- just to get back to my question, whether we replace it and the best way of replacing it, that is what we will deal with at the end of May?

MR. MARSHALL: That's correct.

Q. - Thank you. And I guess to use the words I think it is on page 1 of Appendix A, it is that the Load Forecast is the starting point for much of the planning activity. That would be an accurate statement, Mr. Larlee?

MR. LARLEE: Yes.

Q. - And I assume for purposes of this hearing and based on the evidence you presented, part of a good load forecast

is to consider those advances in technology that occur which will result in a less consumption of electricity by consumers, whether they be residential, or general service or industrial?

MR. MARSHALL: Yes. And technologies that might result in more consumption --

Q. - Yes.

A. -- such as thermal mechanical pulping.

Q. - And in fact this is part of the mandate that the PUB gave you at the conclusion of the Load Forecast last spring, was to bring this evidence back before them today?

MR. LARLEE: Yes.

Q. - Yes. Now I understand from your evidence that in fact there are a number of reductions in the consumption of electricity that occur over time. And your evidence would indicate for example that people might be expected to better insulate their homes. It would be one of the factors you would consider?

MR. LARLEE: Yes. That's considered in the Load Forecast.

Q. - Sure. And people are also expected as they become available to use more efficient electrical appliances as they become available?

MR. LARLEE: Yes. As their appliances age and are replaced with newer appliances.

Q. - Right. And from your evidence also you are telling me that you would naturally expect that where possible and available, and I understand there is limitations on that issue, but general service businesses might, if available and possible, they might switch their business from gas usage, for example, to -- or from electrical use to natural gas. That is something that you have allowed for in your planning documents, in your demand side analysis. Is that correct?

MR. LARLEE: Yes. In both the residential and general service sectors we have aggressive conversions to natural gas.

Q. - Right. And in the industrial side again, you expect that most private enterprises are always looking for better and cheaper ways to do things. And just the economies of private business will result in ways to reduce their electrical costs and usage if possible?

MR. LARLEE: Yes, and that would have shown up in the history which we used to project forward.

Q. - So what I'm getting at is that there are many things that are happening in the way people use electricity that you expect over the next 10 years will result in a decrease in the consumption of electricity. Is that correct, Mr. Larlee?

MR. LARLEE: Yes.

Q. - Yes. And they have been allowed for and planned for in your analysis. Now getting to the demand side management document which I believe is Appendix B in the exhibit A-1. You talk about three different types of potentials. You talk about the technical potential, the economic potential and the achievable potential of different ways of reducing the use of electric power. That is an accurate statement in the broad view?

MR. MARSHALL: Yes.

Q. - Yes. And as I recall and I think I'm quoting from page 16 of exhibit B. "Technical potential is an estimate of the reduction in the amount of electrical energy and demand that would result from implementing all conservation measures".

MR. MARSHALL: Yes.

Q. - Yes. So if I understand what that means, Mr. Marshall, the technical potential is the theoretical potential that you see out there. If everybody did everything that they could to reduce their consumption of electricity, that is the kind of the Utopia that could be a change in terms of electrical consumption -- electrical energy consumption?

MR. MARSHALL: Yes. If everyone ignored economics regardless of the cost and did it, that would be the

Utopia.

Q. - Right. And so that's a very theoretical position that we started with as far as your analysis went forward?

MR. MARSHALL: Yes.

Q. - Right. And then we talked about the economic potential. And economical potential -- and I think I was reading from page 17. It's the estimate of the reduction in the amount of electrical energy that would result from implementing conservation measures that pass on the resource test.

MR. MARSHALL: Yes.

Q. - And I understand the resource test to be a methodology that you use by which you factor whether or not all the costs of switching from electricity to some other methods so that the amount of electricity would be reduced was in the total concept a good -- or a negative economic consideration?

MR. MARSHALL: Yes.

Q. - And the achievable potential, according to your document, is an estimate of the reduction in the amount of electrical energy and demand as a result of NB Power customers implementing DSM measures. And I think that would be on page 22?

MR. MARSHALL: Yes.

Q. - Yes. Now the economic potential is a hard economic

calculation and assumes that people would make decisions purely on the basis of economics, is that correct, Mr. Marshall?

MR. MARSHALL: Yes.

Q. - And the achievable potential is based on a whole bunch of factors?

MR. MARSHALL: The achievable is -- in the analysis is based on how much is economic and then it's based on how many customers may respond to that economic signal, respond to a program that you may actually achieve. So other factors are included in the -- or are considered in the what you could achieve.

Q. - Would some of those factors really be the psychology of the consumer of the electricity? Is that what we are really getting at?

MR. MARSHALL: Basically when you try to run a program it's a marketing issue. When -- and when you are selling something to somebody their psychology of how they respond is a consideration, yes.

Q. - I think to use a phrase -- I jotted this down. I think it's on page 22. It's a complex combination of economics and other factors is I think the phrase you used, Mr. Marshall?

MR. MARSHALL: That would be fair.

Q. - Yes. Now refer to the Load Forecast evidence, exhibit A-1. And for each of the three sectors, the residential, the general service and the industrial, you made an assessment of the technical, the economic and the achievable reduction in the use of electricity. Is that correct, Mr. Marshall?

MR. MARSHALL: Not in Appendix A-1, no. In Appendix A-2 or in Appendix B.

Q. - I think it's Appendix B.

A. I think it's Appendix B, right.

Q. - Well and be more specific I'm referring to page 19 of Appendix B which is a residential DSM summary.

A. Yes. Table 5-1, it summarizes the residential DSM.

Q. - Right. And you are in theory according to you and -- is that if all technology was achieved we could reduce the demand for electricity 856 gigawatt hours?

MR. MARSHALL: That's correct.

Q. - And we could reduce the peak demand 442 megawatts?

MR. MARSHALL: That's correct.

Q. - And if I look over at the economics you say 696 gigawatt hours in terms of the pure economics is achievable?

MR. MARSHALL: That's correct.

Q. - And 176 megawatt hours?

MR. MARSHALL: That's correct.

Q. - And the achievable, according to you, not taking into account switching to gas is 147 gigawatt hours and 39 megawatts?

MR. MARSHALL: That's correct.

Q. - And if I refer to the table 5-2 at page 31, you have done the same thing with general service summary?

MR. MARSHALL: Yes, that's correct.

Q. - And just to put the numbers on the record specifically, for general service you feel that technically speaking we could reduce electricity 411 megawatt hours and 107 megawatts?

MR. MARSHALL: That's correct.

Q. - And for the economic achievement you believe it would be 258 gigawatt hours and 61 megawatts?

MR. MARSHALL: That's correct.

Q. - And as far as what you actually feel can be achieved, you are saying 104 gigawatt hours and 25 megawatts?

MR. MARSHALL: That's correct.

Q. - And at page 38, table 7-1 of the same exhibit?

MR. MARSHALL: Yes, the industrial DSM?

Q. - Right. And your numbers are 847 gigawatt hours and 108 megawatts for what is technically achievable?

A. Yes.

Q. - And for what is economically achievable you are saying

786 gigawatt hours and 100 megawatts?

MR. MARSHALL: That's correct.

Q. - And also for what is actually achievable, you feel we can achieve 50 gigawatt hours and 6 megawatts?

A. That's correct.

Q. - Now table 8-1, page 42, is a summary of that. And I believe the summary also takes into account what might occur from switching to natural gas. Is that correct, Mr. Marshall?

MR. MARSHALL: Yes.

Q. - Right. And you feel that the total that would occur is 268 megawatts and 776 gigawatt hours?

MR. MARSHALL: That's correct.

Q. - And my understanding is, is those -- that is what is economically possible, plus taking into account to go back, the economics and all the other complex factors that are involved in a consumer's decision making?

MR. MARSHALL: Yes.

Q. - Now if I might move to, I believe it's attachment B of Appendix B. And I will just pull the page here for the -- for the requirements -- perhaps page 54. I'm sorry, page 56.

MR. MARSHALL: That's in attachment C?

Q. - Attachment C, yes.

A. Yes.

Q. - Okay. And this is a little bit more in-depth analysis of the tables that you provided, tables 5-1 and 5-2 -- or table 5-1, I guess, because it just -- it deals with residentials. Is that correct, Mr. Marshall?

MR. MARSHALL: Yes.

Q. - And in this you do your total resource benefit. And what I would particularly like you to focus your mind on -- first of all, I'm going to back up a little.

What factors go into that move from economic achievement to -- to achievable -- the achievable element?

MR. MARSHALL: The -- we did this DSM evaluation to compare to what was in the Load Forecast. It -- we were looking at what might be achieved based on the economics of programs based solely on continued education of customers through our energy advisors and account managers without incentive payments or subsidy -- direct subsidies for programs. We are coming up with what might they just respond to with the information in the marketplace. So on that we discussed based on the experience of the energy advisors and account managers and people that have organized programs in the past, what would be a reasonable achievable amount of that that would occur. Then we have a basis to compare to what is in the Load Forecast.

Q. - And as I understand it then and I'm looking particularly at column 11. And we will just take attic insulation for an example. You feel that based on what you have just told me which is the economic variable in discussions with your customer representatives that you might achieve a 20 percent penetration. Is that correct, Mr. Marshall?

MR. MARSHALL: That's correct.

Q. - And similarly on wall insulation, 15 percent, 20 percent. And how -- what my question is, have you completed any empirical studies to determine the confidence of those numbers?

MR. MARSHALL: Any specific empirical studies, no.

Q. - Okay. Have you attempted any pilot projects in a local area to determine whether or not those penetration rates may or may not be accurate, Mr. Marshall?

MR. MARSHALL: The pilot project we have run CEIL loans, that's conservation and electrical improvement loan program through the late 80s and through the 1990s. That the involvement of that program to customers and customer response to that program to all of the energy efficiency that customers have done in the past that our energy advisors are aware of in dealing to those customers, if we call that a pilot program, then, yes, we have relied on a pilot program. We based our estimates on the fact that we

have run those programs in the past. We know how many customers will -- will take up and will do certain things based on energy efficiency. Plus the fact that all of the easy to insulate attics have already been insulated. And we are now down to the much harder to insulate attics that are left. So what is a reasonable penetration of these harder to insulate attics we are going to achieve in the remainder of the forecast. That gets us to a lower number.

Q. - And, Mr. Marshall, if I might interpolate what you just said, it's -- by the way, do you make that judgment call as part of your position?

MR. MARSHALL: No. I discussed that with the coordinator or the energy advisors and some of the account managers directly involved with some of these programs to say what is reasonable in terms of where this is.

Q. - You gather the information from them?

A. Yes. They have significant input into -- into the penetration levels of what we could get.

Q. - Well regardless of who makes the suggestion to you, it's very much a judgment call, Mr. Marshall?

MR. MARSHALL: It's a -- it's an estimate based on experience and judgment of professionals in the industry, yes.

Q. - Yes. So it's -- to use your words, it's an experienced estimate? It's an estimate based on experience?

MR. MARSHALL: It's an estimate based on experience of people that have direct involvement in the industry.

Q. - Now I would like to perhaps ask another question. Based on your experience and knowledge in the industry -- by the way, I guess -- let's back up. This 20 percent achievable, is that what is technologically achievable or economically achievable? What is that 20 percent of, Mr. Marshall?

MR. MARSHALL: It would be 20 percent of the feasible amount. So it's 20 percent of the -- of the economically achievable number.

Q. - Okay. Now I would suggest to you --

MR. MARSHALL: Just -- let me -- subject to check on that, all right. It may be 20 percent of the technical number. Yes.

Q. - You could check that at the next break?

MR. MARSHALL: Yes.

Q. - Okay. And not that a lot turns on it. But the question I have is given the experience of the people that make these decision and their professional knowledge and as part of that team, Mr. Marshall, what would it take -- what would it take to move that achievable percentage, for

example, for attics to from 20 percent penetration to 50 percent penetration?

MR. MARSHALL: It would take an organized subsidy program paying customers money to offset the capital cost of their conversion.

Q. - And what I want to get at, Mr. Marshall, and very much what is in your demand side management analysis here is what you expect to be achieved without any type of subsidies or special programs or incentive to the electricity consumer?

MR. MARSHALL: That's correct. And in the evaluation for the next hearing, we then look at what additional amounts over and above this are achieved, and look at the economics of that in comparison to power plant alternatives.

Q. - And just so I can confirm that. There is nothing in this analysis that you presented today that tells us if we arrange for -- I will use the example of Mr. LeBlanc. If we arrange to pay $2,000 to 50,000 homes to convert from electricity to oil or gas, that type of analysis hasn't been done in this study at this time?

MR. MARSHALL: That's correct.

Q. - But that's the type of analysis that we might well expect to see as part of the Point Lepreau hearing?

MR. MARSHALL: No. The issue is what is economic on a straight economic basis. In the Point Lepreau hearing we will lay out this amount of DSM in additional block and cost it and evaluate it in comparison to new power plants or expansion of the system. And then we will determine an economic decision of what is the most cost effective program going forward.

If the government or some other agency wants to pursue a program for other means, for environmental means or CO2 reduction, then there may be room for some money for a subsidy program to try to achieve more.

Q. - Now, Mr. Marshall, you have indicated that you would be making a further demand side management presentation based on the economics. Will the risks of those programs versus the risk of other alternatives be set out in the Point Lepreau hearing or are you going to restrict yourself solely to the economics?

MR. MARSHALL: The evidence that we have prepared for that hearing deals with the comparative economics of options one against the other in combination with the existing system to provide the lowest cost electricity rates over the long term.

The extent that risks are included, forced outages rates are included in the evaluation of the power plants

and they are included in that. So there is a risk issue on supply availability that is included in that modelling.

There is no risk issue on DSM. We would assume in that modelling and give the benefit of doubt to DSM, that it is all achieved, when in actual fact there may be risks that it is not achieved. So we would not include the risks -- additional risks to DSM in that evaluation.

Q. - Has NB Power spent any money to determine what it would cost to improve the achievable levels and increase the variables under number 11 for any of the achievable items, Mr. Marshall?

MR. MARSHALL: Again there is evidence presented in interrogatories in response to in the Lepreau hearing about the amount of money that NB Power has spent on DSM over the years. I think it is some $25 million.

Inherent in that 25 to $30 million there is a significant amount of money spent to determine what DSM may be achieved, what incentive payments may be required.

That is part of the experience and judgment that comes into these decisions. We have not done any specific studies for the evidence for the Lepreau hearing at this point in time to determine how much more incentives may need to achieve more.

Q. - What would it take to carry out those programs in terms

of time and money, Mr. Marshall, the specific studies?

MR. MARSHALL: Again we are into evaluation of total resource economics. We run the model to determine what is economic and what is not.

If it turns out to be economic then we will look at it as an option and then consider in those costs what we need to do as a program to achieve it.

Q. - What would it cost to carry out a specific study to see what it would take in terms of money and resources to increase those percentages on the achievable column, Mr. Marshall?

MR. MARSHALL: I don't have that answer at this time.

Q. - Could you undertake to provide it to me?

MR. MARSHALL: I will review with the program development people to see what possible estimate there may be. I don't see the relevance of that for this hearing.

Q. - Well, I'm just trying to find out, Mr. Marshall, if you could undertake to find out how much additional cost it would be and the type of programs that would have to be put in effect to reduce the demand for electricity in this province, in other words how can we get better value on column 11 on page 56 with regard to these types of measures?

And I'm asking if a study could be prepared, how long

it would take and how much would it cost?

MR. MARSHALL: I don't know if I'm able to provide that response today.

