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(10:08 a.m.)

CHAIRMAN:

Q. Well, good morning everybody. Are there any preliminary matters to come before this august body?

GREENE, Q.C.:

Q. No, Mr. Chairman.

CHAIRMAN:

Q. No? So I guess we will then proceed to the order of business for the day and Mr. Dumaresque is in his proper place and so I shall turn it over to you, sir, I guess.

MR. DUMARESQUE:

A. Thank you very much, Mr. Chairman, Commissioners, legal counsel, ladies and gentlemen. Thank you for the opportunity to present my views to you this morning. I am a former member of the House of Assembly from Labrador and I also served as a director of Newfoundland and Labrador Hydro. The issue of the Upper Churchill power contract has always interested me, including my time at university in St. John's and Nova Scotia. I will always be a student of public policy and an advocate for change in the pursuit of good government

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in Newfoundland and Labrador. As many who have come before you have stated, the Muskrat Falls Project is the biggest public policy issue ever to have faced this province.

One of the most important debates we had while I served in the House of Assembly was over the future energy requirements of the province and how we would go about meeting them. This debate was included in the passing of the Electrical Power Control Act in 1994, which amongst other things, states the laws of the province as follows: all sources and facilities for the production, transmission and distribution of power in the province should be managed and operated in a manner that would result in power being delivered to consumers in the province at the lowest possible cost, consistent with reliable service.

While it may be debated if Nalcor has the right to build the transmission and generation of power from Muskrat Falls to the island, I submit that the PUB has the obligation to insist on lowest cost power options at all times.

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As I said earlier, I have always been interested in the Upper Churchill power contract and today, I can stand here and agree with former Premier Danny Williams when he stated we have developed this energy plan with our eyes clearly on 2041 when the Upper Churchill contract expires and the province is in a position to receive the full benefits from this resource. This is not a person -- there is not a person in Newfoundland and Labrador who does not agree that Hydro Quebec has taken advantage of us for the past 36 years and will do so for the next 29 years. It is despicable that our neighbour would continue to reap 98 percent of the profits generated from the turbines of Labrador.

It is against this backdrop of public opinion and the policy as stated in the energy plan that Nalcor has taken the following position on access: There is inherent uncertainty around guaranteeing the availability of supply from Churchill Falls in 2041 because it is difficult to determine the environmental and policy frameworks that will be in place 30 plus years out. I recognize

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that they have also expressed other reasons why they ruled out accessing this power, but their economic argument, like the one above, has little merit. This is not market cost power and the Isolated Island option does not have to bear a 600 million dollar upgrade at Holyrood, two reasons they are being used to bias the CPW in favour of Muskrat Falls.

On February the 5th, 2012, 17 days ago, I asked the current Minister of Natural Resources the question: do you agree that we have the right to access the Upper Churchill power in 2041? I know he received that question, but to date, he has chosen not to answer. Irrespective of his position, I have undertaken to consult with various legal and academic experts on the 1969 Upper Churchill contract and the answers I have received from everyone is an unequivocal, yes. All replies can be summed up as Mr. Vardy and Mr. Penney did yesterday, the least uncertain event for the energy of the province is that the Churchill Falls contract expires in 2041. They go on to note that the guaranteed winter availability contract also expires in 2041, as

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does the shareholders agreement between CF(L)Co and Hydro Quebec.

The mighty Churchill Falls is our power and in 2041, it will be ours to do as we please. Every person in this province will agree with the government in reclaiming this resource and giving us the ability to deliver the 5400 megawatts of power as follows: retain what we need to serve the industrial needs of Labrador; keep what we need to feed the island consumer with cheap green power for ever; sell excess power to the marketplace and use the money to bring green energy to coastal Labrador and take them off dirty diesel forever; give all the people the benefit of the zero cost power by reducing their electricity bills and firmly claim that our people will have the cheapest, greenest energy in the world. However, while I am passionate in advocating the above, I have been in business for the past 16 years and I know that it has to make financial sense to take this direction.

The MHI report was a good report. It was the first time that the project was properly

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defined for me and provided an easy read on the complexities involved. This report has provided me with the ability to see the financial implications of getting the access to 2041 power. In Sections 10.5 and 10.6, one can see the cost involved in implementing the Isolated Island and infeed option thermal plants respectively.

The Isolated Island option. The total project budget for the island isolated system is pegged at 8.8 billion dollars. As you can see from this documentation, MHI notes that the 582 million dollars is proposed to be spent in 2015, installing ESP and scrubbers at Holyrood under the Isolated Island plan. Nalcor has confirmed that this cost is not necessary to meet provincial law. It should also be noted that it is not included at all in the infeed option. From 2041 to 2067, Nalcor is proposing to build 1320 megawatts of new thermal generation at a cost of five billion dollars. This would be done using 11 different units all around the island and burning dirty oil. By accessing 2041 power, none of the above would be necessary, so this

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would eliminate 5.7 billion dollars from this cost of this option and its cost up to 2041 would be 3.2 billion dollars.

(10:15 a.m.)

The Muskrat Falls system. The total project budget for the infeed option, which includes Muskrat Falls, is pegged at 6. 6 billion dollars. It must be pointed out that while this option means closing down Holyrood, it also means building 520 megawatts of thermal generation. It would mean eight different units would be built around the island, but still using dirty oil. It will mean that in 50 years from first power, this island will actually have more dirty oil generation than we have today. As I pointed out above, the ESP and scrubbers are not necessary in 2015 under the infeed option, even though Holyrood decommissioning will not be completed until 2029, 12 years later. There are no cost savings from this item. The addition of 300 megawatts of dirty oil generation after 2041 will mean a cost of one billion dollars will be incurred and to keep comparing apples to apples, we can deduct this

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from the total project leaving this option with a net cost of 5.6 billion dollars.

The result. The comparison between the two options by accessing the 2041 Upper Churchill contract results in a 2.4 billion dollar advantage in favour of the Isolated Island system. This is enough savings to pay 100 percent of the cost of bringing a new transmission line from Churchill Falls to Soldier's Pond. It is also necessary to note that while the remaining 3.2 billion to the Isolated Island system includes the expenditure of 800 million in 2033, replacing units one and two at Holyrood, and 500 million in 2035, replacing unit three of Holyrood. These expenditures of 1.3 billion are planned to be incurred a few years before the return of the Upper Churchill power. The future sales of available power at the Upper Churchill would be in the discussion stages by this time and it would be crazy not to foresee a deal to access our required energy to take us over the last few years, even with Hydro Quebec. There are also legal scholars who believe we can negotiate more recall power

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from the existing contract by using Section 92A of the Constitution of Canada.

The benefits. It is hard to imagine, but we can certainly realize our day in the green. Some day the sun will shine and blackouts will be no more. After 2041, we will be able to boast from the tallest points in this great province, we have the lowest and greenest electricity in all of North America, if not the world, and it will stay that way forever.

Furthermore, it will give us the next 20 years to know the following: the future of Corner Brook Pulp and Paper; the viability of the natural gas industry; the impact of shale oil and gas on oil prices; the ability to store wind power; the actual load on the island and the load growth; and also the real industrial demands for power in Labrador.

Finally, it will allow us to be wise spenders of public money, the hard earned taxpayers' dollars. Over the next 20 years, there will not be any blackouts and we will not saddle our children with at least 5. 6 billion of new debt. Our infamous economist, Dr. Wade Locke, warned us last year that this

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province, without Muskrat Falls, was on a way to financial disaster. Our spending, according to the former Auditor General Noseworthy, is out of control and we cannot keep up the pace. In her first speech to the people of this year, Premier Dunderdale told the unions to prepare for lean times ahead. Just last week, Finance Minister Marshall told us that our province will be one billion dollars short in this coming year. These are not times to ignore what has happened to Iceland, indeed to the greatest economy on earth, the USA, and we cannot escape the looming crisis in Greece, Spain and Portugal.

Mr. Chairman, over the past 15 months, I have read the term sheet on Muskrat Falls and thousands of pages of commentary, review and analysis. I have attended as much of the PUB hearings as possible and listened intently to the questions and answers. Today, I am concluding that I have heard enough. The Muskrat Falls Project was conceived as a political project in 2010. It was created to serve the political agenda of a premier who was driven to spite Quebec. This political

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direction was handed off to a new current administration and the past 15 months has been filled with political fraud of the highest order. Muskrat Falls is a spiteful political project and not a well planned energy development aimed at delivering the lowest cost power to the people of this great province as required by law. The sanctioning of this project will be a happy day for the millionaires and shareholders of EMERA, but a sad day for the ordinary ratepayers and taxpayers of this province.

Nalcor is embarking on a dangerous road, consciously avoiding the PUB and taking the damn the torpedoes approach, building a project without acknowledging that we have the greatest resource of clean, renewable energy waiting to serve this province forever, the mighty Churchill Falls.

Mr. Chairman, I thank you and your colleagues once again for granting me this time today and I would welcome any questions.

CHAIRMAN:

Q. I guess, Mr. O'Reilly, we'll start with you.

O'REILLY, Q.C.:

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Q. I don't -

CHAIRMAN:

Q. I do you want a time to reconsider or -

O'REILLY, Q.C.:

Q. No. We've read the -- we've heard the presentation. Nalcor will be responding to the relevant portions in their final presentations to the Board, so we don't have any questions for Mr. Dumaresque. Thank you.

CHAIRMAN:

Q. Okay.

MR. JOHNSON:

Q. I don't have any questions for this presenter.

GREENE, Q.C.:

Q. And I have no questions, Mr. Chair.

CHAIRMAN:

Q. Any Board members?

VICE-CHAIR:

Q. Thank you very much, Mr. Dumaresque.

CHAIRMAN:

Q. No questions, although I don't accept one of your premises about oil being dirty, but that's a subject for another debate.

MR. DUMARESQUE:

A. Okay.

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CHAIRMAN:
Q. Thank you very much, sir.
MR. DUMARESQUE:
A. Thank you, Mr. Chair.
CHAIRMAN:
Q. And next it's the Newfoundland Ocean Industries Association, Mr. Robert Cadigan.
MR. CADIGAN:
A. Good morning, Mr. Chairman, Commissioners, ladies and gentlemen. I want to thank you for the opportunity to speak to you today about the development of Muskrat Falls and the importance of this development to the members of Newfoundland and Labrador Oil and Gas Association, and that's NOIA, and I'm representing them here today.

