STANDING COMMITTEE ON CROWN AND CENTRAL AGENCIES

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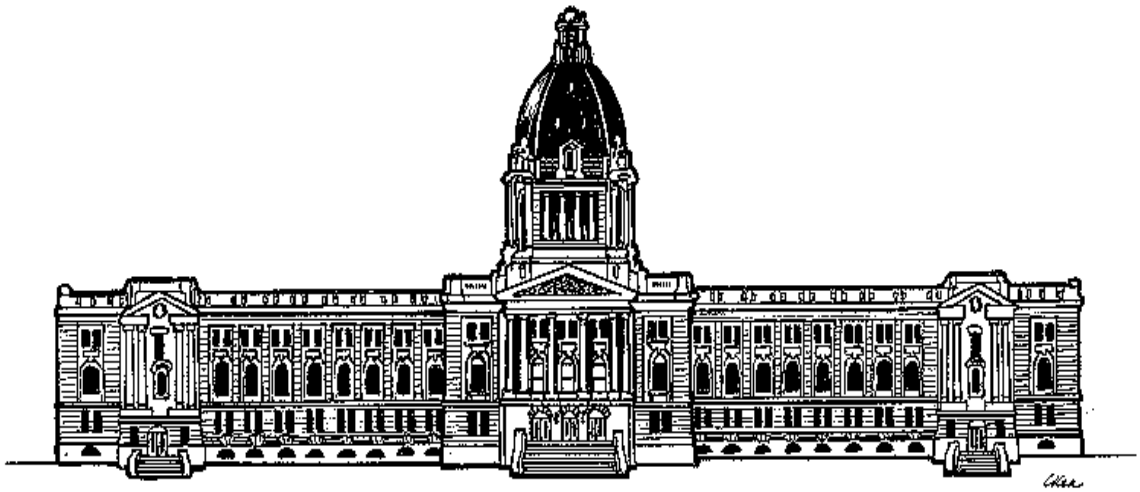

Legislative Assembly of Saskatchewan

Twenty-sixth Legislature

STANDING COMMITTEE ON CROWN AND CENTRAL AGENCIES

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Published under the authority of The Honourable Don Toth, Speaker

[The committee met at 10:00.]

Inquiry into the Province's Energy Needs

The Chair: — Well good morning. I'd like to welcome everyone here today. Today is the 16th day of the meetings of the Standing Committee on Crown and Central Agencies, the inquiry into Saskatchewan energy's needs.

I'm Tim McMillan, Chair of the committee. I would like to also introduce the other members of the committee: Mr. Weekes, Mr. D'Autremont, Mr. Allchurch, and Mr. Bradshaw. We have Mr. Belanger and Mr. McCall.

Before we start this morning, we have several documents to be tabled, and those will be tabled now. All of the committee's public documents and other information pertaining to the inquiry are posted daily to the committee's website. The committee's website can be accessed by going to the Legislative Assembly of Saskatchewan website at legassembly.sk.ca and clicking under "What's New," and clicking on the Standing Committee on Crown and Central Agencies.

The hearings will be televised across the province on the legislative television network, with audio streaming available for meetings outside of Regina. Check the website for information regarding locations, cable companies, and channels. The meetings will also be available live on the website with past proceedings archived there as well.

Before we hear from our first witness this morning, I would like to advise witnesses of the process of presentations. I'll be asking all witnesses to introduce themselves and anyone else that may be presenting with them. Please state your name and, if applicable, the position within the organization you represent. If you have a written submission, please advise that you would like to table the submission. Once this occurs, it will become a public document and will be posted to the committee's website.

The committee is asking for submissions and presentations that will be in answer to the following question. The question is: how should the government best meet the growing energy needs of the province in a manner that is safe, reliable, and environmentally sustainable while meeting any current and expected federal environmental standards and regulations and maintaining a focus on affordability for Saskatchewan residents today and into the future?

Each presentation should be limited to 15 minutes and we have set aside time after for question-and-answer. I will direct questioning and recognize each member that is to speak. Members are not permitted to engage witnesses in any debate and witnesses are not permitted to ask questions of committee members.

I would also like to remind witnesses that any written submissions presented to the committee will become public documents and will be posted to the committee's website.

With that, I would ask our presenters to please introduce yourselves and go ahead with your presentation.