Q. - Okay. Very well.

MR. MORRISON: All we can do, Mr. Chairman, is take it under advisement and see what we can find out at the break and get back to him.

CHAIRMAN: That is fine, Mr. Morrison.

Q. - Perhaps just a follow-up on that, Mr. Marshall. I'm referring to page 2 of appendix B.

MR. MARSHALL: Yes. I have it.

Q. - And under item 4 of this you have stated that part of what was going on here is an identification definition costing and preliminary evaluation of potential demand side management and fuel-switching options that could be employed to reduce forecasted future needs, is that correct?

MR. MARSHALL: That is correct.

Q. - And my question would be again rather than a preliminary evaluation, what would it take to do a complete and full analysis of the potential demand side management and fuel-switching options?

MR. MARSHALL: I believe the information presented is a full detailed analysis of the potential DSM that is available.

Q. - So the word "preliminary" isn't an accurate statement then in paragraph 4?

MR. MARSHALL: It is an accurate statement in that this is a detailed evaluation of the end use as a DSM. And it is a detailed evaluation of the economics of those end uses.

What is not included in this report is the competitive comparison of those options with power supply options integrated into the existing system to determine the least cost combined plan of all resources to meet electricity in the future.

That is part of the integrated resource plan done in step 5 and is presented in evidence in the Point Lepreau hearing.

Q. - Okay. I'm going to refer you to exhibit A-6 which are the responses and in particular interrogatory CCNB-36 which is found at page 44, Mr. Marshall.

MR. MARSHALL: Yes.

Q. - And that was a request from the Conservation Council to provide all documents, reports, analyses and work papers related to delivery and implementation plans for cost-effective DSM measures identified in appendix B.

And the response, "The information you have requested relates to design and delivery of DSM programs. As stated on page 22 of appendix B, no specific program design has

been completed. Some thoughts on possible program design are discussed. But no delivery and implementation plans have been developed."

That was your response, Mr. Marshall?

MR. MARSHALL: That is correct.

Q. - And am I correct in saying then that in terms of specific DSM programs there is none designed to go further than what has been set out in the 268 megawatts in table 8-1 of the evidence?

MR. MARSHALL: There have been no programs designed to go further than that at this time. That would be the outcome of the integrated resource plan analysis to determine whether DSM is cost-effective against power supply options.

As a result of that analysis there was DSM selected in the evaluation of Lepreau evidence. Following that we would look at if this is economic how now do we develop programs to achieve these higher levels?

At that point in time we will then look at programs. At this point in time we have not.

Q. - Just a thought here, to go back a little bit on what I was saying. In theory, and disregarding economics, you can reduce the consumption of electricity by taking additional measures, is that correct, Mr. Marshall?

MR. MARSHALL: Yes.

Q. - And the effect of those additional measures and the cost of them are not part of the evidence that is under consideration at this time?

MR. MARSHALL: That is correct.

Q. - And so for example, if I were to ask you how much would have to be expended in demand side programs to reduce the demand for electricity, 400 megawatts in the province of New Brunswick, at this time you wouldn't be able to provide an answer, is that correct, Mr. Marshall?

MR. MARSHALL: That is correct.

Q. - At some point in time you will be presenting what the cost of reducing electrical consumption in this province, 400 megawatts would be, Mr. Marshall?

MR. MORRISON: Perhaps -- I don't know, Mr. Chairman. We still have some time. But certainly it is open to the Province of New Brunswick to file evidence if it has any. And we would certainly be prepared to look at it, but --

CHAIRMAN: Go ahead, Mr. Marshall. Answer the question.

MR. MARSHALL: The program design is an issue. I think what you are getting at, at least the way I interpret your question, is you are asking how much in incentives or how much in direct money would it cost in order to achieve a certain level of reductions in electricity use.

Well, I want to point out that the amount of subsidy that is paid directly to a customer to get him to switch is only the tip of the iceberg in terms of the total cost.

We could give a thousand dollars to a customer to get them to switch. And in actual fact that switch may increase the customer's total energy cost and total investment cost over time. The economics of that --

Q. - I appreciate that, Mr. Marshall. And I appreciate the economics of it. But what I want to know at some point in time is can you tell me what it would cost to reduce the demand for electricity in this province, the capital costs, the type of investment that would have to be made to reduce the consumption of electricity in this province 400 megawatts?

Can you provide that to me at some point in time?

MR. MARSHALL: I think that information is already in the evidence of the Point Lepreau hearing. We have provided 440 megawatts of DSM as options that are evaluated in comparison to other alternatives in that evidence.

And those 440 megawatts do not get totally selected because they are not cost-effective against existing plans.

So there would be the differential to a plan we may be able to pull out of that evidence to say what the costs

are.

Q. - Again, can you tell me what it would cost today to reduce 400 megawatts of power of demand in this province, Mr. Marshall?

MR. MARSHALL: By what point in time, Mr. Hyslop?

Q. - By 2006?

MR. MARSHALL: Not possible.

Q. - That is your answer?

MR. MARSHALL: That is my answer.

Q. - You couldn't do it?

MR. MARSHALL: We could not do it and continue to meet our mandate to provide for efficient reliable electricity for the needs of the province.

Q. - And you are relying on your knowledge, judgment and experience dealing with the subject of demand side management over the period you have been with NB Power to make that statement?

MR. MARSHALL: Yes.

Q. - You have done no empirical study or analysis to satisfy yourself that your conclusion is correct?

MR. MARSHALL: Based on the quantities required, the experience in the past of running programs and the take-up and how many conversions and how many actual end use measures have to be done in the next four years is very

extremely aggressive. It is not really achievable in that short a time period.

Now we have evaluated the economics of DSM against alternative measures in the Lepreau evidence. And I'm sure we will be discussing it again then.

Q. - I would like to move on to another area, Mr. Marshall. Just one second. To move on to another area, there has been a lot of talk about that table 1 on page 3. And there was another number -- I should be more specific. I apologize. Appendix A, page 3.

And there was one other number yesterday. I wrote it down as 2593 megawatts. And I'm not sure if that number was correct, Mr. Larlee. But I think you were giving the evidence.

What was that number?

MR. LARLEE: I was quoting the actual peak hour demand adjusted for weather and abnormal industrial operations.

Q. - Okay. So the 2593 -- the 2768 was the second forecast that you made. And the 2593 was the actual adjusted result, is that correct?

MR. LARLEE: I'm sorry. Could you repeat those numbers again?

Q. - The 2768 that was alluded to, that was an adjusted number at a later point in time than the 3041?

MR. LARLEE: No. The 2768 was given in response to CCNB-9. And that is the actual 1-hour peak demand for the fiscal year.

Q. - Okay. And the 2593 is the actual with adjustments?

MR. LARLEE: The 2593 was our January peak hour demand. The reason why I quoted that number is because it is the January peak hour demand that we would consider in a normal year that we would see our peak hour demand.

So I put forward that number as the actual in January. And when it is adjusted it gives us a number of 2962.

Q. - Now refer to exhibit A-13, table 10 which is at page 80. Exhibit 13 was the additional document that was added into the evidence of Mr. Larlee.

MR. MARSHALL: What page?

Q. - Page 80, Mr. Marshall.

MR. MARSHALL: Yes. I have it.

Q. - And that is the Load Forecast that was presented last June or July at the first Load Forecast Hearing, is that correct?

MR. LARLEE: Yes, it is.

Q. - And the outlook at that time was the 15,251 and the 3014 megawatts. That was the outlook for 2000/2001 at that time?

MR. LARLEE: Yes.

Q. - And am I correct in stating those are the same numbers you started with when you began the process for the update of that Load Forecast?

MR. LARLEE: We would have used all the available history we had at the time.

Q. - Yes.

MR. LARLEE: And that includes the history for loads, load factors and the peak hour demands that you see there.

Q. - So you didn't update this table for the starting point on your load forecast that was presented as part of the evidence at this hearing?

MR. LARLEE: For the load forecast presented in the evidence in this hearing --

Q. - Yes.

MR. LARLEE: -- all of the history is updated.

Q. - Okay. But the 15,251 and the 3014, which are the same numbers you used on the table we just referred to, those are the same numbers you used last year?

MR. LARLEE: No. That is not correct.

Q. - It is not correct? How am I incorrect, Mr. Larlee?

MR. LARLEE: In referring to exhibit A-13 --

Q. - Yes.

MR. LARLEE: -- table 10, the year of the outlook in that table is 2000/2001. If we refer to exhibit A-1, table 1

the year of the outlook is one year after, 2001/2002.

Q. - For 2001/2002, I'm referring to table 10, your outlook was 15,251 for your system demand and your peak demand was 3014 megawatts, correct?

MR. LARLEE: Those numbers you are quoting are for 2000/2001?

Q. - Yes.

MR. LARLEE: That is correct.

Q. - Okay. I see. I apologize. You are correct on that point.

I do however want to go on a little further. When I look at the actual on page 80, table 10 the actual to and including 1999/2000 the largest number I could find was the 14,595 gigawatt hours --

MR. MARSHALL: Is that a question?

Q. - -- correct? Yes. Is that correct?

MR. LARLEE: Yes. That is correct.

Q. - And the largest peak demand also in that year was 2856 megawatts?

MR. LARLEE: Yes. That is correct.

Q. - And my understand is once we are into this forecast, there seems to be a jump of some 6 to 7 percent between 2000 and 2002.

Can you explain why that would jump that much?

MR. LARLEE: I just want to be clear on the years that you are comparing.

Q. - Yes.

MR. LARLEE: So you are going from 1999 to 2000? And you are comparing to 2001/2002?

Q. - Yes.

MR. LARLEE: If we look at the numbers under peak hour demand, all of the numbers up to 1999/2000 are actual numbers.

The numbers beyond that are all normalized for normal operating conditions and normal weather. So in '99/2000 I believe we had a warmer year. So there had to be some adjustment associated with that.

As to the other adjustments I don't have the specifics with me right now.

Q. - Well, perhaps I will cut to the chase to this, Mr. Larlee. I'm suggesting that there is a certain element of conservatism that comes into doing a load forecast.

In other words, if you are going to be out you want to be out on the side of understating as opposed to overstating the demands. Would that be a fair statement, Mr. Larlee?

MR. LARLEE: No, it would not. What we are doing in the load forecast is we are forecasting for normal conditions,

normalized weather and normal operating conditions for our customers. And then we adjust for any other factors that we see may be coming on the forecast horizon.

There is no attempt to bias the forecast one way or another. And this forecast could be just as likely high or low. It could go either way. But we feel that we have a good forecast for you.

Q. - I refer you to page 59 of appendix A, Mr. Larlee. Do you have it?

MR. LARLEE: Yes.

Q. - Yes. That's a comparison of actual and forecast energy supply on an annual basis and the results are from 1991 through to 2001?

MR. LARLEE: Yes.

Q. - And there are a few positives in the later years, but I would suggest that that chart generally shows that you have -- where your forecast has been off it's generally been on the side that you have overforecast the amount of electricity that would be required, is that correct, Mr. Larlee?

MR. LARLEE: In the period that is shown here, the forecasts have tended to be higher than actual after we weather adjust, yes, that is the case.

Q. - And I'm going to again repeat my question. Do you stand

by your answer that there is not an element of conservatism in your projection of forecasted energy consumption?

MR. LARLEE: As Mr. Marshall pointed out in his presentation at the beginning of this hearing yesterday, in the 1980's our forecasts were actually low. And it is not uncommon in the utility industry for forecasting to go through cycles.

So I do stand by my answer that there is no bias in this forecast, conservative or otherwise.

MR. HYSLOP: Just a moment, Mr. Chairman.

CHAIRMAN: Take your time, Mr. Hyslop.

MR. HYSLOP: Thank you.

Q. - One last follow-up question, Mr. Marshall. I'm referring to appendix B, page 18. And the last sentence -- yes, the last sentence reads "The economic potential estimate is based on economic life cycles and is calculated three ways depending on the end use category."

Can you explain what you mean by the phrase "calculated three ways"?

MR. MARSHALL: Yes. The three ways are -- start on page 20 and are itemized under sections 531 for nonshell measures, sections 532 for shell and heating measures and section 533 for direct load control.

Q. - Thank you, Mr. Marshall.

MR. HYSLOP: I have no further questions, Mr. Chairman. I would like to thank the witnesses for their cooperation.

CHAIRMAN: Thank you, Mr. Hyslop. Mr. Dalzell, how long do you think your questioning will take?

MR. DALZELL: We are not going to be asking any questions at this time. Thank you.

CHAIRMAN: Okay. Does that "we" include Canadians for -- Unitarians for Social Justice?

MS. FLATT: Yes. Thank you. No questions.

CHAIRMAN: All right. Thank you. All right. Seeing that Mr. MacNutt is next we will break for lunch and give him an opportunity to -- oh, Saint John Energy. I'm sorry.

MR. YOUNG: Mr. Chairman, no questions at this time.

CHAIRMAN: Thank you. We will come back at 1:30.

(Recess - 12:05 p.m. - 1:30 p.m.)

MR. MORRISON: Our apologies, Mr. Chairman.

CHAIRMAN: No problem. Normally I'm 10 minutes late whenever I say half an hour, but not today. Any preliminary matters. Yes?

MR. MORRISON: Before the break, Mr. Hyslop -- and we gave an undertaking to look at whether a further DSM study could be undertaken and what the timing and costs of that would be.

And I believe Mr. Marshall has something to add to that, Mr. Chairman.

MR. MARSHALL: The question as I think I have it correct, Mr. Hyslop, was how much time and what would the cost of a study be to determine how much subsidies would be needed to achieve increase demand side management.

To do a detailed study to determine the effect of the subsidy on customer behavior and the quantity of that subsidy, we estimate such a study would take eight to 12 months to do at significant cost.

Now we do not believe that that type of study is relevant to the process that we are in here or the process even for the next hearing.

It would be akin to us doing the detailed design and engineering and costs on the construction of the 400 megawatt combined cycle gas unit and expending the millions of dollars necessary to get very finite detailed engineering on that, even though it's not the economic choice in comparison to refurbishment.

We would -- as I said before, we would do the economics based on the evidence presented in the Point Lepreau hearing. We would determine the economics of DSM as options. And if they then are attractive out of that process, we would then go on and undertake more detailed

studies to design the programs to achieve them.

MR. MORRISON: The only other undertaking I had a note of, Mr. Chairman, was a question from Mr. Hyslop. I think he asked whether the achievable DSM was a percentage of the technical or economic potential DSM. And I believe there is an answer for that as well.

MR. MARSHALL: Yes. In all of the tables in attachment C of appendix B of exhibit A-1, the demand side, the management report, the percentages of achievable numbers are all based on a percentage of the technical capability.

MR. HYSLOP: Could I ask one supplemental question, Mr. Chairman, or --

CHAIRMAN: Go ahead, Mr. Hyslop.

Q. - You indicated that the cost of the study would be a significant cost. My understanding in your pre Point Lepreau you have expended 40 to $50 million to analyze what has to be done and what the process would be with Point Lepreau.

Would such a study cost in the same amount for demand side management, or are we talking a number significantly less than that, Mr. Marshall?

MR. MARSHALL: Less.

MR. HYSLOP: Thank you. You wouldn't hazard -- would it be less than half?

MR. MARSHALL: Possibly less than half, yes.

MR. HYSLOP: Thank you.

CHAIRMAN: All right. Mr. MacNutt?