Just for background, we have about 560 members in Canada and around the world, and NOIA is Canada's largest offshore industry association. While some of our members are focused exclusively in oil and gas activities, most NOIA members, particularly our Newfoundland and Labrador members are focused on industrial activity resulting from oil and gas energy and other industrial projects in

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the construction and development phases, and the ongoing activities to support these projects once construction is completed.

Many of NOIA's members in the construction fabrication and industrial services supply side will directly benefit from these developments. Bringing Muskrat Falls power to market has the potential to provide significant benefits to the people of Newfoundland and Labrador and the people of Canada, and NOIA supports is a key action of the Energy Plan, the reinvestment of provincial revenues from non-renewal resources into the construction of renewable infrastructure.

We believe that we must reinvest the value we receive from our oil and gas resources to secure prosperity today and for future generations. The main driver for the development of Muskrat Falls is the forecast of capacity deficit in 2015 with energy deficits potentially beginning in 2017. As a result, there is a need to take action to ensure adequate supply to the island. In our view, inaction is not an option. In terms of

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the business case of Muskrat Falls, our members are consumers of electricity and will be impacted by changes in cost and by the reliability of the electrical system. In our view, Newfoundland and Labrador is in the enviable position to enjoy the benefits and abundance of energy with oil resources for export and hydro electricity for domestic use and potential export to North American markets.

Oil is in demand and demand is increasing as BRIC countries' developing economies continue to move forward and their citizens demand a higher standard of living. They see what we have is what they want, and certainly we're going to see the impact of that in the demand for oil and gas. Oil is an economic driver for the province because of this demand and the relative scarcity of supply. This isolated island alternative will keep us tied to oil and require major upgrades and replacement of the aging Holyrood generating infrastructure, and leave us exposed to the continued volatility of world oil prices. Hydro power represents a stable and

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economically sensible solution for rate payers in our view. Muskrat Falls project will generate long term sustainable revenues for the people of Newfoundland and Labrador, while providing access to clean and stable source of energy for domestic consumption.

The NOIA Board of Directors was briefly probably about a year or more ago now on the project, and we did review the three options originally represented in detail; the isolated island, Gull Island, or the Muskrat Falls option. In terms of our review, we concur that the Muskrat Falls is the best alternative and provides, in our view, the least cost and most environmentally friendly solution to meet the energy needs of the province.

In addition, our confidence in Nalcor's decision, DG 2 decision, is bolstered by the Navigant Consulting Limited Report which is titled "Independent Supply Decision Review", and the report done for the PUB by Manitoba Hydro International. The project will provide opportunities in Newfoundland and Labrador for future industrial activities that require large quantities of reliable and predictably

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priced electricity such as industrial fabrication, which is certainly core to our membership to support oil and gas activity.

Infrastructure and capacity building as a result of the Muskrat Falls Project will further strengthen Newfoundland and Labrador's industrial appeal. With available electricity, infrastructure, and an experienced skilled workforce, we will be ready to capitalize in new opportunities and industries. Newfoundland and Labrador will be in the enviable position of having electricity system that will be greater than 98 percent carbon free. The Muskrat Falls development will displace greenhouse gas emitting generation sources and replace aging infrastructure, and reduce GHG emissions for Newfoundland and Labrador and for Nova Scotia by displacing oil and coal respectively.

The project will further contribute to the Province's economic and social transformation already under way due to offshore petroleum, mining, and minerals processing activity. Certainly these activities diversify Newfoundland and

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Labrador's economic base with the addition of new industrial sectors, increased expenditures and education training, research and development, as well as opening national and international export markets and increase in our overall business confidence.

The project will provide significant opportunities for employment, with peak employment of 2700 on the island and 1300 in Labrador during the construction and contracting phases, and certainly it will create contract and opportunities for businesses that want to support the project. One of the most important benefits, I think, from NOIA's point of view is that the engineering for Muskrat Falls will be done in province contributing to the on-the-ground expertise available for future projects. This is the only major project that has committed to substantially engineer all of the development in Newfoundland and Labrador, and we believe that's an extremely important contribution. With major projects such as Vale Inco smelter in Long Harbour, the Hebron Project, now Muskrat Falls, there will be

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greater and sustainable long term opportunities for employment. The addition of Muskrat Falls to Newfoundland and Labrador's synergy warehouse helps improve security for the local labour force, and possible repatriation of labour deployed elsewhere in Canada. Many working out of the province are more likely to return for a continuum of projects than return for a single project.

(10:30 a.m.)

In terms of the project management process, the Decision Gate process Nalcor is using is a proven process, familiar to us, and industry standard for large domestic and international projects. The front end loading improves cost schedule and project cost and schedule predictability. A project such as this one of this size and magnitude, it's prudent to get independent reviews, and Nalcor has had independent reviews and peer reviews completed, along with the report commissioned by the PUB.

A similar process is employed by international oil and gas companies that have developed in Newfoundland and Labrador's

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offshore. Front end loading reduces execution risk and increases execution certainty in the construction phase. In addition to Nalcor's experienced project team, the EPCM, the Engineering Procurement and Construction Management firm , SNC Lavalin, have significant experience in hydro developments in Canada and around the world, which will be brought to the Muskrat Falls and the island link project.

In terms of the energy forecasts, PIRA Energy Group is a reputable leading international energy consulting firm. They specialize in global energy market analysis and intelligence on products such as crude oil, petroleum products, natural gas, electricity, coal, bio-fuels, and so on. PIRA's forecasts are widely used and forecast energy commodity prices in short, medium, and long term on a monthly basis and we look at those ourselves regularly, and annually out to the future as far as 2025. There are also several credible sources that forecast fuel costs, including PIRA, Canada's National Energy Board, the NEB, and the US Energy

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Information Administration, or the EIA. IEA/CIA, sounds ominous. Nalcor uses PIRA and has made comparisons of PIRA's forecast to EIA's annual energy outlook, and the NEB's annual energy outlook. We take further comfort from the Manitoba Hydro International Report, and I'll just quote briefly, "Fuel prices dropped by 44 percent from those used by Nalcor. There is no difference between the cumulative present net worth between the two options". In our view, that 44 percent is a significant range and certainly with the ability to precisely predict oil prices, we take great comfort in that number.

In our view, relying on burning imported oil at Holyrood will mean we will remain dependent on fluctuating world oil prices long into the future. By using imported Bunker C at Holyrood, we'll continue to see money leave our province with no tangible financial benefits and will continue to incur environmental costs as well. Rising oil prices and rising demand for power means electricity rates are going to increase on the island. They're increasing between now and

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2017, and those increases are not related to Muskrat Falls. They're tied to oil prices and the increased usage of the Holyrood plant as demand rises. Our understanding of Nalcor's proposal is that in 2017, with Muskrat Falls power, rates will stabilize with minimal increases of less than 1 percent per year. If the Holyrood plant continues to rely on thermal generation, consumers could pay much more for electricity in the long term, and with Muskrat Falls the province will benefit from a stable source of reliable hydro power long after the project is paid off.

Continued reliance on Holyrood thermal generating means unstable and rise in electricity prices into the future, as well as the costs that need to be incurred to refurbish the plant. To continue, the facility will also require significant upgrades and new pollution control equipment. In addition, federal regulations concerning greenhouse gas emissions look increasingly likely. There's a lot of international pressure. The result will be some form of carbon pricing, and we see that has not been

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factored into Nalcor's calculations. Certainly that's another factor, I think, that we do need to consider. As soon as power is available from Muskrat Falls, the production at Holyrood will be displaced and the plant will no longer generate electricity or emissions after 2020.

When we look at major projects, and I guess, from NOIA's perspective, we've been involved in most of the major projects in the energy sector in Newfoundland and Labrador going back about 30 years, and, you know, certainly in terms of looking at a project, whether it's Hebron, White Rose, or this Muskrat Falls Project, we'll tend to look for certain things. I mean, one of the things you look for is a project description/definition that's really solid that builds the business case. We see that here. The flexibility and sensitivity analysis in terms of the assumptions used, and again based on our review of the material, we see that sensitivity analysis and, you know, that's very, very important. The last piece, I guess, is project management because at the

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end of the day the project has to be executed and has to meet the schedule, minimize risk of overages and so on, and if you're looking at a project from that perspective, you know, the first thing you look for is, is the activity core to the business of the firm undertaking the work and certainly, you know, hydro generation is Nalcor's core strength. We see a very credible team that's been augmented by specialists, and we see a very credible EPMC in SNC Lavalin. So if you want to take a project and try to put it in the best position to succeed and achieve the original goals and estimates, I think a lot of the things that have been done here are right, and with the addition of the two major reports that have reviewed the proposal, and both of those reports substantially support the proposal, you know, we have a great deal of confidence in this being the right decision for Newfoundland and Labrador.

So in conclusion, we see the development of Muskrat Falls as financially attractive, generates positive rate of return, and ensures long term price stability. The analysis as I

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mentioned, supported by credible consultant specializing in energy generation and decision-making, and on the basis of our analysis and these factors, we support the Muskrat Falls option. Thank you.

CHAIRMAN:

Q. Mr. O'Reilly.

O'REILLY, Q.C.:

Q. No questions, Mr. Chairman.

MR. JOHNSON:

Q. No questions.

GREENE, Q.C.:

Q. No questions, Mr. Chair.

VICE-CHAIR WHALEN:

Q. No, thank you.

COMMISSIONER NEWMAN:

Q. No questions.

CHAIRMAN:

Q. I just got two questions. I don't need you to answer them now, I'd just like you to give me what reports of evidence that NOIA is using with respect to the concern regarding GHG emissions, you know, what scientific evidence have you guys looked at, and also with respect to carbon pricing or carbon levy, what

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information, what sources are you using to make those two assertions. I don't - you don't need to respond now because nobody - I'd just like you to take them under advisement and give me what information you've used to reach those conclusions in your report.