Presenters: Vision of Earth

Mr. Harack: — Hello. We are Vision of Earth, a volunteer group based mainly at the university. Officially we would like to table two documents, one is our presentation which we will be giving today and another is a reference document for our proposed scheme for feed-in tariffs for Saskatchewan.

Who are we? On my right is Mark Cazakoff. His background is in computer science originally. Now he's studying economics and has been working for SaskPower . . . for SaskTel, my apologies, SaskTel for a year. On my left is Kyle Laskowski, an honours student in physics and is pursuing nuclear physics for graduate studies. I am Ben Harack. My background is computer science and math, but I'm now pursuing psychology and physics. And we've all been interested in this subject, the subject of your committee hearings here, for years. So I'm very excited to be presenting.

We want to be clear about our perspective or our bias in presenting. We are all from small-town Saskatchewan. This has been our home and we have a stake in the future of Saskatchewan that is very directly applicable to our lives. So that's where we're coming from.

The goal of Vision of Earth is to recommend practical solutions to the different difficulties that Saskatchewan faces. The context in which our recommendations should be taken is the following. One, that SaskPower's short-term plan for the next five years is followed — we're assuming that that will be the case — and that Saskatchewan continues to enjoy the economic prosperity that led to the increase in demand that really is the cause of most of these additional costs we're seeing.

So the goal is of course a functioning grid, ideally with an increasing amount of renewable energy. That would be the best thing for us all. So the main question is how do we acquire this generation capacity and of course the infrastructure upgrades necessary. So two main options, although there will of course be a mixture of the two. One is large-scale projects, centralized projects governed by SaskPower or the government themselves, and the other option is stimulating private investment in these technologies and infrastructure. So our main proposal for stimulating private investment is a feed-in tariff.

So these are the three requirements, generally, for a policy to be named a feed-in tariff. There has to be a long-term guaranteed price, and not necessarily guaranteed at a fixed level, but a guaranteed price that companies can rely upon for their forecasting. Guaranteed grid access, which is actually an important topic for Saskatchewan because grid access is difficult in remote areas sometimes. And the subsidy, generally there's a subsidy of renewable energy types, depending on the type of renewable energy type that is most suited for development in the jurisdiction that we're talking about. We'll talk about the details of this on the next slide, and there is also a full document detailing our feed-in tariff plan.

So why do we want feed-in tariffs? There's been a number of studies around the world that found that these are the best mechanisms for stimulating growth in a renewable energy industry. It's competitive but it's also very much led by

government. It's centralized planning. But the resource allocation is as per capitalism because you've got a competitive market for the feed-in tariffs, the feed-in tariff being just a subsidy on the price of electricity that's sold from these renewable sources. So a very large number of jurisdictions in the world have implemented these, so we have a lot of information on this topic that is available.

The summary of our proposal is as follows. This is based on information, we have amalgamated information from Germany, Ontario, and a number of other jurisdictions who've implemented feed-in tariffs. The main difference between ours and say Ontario's, is that we took into account the different wind capacity factor for Saskatchewan. Wind power in Saskatchewan has a higher capacity factor than Ontario specifically. Our capacity factor is about 41 per cent while theirs is around 27 per cent. So this means that the same investment in wind in Saskatchewan is it produces more energy per year than a similar installation in Ontario. So their feed-in tariff price of 13.5 cents was modified. We did some basic math and came up with 11.7 cents as an equally stimulating financial incentive for our wind industry if we choose to pursue that here.

Similarly for the solar photovoltaic, recommend 32.4 cents, much lower than the 80.2 cents that Ontario offers for the same technology type. That was based on sunlight differences between Saskatchewan and Ontario as well as the fact that we have a winter demand peak and not a summer demand peak. Solar is worth a lot more to them than it is to us because of their summer demand peak. So those are the references for our feed-in tariff information.

Now I will talk briefly about a smart grid. There are a number of advantages to implementing a smart grid. Every one of these advantages is a very deep subject in and of itself, but you can see a number of them up here on the slide.

The natural conservation is probably the most important topic. When you introduce a smart grid and real-time pricing to consumers, they naturally reduce their load. They naturally use less energy at peak times because they're paying more for it. And that's the cause of a lot of the incentives for making a smart grid. Ideally we end up with citizen participation in the energy market, which means that people are aware of the energy they're using, and that in itself is a powerful conservation measure.