CROSS-EXAMINATION BY MR. MACNUTT:

Q. - Thank you, Mr. Chairman. I have got two questions, one is a little long-winded but should be fairly short. And the second is fairly short.

Mr. Larlee, I'm going to ask you to turn to the response to PUB-2 in exhibit A-6. That is A-6, PUB-2, interrogatory response. Have you got it?

MR. LARLEE: Yes, I have it.

Q. - Now the Board asked the following question in respect to the Board decision on changes in charges, rates and tolls dated April 23, 1993. At page 20 of the decision, the Board said with respect to the Load Forecast filed at that time. "It is reasonable to assume that higher prices for electricity will result in some curtailment of demand". The Board went on to say that a forecast which fails to account for price elasticity of demand may overstate future load requirements.

The question in PUB-2 was, please advise where in appendix A load forecast 2003-20011 in appendix B the screening of demand size options, price elasticity has been taken into account in forecasting demand. The NB

Power response did not answer the question directly. Instead information was provided as to NB Power's interpretation of the impact of natural gas on the sales electricity for space heating and water heating and mentions the 150 megawatts of self-generation that may be expected in the future. In addition mention was made of increased penetration of energy efficiency measures.

At the end NB Power stated, "It is NB Power's view that all of the above adjustments in the Load Forecast make adequate provision for price elasticity in the absence of specific data on potential price increases and the relativity of such increases to other fuels and consumer price index".

Now question, does your computer model include price elasticity, and if not, why not?

MR. LARLEE: The model we use does not have direct explicit price elasticity inputs. What we have done in this forecast is we have included price elasticity as it relates to other fuels in the adjustments for natural gas penetration. And this comes about under the possibility that natural gas options will be cheaper or will be perceived to be cheaper, even though our information now is that natural gas is marginally economic at best. But we still have included aggressive natural gas penetrations

to take into account that possible elasticity against other fuels.

Q. - So is it fair to say the short answer is no, you do not have -- your computer model does not include price elasticity per se?

MR. LARLEE: Not explicitly, no. There is another -- if I just may finish my response. There is another aspect to elasticity and that is elasticity against general price increases. And that's what is alluded to in the last paragraph of the response to PUB-2.

Q. - And how is that accommodated?

MR. LARLEE: That is not accommodated in the forecast. And the reason for that is that NB Power's expansion plans have with it a cost structure that is going to keep NB Power's costs at or below any projections of consumer price index. And since NB Power's rates are cost based then that implies that our rates will stay at or below the consumer price index. So there is really no need to include that type of analysis in the load forecast to take into account any differences between the price of electricity and changes in the consumer price index.

Q. - Okay. I was just going to ask you that because you said the elasticity against general price. And you -- when you are talking about price in that answer it's the price of

electricity to the consumer, is it?

MR. LARLEE: We are referring here -- the elasticity of electricity against general -- the general prices -- the consumer price index.

Q. - Why do you -- did you not consider it appropriate to have a direct specific price elasticity factor in there to accommodate the real world possibility that prices might exceed your forecast?

MR. LARLEE: History shows that the electricity price and the consumer price index have tracked quite closely, so there really hasn't been any elasticity impacts in the last 10 years or so. When we look forward the plans that Mr. Marshall has for capacity are going to keep our costs at or below any general price changes. So that is why it has not been included.

MR. MARSHALL: I might add that if based on our cost projections that I responded to this morning in the question on industrial avoided costs versus industrial rates, the evidence presented in the Point Lepreau hearing and the Coleson hearing show that the cost base of NB Power with these projects over the long term future is lower than increase in CPI. So if price elasticity was included given that price -- that costs of electricity would be lower than CPI, they would tend to increase load,

not decrease load.

Q. - So your answer is couched in terms of the impact on the industrial load as opposed to the impact on the residential load?

MR. MARSHALL: I just said that our -- the cost base -- the long term cost base in the evidence laid out is for long term stable pricing where the cost base will increase at lower than CPI. As a cost base utility all of our rates are based on cost, so it would apply to all rate classes.

Q. - So you have just commented that that applies to all rate classes, but aren't you under -- in the process of -- or will be shortly attempting to redress the residential rates to bring them within the Board specified 95 to 105 percent? And what impact would that transition and your prices have?

MR. MARSHALL: Yes, that's correct. And in our DSM analysis we have already accounted for that in the rate increases of the residential class. So that in evaluating all of the energy efficiency options a customer would have to lower their usage, the economics of those have included an adjustment to get residential rates up to the 95 to 105 range.

Q. - So the price increase to residential that would be brought about by that has been taken into account in the

DSM approach, is that correct?

MR. MARSHALL: Yes, it has.

Q. - Now can you tell me why you were you using these individual isolated adjustments and various prices rather than having a general price factor -- price elasticity factor incorporated into the whole -- the web of the study?

MR. LARLEE: One of the difficulties we have is that it's difficult to get hold of the data to put in, as you say, factors -- overall factors for price elasticity, because over recent history there is -- there has been no general price elasticity between electric rates and personal -- the -- sorry -- the CPI, consumer price index.

Q. - And what chart or table can you point to us showing the stable relationship between CPI and the prices?

MR. LARLEE: I don't have anything with me right now and I don't believe there is anything in the evidence. I have a chart in my back-up information in the other room, if you would like me to provide that.

Q. - No, I don't think we need that chart at this time. Have you made any effort to obtain the data that would enable you to do a general price elasticity factor?

MR. LARLEE: Not to my knowledge. Just to add to that, I am just recalling that I do believe analysis was done several

years ago that basically was inconclusive and it did not give us any information that we could work with when looking at elasticity.

Q. - Could you arrange to file that with the Board by say noon tomorrow?

CHAIRMAN: I understood, Mr. MacNutt, it was in the room just here.

MR. MARSHALL: It's a different issue.

CHAIRMAN: Oh, different. I'm sorry. I beg your pardon.

Q. - This is the study prepared by NB Power assembling data to do a price elasticity factor which proved to be inconclusive but it's not available here today but could be filed with the Board tomorrow?

MR. LARLEE: It's my recollection that some analysis was done. We will make an effort to collect what we can of that and have it by tomorrow.*

Q. - Thank you. Are you able to determine what the impact on the load forecast would be if in fact there was a price increase beyond CPI over the go forward years?

MR. LARLEE: Without specific -- without specific elasticity data, no, I don't believe we could do that. Again I would like to reiterate that we have no cause to believe that would be the case. As Mr. Marshall pointed out it's likely that our cost will go below CPI.

Q. - Second question, ask you to turn to exhibit A-1, that was your original pre-filed evidence, appendix B, and attachment C to that appendix. This was the table Mr. Hyslop had you looking at this morning. So I just run through that again. Appendix --

MR. MARSHALL: What page, please?

Q. - I am just going to run through it again from the top. Exhibit A-1, appendix B, attachment C, table called Shell Measures at page 56.

MR. MARSHALL: Yes, I have it.

Q. - I just want you to look at column 5 which is entitled Energy Overlap Factor.

MR. MARSHALL: Yes.

Q. - You provided a brief explanation of that this morning, is that correct? And if you didn't --

MR. MARSHALL: No, I do not recall being asked about that today.

Q. - Okay. If you didn't then I am going to ask you to explain what it means. In other words, supplement what is in the footnote asterisk 3.

MR. MARSHALL: It -- as you can read in the footnote, energy overlap factor compensates for technologies that compete against each other for the same energy savings. And I think the simplest example in this table would be to look

at the thermal door and the storm door. And you can see that they are two different types of doors and they are both evaluated as end use measures. If you counted each door as a hundred percent available for energy overlap you would double count the savings by -- because you can only put one door on one door frame, rather than two. So the 50 percent factor splits the savings between the two types of technologies. The customers choose one or the other but not both.

Q. - Okay. And how do you select the percentage overlap?

MR. MARSHALL: The overlap factor was developed by the -- a couple of engineering people who did the detail evaluations of each specific measure. We would look at the energy use, we would look at where it is in the building or where the energy use occurs, what are the technologies, what are the competing technologies. And based on that what allocation given as to how much the overlap factor would be.

Q. - So it's a judgment assessment by your staff and you have accepted it and included in the table?

MR. MARSHALL: Yes. As I responded it's a judgment -- it's a judgment of professionals in the industry analyzing the end use of the energy in terms of how it would overlap against other sources.

MR. MACNUTT: No further questions, Mr. Chairman.

BY THE CHAIRMAN:

CHAIRMAN: Just before I ask my fellow Commissioners if they have any questions and then after that go back to Mr. Morrison on redirect, I may have a couple of questions later.

But just following along on what Mr. MacNutt has been saying and your responses to it since lunch, and in particular looking at PUB-2 and the question -- the preamble and then the question. I agree, Mr. Marshall, that NB Power's cost basis for the production of electricity is lower than certainly anything that I have -- have seen to date. But your prices are pretty much your costs. Is that not correct?

MR. MARSHALL: Yes.

CHAIRMAN: And the sales of NB Power are in excess of $1 million a year. Is that not fair?

MR. MARSHALL: Total sales revenue including export sales, I believe, are more than a million, yes.

CHAIRMAN: And NB Power has no equity. Well, I'm sorry. I beg your pardon, it has about $8 million of equity?

MR. MARSHALL: It has a small amount of equity at this point in time.

CHAIRMAN: Yes. In comparison to sales of over a billion

dollars. And I Chair your economic regulator. And there was a very specific purpose why in 1993 this Board put in our decision what we -- what we did. And, you know, I won't go through a whole pile of scenarios, but let me put a hypothetical to you. If your rates tomorrow were increased by 20 percent, would that have an impact on what you gentleman are, and your company is predicting?

MR. MARSHALL: The -- an increase of 20 percent would -- would change the results in the DSM analysis from the participant perspective point of view. And would make fuel switching more attractive from the participant's viewpoint. Because of that it may -- it would help to overcome the marginal economics that are there today in customers' viewpoint, so it may help us to achieve the aggressive fuel switching which we believe is currently in the forecast.

CHAIRMAN: And just one follow up. Are you aware of any studies in particular in North America in the last say 10 years or even before that, where the studies have looked into the price elasticity of electrical energy?

MR. LARLEE: I'm not aware of any specific study.

CHAIRMAN: You know, personally, and I could be wrong, but I would be very surprised if that hasn't been done somewhere in North America for price elasticity.

All right. I have said enough at this time. I will turn it over to my Commissioners.

BY MR. SOLLOWS:

Q. - Thank you. I guess where -- I have some questions I think for you, Mr. Larlee, about the econometric modelling. And I would ask you to refer to exhibit A-6, Gillis 8, page 15.

CHAIRMAN: A-6.

Q. - Gillis 8, page 15.

MR. LARLEE: Correct.

Q. - Now I guess I see for two -- the history here, 2000 and 2001 shows a real GDP of 16 9 23.

MR. LARLEE: Yes.

Q. - Yes. And that then if I understand the process here for your forecasting you have used a 2.1 percent per year increase on that base amount out to whatever it is. Can you tell me what that would be in around the year 2009/ 2010?

MR. LARLEE: I don't have that number with me right now.

Q. - Well I worked it out. I think it's 20,400 when I worked it through, but I would appreciate you checking it.

MR. MARSHALL: And how did you do that?

Q. - I took 1.021, raised it to the power of 9, I think, and then multiplied it by 16 9 23.

MR. MARSHALL: That's what we would do too. Anyway, while he is checking, I would assume that your calculation is correct, Mr. Sollows.

Q. - Okay. Then we will just carry on while he checks it. I guess my question is that that 2.1 percent per year increase, what kind of relationship is that characteristic of? Is that a linear curve or something like a power curve?

MR. LARLEE: Are you asking what the relationship between what we have here for growth for GDP and what we have for real PDI?

Q. - No, not that relationship. But just the -- what you are projecting for growth in GDP at 2.1 percent per year, is that -- that's not a linear growth pattern. That's a growth pattern that's sort of increasing as it goes out in time, is it not?

MR. LARLEE: That's right.

Q. - Like a power curve might fit.

MR. LARLEE: Yes. Or compounding --

Q. - Yes.

MR. LARLEE: -- another way to characterize it.

Q. - Fair enough. Okay. I would now refer you to exhibit A-9. And again, the first item in econometric modelling. I just want to refresh and make sure my notes are correct

here. In your reference to this yesterday you indicated that some of the later numbers that you used, which presumably might include this 16 9 23 were somewhat different from the historic data. And it was just sort of a clerical error. This was fixed and it didn't make any big difference. Is that correct?

MR. LARLEE: Yes, that's correct. It had to do with how we were updating the numbers.

Q. - Okay. So -- but the basic principle in your forecast is that you would use the real numbers, the historic numbers that would be provided by StatsCan?

MR. LARLEE: Yes. Use the most up-to-date numbers. Yes.

Q. - And in terms of your -- just so that I'm clear as well, in terms of the numbers that are labelled real PDI, those aren't, in fact, real PDI. They are nominal PDI. They haven't been deflated for -- for consumer price index. Is that -- there was a communication error or something that you alluded to?

MR. LARLEE: Yes. As a result of the communication error we ended up using personal income.

Q. - Oh, personal income. Okay.

MR. LARLEE: As a --

Q. - Total personal income?

MR. LARLEE: Yes.

Q. - Okay. All right. And when you were dealing with these issues you also indicated that you would -- the way you decide what kind of relationship to use is based on your test of the data to various types of curve fits to see which fits the data the best way. Is that correct?

MR. LARLEE: Yes, that's correct.

Q. - And you use a least squares type curve fit?

MR. LARLEE: Yes. The program used here is Excel and that's what they -- that's what it uses, yes.

Q. - All right, then. Because I have a hard time when it comes to things like this when there are lots of numbers in it not going to the computer. And I guess, were you able to confirm that we had 20,400 as the -- is that wrong or right or what did you get?

MR. MARSHALL: He didn't finish.

Q. - Are we confident that it's 20,400 based on the procedure that you followed in your -- in your evidence?

MR. MARSHALL: We are confident that you have the ability to take --

Q. - Okay. I would like --

MR. MARSHALL: -- 1.021 to the -- power to get that number.

Q. - Thank you. But I would still like somebody to check. Are you okay?

MR. LARLEE: Yes.

Q. - The difficulty I'm having is when I take the data that I down-load for real GDP from the StatsCan Data Base and plot it against calendar year, I seem to find that a linear curve is a better fit than the power curve. And so I find a regression coefficient. An R squared that's a little bit -- shows a little bit better fit when I use a straight line through your historic data then when I fit a power curve one increasing by a fixed percentage each year. And so, I guess, what I would like to sort of deal with here is what the likely impact of that might be on your forecast if in fact the linear curve fits that model better.

When I do this and project it out to the same year, I get a number that's around 19,750 using the linear model. And I guess my question comes down to what would be the impact of the difference between your number, which would appear to be 20,400 and my number, which is 19,750. What would be that impact on the overall analysis? Is that -- you indicated yesterday that any of these factors were -- were really minor in comparison to the overall forecast. It would have made a small difference, less than 1 percent, I think, was the words.

This change would be about -- if I have got it right, a little under 3.2 percent reduction in the GDP. You are

saying that would make no significant impact on the forecast for 2010?

MR. LARLEE: Without actually rerunning the model that -- that's my preliminary assessment that it wouldn't -- it wouldn't make a significant impact to the forecast.

Q. - Okay. So how big a change in the -- in the forecast for the gross domestic product would we have to have to have a significant impact on your -- your load forecast? 3 percent isn't going to do it, what would?