MR. CADIGAN:

A. We can do that, sir.

CHAIRMAN:

Q. If there's nothing else, I guess, thank you very much for your participation.

MR. CADIGAN:

A. Okay, thank you.

CHAIRMAN:

Q. Now we're ahead of schedule.

GREENE, Q.C.:

Q. We're ahead of schedule, so -

CHAIRMAN:

Q. So tell me what I'm supposed to do.

GREENE, Q.C.:

Q. Mr. Chair, it will be an appropriate time to have a break. The other presenters are not here and are not available to start early, so we really have no alternative but to have a break at this point in time.

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CHAIRMAN:

Q. Okay, so we could be breaking until 12 noon.

GREENE, Q.C.:

Q. Until 12 noon, sir.

(11:39 a.m.)

CHAIRMAN:

Q. Oh! Well, we're breaking until 12 noon. Thank you.

(RECESS)

CHAIRMAN:

Q. Alright, I guess we're ready to recommence. And if there's no preliminary objections, I think you are, sir, Mr. Vince Carey.

MR. CAREY:

A. Yes.

CHAIRMAN:

Q. So you are on, as they say.

MR. CAREY:

A. Okay?

CHAIRMAN:

Q. Go ahead, sir, sure.

MR. CAREY:

Q. I'd like to introduce myself. I'm Vince Carey. My job is in the operations and maintenance sections for gas turbines,

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diesels, and hydro plants across the province for Newfoundland Power.

I've been following the Muskrat Falls discussions with much interest since it's been announced, and I want to thank you for the opportunity to express my views on the project. These are my views only as an interested individual and citizen. Is Muskrat Falls the best option financially, is it a sound investment for the people of the province, or should we stay with an isolated scenario or become part of a bigger system connected to the North American grid? Let me start with the last question first. We've been an isolated system since the first turbines arrived in the early 1900s. We are very fortunate to have so much water potential on the island. We have built generating facilities as the need demanded. Forecast of load growth is a very difficult thing to predict. You can only trend it on past growth and anticipated new load coming on line. Many times it can only be an assumption at best,there are no magic ball only indicators.

We have not seen in the past 20 years a

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load growth like we did since 1965 to 1985. A load growth survey was done for Hydro's request in the late 80s, that in 1991 we would need 1440 megawatts of power, ramping up to 1740 by the year 2010. Christmas Day, 2011, 20 years, we reached a peak of 1382 megawatts. These peaks are for short duration only, but they could be problematic if you had generator or transmission trouble. Peak load demands generally during the winter months and tend to be of short duration. Even last week, February 16th and this week with temperatures varying from 0 degrees to -12, the system is running generally around 1000 to 1100 megawatts on the island. Total generation on the island with all existing units available is around 1800 megawatts; Nalcor, 16; Newfoundland Power, 141: NeWind at St. Lawrence, 27; Sky Power at Fermeuse, 27. Deer Lake Power and Watson Brook, not being a true part of the system, could in the future bring another 138 megawatts of power on line. Changes in the fishery, the closing of two major plants, and possible more to come will lighten the load on the island system.

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Without Kruger's generation, we have approximately 1784; with it 1922. All of this power will never be available at one time due to transmission troubles and scheduled maintenance on generators and turbines, but it does not seem that we are in any danger zone or will be in the foreseeable future. The Holyrood generating station, it's a 450 megawatt generating station on the fringe of St. John's, with the entire infrastructure in place. 70 percent of the load and 70 percent of the population is on the Avalon. It is perfectly located in regard to being a reliable and available source of energy. Reliability and availability are two components that are vital to any power system. We are not depending on a high voltage transmission line about 1100 kilometres in length on the island and a generating source 1300 kilometres away.

When Quebec's ice storm hit in 1998, over 3000 kilometres of lines came down, 300 towers, and over 1100 pole structures. Repairs cost over 800 million dollars. We would not be faced with something of that

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magnitude, but it could be a major cost in addition to all the other debt that we will have to carry over the life of this project. The Holyrood generating facility will see its end, but it's a vital source of energy that could see us through until we enter negotiations for a new deal on the Upper Churchill. Will we need a new transmission line from Labrador in the future; without a doubt we will, but that will be our only cost if we link to the Upper Churchill and not Muskrat Falls. The usually expensive contracts for civil work, dams, spillways, control gates, transmission lines, purchasing and assembling of generators, transformers, turbines and the staffing of the life of the plant, does make this venture questionable at this point in time when we have all this existing on the Upper Churchill, if we have the patience to wait and use our generating facilities wisely.

Do we have the load on the island for the Muskrat Falls when EMERA takes 20 percent for 35 years, and we're left with about 600 to 625 megawatts. Does this plant have to be

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generating at a high output to make it viable and cost effective. Many months of the year 600 and 700 megawatts is the load that we have, so what do we do with all the generation that we have on the island existing. Even as we speak today, most all reservoirs on the Avalon are spilling. Will we shut down and spill water around then to make Muskrat viable? That doesn't seem like - that seems a poor solution. If Muskrat generation is not needed on the island because our in-flows are high during the run off season, it would seem that power would be routed through Churchill Falls in May and June at times of low load on the island. Churchill can control storage. Muskrat does not have the capacity to store water outside of what the reservoir can hold. It's forebay is its only means of control; you have to generate or spill. What price do we receive for the reroute of power through the Upper Churchill from Muskrat? Will it be subsidizing the storage of water at the Upper Churchill that we receive little value for, just to say that Muskrat is running at full capacity? It makes one think if any or all of

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these possibilities come true, then the only ones that will benefit here could be the contract companies that build the facility and its infrastructure.

In Quebec, at this time, there is an aggressive movement to increase generation by 2015-2020. The Sarcelle Rupert Project is 768 megawatts. The Opinaca Reservoir Project is 150 megawatts and the largest one is the Romaine Project with 1550 megawatts. The proposed cost is five million for the Romaine Project, which is twice the output of Muskrat Falls for the same price, with no outside deals with another utility. It is much closer to the major load centres on the eastern seaboard, which makes it an attractive supplier. That is a total of 2468 megawatts of new generation that Hydro Quebec will bring online. They will be aggressively looking for customers for that power and they have been in the game a long time.

If I was an industrial customer and had a choice of either being supplied from Hydro Quebec with its many interconnected transmission systems and a long history of

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supplying power at a much cheaper rate or from another utility that would have two subsea cables, more expensive per kilowatt hour, with no backup system if something major happens to the transmission line, it would not take a customer long to make up their mind which is the best option.

Are we managing our existing water systems adequately? At times of high inflows, millions of cubic feet of water is spilled around generating stations because of dam safety issues. Weeks of generations are lost because water cannot be stored for future use. A review of our water storage could be a useful venture.

Also, gas turbines that generally run about one million dollar per megawatt is another option that could get us through peaks and high load intervals if the need should arise. These can be brought online quickly and are extremely good source of backup power. When Bay D'Espoir and the Holyrood generating station were built, oil was about a dollar a barrel. Many control gates were removed and plants became more run of the

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river, run when water is available and spill what you cannot use. It made sense at the time with oil being so cheap, but not today with oil running around 80 to 100 dollars a barrel.

Can we get longer running times out of our existing systems by better managing our own resources? Could a few small ventures or some wise choices see us through until the Upper Churchill negotiations start in the middle 2030s? Yes, I believe we can, and if there is some short term pain, we know it is only a temporary thing and there is light at the end of the tunnel. It would be minor, I suppose, to the debt we would incur.

Politicians sometimes think of borrowing, make it sound as though they're dealing in smaller numbers by removing a few digits. But make no mistake about it, six thousand five hundred million dollars is quite a lot of money and it could accelerate to seven thousand or eight hundred million for something that may not be needed at this time.

(12:15 p.m.)

In closing, ladies and gentlemen of the

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Board, bureaucrats come and go and are mostly never held responsible for the legacy they leave behind. The people of this province are placing their trust in you that you will listen to all the evidence and make the best decision. It's a daunting task and you are to be commended for your efforts. I only wish you had more time to study it in detail and get all the answers.

I feel that when a government initiates a project like Muskrat Falls, their allegiance to it become all encompassing. Their effort, time, job and political party are on the line. They find it very difficult -- they find it very hard to talk about what it does not accomplish. I feel that cost could get out of hand on this project and the province will have no choice but to keep borrowing to complete the development that is not needed at this time. Keep in mind that the Upper Churchill did not cost this province anything to develop. It's a very different scenario with Muskrat Falls. At no time have we seen the private sector lining up to be a part of this deal. That alone I feel is a telltale

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that the Muskrat Falls may not be a wise choice at this point in time.

I think that reality and illusion are intermingled here. There are too many unknowns and questions unanswered and until these things are brought to light, this project may not be worth the risk.

Thank you very much.,

CHAIRMAN:

Q. Okay, sir. Mr. O'Reilly, any questions?

O'REILLY, Q.C.:

Q. No, Mr. Chairman. We don't -- Nalcor will be dealing with the relevant portions of Mr. Carey's presentation in its final submissions to the Board.

CHAIRMAN:

Q. Sir?

MR. JOHNSON:

Q. No questions, Mr. Carey. Thank you.

GREENE, Q.C.:

Q. No questions, Mr. Carey. Thank you.

CHAIRMAN:

Q. Any members -

MR. CAREY:

A. Whoever speaks to me, you have to speak up

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fairly loud because I've been working around noisy machines for a long time.

CHAIRMAN:

Q. No, I don't think we have any -- there's nobody has any questions, sir, so we certainly thank you for your participation as an interested citizen and we've got a copy and thank you very much.

MR. CAREY:

A. Yes, thank you.

CHAIRMAN:

Q. Okay.

GREENE, Q.C.:

Q. Mr. Chair, at this time, I would request a five-minute break as we get set up for the next presentation. We do need to do something to get ready for the presentation, so we'll need about five minutes.

CHAIRMAN:

Q. Okay. Want us to leave or what? We got to leave, have we?

(BREAK - 12:17 p.m.)

(RESUME - 12:36 p.m.)

CHAIRMAN:

Q. Alright. So I understand now we have Mr.

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Winston Adams and you're assisted by?