The possibility of making that metering ubiquitous, that's if a smart meter just happens to be a two-way meter or that's a cheap option to implement so that everyone could be part of the net metering program on a small scale.

The cost of a smart grid, there's a great number of details here. We cite a lot of Ontario's work because of our economic similarities to them, being another Canadian province, but they have introduced a smart grid system with relatively little extra cost to their consumers. And their goal is to have every house with smart meters by the end of 2010 so we'll see how the end of their project goes. So we have an example close to home that we can drop on for knowledge as far as smart grids go.

And now I'll pass it off to Mark who will talk about the LEED [leadership in energy and environmental design] building standard.

Mr. Cazakoff: — Thank you, Ben. So just before I start here, I'd like to sort of give a bit of a context in which I'm presenting here. We know that you've been inundated with information. We've read a significant portion of that, especially SaskPower's document that they submitted. We've picked some topics that we think have been underserved, like the feed and tariff and such, and we're specifically addressing those. These aren't necessarily the most important things that you've heard about, but these are probably the things that you've heard least about, which is one of the reasons that I'd like to talk about LEED.

It isn't specifically to do with the grid, but because worldwide about 40 per cent of emissions are due to buildings specifically, it's quite important to have an excellent standard for buildings so that they off-gas as little as possible, they cost as little as you can arrange for.

And there seems to be some low-hanging fruit with LEED specifically. LEED is leadership in energy and environmental design. A Canadian version was completed in I believe 2005. There is now a LEED certification that is tailored specifically for the Canadian climate. And in talking with leaders in the advisory building positions around, in Regina specifically, it seems that that is being underserved. There's a lack of industry knowledge in LEED, so even on SaskPower's website for example, there is nothing about LEED. It mentions Energy Star, it mentions R-2000, but LEED seems to be, from what we understand, to be a superior system and it's entirely unknown.

LEED is . . . Well the buildings themselves cost little or nothing extra to build, but they do significantly cut maintenance costs. The investment is quite low, but the return is quite considerable. This is the case with other standards as well, such as Energy Star, but LEED seems to be much more bang for buck.

There are a number of additional benefits as well. And these are more pronounced with LEED, such as reduced emissions, productivity gains, and other things that are more difficult to quantify like that. And because of this underserving by the private sector in this matter, we feel that perhaps some public education through SaskPower, possibly through the government itself, would help to . . . You know eventually LEED will probably come out on top. But I really don't want it to be the Betamax, where it's a superior standard that for no apparent reason is underserved. And I think that the difference between LEED and say Energy Star, and Betamax and VHS [Video Home System] is vastly greater.

I think that we would be doing the province a vast disservice to not improve at least industry and probably also layperson education on this topic. I would like people to ask for LEED houses.

I will pass it back to Ben.

[10:15]

Mr. Harack: — We're going to discuss a few options for our generation capacity. First of all, the definition of baseload, there seems to be this myth that, well not a myth, but just a misunderstanding that baseload is always on and always works.

Capacity factors for baseload are generally above 90 per cent, but they're not on all the time. It's not like a one-shot solution that's going to provide all of our needs. So we always have to have a energy mix, and we always have to hedge our bets in the energy system.

Germany has a project where they provide one-ten thousandth of their electricity just using a combination of renewables. I believe they have expanded this project recently, but I wasn't able to find any updated information.

Carbon capture and sequestration. We have a couple of resource-heavy slides here so that you have information that I won't be giving in the talk. But the carbon capture and sequestration, we are looking into it in great depth and putting a lot of research dollars towards it. So it makes sense to finish with that research, but it also makes sense to be careful about our investment in a technology that has not been proven. So great care should be taken with carbon capture and sequestration funding.

Here's a slide detailing a number of possible issues with the carbon capture system, sequestration and underground aquifers. This is I believe sourced from a University of Toronto study conducted on the subject.

Wind and natural gas seems to be our current expansion . . . [inaudible] . . . generation capacity, as per SaskPower's report. We use the natural gas for flexibility obviously, but there are other options for flexibility. We hope that we can pursue stronger ties with Manitoba, even though Manitoba said that their firm power is called for until 2020 or 2023, according to SaskPower. If we provide them wind power, that means they run less water out of their reservoirs. So if we provide wind power to Manitoba, they can meet their contractual obligations to the United States while when we have a less windy day in Saskatchewan, they could run the water out of their hydro dams and sell us back power with an agreement of that sort. So even though firm power is not available from Manitoba, we believe that they could help us with the peaking requirements introduced by wind.