MR. LARLEE: 3 percent over 10 years approximately wouldn't be that significant. I think if we -- if we had an annual growth rate significantly different from the 2.1 percent that we have in the forecast, we would -- we would see that impacting the forecast in a -- in a significant way.

Q. - I guess what -- I guess I'm having difficulty making myself clear. But this straight line seems to do what you said you did in fitting the best possible curve fit to the data. And it projects a gross domestic product that's somewhat less than the number that you seem to have used, rather than what you had said you had done. So I'm just trying to see exactly where we stand with this.

Do you -- maybe you can provide us with the various trials that you used for your curve -- your curve fits or --

MR. LARLEE: Let me just take a step back and maybe I can help explain what it is we are actually trying to do here.

Because the only forecasts that actually are available to use on a go forward basis are forecasts of gross domestic product that is the first -- the first input in the forecast. We used this regression to create the relationship to personal disposable income. And then in turn we use this regression to give us our forecast of personal disposable income.

So we have the 2.1 percent increase in gross domestic product and that -- when we relate that personal disposable income based on the outputs of this regression analysis, it gives us a forecast of 1.9 percent for personal disposable income. It's the forecast for personal disposable income that in turn is used for the general service sector forecast.

Q. - Right.

MR. LARLEE: Okay.

Q. - But my understanding was that you were -- your evidence that you gave yesterday, or your testimony yesterday was that you always tried various curves and fit the best fit for the historic data to use in your projections. But that -- so what I'm getting is that doesn't seem to be the case here, why?

MR. LARLEE: That was my -- that's my understanding that we tried this -- this particular regression using a linear -- a linear type of regression and it did not give as good a fit. I can provide that -- provide that to you if you would like it.

Q. - That will be helpful for my own peace of mind. And just to be clear, what you are saying is that this difference of the sort of -- this 3.2 percent discrepancy, I think it's $650 million really doesn't make any difference from the point of view of your overall load forecast or the general service load forecast?

MR. LARLEE: I don't think it would -- it would make a whole lot of difference to the overall -- the overall load forecast.

Q. - But it might be significant in terms of the general service?

A. Possibly, but my -- my first thought would be, no, that it wouldn't be that significant.

Q. - Okay. I guess at this point I would like to refer you to exhibit A-1, Appendix A, page 26. That has figure 12 as real personal disposable income against gross domestic provincial product, and that's actually real total disposable income, is that correct?

MR. LARLEE: Yes, that's correct.

Q. - The line that I see running on that curve is -- what is it's -- does that represent the curve fit?

MR. LARLEE: No, it does not. That's just for illustrative purposes.

Q. - What is it meant to illustrate?

MR. LARLEE: It is meant to illustrate the relationship between the two.

Q. - So it represents the curve fit?

MR. LARLEE: Not -- no, it doesn't. So it's not a very good illustration.

Q. - Okay. So the line is in the context of this evidence not very meaningful?

MR. LARLEE: That's correct.

Q. - We should ignore it?

MR. LARLEE: Yes.

Q. - Okay. All right. Again if I take the real data for gross domestic provincial product and real PDI and regress a straight line against it, I seem to get a slope of about .55. And if I draw a rough line through this data I get slopes between .5 and .6 to that line that we can ignore as a slope of .8. So would you think -- you know, would you say -- looking at this data is it reasonable to assume that the slope is somewhere between .5 and .6, bearing in mind that I have -- when I do the regression I get a value

of .55?

If you wish I can share with you what I have done, if you just want to check that if it's easier.

MR. MARSHALL: We are just mentally getting a picture on your statement.

Q. - Sure. Where I'm coming from?

MR. MARSHALL: Yes.

Q. - And am I roughly right there, it's on a slope of a line that I might eyeball through that. It would be somewhere between .5 and .6. I think when I did it the older data, the data between 10,000 and 13,5', I got a slope of .6, and the newer data I got a slope of .5. And so somewhere in between might be reasonable as an average for the slope? And as I say, when I did the actual regression I got .55 or .56, .57.

MR. MARSHALL: That would work if the numbers at the -- above the 14,000 are dominating the regression because there are more points in that area would tend to increase the line -- or decrease the slope and raise this portion of the line up --

Q. - A little bit, yes.

MR. MARSHALL: -- to get to their range of .55.

Q. - Yes, something like that.

MR. MARSHALL: Yes.

Q. - So would you agree that I can take that slope of .55 and multiply it by that 3.2 percent reduction that we assumed for the GDP and use that to get a reduction in the -- a percentage reduction in the PDI?

And when I do that I get about 1.8 -- 1.78 percent lower. Is that -- I mean, methodologically am I sort of -- what I'm trying to do is recreate your analysis here step by step so that I can follow it through. So am I departing significantly from sort of the process that would be followed in your load forecast?

MR. LARLEE: Can you just take me through your analysis, that last step, one more time?

Q. - Well we previously found that if I fit the straight line to the GDP data I got a number that is 3.2 percent lower than the one that you have in your evidence. And we have been looking at this data in figure 12 and concluded that the slope of that line, that is the change in RPDI as it's labelled to GDPP, is about .55. So that means that for every one percent change in the GDPP I should have about .55 percent change in PDI. So I took my 3.19 percent lower GDP and got 1.78, or about 1.8 percent lower PDI. Only it's -- we understand that it's not PDI, it's personal income.

MR. LARLEE: Okay. So far I follow.

Q. - Okay. So I should be able to now take that and go into that 1.8 percent and use that to project what is going on with your per capita general service sales, right?

I should be able to go into the next figure which is page 27, figure 13.

MR. LARLEE: The forecast for PDI is an annual increase. So the forecast that we develop from the relationship for -- between GDP and PDI is a forecast for annual growth.

Q. - Yes.

MR. LARLEE: Now if we look at figure 13, it's relating the absolutes for PDI and general service sales.

Q. - And again on that one -- that straight line, is that meaningful or not in this illustration?

MR. LARLEE: I believe that it's just eyeballed in.

Q. - So again we just ignore it?

MR. LARLEE: Strictly for illustration, yes.

Q. - Okay. And we are not sure what it is illustrating, so it probably should not be there, or should we just ignore it or --

MR. MARSHALL: I don't know. I remember my first statistics course in university the professor said when we have a series of points like that the first thing you do is draw a straight line through them before you do any mathematical analysis.

So I think the line has some value but whether it has an absolute statistical value depends on the regression analysis.

Q. - Fair enough. So it's not unreasonable for us to rely on it in estimating changes then, is that fair? Changes in one variable with respect to another.

MR. MARSHALL: Not based on a regression calculation, but as a simplistic --

Q. - Yes.

MR. MARSHALL: -- illustration of that's what it is you could get some relationship from it.

Q. - All right then. Okay. Again I want to come back to this curve. When you tested this data what type of curve did you end up fitting?

MR. LARLEE: I would have to look at the model in order to -- in order to answer that question.

Q. - You don't have the model here or --

MR. LARLEE: I have the print-outs. If you would like -- give me a few minutes to go through it I can find that.

Q. - I guess I am curious, and I will give you in advance why, because again downloading the PDI per capita and using the general service sales per capita, when I do the regression I found that the best fit was in fact a second order polynomial that showed progressive decreases in the rate

of increase of general service sales with RPDI per capita, indicating a fall off. And that statistically seemed to be a much better fit than a straight line or a power curve or anything else. So that's where I'm coming from with my question. So I would very much appreciate maybe at a break if you could get the information for me. Okay.

MR. LARLEE: Very well.

Q. - So can I leave that and carry on to -- I think it's in exhibit A-6, NBP -- CCNB-18. And it is on page 24, I think. Do you have it? This is labeled "General service model inputs."

And I see you have your population, history, your PDI history. Only it is not PDI. It is personal income. And it is general service sales.

Those figures for the general service sales, where do they come from?

MR. LARLEE: Those are actual historical sales.

Q. - Okay. So at this point I would direct your attention to -- if I understand this correctly, that is the 2000/ 2001 annual report?

Well, here. I will just hand it over. That would be easier.

And for general service sales 2000/2001 I think there is a statement of generation that lists the general

service sales. And what number appears in that table?

MR. LARLEE: The statement of sales which is actually the second -- the second table on the page shows the sales, the broken-out wholesale, industrial, general service, residential, streetlights. And for 2000/2001 for general service it is 21 11.

Now the numbers in the response to CCNB-18 are for total provincial general service sales. So the portion for wholesale would be included in the number that we use in response to CCNB-18.

Q. - Okay. So the column labeled "General service sales" is not NB Power's billing group at general service sales. It is your own billing and general service sales plus some fraction of the wholesale to the municipalities?

MR. LARLEE: That is right.

Q. - What is the fraction?

MR. LARLEE: Overall I believe it is about 30 percent.

Q. - 30 percent of wholesale?

MR. LARLEE: That is right.

Q. - Okay. Now I guess what I would like to do -- and pull these things out -- is again refer you to exhibit A-9, the letter from the Board.

And item 2 that you dealt with, the load and resources review, I would go from there to -- I think it was exhibit

A-11 which was an excerpt from an early '90s load and resource review.

And I'm looking at table 1(d), the load surplus deficit summary. And you have explained the difference between the sustained surplus deficit and the peak surplus deficit in terms of power I think yesterday, indicating that you weren't so concerned about sustained surplus deficits because the fraction of your generation mix that is covered by hydro has fallen over the last 20 years, is that fair?

MR. MARSHALL: Basically, yes.

Q. - Okay. I guess what comes to my eye when I look at this table, I see that your sustained surplus deficit in terms of power which is here and not energy, but your sustained -- you enter a deficit situation in 1999 to 2000 for power on a sustained basis. But you enter the deficit in '95, '96 for peak.

Would it be fair to say that you -- that this relationship sort of holds in the current planning, that there would be sufficient energy on NB Power's system to meet your energy demand even though you might have a peak-related deficit, a power deficit?

MR. MARSHALL: I don't know that you can interpret that from these calculations. The sustained calculation is one that

was done using a high probability of hydro generation.

So it is the 95 percent probable hydro energy fitted under the load curves plus an additional amount of reserve on a reserve-sharing basis through the Maritime area.

It was a way to determine what is the amount of truly reliable hydro energy that you can count on to get an equivalent type of capacity to operate the system.

It was to use as a planning tool to decide how much capacity, how much iron and steel we have to put in the ground to have capacity in place to reliably supply customers into the future.

So the two criteria were done. Analyses were done. And then which criteria has the lowest amount of surplus or the highest amount of deficit is the one that you said, that is the one that governs and we have to meet that obligation.

Now as we -- as you can see in the numbers, as the system grows out in time the difference between the two -- back in 1989/'90 when the load was at 2500 megawatts, the two criteria -- the difference between the two criteria would be a little over 200 megawatts.

Out in 2003/'4 at that time, if the load grew to 3700 megawatts, the difference between the two criteria was over 400 megawatts.

So as the load grows you have the same amount of hydro energy. You can squeeze it more and more into the peak. You get more value out of it. That is essentially all this says.

Now this is a planning criteria. We plan the system based on the peak criteria of 20 percent reserve or the largest unit. And the value of the sustained criteria is now redundant or irrelevant. And we don't do it anymore.

Q. - Okay. So the sustained power criteria is irrelevant. Then what about the sustained energy criteria that would appear in your earlier load forecast?

It went through on a month-by-month basis and showed whether or not you had a surplus or a deficit forecast for energy on the system.

Would that also be irrelevant? And why?

MR. MARSHALL: It was part of that calculation to look at monthly numbers. We disbanded it when we disbanded the sustained criteria. We consider it to be irrelevant.

Q. - I guess I'm having a difficult time understanding why it would be irrelevant that there was capacity available on the system with existing plants that was not fully utilized, why that would be irrelevant to your capacity planning process?

MR. MARSHALL: Again I come back. Our capacity planning

process is to meet the one hour of peak winter demand. The value of energy on the system is an economic issue. What fuels do we have from what resources?

And we capture the value of that fuel and the value of the surpluses in those resources in the integrated resource planning by modeling the detailed system. You know, through what is the cost of fuel to supply the load.

So we capture the value of it there. And any surpluses we also then can sell those surpluses at their cost in the projections of external markets. So there is value captured there.

Now to produce a chart month by month, to state today, here is how much surplus there is from these resources, okay, we are in a competitive world, a much more competitive world today than we were back as a fully regulated entity in 1990, okay.

We would not want to release that information today. Because that has competitive value to our competitors and detrimental value to our customers.

Q. - Okay. So the answer is that the decision on an energy type plant would be driven by the economics analysis and not so much the power deficit?

MR. MARSHALL: That is absolutely correct.

Q. - Okay. Finally item 3 in appendix -- or in exhibit A-9

deals with direct load control. And I think, if I recall, you provided illustrations under exhibit A-12?

MR. MARSHALL: Yes.

Q. - Okay. And I'm looking at the one labeled "N. B. system load actuals for February 22nd 2001"?

MR. MARSHALL: Yes.

Q. - And you have labeled system peak load as 2893 megawatts?

MR. MARSHALL: That is correct.

Q. - That is sort of the observed peak for that year. Now where would the -- what would the reserve margin be in this? Where would that be shown? Would I -- the required reserve margin presumably would be the 605 megawatts?

MR. MARSHALL: There are different types of reserve margins. The capacity reserve margin would have been 605 megawatts in that year, being the largest unit on which we relied, Point Lepreau. The capacity planning reserve margin is 605.

The operating margins relate to what is the contingencies that are on the system at this point in time? What is the largest contingency that could occur coincident with that happening?

And we have to back up, have enough capacity to account for 10 percent spinning reserve, 10 percent reserve and 30 percent reserve.

And they are based on what actually occurs at that day ahead, going into that day, how do the system operators plan and provide enough reserve operating in the system that is available on a 10-minute and 30-minute basis?

Q. - So on that basis, assuming that the Lepreau plant was up and running, is it fair to say that you would have had, let's say for round figures, 3500 megawatts available on the system? Is that -- am I getting it roughly right?

MR. MARSHALL: You are correct. Normally Point Lepreau would be the largest contingency. So that if it was tripping off line we have to have enough resources in place for that spare tire, to instantly change tires on the run to keep the system whole.

Q. - All right. Now I'm looking down below at your curve labeled "Total hydro". And I see somewhere around that system peak load it is producing about 500 megawatts?

MR. MARSHALL: That is correct.

Q. - Forgive me if I have got this wrong. But I'm guessing from memory 790, 780 total?

MR. MARSHALL: It is 880.

Q. - 880, okay, is your total hydro. So the difference between that 500 and that 880 is the hydro capacity that can be credited to reserve?

MR. MARSHALL: Yes.

Q. - Okay. So can you quickly do this? We said 880 and 500. So we are looking at 380 megawatts would be handled by your hydro plant of the reserve.

So that leaves what in terms of total requirements for reserve over and above that?

MR. MARSHALL: The total requirement for the reserve operating is a shared reserve within the Maritime control area. There is a reserve sharing agreement with Nova Scotia. They provide a share of that. P.E.I. provide a share.

The total reserve capacity required on peak or on any hour of the system is normally in the order of 800 megawatts.

Q. - Okay.

MR. MARSHALL: So their criteria --

Q. - So it is more than the 600?

MR. MARSHALL: It is more than the 600.

Q. - All right. So let's say it is 800 then. So the difference between your 500 that you are using in hydro and your 880 is 380 megawatts that you can get out of that hydro?

MR. MARSHALL: Yes.

Q. - So the rest has to come from somewhere else?

MR. MARSHALL: Yes.