MR. ADAMS:

A. Troy Templeman.

CHAIRMAN:

Q. Okay. I guess then, sir, we will turn it over to you.

MR. ADAMS:

A. Thank you. Just to give you a little information on me, I studied engineering at Memorial University, graduated from Nova Scotia Technical in electrical engineering in 1971. I worked for five years as a design engineer with Newfoundland Hydro in high voltage substation design and since then, I've worked mostly with mechanical systems, largely heating systems. So that's my background.

What I want to address today is the issue of efficiency. Efficiency is the ratio of useful work performed to the total energy expended. Aiming for high efficiency is a wise use of resources. It reduces waste, allows higher productivity and businesses to be more competitive and more profitable, but there is a cost to high efficiency. In the marketplace, it is desirable that it be cost

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effective. Perhaps no group of professionals use the efficiency word more than engineers. It is indispensable for their analysis for projects and product design and application. The word shows up in the Manitoba Hydro International report in the section on forecasts. It is the intent of this presentation to challenge the low weight and low value placed by our power companies on the efficiency component.

Efficiency is a part of a factor called technology change. This is one of the components and input into the formulas being used by our power companies to predict future electrical energy needs which are the forecasts. Its effect would be good in that it would help drive down the energy and peak demand needs and it is beneficial to offset the contributions by other factors that tend to increase energy needs, like more houses, more conversions from oil to electric heat, et cetera.

The MHI report gives some comparison to the methods used for forecasting by our power companies as compared to the provinces of

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Ontario, Manitoba and British Columbia. It says the key finding here is that Manitoba, Ontario and British Columbia all use what they call end-use models to predict the domestic, that is the residential forecast. Our power companies here, both Newfoundland Power and Newfoundland and Labrador Hydro, do not.

The MHI report makes recommendations in this regard. They say that Nalcor should develop an end-use forecasting model for the domestic sector and that the best utility practice for preparing a domestic energy forecast is to use a combination of regression and end-use modelling techniques. That Newfoundland and Labrador Hydro should partner with Newfoundland Power to develop and implement an end-use methodology to predict future domestic energy consumption. They say that additional details of end-use forecasting methods may likely improve but not guarantee an improvement as it depends on the accuracy of the assumptions on which it is based.

The current process produces reasonable results, but does not possess the explanatory powers of an end-use methodology and that end-

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use methods improve the capability to: a. quantify the load growth by end use; b. quantify energy efficiency by end use; incorporate new end uses, like electric cars; improve the design of the CDM system, which is for demand management programs; e. improves the defensibility of the load forecasting methods. It also goes on to say that Newfoundland and Labrador Hydro should partner with Newfoundland Power to develop a coordinated load research program using information by sector and end use to incorporate all sectors, domestic, general service and industrial, and this would also include the end use example for space heating, load research information, so as to integrate the energy and the peak forecasting processes.

The Manitoba report says Newfoundland and Labrador Hydro's ability to conduct detailed end-use analysis is limited since they do not have access to the majority of the customers billing information. Newfoundland Power, a privately owned utility, distributes power to 90 percent of the island's domestic and general service customers. Yet, it is

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Newfoundland and Labrador Hydro which has the responsibility for developing the long-term forecast to assess future generation requirements on the island.

Again, the Manitoba report says the current models do not have the explanatory powers of end-use analysis and that end-use models are based on detailed customer billings and survey analysis, that end-use models are calculated showing a bottom-up approach, meaning that the forecast is calculated by summing up the energy associated with each of the major domestic end uses, such as electric space heat, electric water heating, fridges, washers, dryers, dishwashers, televisions, personal computers and lighting and a miscellaneous component to represent all other electrical uses.

The report goes on to say the domestic sector represents about 50 percent of all electrical sales on the island and electric heat growth is the dominant domestic end use and a significant factor in the overall island load growth.

The domestic load for electric heat is

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783 megawatts of peak demand and consumes 1506 gigawatt hours of energy. Newfoundland and Labrador Hydro is 637 megawatts of installed capacity. So, our peak heating load comprises 52 percent of the capacity and about 21 percent of energy sales. This contributes to a low load factor overall because heating is mostly for the winter months of December to March.

For the Newfoundland Power domestic sector, the reduction in energy due to the technological change variable in the forecast formula is 178 gigawatts total over 20 years. This is 8.9 gigawatts per year and comes out to be 9.6 gigawatts per year when allowing for reduced line losses. Since our average domestic sales is 3600 gigawatt hours per year, our forecast gives just a . 002 reduction, which is just two-tenths of one percent, which is almost zero savings. It comes to a value of $3.37 per year to the average customer and yet, energy efficiency improvements are a key factor that should be driving savings. So why are our power companies forecasting no significant savings?

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The MHA (sic) report also says that the present future -- that the present forecast uses an assumption that peak efficiency improvements will be 30 percent more difficult to achieve in the future because most cost effective improvements have already been done. This presentation challenges that assumption.

We submit that peak efficiency improvements in the future will be easier to achieve because highly efficient, reliable, cost effective technology is available for electric space heating systems to achieve this. Two, that these heating systems currently have a very low penetration rate in the Newfoundland market, so there is significant potential for use. Three, that it can provide a large reduction in what is the largest driver of our peak, the domestic space heating. Four, that the heating efficiency is so high that on an individual house, it might reasonably be described as a quantum leap in energy savings and demand reduction, 60 percent average reduction for space heat and at least 50 percent reduction in peak demand. Five, than an enhanced installation method

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provides advantages in our severe winter climate, such as improved operation reliability in extreme cold and high wind and snow conditions and this is done without backup resistance heaters, and that ten percent additional improvement in energy reduction, which would be an added value of 6.2 million dollars for the electric heat users, and also provides protection against salt corrosion.

On the island system, from the domestic sector alone, it has the potential to reduce peak demand by 423 megawatts with 296 megawatts achievable if houses use 70 percent coverage. What is meant by 70 percent coverage is that a person might install a unit, but not have it operating in some bedroom or some basement room where regular electric heat is being used. So, some people -- a good installation, you would try to use full coverage with these systems.

Now the chart there shows the -- it shows the peak demand reductions using high efficiency heat pumps with invertors. Currently the heating demand is 707 -- 700,

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and what was it? 783 megawatts, as you see from the point on the left-hand side, and you see the reduction in demand over a ten-year period, assuming there was a program of conversions to convert all the homes in Newfoundland to these type of systems over a ten-year period, then at the end of ten years, you would see a 50 -- you would see up to a 54 percent reduction if people were using full coverage of these units. A more likely scenario would be that some people would use partial coverage and it shows up in the B curve then as a 38 percent reduction in peak demand.

Now on an island basis, from the domestic sector, there's the potential to reduce energy consumption by 1138 gigawatt hours with 622 gigawatt hour achievable if houses used, again the 70 percent coverage factor.

(12:45 p.m.)

This chart compares the projected savings over 20 years. It shows the forecast by Nalcor, what they're expecting in savings, and it shows the potential savings from these heating systems. The bottom line shows the

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Nalcor forecast at line number D and that's projected out over 20 years. The lines A, B and C is the effect of using the high efficiency heating systems. The most effective is using full coverage with enhanced installation, which is the green line, line A. Line B is using regular installation. It's not the enhanced one, so you lose some savings. And line C is using the regular installation, but only having 70 percent coverage. And as you see, the domestic energy sales coming down, the top lines, is showing -- it's kind of a mirror reflection of the bottom lines. The energy savings in gigawatt hours are just subtracted from the total sales. The last point on that, I guess, is that additional substantial savings is possible in the domestic sector with efficient water heating, and also with space heating in the small commercial sector. I haven't done detailed calculation for those sectors, but I would think that there's at least another 100 megawatts that could be shaved off of total winter time demand by using the application to these sectors.

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An aggressive plan to convert to efficient systems would free up substantial existing hydro electrical generating capacity to facilitate more conversions from oil to electric and to substantially reduce, if not eliminate the burning of fossil fuels at the Holyrood plant.

Now whether we are wasting energy depends on how cost effective conversions are. A Type 3 system can be contractor installed for about $1800.00 per kilowatt of heat produced at 0 degree Fahrenheit, that is -18 Celsius. This figure would include installation for enhanced performance and reliability. So reduction in cost for energy efficiency appears to be much less at about 1/5th the cost of new generation via the in-feed system, and it would appear to offer even more savings from the cost of new generation for the island isolated option.

To determine the actual energy and demand reductions and to assure reliability in our severe climate, we undertook research to obtain end-use data, as Manitoba Hydro Report says, that permits more accurate forecasting as a residential installation. Our

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installation, the building was 23 years old, and before they upgraded, they need about 5 watts per square foot of electrical baseboard heaters. The conversion was put in operation in January, 2010. It is currently in its third winter of operation. We selected a Type 3 electromechanical heating system, which is generally referred to as a heat pump, but it's a particular type of heat pump. Its installation was such to expect enhanced performance from its already highly certified factory ratings. Modest shell improvements were also made to the building.

The research data showed the following. The reduced overall energy consumption was 42 percent. Reduced peak demand from the space heating equipment is 73 percent. There were no malfunctions up to present midway through the third heating season. There is additional benefits from air conditioning and humidity control in the summer season. It gives a positive contribution to increase the summer system load, and as it's decreasing the winter load, it so improves the system load factor. The new heating system maintains heat at 0

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degrees Celsius for about 0.65 watts per square foot, and would appear not to exceed 1 watt per square foot at about a -12 Celsius. This compares with about 1.4 watts per square foot required for a R2000 construction.

The chart here illustrates in this installation what the data indicated. The red line shows - that was the starting point of operation, and it was only three weeks of that building period that the unit was operating. So our first building from Light and Power commenced there at the top of the red line, and so for the spring months, you can see February, March, April, and so on, and you can see the decline in energy consumption up to June month, and then we pick up on the left hand side on the green line and go through the summer and up until the fall, and you'll notice that there's a fair drop off in energy consumption from October to, I guess, early January, and there's a note there that it was reduced occupancy. So we show a dotted green line showing where we expected if was occupied where that power consumption would be, but I should point out that even though it was

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reduced occupancy, the heat was on at normal heating temperature of about 72 degrees Fahrenheit during that period. So even with that depressed line at that point, the heat was fully on during that time frame. So the reduced occupancy brought further reductions because there was no water usage and TV and so on. So then it picks up, the peak of the green line in January and comes on. We're then into the 2011 spring season. So you would obviously get a repeat pattern from that.