Nuclear has a very large number of issues that would need to be considered before any possible implementation in Saskatchewan. One thing that we felt was missing was a discussion of the possibility of Boundary dam reservoir being converted for use for a nuclear power plant. This was missing from the UDP [Uranium Development Partnership] and from the Bruce Power feasibility study on nuclear. So there's a very large number of issues there and we can discuss those if you were interested. And that's our presentation. Thank you.

The Chair: — Well thank you very much for your presentation. Just a couple of things that jumped out at me during your presentation that I'd like to ask about. You said Ontario has a smart meter program that by the end of this year they're hoping to have a smart meter at every house in Ontario?

Mr. Harack: — Yes.

The Chair: — Are they also hoping to do time-of-day pricing in conjunction with that?

Mr. Harack: — Yes. Some jurisdictions within Ontario already have time-of-day pricing. The rest are expected to be online with time-of-day pricing within a year or two.

The Chair: — That's cutting edge I think in the electricity world. The other side I guess . . . Smart meters is a very broad topic right from time-of-day pricing to a meter than can talk to your hot water heater. Is that type of technology also being pushed in Ontario at this time or is it mainly time-of-day?

Mr. Harack: — I believe that the meters used in Ontario do have the capability of connecting to smart homes as I would call those with those sorts of technologies in place. It may not be included with the package. You may need to purchase additional units for controlling your home appliances and such, but I believe they have that capability. It's also accessible through a web interface; the information is accessible.

The Chair: — Thank you. Mr. D'Autremont.

Mr. D'Autremont: — Thank you. Thank you for your presentation. I have a couple of questions. On the LEEDs issue that you have been raising, government actually has been utilizing LEEDs for the retrofitting and development of new buildings. So government is participating in that. And the previous administration started it and we've continued it. And it is a good program, however there is a cost increase to deal with LEEDs because of the different standards that you're moving to. So people when they're building their homes may be reluctant unless they have a very firm knowledge that there will be a savings for them at the end of the day.

Looking at your graph that you had from, I think you said from someplace in Ontario on the geological formations, are any of your members geologists or engineers, have any knowledge of that?

Mr. Laskowski: — We have knowledge of it; it's not our area of current specialty.

Mr. D'Autremont: — Okay. You know, I'm looking at this and it shows how if you pump CO_2 into the ground, it'll all come back up to the surface at some point in time. I'm just wondering if that's the case, why all the natural gas hasn't escaped from deep in the earth.

Mr. Laskowski: — This isn't an illustration saying you put these down, it'll immediately come back up. The illustration is, it's simply to quickly graphically show you possibilities. If you have a graphical picture showing you that nuclear waste could potentially cause problems in the future, it doesn't say it will happen or what the probability is. It's just, you know, a graphical description of possibilities.

So for instance you can point out that if I drill a new oil well, some of it may come up if I didn't have a perfect understanding of that geological rock reservoir I was using to store it. And you know, you simply can't have full understanding of that rock. And not saying that it's likely, but I mean the more of these reservoirs you create, the higher you pressurize them, the higher these probabilities become. Not saying that they're highly probable, but these are issues that need to be considered. If I don't know of an old well that may have leaked or the pipe put

around it may corrode and, you know, some carbon dioxide can leak out of that.

Mr. D'Autremont: — Well just looking at this graph, it doesn't indicate anyplace that there is only a small possibility. It seems, just looking at that, that that is how it would work — that it's a 100 per cent probability. So if it's only a small possibility, how small is that possibility? Fifty per cent? Ten per cent? Point zero zero zero one per cent?

Mr. Laskowski: — That information is in the reference material. We simply added the picture so we could have a graphic illustration to point to when discussing that. We didn't have time to talk about it much, but I'm sorry you were misled by a picture.

Mr. D'Autremont: — Well I think that the picture you presented was here for a particular purpose. And I think you didn't quantify what the significance of that was, rather than going with the shock value of the picture.

You talked about the feed-in tariff as a subsidy. And I agree it probably is. SaskPower in its earlier presentation suggested that the cost of electricity is likely going to rise over time, roughly, they said, probably 8 per cent. Do you agree with that, that no matter what kind of generation we may be looking at, that the cost of electricity is going to rise?