Q. - Where does it come from?

MR. MARSHALL: It comes from reserve sharing agreements with Nova Scotia. They provide I believe it is 125 megawatts of 10-minute reserve, 50 megawatts of 30-minute reserve.

Maritime Electric I believe provide 40 megawatts of interruptible load to meet their reserve piece.

Q. - How much does NB Power provide in addition to that 380?

MR. MARSHALL: Well, when you add these up NB Power provides all the rest.

Q. - So what is that?

MR. MARSHALL: So if the requirement is 800 megawatts we get about 270 or '80 from external sources. And we provide the rest, 530 or --

Q. - Say 530 minus the 380 is what? Let's just say that is --

MR. MARSHALL: Call it 200 megawatts.

Q. - 150, isn't it?

MR. MARSHALL: 150.

Q. - So we have got about 150 megawatts that you have to provide out of some other resource?

MR. MARSHALL: Yes.

Q. - Okay. All right.

MR. MARSHALL: And what we normally would do is the -- any thermal load that is running that still has room on the top -- if Coleson Cove is running and not fully loaded,

the amount of space on the top of Coleson Cove could contribute some of that reserve.

Now at this point in time, assuming that Coleson Cove and Belledune and the thermal plants are all running fully loaded at the 2500 megawatt line, and there is no additional thermal reserve -- some of the reserve also comes from export sales.

By selling power into the New England market out of the Maritime control area, that energy is sold into the market and can be marked as interruptible for predetermined contingencies.

The contingencies that it is labeled against are Point Lepreau tripping, Belledune tripping, the large contingencies in our system.

So that in essence what we are doing is we are utilizing our total capacity. If there is economic sales for energy we sell the energy into that market.

But basically we are selling our reserve capacity as energy, making money on it while we can sell it. But it is recallable instantly if there is an outage. And that essentially provides a significant portion of the reserve on our system.

Q. - Okay. Fair enough. Now if I go to the next one that you provided, which is peak-shaving adjustments with 300

megawatt hours of direct load control?

MR. MARSHALL: Yes. I have it.

Q. - And you have shown it in a fairly simple fashion. You have knocked the power down and then followed the load and then brought it back up, knocking what might be, oh, I don't know, 75 megawatts off of the electric peak?

MR. MARSHALL: 150 megawatts.

Q. - Really?

MR. MARSHALL: Well, we were asked to look at 150 megawatts of load control and 300 megawatt hours. We divided the 300 by 150 and said it will last for two hours at that rate. So that is what we modeled.

Q. - Okay. Just help me. I'm just a little confused here. If I look at this black line, what is the peak load shown by the black line?

MR. MARSHALL: That is the -- the hourly integrated is the 2893 on the previous chart.

Q. - Okay. So that is 2890 --

MR. MARSHALL: Now the instantaneous load is higher than that.

Q. - Okay. But now what is the highest load after you put in the direct load control? What is the highest electrical load you see?

MR. MARSHALL: Well, on this chart, if we only interrupted

the two hours, then it looks like it would lower the load -- I would have to guess and say it is --

Q. - I guessed 50 and you said no. But I mean, that is what I'm just trying to get at.

MR. MARSHALL: 2893 down to maybe 2830. Maybe it is 50 megawatts.

Q. - That was my initial guess.

MR. MARSHALL: Okay.

Q. - So we are in the same place now.

MR. MARSHALL: Yes.

Q. - So would you agree that if you were to dispatch this -- what we indicated here as direct load control, slightly differently and bringing it on more slowly, we could lower down the extreme edges and bring up the bottom and sort of smooth it out on the bottom?

MR. MARSHALL: Yes, we could.

Q. - So in doing that we would increase the amount of energy or the amount of load reduction but not change the energy at all, would be the idea here --

MR. MARSHALL: That is --

Q. - -- is that right?

MR. MARSHALL: I think you are referring -- if we go back to --

Q. - More like a smooth one?

MR. MARSHALL: -- more like the first page where we just took the peak --

Q. - Yes.

MR. MARSHALL: -- and used the energy to take the whole peak off?

Q. - Yes. And I guess my question -- one question here is I don't see where the missing makeup energy would be on this graph.

So I assume there would have to be some change in the peak load, the black line after this demand side management or direct load control kicks out to make up the energy, is that right?

MR. MARSHALL: Yes. And if you -- we didn't draw it on the chart.

Q. - Fair enough. That is okay.

MR. MARSHALL: The makeup energy -- on this particular day the makeup energy would have had to have been moved all the way over to 10:00 o'clock at night or 2200 hours and in that area where the hydro is now going down to make up the difference on the hydro curve.

So you would have to shift and make up that energy later that evening after 10:00 o'clock.

Q. - Fair enough. So it is fair to say that we could probably just represent this peak-shaving with direct load control

as a horizontal line drawn at some point so that the energy that we interrupted was at 300 megawatt hours. And whatever point that is would be reasonable?

MR. MARSHALL: Yes.

Q. - Okay.

MR. MARSHALL: And if you --

Q. - And it would shift the load off immediately -- it would have to be shifted later in order to make it up, is that correct?

MR. MARSHALL: It has to be shifted outside --

Q. - Fair enough.

MR. MARSHALL: -- the flat level of the hydro dispatch. So it has to be shifted to 10:00 o'clock at night.

Q. - Fair enough.

MR. MARSHALL: Yes.

Q. - Okay. Now I'm just looking at this. What I'm seeing here is -- if I just eyeball this, it would seem to me that we get more than that 50 megawatts of peak reduction if we did it that way, wouldn't we? We would get --

MR. MARSHALL: Yes. I would think we might get 80 megawatts, let's say.

Q. - I would -- just based on the calculation that you have given me here, 22 megawatts reduction down there, my guess would be more like 138.

Because the sum of the two has to equal 150 megawatts, doesn't it?

MR. MARSHALL: No, I don't think so.

Q. - No?

MR. MARSHALL: I think that -- if we assume that the peak of the curve is a triangle --

Q. - Okay.

MR. MARSHALL: -- then the base and the altitude -- the altitude of the triangle is half the base.

Q. - Okay. All right. So let's take --

MR. MARSHALL: And so it would be -- half of 150 is 75 megawatts.

Q. - So let's say it is -- you say it is 75 or 80. That is fine. Let's put it at something like that.

Now that load would represent your peak load then on that day, that peak electrical load on that day, wouldn't it?

MR. MARSHALL: Yes.

Q. - So that means that your reserve margin would have to add to that load now and not the other one that we used before, is that correct, the 2893?

So my total of load plus reserve would be reduced by whatever that amount is, wouldn't it? My reserve margin is added on top of my total system net electric load,

isn't it?

MR. MARSHALL: Yes, it is.

Q. - And so after I do this direct load control my system net electric load has been reduced by that much?

MR. MARSHALL: It is because direct load control is a resource. We would -- we would not put the load control in the load side of the equation.

We would put the load control on the resource side of the equation as an activity that the operator of the system would invoke as a resource, just as if he was scheduling a generator to meet a requirement.

Q. - And are you saying --

MR. MARSHALL: So the load --

Q. - Are you saying then there you have to add a reserve margin to account for your direct load control?

MR. MARSHALL: No. We would use the direct load control to be part of the reserve margin.

Q. - Okay. Fair enough. So what that is saying is then that the total benefit of the direct load control is the reduction of your peak load plus this 22 megawatts that you give down below? Is that roughly right?

MR. MARSHALL: The reserve -- the load control could be used to provide that operating reserve that is required. That is what we said in our report --

Q. - Right.

MR. MARSHALL: -- that the way to evaluate this is -- with unbundled ancillary services today we think there is an opportunity to look at direct load control as an operating reserve resource, to be evaluated in that sense.

Q. - And so the saving that accrues from it -- I'm trying to get at its economic value here -- is that it would represent essentially a peaking plant for the vast majority of its power. And a small amount of its power would go into reducing the intermediate load on the system, is that right?

I'm trying to get at how we value this direct load control. It seems to me that the way we are looking at this, it reduced the system net peak load and therefore reduced the total capacity that will be required.

Because now your reserve margin is going to be added onto a lower system net peak. And so that savings represents an economic value that could be -- that could be counted in terms of its --

MR. MARSHALL: Yes. That is correct.

Q. - Okay. I guess that is my core concern. Let's see what I -- let's see, it's here somewhere. Oh yes. I would refer you now -- there was a lot of talk about this earlier in the day, but I'm going to refer you to I think

it's appendix B of your evidence, the screening of the DSM options. And I guess I am looking at the revised page 53 which is exhibit A-8. And -- but I think this could apply to any of these ones in this table.

But my question for you is when you evaluated the savings you did a benefit cost ratio for the participants and sort of looked at it and said, you know, how much is this going to benefit you and how much is the cost.

How did you value the electricity savings that the participant would receive in terms of reduced -- they are putting in a heat pump, their reduced electricity bills, how are they valued? Specifically were they valued at the long run marginal cost or were they valued at prevailing prices?

MR. MARSHALL: In the participant perspective they were evaluated at the price that that customer pays for electricity.

Q. - Is that price -- in the case of residential customers, do we know whether that price is above or below the cost?

MR. MARSHALL: It's based on the current published rates for electricity.

Q. - And are they above or below the cost I guess is --

MR. MARSHALL: That cost today is -- in terms of a cost to service ratio it's below the cost. We adjusted that -- we

assumed that it was about 90 percent cost of service in going into this study and then we raise those prices up to 95 percent cost of service. So we gave the participant a higher saving on his electricity bill against the investment.

So it's based on 95 percent cost of service.

Q. - So when you look at something like your energy savings I should be able to go to your rate schedule and multiply through the cost per kilowatt hour in your rate schedule by say this 4269 for high efficiency air source heat pump, and get a number that represents the savings based on your price schedule, but you use more savings than that, is that what you are saying?

MR. MARSHALL: Yes.

Q. - Is that detail in your submission anywhere?

MR. MARSHALL: Not in this evidence. We have submitted in the evidence for the Point Lepreau hearing in interrogatories responses to the model in evidence. I don't know the exhibit number but it went out last Tuesday, I believe. And we have behind all of these detailed back-up sheets on all the calculations of cost requested by CCNB. We have also in here a print-out of our detailed model that takes all of the numbers all the way through the model so that you can look and see, plus

all of the inputs that go into that model that include the prices for customers that would go into that rate. So all of that is provided in the Lepreau evidence.

MR. SOLLOWS: Okay. Thank you.

CHAIRMAN: My suggestion is we take a break. You have one or two things that -- certainly one thing you were going to look at and thought you could get a hold of quickly, and the other refresh my memory on it. That was something that --

MR. SOLLOWS: Yes. If I recall you were going to -- we were working through that calculation trying to see the impact of the changes in GDPP and you were going to go and check your model, was that the plan?

MR. LARLEE: I was going to get back to you with the type of regression we used, between --

MR. SOLLOWS: Yes, that's right, on the general service sales versus --

MR. LARLEE: PDI.

MR. SOLLOWS: -- versus PDI. Perfect.

CHAIRMAN: My suggestion is that we take a half an hour break now and then come back after you have got that done, because I know that at least Board counsel was speaking with Mr. Coon during lunch and he requested at least that amount of time, is that right, Mr. Coon, before we started

summation?

MR. COON: I can actually deal with less, Mr. Chairman. What is your pleasure? I don't require the full time now.

CHAIRMAN: Okay. Well then let's say we come back at quarter after three. If that's not enough time for you to get through to Fredericton and find out what you want to, why let us know.

(Recess)

CHAIRMAN: Mr. Larlee, over the break were you able to shed any light on the two things that Commissioner Sollows had been talking to you about?

MR. LARLEE: Yes, Mr. Chairman, and as well I was able to look into the elasticity analysis that I spoke about earlier. Can I comment on that as well?

CHAIRMAN: Sure.

MR. LARLEE: The elasticity analysis that I recalled was actually filed with the Board in the '92/'93 rate case.

Now to Mr. Sollows' questions. The question relating to the power curve and why we chose the power curve to relate real gross domestic product and real personal disposable income, I have here an exhibit that shows the regression statistics for -- in both cases.

MR. MORRISON: Mr. Chairman, shall we have this marked?

CHAIRMAN: We might as well wait for just a second. We will

mark it when we can follow along with it. That will be Exhibit A-15. What would I call this?

MR. LARLEE: A comparison of regression statistics. Under the title A, linear regression statistics, this is what Mr. Sollows asked us to do on the same series of data. You can see the R square function which is about half way down the grey box is .9447 in that case. Under the title B logarithmic regression statistics this is the actual relationship that we use in the model again on the same data. The R square statistic again about half way down the grey box is .9491. Slightly higher. This is using the functions that are embedded in Microsoft Excel.

CHAIRMAN: Did you have anything further?

MR. LARLEE: Yes, there is one other item. Mr. Sollows asked the question how do we relate real personal disposable income per capita and total general service sales per capita, and that is done using linear regression.

Q. - So in terms of what you have shown here is that the -- your -- you have got a slightly better fit using a log log fit for the GDP versus real gross domestic product, right -- or no, real PDI? I guess the first question that I had asked you to look at though was the fit using GDP versus year. The linear curve seems to fit the data

better than your 2.1 percent. So while this is fine, this wasn't really the point that I was looking at.

The second one, you have used -- I guess this is for figure 13 -- you have used a linear curve through the data and you say you got a better regression than you would using a second order curve. What did you get for the regression coefficient for the linear?

MR. LARLEE: The regression coefficient for the linear was -- or is 0.9749. I don't believe that we did any other type of regressions on this particular relationship. I would have to confirm that. Given such a high coefficient I --

Q. - And just to be clear, this was the real PDI or the real total real personal income? Which was it that you are doing?

MR. LARLEE: It turned out to be the real personal income. All the data used in the forecast is actually personal income.

Q. - As opposed to personal disposable as it's listed here.

MR. LARLEE: Yes.

Q. - So that could be the explanation for the disparity. I'm actually working with what you said it was which was personal disposable income.

MR. LARLEE: Yes.

Q. - So that it is absolutely clear to me, which did you intend to use?

MR. LARLEE: We intended to use personal disposable income. Again as a result of a miscommunication we received the wrong series of numbers.

Q. - So would it be too much to ask you to redo these graphs with the way you intended them to be and sort of update this so that we can have a sort of document that records what the process is and should be?

MR. LARLEE: I don't see any difficulty in that. We can update the -- you are speaking specifically of the figures that include PDI?

Q. - Yes. And particularly your investigation of your general service sales per capita versus real PDI per capita. Again I think the discrepancy might be that I'm working with the real PDI numbers from StatsCan and you were using just personal disposable -- or total personal income or whatever. I would just like to resolve the discrepancy, that's all. So if at some point you could work this thing through and get a copy to us, I would appreciate it.

MR. LARLEE: Very well.

CHAIRMAN: Commissioner Sollows, is there anything that we could get let's say in 15 or 20 minutes, because the record will close in this particular hearing as soon as

counsel have summed up this afternoon. So anything that will affect our deliberations concerning this particular hearing has to be in front of us by that time.

MR. SOLLOWS: Well my understanding is they can't provide that by that time. My understanding is you couldn't provide this before we close this hearing?

MR. LARLEE: No, we could not.

CHAIRMAN: All right. Well could you in accordance with Commissioner Sollows' request file it in the near future just for curiosity sake?

MR. LARLEE: Yes, absolutely.

CHAIRMAN: Now have counsel had the opportunity and parties to prepare their summation?