Now the blue line is the year before this unit was installed, which is 2009 Light and Power billings, and you can see particularly in the winter season the big drop off in demand. So what this would do if all the homes were using heat pump systems, it wouldn't employ such a large drop off in the utility demand in total because the domestic heating is a proportion of the total, but you would get a large piece of the total peak reduced from the existing operating mode. Now I'm going to say that it would appear that there are very serious errors in the power

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company's methods or formulas. There should be very positive contributions from energy efficiency upgrades, and forecasts should show significant gains. It is likely the error is due to not having actual end-use data.

So I think, you know, this what I show here is a prime example what end-use data, the type of information, the feedback from that can show how tremendous these heating systems can cut demand. I'd just like to make a comment there because I watched a bit of the proceedings a few days ago, and someone discussed heat pumps and the savings potential, and the comment was made whether or not, you know, people save some energy, but then they use up the equivalent energy by having an extra TV or that sort of thing. Now the information shows that on average the Newfoundland average household is using25. kilowatts of energy for heat, for the domestic heat. If you cut that in half, you save 2. 6 kilowatts. If you buy a new TV from the little checking I've done, I think I saw some Sony 36 inch models that were showing about 200 or 225 watts of power consumption. So you

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would have to buy and install, say, 13 televisions to chew up the energy you're saving with your heat pump, and you would have to have all of those 13 televisions on continuous 24 hours a day to since - at peak time your heat pump is running pretty well 24 hours a day, and to chew up the same amount of energy. Again end-use data would give you that information and that kind of information is not readily available to the public, so they can't make some good decisions on these things.

Now the electric space heating systems used in Newfoundland are of a variety of styles, but most are of the resistance type heater. The method being that if you apply a sufficient voltage to a conductor of high resistance, it will heat up. This was used with Edison's light, whereby it gave mostly heat, but also light. For heating purposes, we have the baseboard heater, the electric furnace, the duct heater, the electric boiler, the in-floor electric heater, all of these are resistance heaters. Sir William Coaker used electric resistance heaters in his house in

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Port Union in 1917, being state of the art at that time. They are reliable, they are cheap, but they're very inefficient by today's standards.

Modern electromechanical space heating systems is an hybrid type of electrical, mechanical, and electronic components. They offer energy reduction due to their exceptionally high efficiency. This is generally measured in COP, which means coefficient of performance. Their performance is climate dependent. Our climate in Newfoundland is very good to obtain high performance. The COP of 2 or better can be expected for a Type 3 System in worst winter conditions. The COP of 2 means that for $1.00 worth of energy in, you get 2 out. COP of 3 or better is what you would expect for your yearly average. The COP of 4 or better is what you would expect in the spring and fall when operating at part load, and part load is accomplished by inverter technology. This also is very beneficial to the power company to eliminate high current inrush that commonly would dim the lights momentarily. When these

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products are used extensively, it lowers - it allows lower utility cost for smaller capacity distribution lines and power transformers.

(1:00 p.m.)

Now we look at compact fluorescent light energy saving, and I asked the question is it fact or fiction. MHI, Manitoba Hydro points out the importance of end-use research to confirm claimed energy efficiencies. Many products are climate dependent. That is it may work fine for one application, but not for another. These style lights produce much less heat, but equivalent light, so they are much more energy efficient. The old style 60 watt bulb can be replaced by a newer one of 13 watts, which is about 78 percent reduction. Most of this is due to less heat generation. For southern climates where little heat is needed and where excessive heat requires air conditioning, these lights save substantial energy year around. In our climate, the old style light contributes to the heat needed for about 11 months out of 12. So when the light is on, the electric baseboard heater and other resistance type space heaters uses less

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energy. When replaced with the new style, because it puts out less heat, the regular electric heaters must stay on longer to compensate. The result is that there are essentially no energy savings except in the warm period of summer, about one month.

CHAIRMAN:

Q. Hopefully.

MR. ADAMS:

A. Hopefully. So the suggested saving is about ten times more than actual. End use data would show that. The same principle applies to the more efficient appliances, like fridges or TVs and also applies to insulating hot water pipes that are within the building occupied envelope. However when the new lights are used outdoors, these will save the energy suggested, again, end-use research would show that. Also when the energy efficient lights are used indoors, in conjunction with the highly efficient heating system, the lights save on energy year round, that's because their loss heat output is then supplied by the highly efficient heating system at about one-third the cost, so they

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work together effectively.

The Manitoba Hydro report says Newfoundland Power and Newfoundland and Labrador Hydro designed the energy efficient guidelines, which is promoted as the Take Charge Program. It appears that since no end use data research was done, that many of their recommendations for energy savings are ineffective, that many highly efficient products are not promoted. This likely contributes to a forecast that shows no significant savings from energy reduction in technology change from efficiency.

Conclusion: That energy efficiency can have tremendous savings to the power companies that can pass on to the customers, in particular the domestic sector. As well, there are other environmental benefits, that this approach can offer alternative options to meet efficiency gains. Forecasting methods that use end-use data and research to obtain the data is essential. And programs that partner with domestic customers on costs to convert to the modern highly efficient heating systems would result in substantial savings

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and benefits from the efficiency factor. A 10 percent efficiency surcharge on electricity sales with a 60 percent rebate on customers' costs would allow an aggressive conversion rate. This would allow no net increases for electricity to the domestic customer, since the energy reduction savings offsets the surcharge. It can be seen that the issue of efficiency for our power systems, in general and use, is substantial. Areas like Vermont, Nova Scotia and New Brunswick realize that it is often less costly to advance efficiency improvements as compared to new generation. They have set up corporations with sole responsibility for efficiency issues called Efficiency Nova Scotia, Efficiency Vermont, et cetera. Perhaps such a corporation - Efficiency Newfoundland and Labrador would be useful. That concludes it.

CHAIRMAN:

Q. Thank you. Mr. O'Reilly, sir.

O'REILLY, Q.C.:

Q. Thank you, Mr. Chairman. No, I don't think we have any questions, we'll be addressing the relevant portions of the presentation in our

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final submission to the Board, thank you.

MR. JOHNSON:

Q. No questions for Mr. Adams. I appreciate his presence here today on that. I would say, though, I've found the example of the 13 televisions, if we had 13 computers, maybe our viewership would be up, on the webcast, but alas that won't be, I guess, but I enjoyed your presentation very much, thank you.

GREENE, Q.C.:

Q. No questions, Mr. Chair.

CHAIRMAN:

Q. I just got one. In the case study that you did with the 23 year old house, how much--what was the capital investment?

MR. ADAMS:

A. Well, it's less than what most people would spend because I did my own installation, so I had no labour costs, I put in a single unit and I bought it wholesale because I'm in the business where I can do that. Equipment and materials, I would say about $1,500.

CHAIRMAN:

Q. $1,500? What about the heat pump, how much did that cost?

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MR. ADAMS:
A. That includes the heat pump and materials would be the wiring, the refrigerant line, the heat pump--I wouldn't have HST included in that. Wholesale cost on the heat pump could be $1,200 or $1,300, but that's a single system, what--to give you some idea of a typical home who would want to put in enough to cover some heat in the basement and cover all his upstairs, situate maybe 1200 square feet up and down, you may be looking at about $9,500 installed.
CHAIRMAN:
Q. $9,500 for say 2400 square feet?
MR. ADAMS:
A. Yes.
CHAIRMAN:
Q. Is that right?
MR. ADAMS:
A. Yeah -
CHAIRMAN:
Q. It's only a ballpark now, I mean, I'm not going to be crucified if you're out, don't worry about that.
MR. ADAMS:

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A. Ballpark, yeah, no. I did a comparison the other day and it kind of comes out to be somewhat similar to putting down a hardwood floor on a square foot basis.
CHAIRMAN:
Q. Okay, that's a good -
MR. ADAMS:
A. I know when people are faced with decisions to put in a heat pump and save energy or put in a marble or granite countertop, some similar price and quite a few people would go for the granite countertop. (laughter). I think if they realized where power costs are going to be four or five years down the road, they might reconsider that.
CHAIRMAN:
Q. They might come to their senses.
MR. ADAMS:
A. Yeah, and I think it's quite likely that with more of these systems getting into the marketplace, if there's no program put in place to encourage them, because they're so tremendous at reducing energy and so cost effective, you're going to get more and more people convert to them anyway. So I see this

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as a big danger to projecting increased loads to our system 'cause certainly if there's aggressive programs to make it happen, we can bring our loads down a lot. If there's no programs, it will happen but at a slower pace, but it will get there, you know, sure as the car replaced the horse and buggy, heat pumps will replace the, what I call the resistance heater, which is the common thing that's being used now.
CHAIRMAN:
Q. So you could buy a unit for 2400 square feet, you could buy a unit for $9,500, ballpark.
MR. ADAMS:
A. Yeah, installed.
CHAIRMAN:
Q. Oh that's all your--everything, give her the flick.
MR. ADAMS:
A. Yeah, I think that would be installed, yeah.
CHAIRMAN:
Q. So obviously there's been a major reduction in unit costs over the last five or six, seven years then.
MR. ADAMS:

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A. There's--yes, I've just been tracing this for the last couple of years and I've manufacturer's reduced cost and also manufacturers, surprising how they're still increasing the performance of those units. I just got one piece of information off line a day or so ago and the prior model that was on the go for maybe four or five years, when it's operating at low load, just part load operation, you'd have a COP of 3.5. Now that model, as of last week, I guess, it's obsolete and they got a newer model there, and similar capacity and the performance jumps from 3.5 up to 6. So that's almost a hundred percent improvement operating at--and when it's going to operate at low load is in spring and fall when your temperatures are at maybe 4550 degrees, you don't need a lot of heat, your system--the compressors are variable speed, so the compressor is going very slowly to do the job and it brings down energy consumption. And it's just amazing at low load there, they give--on that particular one, the input to the system is 200 watts and the output is 1. 2 kilowatts, and you divide 1.2 by .2 and you

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get a coefficient of performance of 6.