Mr. Harack: — There's a lot of details to this topic. In our tabled document on feed-in tariffs, some of them are discussed in more detail. In Germany a study was conducted about the consumer costs of their feed-in tariff scheme, and it was calculated in 2008 to be about 5 per cent of a consumer's electricity bill.

A different study was conducted which took into account the effects on natural gas pricing and other indirect effects of moving your energy sources to renewables rather than depending on for instance natural gas. And they found that due to natural gas, or a reduction in natural gas price, you actually ended up with a lower overall cost of energy — both energy and heating — to German customers due to the introduction of their feed-in tariff program.

A similar study was conducted in both Denmark and Spain where they found about a per cent, I believe, of reduction in cost to the consumer because of the introduction of a feed-in tariff scheme.

Mr. D'Autremont: — So you're telling . . .

Mr. Cazakoff: — If I could address that as well. To directly answer your question, Mr. D'Autremont, I believe that Saskatchewan is currently underpaying for power and that the 8 per cent would bring us much more in line with a more global paying for power. In Europe, for example, they're paying more than double we are, the rate we are. And even in the United States they're paying a few cents more.

So to answer your question, absolutely, directly, yes, I think that SaskPower is completely justified in asking for its rate increases.

Mr. D'Autremont: — Thank you. And you mentioned doubling, that was going to be my next point. Do you think the people of Saskatchewan are prepared to pay more for their power?

Mr. Cazakoff: — I know I am. I certainly can't speak for the general public. But I think that the rates that SaskPower is asking for over the next short while are completely not only justified but would be quite acceptable. It's only a few dollars. I think that people are willing to pay a few dollars, and there are a number of people like myself who'd be willing to pay much more than that.

There are a number of younger individuals who are willing to contribute. And if that means that we have to pay double our power bill, well so be it, if that's for a good cause like having 20 per cent wind in our province, for example.

Mr. D'Autremont: — Okay. Thank you.

The Chair: — Mr. McCall.

Mr. McCall: — Thanks very much, Mr. Chair. And thanks very much, gentlemen, for a very thoughtful and well-researched presentation. And thanks for stepping up.

I guess the first question I'd have is there have been in the past, in terms of people willing to pay a premium for green or greener forms of energy, there has been the possibility under SaskPower under the Green Power purchase program for people to pay a premium and to have some certainty as to the sourcing of that power. Any, you know, in terms of the experience with that program, any thoughts on how that worked or did not work in terms of people having that willingness to step up, pay more for their power, and make a contribution to the green generating capacity in this province.

Mr. Harack: — It is my understanding that the Green Power program by SaskPower was bought out, like all the electricity was called for — I'm not sure when this happened, but I think it did happen; perhaps you would know with your study of this — but I believe that all the electricity was called for so they can't sell any more of the Green Power option to consumers. To me that signals success in that there's a number of people willing to pay, or to step up and pay a premium for the green energy. Expansions to that program would be ideal because that's perfect if a person can choose to enter into a higher cost for their energy because they want to know where it comes from. Does that answer your question?

Mr. McCall: — Yes, I guess it does. And one of the things I like about your presentation is that it at once presents a very interesting vision going forward, but it also pays attention to the fact that you can't whiplash people. You can't just go with a big bang and expect people to pick up the pieces. So perhaps as an extension of that program, perhaps it's time if it's fully subscribed to, as a transitional approach, ramp up the power that's available there and see if that continues to be fully subscribed or what happens. But I just wanted to get your thoughts on that.

I guess another question I have is in terms of the — and it had been touched sort of tangentially — in terms of the ease of

finding information. Certainly by your reference notes, you've ranged the different sources available in government. And certainly having been students, or you know having recently been students, you've got the research skills to bring to bear.

[10:30]

Are we doing what we need to do as a province to really provide that full menu of options to interested people on the part of government? Do we, you know, there's some in environment, there's some in SaskPower. Is there a need to have some kind of a lead agency or a lead portal that would do a better job of presenting the information and putting the tools in the hands of people than we're doing right now?

Mr. Harack: — Just to clarify, do you mean lead as in LEED certification or like lead being leaders in this energy . . .

Mr. McCall: — I'm talking the whole gamut.

Mr. Harack: — Okay.