MR. SOLLOWS: Yes, Mr. Chairman.

MR. MARSHALL: Are we dismissed, sir?

CHAIRMAN: Not yet, because I -- let me explain, Mr. Marshall. Your counsel has the right to redirect and I just wanted to know if we needed any more breaks or if we could go right straight through after that, because some parties were indicating they needed time, but Mr. Coon had indicated he didn't need as much as I had originally anticipated. So I was just checking on that.

So you are still there at the mercy of your counsel.

MR. MORRISON: I have no redirect, Mr. Chairman.

CHAIRMAN: This panel is dismissed. And we want to thank you for your participation.

We will give them a moment to clear out. And while they are completing that task, for those parties who have not been involved in a matter of this nature before, the normal procedure is that the applicant will -- that is Mr. Morrison on behalf of the applicant will sum up for the Board. And then we will go around the intervenors and ask for their participation in accordance with the alphabetical order. And then Mr. Morrison will have the last opportunity to comment on anything that the intervenors brought up which they couldn't have -- which he could not have reasonably anticipated they would cover.

Mr. Morrison, if you would like to go ahead.

MR. MORRISON: Thank you, Chairman. Commissioners, I will be brief. This is a hearing to deal with an updated load forecast.

The load forecast evidence -- the primary load forecast evidence was filed in the generic hearing last year. That load forecast evidence was accepted by the Board to be on balance reasonable.

In the course of its decision the Board directed NB Power to update the load forecast prior to the filing of the Lepreau evidence. And it specifically directed NB

Power to deal with three issues, DSM, natural gas fuel switching impacts and self-generation by third parties.

It is my submission that all of these, these three specific issues have been dealt with, and have been dealt with thoroughly in the filed updated load forecast evidence.

It is important to note that the Board has already approved a load forecast evidence and this is merely an update. And the methodologies that were used in the original load forecast evidence are identical to the methodologies that were used in the update. So the methodology ought not to be an issue.

And it is also important to remember that we are dealing with forecasts. And a forecast is just that. It is by its very nature inaccurate. The test is whether a forecast is based on reasoned judgments. All forecasts require the exercise of judgment, skill and experience.

Now we have heard a lot about modelling and computer models and all of the mathematical tools that are used in forecasting. And they are important, no question. But the judgment of experienced professionals is what prepares and presents the forecast. So you just don't put numbers in one end and out comes the magic answer. Judgment of experienced professionals, which I submit, the people who

are involved in this on NB Power's behalf are.

I think the evidence shows three things, that the forecast penetration of natural gas, as the witnesses have stated in their evidence, is aggressive.

The energy efficiency measures that are included in the load forecast are confirmed by the detailed DSM analysis which was essentially Mr. Marshall's evidence. And most importantly, there is no appreciable difference between the updated load forecast and the load forecast which was filed at the generic hearing.

None of the intervenors so far, from the questioning that I have heard, has indicated in its questioning that the load forecast is unreasonable. Now, we may hear differently in a few moments. Now some of the questions that have been brought forward by the intervenors have questioned some details of the forecasting. But I would suggest and it is my submission that the underlying basic reasonableness of the forecast has gone unchallenged. And it has gone unchallenged because none of the intervenors has filed any evidence.

It is my submission that on balance the updated load forecast is reasonable. It is based on reasoned judgment and confirms the estimates in the load forecast which has been previously filed at the generic hearing.

Essentially what NB Power is asking this Board is to confirm that the updated load forecast is indeed reasonable. It is essentially no different from the previous load forecast evidence, and that the economic analysis for the Point Lepreau refurbishment project for the next round of hearings, that that be based on the load forecast evidence that has been previously filed.

And that, Mr. Chairman, is my submission.

CHAIRMAN: Thank you, Mr. Morrison. Now the Atomic Energy of Canada Limited is not represented at this particular hearing. So next would be Canadian Unitarians for Social Justice. Do you have anything you wish to say to the Board, Ms. Flatt?

MS. FLATT: Yes, please. And as well the Saint John Citizens Coalition for Clean Air has worked with me for this comment to the Board.

CHAIRMAN: Okay. First of all, when you do make your comments, if you want to, you can move up to the front table.

Secondly, does this mean it's a dual or joint contribution?

MS. FLATT: Yes, thank you.

CHAIRMAN: All right. Do you want to go on your turn, Ms. Flatt, or do you want to go on Mr. Dalzell's?

MS. FLATT: My turn is fine.

CHAIRMAN: Okay. Did you want to proceed from there or do you want to come down front? Okay.

MS. FLATT: Mr. Chairman and Members of the Board, the two intervenors, the Saint John Citizens Coalition for Clean Air and the Canadian Unitarians for Social Justice have prepared the following closing comments.

We base these comments upon reviewing the evidence and listening to the various witnesses over the last two days of this hearing. Unfortunately for the record, as volunteer NGO's without intervenor funding, we were unable to provide our own evidence.

We do not feel that this updated load forecast is a reasonable analysis upon which the overall financial and facility planning activities of NB Power be based. As well, further demand side measures need to be included for the PUB's consideration. We do not believe this forecast takes key issues relevant to this time period into account. These issues pertain to climate change patterns due to global warming, possible CO2 charges of up $100 per tonne which were identified at the Coleson Cove Hearings. Industry down-sizing. Independent industrial electricity production. Public concern for the environment and the will to pay to clean it up. And more energy efficiency

technologies.

We are concerned that the screening of the demand side management did not include trends seen elsewhere of public interest and willingness to embrace private renewable energy sources. For example, solar panels on roofs, community hydro, small wind generators, micro turbines, et cetera.

We are also concerned that renewable energy sources for industry demand side management was not factored in. At the recent Environmental Industry Association conference, Irving even expressed enthusiasm in hydrogen fuel cell technology being the "wave of the future".

Besides financial incentives for more DSM success we believe NB Power should have looked at residential networking where people wishing to use green power sources could actually feed into the system rolling their meters back and receive credits if they produced more than they needed. This concept is well known as reverse metering.

As well we observed that NB Power did not factor New Brunswick's energy policy in relation to fuel switching and green power into their analysis.

We also would have felt more confident with the load forecast if independent studies had been undertaken with the public to see what people were willing to do to save

energy and/or to reduce greenhouse gases.

Simple focus groups to larger scale polls and other assessments would go a long way to address the concerns heard today and yesterday on the accuracy of the DSM findings.

We are gravely concerned that the amount of energy that needs to be saved to avoid refurbishing Point Lepreau approximately 440 megawatts is being lost and/or saved by alternate DSM measures and weather patterns.

We feel strongly that not enough study has been undertaken to find out how much money it would take to improve the DSM results.

Surely the amount would be less than the $800 million some figure that will be spent on the Point Lepreau refurbishment. Therefore, we request that NB Power sponsor an independent study to clarify the extent to which DSM measures play into the validity of this load forecast.

We further recommend that the PUB in its final decision make a recommendation to NB Power that they be more pro-active in promoting and developing DSM programs and services to help New Brunswickers reduce their electricity consumption.

Thank you.

CHAIRMAN: Thank you, Ms. Flatt. Conservation Council of New Brunswick?

MR. COON: Thank you, Mr. Chairman and Members of the Board, Commissioners.

I would like to start with where this all started, and that was the questions that were posed for the Generic Hearings, or at least one question that was posed for the Generic Hearings by the Board. And that was, is it reasonable to believe that NB Power will require the power generated by Point Lepreau at the time that it has to be shut down.

In the Board's Decision from the Generic Hearings on page 3, this was sort of rephrased in the sense of it saying what is the generation capacity required by NB Power in order to meet the peak demand that will be placed on its system during the 10 year planning period. So dealing with this 10 year planning period which began a year ago now.

The Board in its decision noted that an attempt to predict the future is subject to uncertainty. And that the current load forecast filed for the Generic Hearing was prepared at a time when additional and new factors create even greater uncertainly -- uncertainty than is normally associated with the unpredictability of load

forecasting.

So on page 5 of your decision you noted that significant factors beyond the control of NB Power may impact on the need for the 635 megawatts represented by Point Lepreau. And that since hundreds of millions of dollars are at stake you directed NB Power to file an updated load forecast, which they have done.

So the question is, is this updated 10 year load forecast reasonable? As the Board noted in its decision on the Generic Hearings, there are factors operating today that create greater uncertainty than in forecasting them in the past.

And Mr. Marshall during the Generic Hearings under cross-examination echoed that in agreeing with me that we are in a very turbulent planning environment right now when it comes to planning for future capacity in electric power planning.

So 10 years ago we didn't have the same kind of turbulent planning environment. And they didn't have the same special factors and larger uncertainty that we are dealing with right now. Yet the forecast of 10 years ago over estimated generation requirements in the end of that period which was 2001, and by almost 16 percent or 547 megawatts in terms of peak demand. 547 megawatts far

exceeds any shortfall that is expected with Lepreau off line.

Now we are only one year into the current forecast period and NB Power, as has been demonstrated in the evidence, has overestimated requirements for the first year already by 273 megawatts as was extensively discussed in cross-examination with Mr. Larlee by Mr. Secord, were almost 9 percent in the very first year of the forecast. They have overestimated by that amount.

It's actually a pretty good indicator of the kind of greater uncertainty we are dealing with in the current turbulent planning environment. Because if you look back in the evidence in exhibit 1, page 60 in appendix B, there is a table 23, which looks at the actual and forecast peak hourly demands. And when you look at the last 10 year forecast that was made -- or forecast that was made some 10 years ago, in the first year of that forecast after it had -- they had one actual year to go on, they were only -- had only overestimated their requirements by 3 percent or 91 megawatts. So back then it was a different time. They only overshot by 3 percent. Overestimated the demand by -- a peak demand by 91 megawatts. And here in this case the very first year of the current planning period, the current forecast, they overshot by 273 megawatts or

overestimated by almost 9 percent in terms of their peak demand.

So before we have -- before us we have a revised 10 year forecast that's using essentially the same techniques as were used in the past.

What are the sources of these -- this turbulence, this instability, special risks that didn't previously exist in other forecast periods that NB Power has dealt with. Well, there is a number that I would like to outline that came out of the evidence in cross-examination and interrogatories.

For the first time we know that industry can now self-generate. NB Power in its evidence made no effort to forecast what that potential might be based on -- on the technical potential or economic potential, it only included what they had been assured -- assured by their customers they were planning to do in terms of their -- their inclusion provision in the load forecasts for the impacts of self-generation. So they didn't make any attempt to forecast that. They simply took their customer's notice of intent that they would be self-generating and they incorporated that into the load forecast.

And as was pointed out in evidence in cross -- under

cross-examination, this represents self-generation only in Southern New Brunswick. And that they assume -- Mr. Marshall said they assume no self-generation in Northwestern New Brunswick or the Miramichi, because of the great deal that NB Power has to offer.

However, of course, a number of customers have decided already in the south to self-generate to the tune of 150 megawatts, despite the particular prices that NB Power can offer them. So one would expect that may be customers in the Northwest or the Miramichi who would make similar kinds of decisions.

Secondly, NB Power seems to assume by their evidence that they will continue to monopolize the electricity market at a time when the province is moving to create a competitive market is a matter of public policy.

The contestable market or the amount of their sales that potentially could leave once a competitive market is up and running during this 10 year planning period we are -- we are talking about, is about 44.8 percent according to the evidence of all their energy sales.

Now on top of this we have -- well they say that where they could leave too, of course, is a number of places. The intent of the government with the market is to enable private power producers to compete in the market. So

large industrial customers, municipal utilities can buy from private power producers, or import from Hydro Quebec or other sources.

On top of this the energy policy is suggesting they may even go further to retail competition, something they will be evaluating on a regular basis, taking it even farther down the road in terms of the potential impact on their 10-year updated forecast. So that is another area where clearly it causes grave uncertainty about the forecast, updated forecast before us.

Third, there is the issue of the provincial energy policy with respect to fuel-switching and energy efficiency. No details of these programs have yet been released in terms of how they intend to implement the goals and objectives they have established. So the impacts can't be quantified at this time and included in a forecast by NB Power.

Fourthly, as Mr. Larlee pointed out under cross-examination, NB Power has no rate strategy. So therefore they have been unable to build any price effects into this updated forecast over 10 years.

This of course doesn't consider either the fact that there may be a change in a rate structure imposed on NB Power by the provincial policy I just spoke of once the

details of its implementation are clear, in terms of actual structure of their rates.

Fifth, it was evident under cross-examination -- Mr. Larlee said they are basing estimates of industrial load growth on history, assuming that we will continue to see exactly the same kinds of increases in industrial -- in electricity intensity of the industrial sector over the 10-year planning period before us.

Historically, the evidence they presented under cross-examination for the last 15 years or so, that increase in energy intensity in the industrial sector attributed primarily to two mills shifting -- two pulp mills shifting to thermal mechanical pulping and a significant increase in automation, a trend that began a very long time ago.

They presented no evidence as to whether two mills of similar size over the planning period intend to shift to thermal mechanical pulping.

And you may recall that I had asked them under cross-examination what the range of the load of pulp mills is in the province without identifying any particular customer. Mr. Marshall indicated they range from -- their low is from about 30 megawatts to 100 megawatts.

So it is important obviously to know if a mill were to switch, which we don't, the particular load that mill had

compared to the loads that the mills -- the two mills in the past had when they switched over.

And I guess the other point was in going forward in this 10-year planning period, while some of the increases in electricity intensity of the industrial sector resulted from this trend to automation, fewer people working more machines. There was no evidence presented in going forward into the 10-year planning period as to how saturated that is, how much -- how far along the automation continuum are we.

Has much of the cost-effective automation in our industrial sectors been achieved with current technology at this point? Or is there far more to expect in the next 10-year period, which would increase their electricity intensity as they are projecting? No evidence was presented there.

With respect to the models, the model used in projecting industrial growth, I think from the evidence it is clear that the particular regression model used is overly simplistic in that, based on the evidence, does not include many relevant variables, it only has two, such as price effect, patterns of technological change and structural change in the economy, variables that more sophisticated models incorporate.

So basically they are saying the future, as far as industrial load growth, is the same as the -- will be the same as the past. And as we have seen, that approach to forecasting has failed them in the past.

Further, under cross-examination it was made clear that NB Power is assuming industrial rates are going to decline in real terms. That's their operating assumption in the forecast. But no evidence was presented to support this.

If we look at the industrial structure of New Brunswick, we have got mines shutting down, wood supply to the mills fully subscribed, an overall shift to more of the economy-based and information technology. So these are the kinds of things one would expect to be reflected in the forecast.

Next I will talk about the issue or the role that the projections run in residential load growth play in terms of the special risks embody in this updated load forecast.

NB Power is using a 30-year average for weather conditions in trying to project the kind of residential load when there has been nothing average about our weather conditions for some time.

In fact there has been a clear trend over the last 10 years anyways that by all counts will continue to warming.

And that has not been taken into account in the residential growth -- load growth forecast.

By relying on the standard old-fashioned approach of using a 30-year average that obscures the very clear trend that Environment Canada would be happy to share with them that they have identified, particularly for our winters over the past 10 years or so.

So all of these factors that I have listed create special uncertainty in this forecast period, particularly the farther you go out in the forecast.

And as a result, what CCNB would like the Board to consider in such an uncertain an unstable planning environment, given there are significant financial risks for New Brunswick Power customers in New Brunswick, that to accept this 10-year forecast or any 10-year forecast, updated forecast, is unusually risky at this time.