CHAIRMAN:

Q. And so therefore your payback on your investment is substantially reduced.

MR. ADAMS:

A. Yeah. It appears the cadillac of heat pump systems in some respects, or ground systems which are very expensive, but I think most ground systems, the COP generally wouldn't go over 4 or 5 and at certain operating times of the year, these air systems were exceeding the ground systems performance. So their comparative low cost and their ease of use for most all buildings, the ground systems, as soon as you got a big water supply where you got the space to put a lot of ditching in or dig wells, they're doing it now at some schools in the province, but particularly for residential, water systems are very, very expensive in comparison to these.

CHAIRMAN:

Q. Well thank you very much, it was very interesting.

MR. ADAMS:

A. Thank you.

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CHAIRMAN:

Q. I guess we're adjourning for lunch now, are we?

GREENE, Q.C.:

Q. Yes, until 2:00, Mr. Chairman.

CHAIRMAN:

Q. 2:00? We are adjourned until 2.

(1:13 p.m.) (ADJOURNED FOR LUNCH)

(2:10 a.m.) (RESUME)

CHAIRMAN:

Q. All right, are there any preliminary matters before I turn the proceedings over to Yvonne Jones.

GREENE, Q.C.:

Q. No, Mr. Chair, I believe there are no preliminary issues today.

CHAIRMAN:

Q. So, madam, you are on.

MS. JONES:

A. Thank you, Mr. Chairman, and thank you all for the opportunity to present here today, and I certainly appreciate you accommodating me. I'm probably the only permanent resident of Labrador that will have the opportunity to present before the Public Utilities Board, and

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I was very disappointed to know that the Board would be restricted in holding hearings across Labrador, especially since it is the home of Muskrat Falls, and the people there will probably be most implicated by any new developments that occur in their land. So I appreciate the opportunity to present and you accommodating me today.

Before diving into the details of the Muskrat Falls Project, it's worthwhile, I think, reviewing why we are here.

The most important reason why we are here today is the Upper Churchill Project constructed almost 50 years ago. In particular, we are here because of the failure of a power purchase agreement signed between Hydro Quebec and agents of the Government of Newfoundland and Labrador. The sad history of this deal has seen billions of dollars in power profits leave our province.

The deal was not an inevitable deal. It was a deal that could have been avoided.

Perhaps if we had had a Premier and a government at the time that was more open to having their policies and projects questioned

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and scrutinized, the outcome would have been different. Imagine how different our history would be if we had taken the time and effort to place something as simple as an escalator clause on the price of power. What additional infrastructure and services would we have today? Where would our debt be?

If we have learned an lesson from the history of the Upper Churchill, we should have learned that there is no such thing as too much oversight or too much scrutiny.

Today we stand at a fork in the road looking at yet another major power deal, the Muskrat Falls project. One thing that has been largely left out of the discussion is the return of the Upper Churchill power in 2041. Although it plays a prominent role in Government's Energy Plan released in the fall of 2007, Muskrat Falls seems to ignore it.

Nalcor's financial projections stretch out to 2067 because that's the time frame that will take to amortize the capital cost of Muskrat Falls, but that is 26 years after we regain control of the 5,428 megawatts from the Upper Churchill. At that point we will have

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all the power we will ever need for centuries.
That is only 29 years away. So what we need to do is bridge the power needs between now and 2041, and our goal should be to achieve that as cheaply as possible in order to ensure that we always have access to the lowest possible cost power.
Therefore, we should require that the financials be planned with amortization over 30 years, not 50 years. Then we can see if Muskrat Falls is worth the money to the Newfoundland and Labrador taxpayer.
Muskrat Falls is a complicated deal with many aspects to it. It has been made more complicated by the way government and Nalcor has decided to proceed. It has become very difficult to see the true deal because of how information changes and shifts in official positioning depending on which criticisms are being addressed.
Today I'm going to address the major concerns which we have as the Official Opposition, and I, as a leader in Labrador. I will divide my concerns into the following groups; process for examination and review,

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questions on the demand side and Labrador, questions on energy pricing projections, questions on the supply side, questions on cost overruns/financials/export markets, and impact of future land claims.
Too many issues are deeply intertwined between those within your scope and those just outside your scope, and I can't help that and I hope that you will provide me with the latitude and the time that I need to cover the information that I want to share with the Commission today.
The process for examination and review, in an ideal world, this project would have been reviewed without arbitrary constraints, by outside experts with no vested interests in the outcome. That includes this Public Utilities Board. Nalcor refers to these reviews as "cold-eye" or "independent".
Since the project was announced on November 18, 2010, there has been exactly one official independent unrestrained review of Muskrat Falls. That review was the Lower Churchill Generation Project Environmental Impact Statement produced by the Joint Review

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Panel.
That review as conducted by a panel of truly independent persons who heard from multiple points of view and gathered and evaluated a large amount of information from interested persons and groups. Most important, the panel did not rely exclusively on data that was supplied by Nalcor, and what did they conclude? It's worth hearing the quotation in full, "The panel concluded that Nalcor had not demonstrated the justification of the project as a whole in energy and economic terms, and that there are outstanding questions related to both Muskrat Falls and Gull Island regarding their ability to deliver the projected long term financial benefits to the Province, even if other sanctioning requirements were met".
This is very important. If Nalcor could not convince the independent panel that this project was justified in energy and economic terms, then it was up to Government and Nalcor to go back to the drawing board and reconsider their plan. They have not, and instead they have just pushed the project forward without

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change. Since then there have been two other publicly released reports, and the first was from Navigant. We believe this was a seriously flawed report which was in no way "independent" or "cold-eyed". First, Navigant has had a longstanding prior relationship with Nalcor with many contracts awarded to them over the last decade, but more importantly, the report is based on a narrow scope of review and a mandate which avoids looking at the areas of great public policy importance. For example, the report did not look at conservation, demand management, use of alternatives such as offshore gas or cash flow projections and out of province power sales.
Similar criticisms can be made for the work commissioned by the Public Utilities Board from Manitoba Hydro International. This report is also circumscribed in scope by the mandate provided to the Public Utilities Board. The Public Utilities Board is one of the most important regulatory bodies in this province. Its decisions affect everybody in the province who turn on electric lights or dial up their electric heat. The first and

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primary mandate is to regulate the prices of utilities such as electricity according to the Electrical Power Control Act, and that Act states that, "A production, transmission and distribution of power in the province should be managed and operated in a manner that would result in power being delivered to consumers in the province at the lowest possible cost consistent with reliable service". Yet the Public Utilities Board has been asked by Government to conduct hearings which specifically exclude the issue of impact on ratepayers.

The people of Newfoundland and Labrador have to rely on the Public Utilities Board to carry out an independent review of the effect of Muskrat Falls on electricity rates and to look at the impacts of alternative sources of power. Otherwise, we will never know if we are getting the lowest possible rates for the people and the businesses of the province. We cannot afford to rely exclusively on the non-objective and biased perspective of Nalcor and their allies.

This is the fatal flaw in the review

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process of this project. Once the decision was made to build a smaller dam at Muskrat Falls combined with thousands of kilometres of transmission to Nova Scotia, all other alternatives were eliminated from the discussion.

It's also worth nothing that in a project as complex as this, the devil is in the details. Currently, Emera and Nalcor have announced an indefinite delay in producing the legal text to guide the execution of this project. We have to question how is it possible to truly examine the impact and reality of this project without access to those legal texts.

Section B, Demand side discussions. Government has made every effort to simplify this complex discussion to a series of simple questions; do we need the power, and if so, what do we do about it? I'd like to address the first part of this now, and I'll address the second part later in my presentation.

Since it was first announced, Government and Nalcor have increased the urgency in moving forward with Muskrat Falls. Minister

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Kennedy has even been quoted that the Island will start experiencing brownouts by 2015 unless we build Muskrat Falls. Well, let's keep in mind that 2015 is only three years away, and if Kennedy's statements are true, then we are destined to experience brownouts because there is not - there is no reasonable way that Muskrat Falls will come on line in that time. But let's leave that aside. His statements, as we know, have been unfounded and unverified and they make no reasonable sense.

Overall, Nalcor claims a steady increase in demand of .8 percent year over year. Here's the problem with that statement. There is no independent authority that confirms this fact. On the contrary, there are several independent authorities who contradict that scenario by Nalcor. The Joint Review Panel, for example, didn't believe it and recommended further study to confirm the information. It's important to know that we have lost two major industrial customers in the last five years; Stephenville and Grand Falls pulp and paper mills, and although Long Harbour will

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bring a new demand on the provincial grid, that power has already been accounted for.

Second, the overall population has remained relatively stable and is projected to stay that way. This is important because demographics drives power demand. In the medium level population scenarios out to 2025, we are looking at a population which stabilizes around 528,000. This compared to the 514,536 according to the most recent 2011 census that we've had access to, and that population will be much older than the population we have today, so more people will be living in smaller spaces, in higher density housing than we see today. That means a reduced energy demand.

Third, Nalcor has completely ignored the impact of conservation and demand management. The only statement from Nalcor on this issue is that they have tried to bring in power conservation, but people have not been interested. In fact, Nalcor has not tried very hard, in my estimation. Newfoundland and Labrador Hydro commissioned Marbek Resource Consultants to assess conservation and demand

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management potential for the province. They found that current conservation and demand management budgets account for just 0.75 percent of utility revenues, compared to a recommended level of 1.5 percent. Newfoundland and Labrador lags behind the rest of Canada in spending $2.22 per capita on conservation and demand management, compared to Quebec who spends $29.02, and British Columbia who spends $40.63.

Dr. Jim Feehan, a respected economist at Memorial University, argues that a program to half the growth in power consumption would eliminate Nalcor's claimed cost advantage for Muskrat Falls. He advocates a program of smart meters, time-of-day pricing, and electricity pricing that better reflects the cost of electricity production. He concludes that sanctioning Muskrat Falls now would be "premature and imprudent".

It's worth contrasting government's claims of a hypothetical ever-increasing island demand to the very real increasing power demands that exist in Labrador.

The major customers for electricity in

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Labrador are new and expanding mining projects. IOC, for example, is proposing to double their output through the Genesis expansion. This is estimated to require a minimum additional 200 megawatts of energy. On top of that, there are several other new mining operations in various stages of development. New Millennium, in both their mines will require nearly 300 megawatts of power. Alderon's projections are expected to exceed well over 50 megawatts of power. Small mines like Labrador Iron Mines, Iron Sands, and Aurora Energy, will all require anywhere from 50 to 100 megawatts of power, and Vale Inco is looking to go underground again requiring a huge block of power exceeding the 50 megawatt range. If there is any part of the Nalcor proposal that is based on speculation, it is surely their projections on future energy prices.

Nalcor and Government justify Muskrat Falls by stating that the price of oil will be ever increasing, up to levels around $200.00 a barrel. Therefore, we need to get off Bunker C and onto hydro because then prices will be

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cheaper and more stable. You note that that reasoning applies to the island portion of the province, but not to Labrador. A double standard of Nalcor and Government, as they desperately look for a rationale for Muskrat Falls, because as we know, the power needs to the isolated communities on the north and south coast are currently being met by diesel power generation. The people in southern Labrador are going to see transmission lines carrying clean hydro power passing over them in their communities. People across Labrador are going to see clean energy hydro power developed and exported to other regions of the province, the country, and North America. It is increasing the level of frustration for Labradorians who have been shut out of the project and forced to access high priced diesel power.

It is unreasonable to extract hydro power from Labrador without providing the benefits of directly availing of that power to its people and to the industry. Nalcor says as well that they base their projections on PIRA numbers. The PIRA Energy Group is an

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international energy consulting firm specializing in global energy market analysis and intelligence. They are a respected international publisher of future energy prices, and Nalcor uses PIRA projections as a primary justification for moving forward with Muskrat Falls. However, if you open the page of the provincial Energy Plan, you will see that the price for West Texas Intermediate was projected to be US $60.00 per barrel in 2012, yet this morning the actual price of West Texas Intermediate is listed at around $105.00 US per barrel. The same energy plan document also provides price projections for natural gas, and according to the plan, the price of natural gas this morning should be around $8.00 US million BTU. Yet according to the US Energy Information Administration, the price is currently today hovering around $2.5 million BTU, US. So both of these energy plan projection are numbers derived from PIRA projections. Remember that this energy plan released in the fall of 2007 is the basis for all energy policy in the province, including the prime justification for Muskrat Falls.

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So when you look at what PIRA said just four and a half years ago what prices would be today, you see a great discrepancy. It's clear that their projections simply don't hold up. So what Nalcor does not explain is how PIRA is constantly revising their future prices to take into account the most current information. As current information changes, so do their projections.

So energy projections that are now published in 2012 for oil prices in 2025 will not be the same as energy projections published in 2007, and those energy projections will be different from the projected prices they publish in 2017. These projections are the best guess based on circumstances today and as circumstances change, so do the projections. Nalcor would have you believe that oil price projections are oil price predictions, and they are not. The fact that the projected prices for oil and gas for today as stated in the Energy Plan from four and a half years ago are so far off, it shows how dangerous it is to rely on them and them alone. It is reckless to build a 6.2

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billion dollar project on such a flimsy basis.

Nalcor's plan is to build an infeed from Muskrat Falls in Labrador to supplement the island's current power supply which is derived from several hydro facilities and Holyrood. Holyrood, we should note, is used only part of the year. Let me say something about the Holyrood facility because we agree that we would be better off without it, and if we can - that's if we can close it out. However, we are not convinced that the 6.2 billion dollar hydro project at Muskrat Falls is the right option to replace it. Further, there are conflicting reports on exactly what will happen to Holyrood in the long run. We have been advised by experts in the transmission that Holyrood will have to stay operating even under the in-feed scenario. One reason we are told is an emergency backup for the Avalon Peninsula, and another reason would be to balance the load across the system. So we are not exactly sure what is going to happen to Holyrood or what other similar thermal options might replace it in the future. We note that the Manitoba Hydro Report indicated that in

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2067 the province's energy generation will be 37 percent thermal, thanks to seven new thermal generation facilities. If that's the case, then it flies in the face of Government's desire for the province to go green. So we'll leave this issue aside at this time, as I want to discuss some other options.

Minister Kennedy states that Muskrat Falls is the least cost option to supply the new power we will need. What he really means it that it will be the lower cost option between his favoured Muskrat Falls project and an artificial isolated island option, and the reason I say the isolated island option is artificial is because that option was designed to compare badly with Muskrat Falls. There are other more reasonable isolated island options which are more economical and more realistic than the one put forward by government.

First, the option of natural gas has been dismissed out of hand, and we have the option of bringing it to the island and burning it at Holyrood. It is much cleaner and cheaper than

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Bunker C. We have literally trillions of cubic feet of natural gas, roughly 60 TCF by some estimates, sitting off our shores, and not just offshore. Nalcor's 20 million worth of dry holes at Parsons Pond may not have found oil, but they did find natural gas, and our oil projects, notably White Rose, uses natural gas to re-inject pressure in their wells, but they only do that because they chose to do it, but we could bring that onshore instead. Nalcor claims that we can't look at natural gas because we don't have the infrastructure to bring it onshore. But using that logic, we may as well stop talking about Muskrat Falls because we certainly don't have that infrastructure in place either.

(2:30 p.m.)

Dr. Stephen Bruno of Memorial University has done reports and presentations on bringing natural gas onshore. In 2005, he estimated that in his expert opinion if we recovered only 60 percent of the natural gas available at Hibernia, Terra Nova and White Rose, we could run a Holyrood size plant at full capacity 365 days a year for over 100 years.

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That gas could be fed to the island through a 12-inch diameter pipe at 3,000 psi for approximately 300 million US. Remember that we now own equity stakes in this energy resource as well.

Yet today, this option is completely dismissed out of hand by Nalcor and Government. Yet, they have commissioned no studies to justify that position. While the shale gas revolution tears through North America, we are keeping our eyes closed to those possibilities. It is irresponsible for a vertically integrated energy utility like Nalcor to ignore these possibilities and in doing so, they are not upholding their obligations to the people of Newfoundland and Labrador.

I will address all the financial issues in one section because I believe that they are all closely related.

There have been many different descriptions of how this project will affect ratepayers and I would like to address three primary factors which may determine how Muskrat Falls will affect the way ratepayers

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bills change.

First are cost overruns on the project. According to the Nalcor/EMERA term sheet, we are responsible for 100 percent of the overruns on all parts, except the Maritime link. On the Maritime link, we are responsible for 50 percent of the overruns, despite the fact that we have no management control over that construction. Nalcor's numbers are based on their certainty that their 15 percent built in cushion for cost overruns will cover any eventuality that they could face. They are gambling with the pocketbooks of ratepayers in this province.

The World Commission on Dams looked at 125 large dam projects around the world. They found that cost overruns averaged 56 percent more than initially budgeted. On Muskrat Falls that brings the project to a potential cost of almost ten billion and how will we cover that overrun? Where will the cash come from? Right now, it's hard to tell because of the minimal financial information that's being provided by Nalcor. For example, in their current potential overrun of 15 percent, we

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don't know how much of that might be the projected results of higher cost of materials, labour, design or some other factors. However, one thing is for sure, because Muskrat Falls capital costs are based on recovery from ratepayers, it is the people of Newfoundland and Labrador who will be stuck with the big bill.

The other aspect which will determine how hard Muskrat Falls will hit ratepayers is the potential export markets. Again, this is an area which lies outside the mandate of the Public Utilities Board, but I ask for your indulgence for just a minute.

Because capital recovery will be based on ratepayers, then the more we sell to other markets, the lower our potential rates. This project is different from just about every other Lower Churchill power project that has been looked at in the history of our province because other proposals were based on income from outside export, bringing returns to the province and ensuring that the ratepayers and the people of Newfoundland and Labrador get the fairer deal.

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Nalcor and Government have been all over the map on this issue. They first tried to sell the project by talking about export markets. Then they changed their tune and talked about how this project was to address local energy needs. The reality is that this might be the very worst time in 40 years to try and export energy into the United States. Between their structural weak energy demands due to economic slowdown, the easy, availability of shale gas for heating and power generation, and the glut of hydro energy provided by Hydro Quebec, wholesale electricity prices throughout the northeastern US are at very low levels. There will be no recovering of Muskrat Falls capital costs from that market.

As for EMERA, we are providing EMERA with power for 35 years at no cost in return for constructing the Maritime link. There has been much public discussion about whether this means EMERA will receive free power. We have claimed that EMERA will receive free power while Nalcor has claimed that EMERA will be paying 1.2 billion for it. Either way, the

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power will be transferred from this province to Nova Scotia with no revenue associated and no revenue returning back to the people of the province. If power rates drop to nothing, EMERA will pay no less money to Nalcor. If power rates skyrocket, EMERA will pay no more money to Nalcor. It is all fixed. This is a problem. We are providing EMERA with power where the cost is not dependent upon prevailing energy rates. If we have learned nothing else from the Upper Churchill, it's that escalator clauses are essential to fundamental fairness. Not addressing this issue now is a receipt for financial disaster in the future.

Finally, there is the issue of the impact of future land claims. A key initiative which has allowed the Muskrat Falls Project to move this far has been the resolution of conflicts with some of the Labrador aboriginal communities through the New Dawn Agreement. Among other things, this agreement with the Innu communities resolved land conflict issues related to Muskrat Falls and provided benefits in terms of construction job guarantees and an

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equity stake in the project. Nalcor and Government have praised this deal as being a final resolution to aboriginal claims which might impact Lower Churchill development.

However, there are still unresolved issues with the Nunatukavut government, formerly known as the Metis Nation. They too have land claims outstanding and they too will be adversely impacted by the Muskrat Falls development as things currently stand. So far, they have not been recognized in their claims by Nalcor, despite the fact that those claims may have a serious impact on the financials and the progress of this development. Ignoring this community is to disregard potential serious disruptions to Muskrat Falls planning and execution and the financials at the end of the day. And there is no doubt that such disruptions will lead to cost overruns, delays and more costs to ratepayers.

Overall, we feel comfortable in stating that there is every possibility that electricity rates in this province will double.