And instead, we would suggest that a safer approach, a less risky approach would be for the Board to consider accepting the first five years as the reasonable forecast.

Five years -- the five-year forecast as presented would provide a much more reasonable basis for short-term planning for NB Power, would allow NB Power to establish a medium and long-term rate strategy which then would allow them to include price effects and subsequent forecasts and

provide some sense to NB Power of what kind of competitive market will develop after market opening in April of 2003, and what the impacts likely will be in the latter five years of this 10-year period, post 2006, in terms of their sales.

What kind of competition will they be really dealing with? Who is stepping up to the plate at what price? And what are the likely impacts on NB Power's sales?

Mr. Larlee agreed to me under cross-examination certainly that the reliability of forecasts as we go out reduces significantly.

And we would argue, given the special circumstances at this point in time in this planning period, the uncertainty is dramatic and the risks significant.

Also if the updated -- the first five years of the updated forecast was accepted as reasonable, then that would also give NB Power a chance to see how the Provincial Energy Policy plays out over the next year or so in terms of the kinds of measures that might come forward to encourage -- achieve the kind of fuel switching energy efficiency the province has said they are committed to and also might make it clearer what role liquefied natural gas will play in its impact on the price and availability of -- (inaudible-microphone hit).

Now in the generic hearings we had argued that energy efficiency programs can reduce demand, to reduce or eliminate the projected deficiencies in meeting their peak demand for capacity after Lepreau's forced retirement. And that was reflected in your decision in the generic hearings.

And it was noted on page 4 of your decision for the generic hearings that we highlighted the need for -- sorry, on page 11, that we highlighted the need for a further evaluation of demand side management as an alternative to any supply side projects.

So considering this and other input, the Board instructed NB Power to address the potential for demand side management to be addressed for this hearing.

The evidence presented to us, filed with the Board, presented through interrogatories and under cross examination has shown that this has not been done.

What we have had is a screening of energy efficiency measures. We had some discussion about the definition of demand side management.

And Mr. Larlee clarified that clearly, that demand side management options are those programs that cause customers to reduce their demand for electricity by implementing conservation and energy efficiency measures,

some of which were screened in this evaluation.

So in other words DSM options are those things, those activities, programs and subsidies and financial measures and other things, proactive activities initiated by a utility that cause consumers to reduce their demand for electricity by implementing energy efficiency measures. And what they did was screen energy efficiency measures in their evaluation.

So the load forecast correctly incorporates a reasonable estimate of the naturally-occurring energy efficiency that could be expected over the forecast period in the absence of providing for price effects, is the proviso I will put on that, and in the absence of any actual demand side management, meaning actual programs to induce customers to reduce their demand for electricity through improvements in efficiency or conservation.

They identified 30 megawatts of naturally-occurring energy efficiency over the forecast period in the residential sector and 27 megawatts of naturally-occurring efficiency in the general service sector.

I say naturally-occurring because they made it clear that the government buildings program, as far as they knew, was not going to continue. It had one more year left in it.

So they were assuming that they would get some naturally-occurring energy efficiency improvements in the general service sector, just as we go along in the absence of any actual program. So a total of 57 megawatts of energy efficiency is considered in the load forecast.

And in the absence of any actual demand side management, that is management of the demand side, we see that as -- and the absence of also any price effects in the forecast, we see that as a reasonable estimate of naturally-occurring energy efficiency measures.

The analysis that was done in screening energy efficiency measure basically calculated what kind of energy efficiency improvements would occur in the absence of any demand side management, that is in the absence of any inducements, as demand side management is defined, to increase energy efficiency on the customers and/or implement conservation measures.

So that is -- naturally-occurring energy efficiency represented in the load forecast is the same as achievable efficiency determined in the screening of energy efficiency measures done by NB Power for this hearing.

So they are interchangeable. What was determined to be achievable is essentially what will naturally occur in the absence of any demand side management.

The applicant has indicated that in the upcoming hearings demand side management will be treated as a supply alternative to the refurbishment of Point Lepreau that is being proposed.

The question then really is what instructions should the Board provide to ensure fair treatment of demand side management as a supply alternative in that hearing? Remember again when we are talking about demand side management we are talking about various options, programs that would induce people, customers, businesses to reduce their demand through efficiency improvements or conservation.

So how should DSM be evaluated as an alternative for the proposed project by the applicant? Well, the analysis of screening of energy efficiency measures that we have before us did look at the technical potential of energy efficiency, for the energy efficiency measures that they looked at, in terms of reducing demand. And it looked at the economic potential and identified a total of 337 megawatts as economically potential.

Now this has nothing to do with natural gas switching. Because that kind of got muddled in some of the discussions. And natural gas-switching was sometimes part of demand side management and sometimes it was just energy

efficiency. So I'm not talking about gas-switching here. I'm simply talking about energy efficiency improvements.

And so what the analysis in appendix B identified was an economic potential for 337 megawatts of capacity to be avoided through energy efficiency improvements in the residential, commercial and industrial sectors. So no gas in that number.

Now if we take out what is going to occur without any actual inducement or without any actual demand side management, the 57 megawatts that the forecast assumes will naturally occur in terms of energy efficiency improvements.

So that drops to 337 megawatts of economic energy efficiency down to 280 megawatts. If we add in the CO2 credits that NB Power has calculated in their evidence that it gets us back up to 300 megawatts.

So in essence 300 megawatts of economically attractive energy efficiency is available, or at least economically attractive energy efficiency measures that would displace 300 megawatts is available, already identified as economic.

And this is close to the generation gap that was identified in 2007 which we are going to talk about in the next hearings. So to compare DSM on an equivalent basis

to supply options we really need to estimate the program and operating costs needed to achieve that 300 megawatts.

Now theoretically all 300 megawatts of energy efficiency is achievable provided the necessary financial program and personnel resources are made available.

In exhibit A-6, the interrogatories on page 29 of appendix A-5, there is the Marbeck study that looked at energy efficiency potential in New Brunswick and fuel-switching potential about a decade ago now.

And on page 29 they look at how you think about achievable potential once you have identified what is economic, how you think of achievable potential.

And their recommendation was the estimation of achievable potential should be done on a program-specific basis, with each program identifying factors such as specific priority target markets and magnitude of energy savings potential.

So in each sector, each program you might have four or five different programs targeted to the residential sector, you know. Taking as an example, I haven't insulated my basement, I'm sorry to say, even though it is economic. So the economic potential is there to achieve that energy efficiency potential. But I haven't done it.

A DSM program, demand side management -- one of the

demand side management programs might be a zero interest loan program for people like me. And I would do it. For me that would cross the threshold for whatever reason I'm not doing it. And I would do it.

So you can see that that is the difference between the economic potential and a very specific example of an energy efficiency measure that is economically attractive and actually achieving it, how you help induce that action to achieve the economic potential.

So they are saying select specific priority target markets and the management of energy savings potential in each case.

Then consider the level of program financial commitment in each case in other words how much you are going to spend on each type of program, how much you are going to spend on what kinds of financial programs, loan programs, direct subsidies, direct installation programs in some cases, marketing programs and so on and so forth.

Consider the technologies involved, on a program basis remember. Consider the knowledge of a customer decision-making process involved in the case of each program, including the kinds of market impediments and the appropriate program or policy response options to address those market impediments and so on and so forth.

So those are the kinds of things that would need to be done for the next sets of hearings to fairly compare the economic potential that has been identified with the supply alternatives.

So to address the potential of demand side management to perhaps induce customers to achieve what has already been identified as economic, in other words to induce a shrinkage and demand through energy efficiency improvements alone, to the tune of 300 megawatts, requires costing of the necessary financial program and personnel resources required to achieve that potential, that economic potential.

And it is the the costing of those financial program and personnel resources, those costs, that we should be comparing against the costs of refurbishing Point Lepreau or some other supply option related to what you get.

So you might get 300 megawatts or some portion of that that is identified versus the output of a generation supply option for a particular investment as well.

So these are the costs of demand side management. They need to be compared against the costs of rebuilding Lepreau or investing in other supply alternatives.

Now NB Power spent $40 million costing and designing an implementation study for refurbishing Point Lepreau.

And they have acknowledged they have done those studies to cost and design -- develop a cost to design and develop implementation strategies for demand side management, which is by definition necessary to pursue demand side management. Because as we have already cleared up, demand side management means you are inducing customers to take action through various programs and activities.

So the Conservation Council is asking the Board to consider doing three things. One is to direct NB Power for the next set of hearings when we are considering alternatives to the expenditures for refurbishing Point Lepreau to provide a detailed program design and specific implementation strategy programs and the costs of the programs and running the programs for the demand side management option for the 300 megawatts that have been identified in the current analysis as being economic.

Secondly we would ask that the Board direct NB Power to carry through the 300 megawatts of energy efficiency potential that has been identified in their analysis in appendix B forward into the next hearing. And that is what we compare the supply alternatives and the Point Lepreau refurbishment to, as a minimum.

Because of course there is considerable discrepancy between the Marbeck study that is included -- one of the

earlier references included in the response to interrogatories -- in terms of their estimates of the economic potential, albeit 10 years ago.

And the difference is about a factor of 3. They estimated overall the economic potential to be about three times the size, according to the study included with the response to interrogatories, of what economic potential NB Power estimates.

NB Power's estimates too, according to the material they supplied in response to interrogatories, is based on their 1995 study. So their study is not so recent either. They simply updated some of the costs to try and bring it up to date.

So that is the second thing, to ask that NB Power, for the purposes of the next hearing, bring the actual 300 megawatts identified in its current study that is economic potential forward for comparison in the next hearing to the proposal for refurbishing Lepreau and the other supply options.

And then finally that the Board instruct NB Power as to how to proceed specifically with how that energy efficiency potential and the necessary demand side management that would be required to achieve it be treated in the next hearing, and if they are on a fair basis with

the supply options.

Mr. Chairman and Commissioners, that ends my argument.

CHAIRMAN: Mr. Coon, would you just develop your last two or three sentences a bit more? My notes indicate that you want us to instruct NB Power on how to proceed in order to treat the demand side management in an appropriate fashion.

MR. COON: Correct.

CHAIRMAN: So I'm just saying be a little more specific about what you are talking about.

MR. COON: Well, there are two things I guess that led into that that were made by suggestion. And one was that they actual carry out the necessary study to cost out the demand side management that would be required to achieve that, so that we have actually got costs.

Because as I mentioned, what we wanted -- what we need to compare is the cost of refurbishing Lepreau or building a gas plant with the cost of demand side management programs that would be necessary to achieve the 300 megawatts or close to that in energy efficiency. So that is one.

The second thing was to actually bring those 300 megawatts forward from this hearing, from this analysis, those economic opportunities that have already been

identified for energy efficiency through their energy efficiency measures screening process into the next hearing.

So it is that that we are talking about. It is those 300 megawatts of economically potential -- economically attractive energy efficiency measures that could displace generation requirements that we are looking at in comparison with the other supply options.

And then finally taking those two things, and based on everything else you have heard on this issue at this hearing, provide any additional instructions to NB Power about how they should treat the DSM option along with the supply options that will be considered as alternatives to the proposed refurbishment.

CHAIRMAN: Okay. So in other words number 3 in your list is to make certain that we direct NB Power to do 1 and 2 properly?

MR. COON: And I'm not saying that is comprehensive. There are likely other issues here that, in consideration of the evidence, that might come into play.

But at this time those were the two specific things that we felt were important to treating the DSM option on a fair basis with the supply options in the next hearing.

CHAIRMAN: Good. Thank you, Mr. Coon.

MR. COON: Thank you.

CHAIRMAN: We are going to take a quick recess.

(Short Recess)

CHAIRMAN: Mr. Craik is not here. Energy Probe has not been here. Mr. Gillis is not here. IBEW is not here. J.D. Irving.

MR. MOSHER: We do not expect to make any closing remarks at this time.

CHAIRMAN: Fine. You are really having a watching brief as the lawyers would say.

Mr. LeBlanc, would you like to come up to the front?

MR. LEBLANC: Monsieur le Président, et membres de la Commission, merci.

Je vais présenter quelques commentaires pour conclure mes arguments par rapport aux preuves qu'on a entendu aux documents qui nous on été présentés dans le cas de cette audience.

Je dois tout simplement dire que je suis ici à titre de mon nom personnel, une personne intéressée ou préoccupée par des décisions environementales au Nouveau-Brunswick et également économiques.

Je pense que selon mon opinion nous avons devant nous une question qui a des portés quand même importantes. C'est probablement la décision énergétique la plus

importante que nous avons à prendre pendant un bon nombre d'années. Et puis je trouve qu'il est important pour satisfaire aux préocupations de la population du Nouveau-Brunswick d'être -- que tout les gens se sentent bien par rapport aux informations qui nous sont présentées.

J'ai écouté avec beaucoup d'intérêt les interrogations au cours des deux dernier jours. J'ai également lu avec beaucoup d'intérêt les divers preuves qui nous ont été présenté depuis le mois dernier.

J'ai beaucoup appris disons sur le modèle que utilisait Energie Nouveau-Brunwick pour arriver à ces projections qui bien sûr sont -- ne sont que des projections.

Et par rapport à cette -- à ces présentations j'ai quand même -- j'ai quand même sorti avec quelques questions qui pour moi n'ont pas encore été répondu, et quelques préoccupations par rapport aux -- à certaine absence des preuves qui nous ont été présenté.

Je dirais que la -- bien sûr je dois reconnaître l'expérience qu'a Energie Nouveau-Brunswick dans la gestion des questions énergétiques et également la préparation de ses projections.

La seule chose qui a semblé être évident pour moi au cours des derniers jours, c'est une certaine réticence

quant à promouvoir de façon très aggressive les messures de conservation qui auraient -- ou qui pourraient nous permettre de créer des économies réelles au niveau de la demande.

Je constate également que ça fait près d'une dizaine d'années que l'on parle de façon assez sérieuse au Nouveau-Brunswick du besoin d'identifier des mesures de conservation pour -- afin d'économiser non seulement la création d'une nouvelle charge d'énergie, mais également pour des mesures de protection de l'environement.

Mais à ce jour on a toujours pas une mise à jour, par exemple, du rapport Marbeck ou bien une stratégie qui est complètement transparente et complète qui nous présenterait des alternatives au niveau de la conservation.

Bien sûr je pense que on est tous conscient qu'on ne parle pas ici de 50 ou 60 pour cent de la capacité d'électrique du Nouveau-Brunswick, mais probablement des mesures qui chiffrent entre cinq pour cent et peut-être 15 ou 20 pour cent selon l'emphase de ces mesures de conservation ou d'éducation, ou l'incitatif du rapport du gouvernement pour réellement attaquer la question de conservation.

Alors disons, je regrette bien sûr de devoir venir

inervenir à cette audience ici sans que j'ai à ma disposition aucune alternative ou bien aucune étude indépendante qui aurait été préparé pour présenter disons un problème assez important de conservation.

Je sais que c'est toujours dans les plans de la province du Nouveau-Brunswick d'en avoir un de compléter, sûrement si on se fie à la récente politique énergétique. Mais aujourd'hui même alors que on doit évaluer les -- ces alternatives-là, on en a pas en mains.

Et puis bien sûr vous comprenderez que moi-même, ou probablement la plupart des autres intervenants ici aujourd'hui, non pas les moyens pour soit produire nous-mêmes ces preuves ou financer une recherche qui aurait permi de bien évaluer ces alternatives. Alors je pense que c'est pour moi le point le plus faible, disons de cette audience.