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The Official Opposition and I are in favour of developing the Upper Churchill, both Muskrat Falls and Gull Island, after a proper and complete process of due diligence. We do not see due diligence being performed in this case.

We are not concerned that the process to examine Muskrat Falls has been limited -- We are concerned that the process to examine Muskrat Falls has been limited to an artificial choice between the Nalcor preferred option and the isolated island option alternative, which is clearly designed to be problematic and unacceptable. Further, it is unreasonable to expect this review to be completed in the short time that has been allowed by Government.

Any review of Muskrat Falls should be done in the context of all possible alternatives welcoming input from credible and respected points of view without artificial deadlines. I just hope that the Public Utilities Board, in the short period of time that you have, will at least have the opportunity to examine, to the best of your

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ability, what the real impacts of this deal will be for the long term on Newfoundlanders and Labradorians and I hope that you will see that there is a better way and there are other alternatives. Thank you.

CHAIRMAN:

Q. Mr. O'Reilly, sir?

O'REILLY, Q.C.:

Q. Yes, Mr. Chairman. Nalcor will deal with any factual issues and issues relating to the relevancy to this process in its final submission to the Board. We have no questions for Ms. Jones at this time.

MR. JOHNSON:

Q. I have no questions for Ms. Jones. Thank you very much.

GREENE, Q.C.:

Q. And I have no questions for Ms. Jones.

CHAIRMAN:

Q. Thank you very much for your presentation, Ms. Jones.

MS. JONES:

A. Thank you.

CHAIRMAN:

Q. Next we have Mr. Gordon Ralph. When you're

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ready, sir.

MR. RALPH:

A. Okay, thank you very much. I'm not really representing anyone. First of all, I should read from this, I suppose.

Ladies and gentlemen of the Public Utilities Board, thank you for giving me the opportunity to address you today. I promise I will be brief and avoid redundancies in terms of what has already been presented. Let me state, I am not an engineer, economist or politician, just an ordinary citizen, if there is such a thing. But listening to Ms. Jones' response, I think there will be a degree of overlap. However, I think I can say that this is not the first time you've heard an ideological echo in this room, right. It's probably happened a number of times because the issues are so crucial that I think a lot of people will touch upon the same types of issues and that's inevitable.

One of the things, as she was speaking, that is not in my report, that my imagination thought about and that is will we have the workers? Right now, there's a tremendous

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deficit in the number of workers for the Long Harbour plant and you can jot down workers, I think that's going to be a really big issue because if we try to entice the boys and girls back from Alberta, we're going to have to pay Alberta prices and that could work to accelerate the cost of the actual project.

It appears to me that a couple of issues have changed or have been modified since the public had been first aware of the development, and again, my information is the public news. I have read everything in the public media. If you see my bag there, I got about 40 or 50 essays that everybody has written. So what I did, I tried to go through them and look at the other reports and say is there a niche here which we haven't looked at.

At first it appeared that the resale of power was an integral part of this project. A government website in 2011 stated that 40 percent will service the needs of Newfoundland and Labrador. 20 percent will be transmitted to Nova Scotia under a 35-year contract and 40 percent will be sold into the market through Atlantic Canada and New England or available

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to support and attract industrial development in Labrador.

Later in the article, it states that the project business case is not dependent on export sales. This is confusing. Export sales are either a part of the business plan or not a part of the business plan. If this project of 824 megawatts generation, costing 6.2 billion dollars, is to proceed, while the province only needs 40 percent of this power or 329.6 megawatts, then alternatives look slightly more enticing. So, figures need to be jiggled in relation to the crucial aspect or non-crucial aspect of export. That's a very important idea.

A memorandum dated October 18th, 2010 stated that sale of additional power to export market further enhances the viability of the development and makes this approach the most economical solution over time. This again is confusing. When is over time? Will it be my children, my grandchildren? Who will reap the benefits? It's very kind of non-descript.

PEI has heavily invested in wind generated energy. The United States has

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discovered shale natural gas. New Brunswick has the Romaine River complex next door in Quebec able to offer electricity for near 50 percent of our purchase price, 1550 megawatts for 6.5 billion dollars. The only buyer which I can envisage is Nova Scotia who is prepared to purchase electricity for 50 percent of what the people of this province will pay. Good deal. Excellent deal. If I was a Nova Scotian, I'd go for it.

My second point is the need to clarify exactly what we will pay. Does the cost of development translate into consumer cost of 28.4 cents per kilowatt hour? That's been bantered around. I don't know, but that's been bantered around. And if the cost of this development has overruns, which are likely, as Ms. Jones has said, does this translate into an even greater cost in electricity for the consumer? This needs to be clarified, especially considering Manitoba Hydro experienced forecast overruns in billions when they started their development.

If we look at the demography of this province, the number of retired persons is

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increasing year by year. These individuals will experience extreme financial hardships on fixed incomes, potentially paying triple, maybe more, the electricity rates they now pay and I think that really that is a big serious issue.

I realize that if we wait until 2041, we will still need a transmission line to the island, as well as pay heavily to refurbish the Holyrood plant. However, in 2041, if we add the Upper Churchill to present plans, we could end up producing 3,629 megawatts of power and no guaranteed purchaser, except Nova Scotia, and our demand will be somewhat above 400 megawatts. So we will be producing 3, 629 megawatts. We will need somewhere over 400 megawatts. There's something not very logical in this for me.

Mr. Kennedy stated in The Telegram that he would not be a party to any deal like the Upper Churchill. However, in 1968, nobody could predict that energy rates would rise so drastically. Now today, with cars burning less fuel, the advent of electric cars, consumers purchasing solar panels, health

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conscious people bicycling and walking, alternative energy sources threaten to drive down the cost of energy. We could end up with the flip side of Churchill Falls if energy process drop -- prices that should be. That's a misprint -- if energy prices drop.

Between 2008 and 2009, Manitoba Hydro experienced a decline of 1,500 gigawatt hours while expert markets shrunk. I hope that doesn't happen here. I hope that doesn't happen here.

There were many other issues which I had previously intended to address, but I feel that these issues have been addressed by other presenters. I merely wanted to stand back, did the readings and says what does an ordinary person say when looking at this. I talked to my friends and we talk about it, we talk about it a lot. The most common comment from people is "I don't know anything about this" and that's bad. That's bad. "I don't know anything about this." And it needs to be consistent, it needs to be clear and we need to know what we're getting into.

Now I know it's not the same as buying a

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steak at Sobeys, but you should be able to say no more than this, no less than this. No more than this, no less than this, with accuracy, because there's been too much number crunching on the go. I mean, when Newfoundland and Labrador Hydro submitted to you people the cost of the new changes they wanted to make, you know, the new expenditures and stuff, Mr. Martin said "well, that's a little bit high. I'll go back and look at that, I guess." When he projected the cost of running from Muskrat Falls the power down to Soldier's Pond, he said "oh, that's a little bit high. I'll have a look at that again." I think before the public sees any number, we sit down and say this is what it's going to be; no more than this, no less than this, and we can't confuse the public because it's the public who are going to be paying for this and that makes me wonder -- I don't know, you might know, I don't know -- why isn't there private people banging at the door saying "we want to give you a couple million dollars" if this is a good deal. It's all public money. You know, why aren't there investors saying we'll give

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you all kinds of money because this is a good deal. We had to fight like dogs to get an equity share in Hibernia. And all of a sudden, nobody is going mad over this one.

It is for the issues here presented and those presented by others, ladies and gentlemen of the Public Utilities Board, and I know it's not your call, but we must have a referendum, definitively. The only way we're going to democratize this is with a referendum, or otherwise we're in an autocracy. Is this a democracy or an autocracy? The referendum is the only way out of it, in my opinion.

Any questions?

CHAIRMAN:

Q. Mr. O'Reilly?

O'REILLY, Q.C.:

Q. No, Mr. Chairman.

MR. JOHNSON:

Q. No questions, thank you.

GREENE, Q.C.:

Q. No questions, Mr. Chair.

MR. RALPH:

A. Okay. Thank you for your time. I said I

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would be brief, and I was brief and I hope the ideological echo in this room is not too tormenting for you.

CHAIRMAN:

Q. No, it's not.

MR. RALPH:

A. Thank you.

CHAIRMAN:

Q. Thank you very much. I think that exhausts our agenda.

GREENE, Q.C.:

Q. Yes, Mr. Chair, but I wanted to provide an update on the schedule.

CHAIRMAN:

Q. Okay.

GREENE, Q.C.:

Q. We have scheduled two presentations for Thursday morning. The final schedule will be posted on the Board's website, but as of now, we believe that we will have a presentation at 10:30 on Thursday morning from Mr. Swinimer who was unable to make it on Monday due to a death in the family. And the second presentation will take place at 11 a.m. and it will be by videoconferencing. It will be a

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presentation on behalf of the Grand River Keepers from Labrador and so that will be by videoconference at 11 a.m. Again, the final schedule will be posted and available on the Board's website.

I did want to remind people and those listening that the final date for the Board to receive comments from the public with respect to the review is February 29th. We will be accepting written comments up until the end of business on February 29th. Written submissions are to be filed by both Nalcor and the Consumer Advocate by March 2nd, on March 2nd. Those written submissions will also be posted on the Board's website and available for viewing by the public. So thank you, Mr. Chair. I just wanted to provide that update on the schedule, and of course -

CHAIRMAN:

Q. So we'll adjourn until?

GREENE, Q.C.:

Q. Thursday morning at 10:30.

CHAIRMAN:

Q. Thursday morning at 10:00. Thank you all very much for your -

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GREENE, Q.C.:

Q. 10:30, Mr. Chair.

CHAIRMAN:

Q. Oh, 10:30. I'm sorry. 10:30 on Thursday morning. Thank you.

Upon conclusion at 2:56 p.m.

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CERTIFICATE

I, Judy Moss, do hereby certify that the foregoing is a true and correct transcript of a hearing of the Muskrat Falls Review, heard before the Board of Commissioners of Public Utilities on the 21st day of February, A.D., 2012, in St. John's, Newfoundland and Labrador and was transcribed by me to the best of my ability by means of a sound apparatus.

Dated at St. John's, NL this

21st day of February, 2012

Judy Moss

Discoveries Unlimited Inc.