Et une autre constatation je pense c'est, j'ai eu l'impression que les projections qui nous avaient été présenté, le modèle de projection à long terme, était probablement très semblable à celui qui avait été préparé une dizaine d'années passé et bien sûr évidemment celui de l'année dernière.

Et bien que il y a plusieurs choses qu'il ont changé dans les dernières années, également beaucoup depuis

l'année dernière, comme on le sait bien.

Plus particulièrement ici au Nouveau-Brunswick je pense que les gens ont probablement à l'esprit les tendances démographiques.

Je sais que moi-même je me pose la question, si on a un scénario qui disons si la tendance se maintient et qu'on a une décroissance au Nouveau-Brunswick, est-ce que c'est sage pour nous d'investir par exemple un milliard des aujourd'hui en l'an 2002 ou 2003 envers un projet si important. Ou, est-ce qu'on ne serait pas plus prudent de réduire ces investissements-là.

Alors ce sont des genres de questions sûrement que moi-même je me pose, puis j'ai l'option que plusieurs autres personnes, et puis lié surtout aux questions démogratiques -- démographiques, bien sûr à la question de conservation que j'avais présenté -- que je vient de présenter.

Alors, c'est -- c'est une chose qui -- bien sûr qui n'était pas possible pour Energie Nouveau-Brunswick. Bien sûr je comprends. Elle doit avoir comptabilisé les nouveaux -- les nouvelles donnés du recensement. Mais c'est certainement une préocupation importante.

Une autre chose que j'ai regretté, disons, c'est l'absence complète de le scénario qui verrait toucher

l'ensemble de la province pour la question du transfert du combustible. On a vu dans les scénarios qu'on parlait surtout d'un programme visé au gens qui vivent le long des couloirs qui sont provisionnés par le gaz naturel. Alors que bien sûr on peut s'imaginer qu'il y aurait d'autre scénario qui pourrait se produire.

Celui que j'ai suggéré bien sûr c'était celui de l'huile à chauffage. Par exemple avec la technologie que nous avons aujourd'hui il y a quand même une efficacité beaucoup plus poussé au niveau de la conservation et la réduction des coûts pour les particuliers. Alors, ça semblé être une option qui a été rapidement rejeté dans le modèle que nous avons été présenté.

Bien sûr également je comprends que le modèle ne tient pas compte du tout du fait que d'ici à les prochaines années on pourrait également avoir un programme assez important soit de la province ou du fédéral, ou des deux, ou peut-être même d'Energie Nouveau-Brunswick qui encouragerait les gens à adopter des mesures de conservation en ayant accès à des fonds soient gratuitement, ou par un programme un peu comme qu'il a été -- il avait été le cas une vingtaine d'années passées au Nouveau-Brunswick.

Alors, c'est sûr que on en parle beaucoup au Canada et

au Nouveau-Brunswick. En fait on en parle plus qu'on en a jamais parlé depuis les 20 dernières années, alors j'ai l'impression que c'est une -- une question qui préoccupe beaucoup de canadiens et les gens au Nouveau-Brunswick. Mais cette analyse ici ne prévoit pas qu'une telle -- un tel scénario pourrait se produire dans les prochaines années.

Je ne sais pas moi-même si ça va avoir un impact significatif. Mais si c'est -- si ça même à l'ordre de cinq ou même trois pour cent, ça quand même des impacts importantes sur ces projections.

Alors, c'est à peu près ça mes -- mes commentaires. Et puis en fait j'aurais une recommendation à faire à la Commission et puis pour -- dans l'esprit de rassurer les gens du Nouveau-Brunswick, et puis bien sûr moi-même évidement, et ça serait de demander à Energie Nouveau-Brunswick de -- d'embaucher ou bien d'utiliser les services d'une firme indépendante qui réaliserait très spécifiquement cette stratégie de réduction -- bien, cette stratégie de conservation laquelle on parle depuis une dizaine d'années.

Cette stratégie-là peut soit être mise à jour assez détailé du rapport Marbeck, par exemple. Ou bien, une autre stratégie qui permettrait d'évaluer par exemple les

impacts d'un programme de subsides sur le transfert de combustibles.

Alors, c'est-à-dire si j'avais commencé un scénario plus tôt dans la journée qui prévoyait que si chaque personne au Nouveau-Brunswick recevait un 2 000 $ ou 50 000 qu'est-ce pourrait être l'impact sur l'énergie, la demande totale du Nouveau-Brunswick? Bon, c'est simplement un exemple. Mais ça aurait été bien, et ça serait bien, si Energie Nouveau-Brunswick pouvait financer une telle étude indépendante qui nous permettrait d'avoir au moins quelque chose à comparer. Parce que je pense que c'est -- c'est la préoccupation principale de cette audience. Pour moi, c'est le manque d'une alternative avec laquelle je peux disons faire une opinion finale.

Alors, c'était tout. Je vous remercie.

CHAIRMAN: Thank you, Mr. LeBlanc. And Mr. Hyslop?

MR. HYSLOP: Thank you, Mr. Chairman, Commissioners. My remarks will be relatively brief. And there is really only about one point that we will be spending a little bit of time on.

This hearing was convened pursuant to the order of the -- of this Board. Where the Board directed that NB Power to file an updated load forecast. And in particular, the updated forecast was to address all significant changes,

with particular reference to the issues of the demand side management, energy efficiency, natural gas penetration, fuel switching, self-generation by large customers and the supply of electricity by parties other than NB Power.

And the Province of New Brunswick concurs with Mr. Morrison's remark that the forecasting is a difficult art at best. And with the exception perhaps only of the demand side management analysis, we are satisfied that the assumptions upon which NB Power has relied are reasonable. And to that extent the forecast itself has some merit.

However, we do have certain reservations with regard to the issue of demand side analysis. And to this extent we feel that the evidence put forward by NB Power did not go far enough.

First, demand side analysis is the assessment of the potential reduction of electricity if there is an intervention into the economic order. This report went on the basis that there was no intervention into the consumer economy or into any other economy, but for some marginal advice from NB Power's customer representatives.

And the way I understand this works, if someone complains about their power bill these people will go out, meet with the consumer and make suggestions to make the home more efficient. So there is -- there is a little bit

of demand side management in that -- in that program. But generally speaking it's non interventionist.

And we would have thought that it would have been proper at this hearing that NB Power presented the proposals that would have allowed a true demand side analysis to take place because demand side management is more. It's an analysis of program, potential programs, program costs and economics. It's a way to increase the reduction of the use of electricity. How much can we intervene and what will be the results?

And fundamental, I think, at the end of the day and at the end of the Point Lepreau hearing, we are going to be asking how much will it cost to reduce power consumption demand 400 megawatts. We don't know today. A detailed study to do that may -- may be in the future. But before Point Lepreau it doesn't appear that evidence is going to be intact. And that will be a substantial weakness of NB Power's case at that hearing.

It's more than just an economic analysis. In NB Power's evidence at page 22 of exhibit B, Mr. Marshall stated customer decisions about energy conservation are a complex combination of economics and other factors.

At page 12 of the evidence these factors are described. Research has shown that customer decisions

about energy conservation are a complex combination of economics, beliefs, cynicism, concern for supply and a vow of social norms. In some cases benefits and costs are less important to the participants than other factors. For this reason, successful implementation of large amounts of demand side management must include customer education, direct customer contract, trade ally cooperation, advertising and perhaps alternate pricing and direct incentitives.

Quite simply and unfortunately the customer decision making process is not as simple as making benefit cost calculations.

Now ironically what NB Power proceeds to do in appendix B is to do an economic analysis. They go out and they talk about the participant ratio, the utility ratio, the total resource ratio. And they take all these things that might be considered demand side and they apply these ratios. And if it doesn't meet the ratio it gets thrown out.

Now for example, they threw out storm doors because the participant ratio was .74 instead of .9 or whatever they were using. And yet in cross-examination we find out they have this heat plus program which was non interest bearing loans. And then we find there was a fairly strong

penetration of people taking these loans to buy doors. That was an example of decide -- demand side managment working. I don't know.

But all NB Power really relies on are these various economic analysis. Now they do address the complexities. And where they -- where we dealt with that was in page 56 of attachment C to schedule B. And that was the little chart where we had the discussion of how -- what is it that takes you from the technically possible to the achievable. And there was some percentages. And I spent a fair amount of time with Mr. Marshall on this this morning. And his analysis of it is that we have expericenced professionals using their judgment over a fair amount of time to plug in these numbers.

Now with no disrespect to Mr. Marshall intended, Mr. Marshall is an engineer. When I look at the list of things he has considered as important in these type of decisions, which I read out of his evidence, I only note he is not an economist. He is not a psychologist. He doesn't have a PhD in marketing. He is not an advertising specialist. All these psychological factors that go into how people make decisions to use electricity, I haven't heard NB Power tell me about any expertise they used in those areas to see what's achievable and what's not

achievable.

I guess to summarize Mr. Marshall's evidence, these are educated estimates made by people at NB Power in consultation to each other. A more cynical person may see -- say that they are relying on their gut instincts. I don't know.

Unfortunately the customer decision making process is not as simple as making benefit cost analysis. There is a lot more to it than that. If there is going to be a real analysis of what demand side management can achieve, it's our submission, Mr. Chairman, that has not been done.

Now -- and fundamental at the end of the day is how much is it going to cost to reduce demand for electricity in this province 400 megawatts? What type of programs can be put together? How can they be boxed? How can they be marketed? What is the optimum way to present that to the consumer of New Brunswick? You know, that's going to be an issue at the hearing.

There has been the suggestion of some people that there be a full study done. And Mr. Marshall indicated this would take a considerable period of time and significant costs. I don't know. Obviously he was at some disadvantage in giving those answers. But I would hope, and it would be our feeling, that NB Power will take

measures between now and the end of the month to identify specific evidence that will assist us as we go forward at the Point Lepreau hearing.

It's our hope that at that hearing, and we would ask the Board in their decision to recommend, that NB Power produce and obtain any analysis that have been done in North America over the last 10 years relating to demand side analysis and programs, how they work, what the cost of them are and how they can be effective.

What is the optimization of these programs? How can we package them? And how can we create a consumer psychology to reduce the consumption of power? And how much will it cost?

We are told by Mr. Marshall this is part of and will form part of the evidence as we compare the different scenerios at Point Lepreau, and we would suggest that that's the proper place for it to take place.

Two or three times in my evidence I have made the statement, unfortunately the customer decision making process is not as simple as a benefit cost analysis. Many of the intervenors have made statements to similar effect and argue the similar point. But I will leave you with this thought. Those words are not mine, Mr. Chairman. Those words are Mr. Bill Marshall's and they are quoted on

page 12 of appendix B of the record. That's a statement made by him. They are the very words of NB Power. And if there is much -- if this decision making process is more than benefit cost analysis, we would like to have the evidence at some point in time that takes into account all the factors that make up a real demand side program.

Thank you very much, Mr. Chairman.

CHAIRMAN: Are you suggesting, Mr. Hyslop, that this be done before the start of the hearing the end of May, or are you suggesting that it be undertaken and filed, and the hearing adjourned? Or what particularly are you suggesting?

MR. HYSLOP: We are suggesting and we are leaving it with NB Power to decide on the strength of the case that they will have to meet at that hearing.

If the evidence -- and I haven't read all the Point Lepreau evidence -- is submitted, I expect we will take the point that they haven't presented and produced the proper evidence for you to rule out demand side management programs, Mr. Chairman. And we may well take the position that the project not proceed at that time.

I prefer to leave it with NB Power to decide what evidence is critical to their case. However, I would make the statement that at some point in time a full demand

side analysis -- and if it costs $10 million and it takes eight or 10 months to do, is something that's going to become very critical to the management of the power resources in this province.

CHAIRMAN: Thank you, Mr. Hyslop.

MR. HYSLOP: Thank you.

CHAIRMAN: You don't need to move from there. I believe it is back to Mr. Morrison if he has any --

MR. MORRISON: I will have a couple of very brief comments, Mr. Chairman, but if I --

CHAIRMAN: Do you need a few moments?

MR. MORRISON: A few moments to go through my notes.

CHAIRMAN: Okay. We will stay right here.

MR. MORRISON: Mr. Chairman, I am ready to proceed. I will be very brief.

CHAIRMAN: Fine.

MR. MORRISON: There really is only one issue that has come up from the intervenors in their argument. And that of course is the question of DSM and how it is dealt with or how it ought to be dealt with.

First, let's bear in mind, and I said this at the outset of my argument, my submission, let's bear in mind that this deals with the load forecast. And when one forecasts something, one does not forecast on what is

hypothetically possible, one must forecast on what is likely to occur.

Now this DSM that Mr. Hyslop has referred to, is at this point in time at least, pie in the sky. What is achievable at what cost, who pays that cost? Is it the Province of New Brunswick? I don't know.

But Mr. Larlee, in producing a load forecast, has to look at what is likely to occur. And I would suggest to you that the analysis of energy efficiencies that are contained in the load forecast are what is likely to occur given the evidence that is available at this point in time. So that is the first point I would like to make.

The second point I would like to make is how DSM is dealt with was essentially directed by this Board in the generic hearing in 1990 on capacity, capacity hearing -- generation capacity hearing. I understand that is when it happened. I wasn't -- of course I was -- 1991, I was still in kindergarten at that time, Mr. Chairman.

But as I understand it, the direction of the Board was DSM was to be dealt with in the following manner. If you look at the universe of energy efficiency measures, you take those which are -- you screen them to see which are economic and then they are to compete with generation options.

And I would suggest to you, Mr. Chairman, and to the Board of Commissioners, that is exactly what NB Power has done in its evidence and what will be occuring at the project hearing. Exactly what was directed by the Board back in 1990/1991 in how to deal with these -- this DSM issue.

Now my final point is -- and Mr. Hyslop has thrown a fair number of snowballs, as to what NB Power should do, what NB Power ought to have done about this study.

Well, you know, Mr. Hyslop and the Province of New Brunswick, who has the resources that some of the intervenors don't have, hasn't presented any evidence.

It was certainly open to the Province of New Brunswick to present evidence as to what he considers -- whatever evidence he wants to file in connection with this hearing as to what this DSM program ought to be.

They for whatever reason have chosen not to do that and have tried to place the onus on NB Power to do that. Those are my submissions, Mr. Chairman. Thank you.

CHAIRMAN: Thank you, Mr. Morrison. I don't need to remind you. I keep reminding my staff that administrative quasi judicial tribunals are not bound by previous decisions, especially when they go back to '91. I will dig that out by all means.

This concludes this hearing. And I want on behalf of the Board to thank the witness panel for their cooperation and the clarity of same and as well the cooperation that we, the Board and all of the intervenors have had in the lead-up to this particular hearing.

It is the Board's intention to deliver a decision as quickly as we are able. Right now I'm tentatively looking at a decision to be delivered at 10:00 a.m. day after tomorrow at the Board's premises. However that is pure speculation on my part.

And I will ask you to give the Board premises a call tomorrow aftgernoon at 2:00 or after. And we will be able to let you know if we can go ahead then or not.

And immediately after my adjourning this we will just put on our other hats and go to the Point Lepreau hearing. Because I believe there are some matters we should conclude in reference to that.

So again I want to thank all participants. And we will adjourn this matter over to tentatively Thursday of this week at 10:00 in the morning at the Board's premises. If not we will inform the parties of when it is the Board will deliver its decision.

Thank you.

(Adjourned)

Certified to be a true transcript of the proceedings of this hearing as recorded by me, to the best of my availability.

Reporter