Mr. McCall: — You know, and I take a point on LEED and it not being fully discussed or having any kind of profile as opposed to Energy Star. But in terms of just the difference for people that are interested in treading a bit more lightly on the earth, do we do the job we need to be doing as government in terms of presenting information and sort of arraying the tool kit for those people and for those organizations as the Government of Saskatchewan?

Mr. Cazakoff: — If I could . . . Thank you. I think that there's certainly enough information out there for the people who are interested. I think that if you are willing to look you can certainly find, but I think that there isn't quite enough information for the people who aren't actively seeking this sort of information. I would like to see LEED information on SaskPower's website or SaskEnergy's. While the government is certainly . . . I'm very happy that it is pursuing LEED. It seems that the government should be leading in this way, that there is an informational gap between us and the average consumer.

Mr. Harack: — If I could just quickly add one point to that. To directly answer your question, I believe what you are doing with this public consultation is an excellent step in the right direction with regards to planning our energy future. That's the best possible thing I can think of. So the best possible step I can think of has already been done. Additional compiling of information, especially for the layperson like Mark said, is key to an effortless kind. That's what we have been trying to do, but we are volunteer and part-time. So that is our take on that subject.

Mr. McCall: — Yes. I guess I'm just, not to flog the green horse, but in terms of again we as legislators, yourselves as interested participants, perhaps we've got a higher degree of interest and ability to seek out the information. But something I'm concerned about is do we do the job we need to be doing, in terms of the ordinary citizen that perhaps has an interest but has an exceedingly busy life as we all do, but perhaps not the tools to go on that search? Is there a way that we can provide that green portal or that green lead agency within government to better connect people to what the possibilities are and to better equip them for their own sort of efforts?

I guess one more question in this session. And then if we have time, I've got another one, but I don't want to hog the mike here. In terms of the initial sort of vision that you laid out at the start in terms of sort of big state projects, big capital projects versus a more distributed model of generation, and more sort of incentives to individual and community level participation, private participation, one of the things that — for whatever its virtues and faults right now — at least we have, as the people of Saskatchewan we have control over SaskPower. It's a public utility and we as the people have that measure of control over its activities.

As you move to a more distributed model, there's a question to wrestle with in terms of, you know, how do you retain that accountability to the public and that measure of control? And certainly in the situation with Ontario, part of their *Green Energy Act* has a bias towards participation by Aboriginal groups and local community groups. But there is also within that regime a great measure of participation by out-of-province corporations, multinational corporations.

Have you given any thought to how you'd maintain that balance between moving towards a more distributed model but at the same time retaining that measure of accountability back to the people of Saskatchewan that you have with a public utility like SaskPower? How do you guard against some kind of surreptitious privatization of the power generating capacity of the grid?

Mr. Harack: — My first response to that would be careful legislation of the feed-in tariffs, for instance, that you introduce. I know that Ontario has certain powers written into their feed-in tariff scheme that, like for instance I believe that larger-scale producers cannot just choose to turn off their power or something like that to, you know, as a club to wave at Ontario Power Authority. So that you can't just wave a club at them or manipulate the market in any such way, the market remains under the control of the legislation. So that's my first response. It's just like any market system. If you've got some regulation, it remains under the control of the people in charge of the regulation. That's my first response. Did you want more on anything related to that?

Mr. Laskowski: — I think it is really important to have a good connection with Native groups and community groups because really then you've put the information out into a group and that can refresh. Like we try to compile information, tell other people. But if you have a community, you know, any type of community interested in this, that information will spread itself. And then they have a longer term interest in the topic, right? You know, if I'm working with a community now on green energy, it won't be a surprise in 20 years if they come back to me with that amount, with more interest in that topic.

And I think SaskPower does a good job there. Certainly, you know, having trouble letting go of that control a bit. Because I was reading the small-energy producer documents and it's a lot, it's a big pill to swallow even for someone who reads a lot of papers. There's just a lot of technical information in there for me to swallow, let alone for even a community. But you do need those communities to be engaged. But we do still

definitely trust SaskPower to manage that power.

What you see from a lot of the SaskPower's presentations, from our presentations, are that large-scale wind farms still give you a lot of bang for your buck. You can still get cheap power. You know, you have more difficulty managing it. As SaskPower said, we can get to 8 per cent and then we start to worry. And then that power will become more expensive or we'll have to become more clever in trading with Manitoba to keep that cost down. But that's the most efficient power. So we do have a lot of trust in SaskPower there. You know, they have a great history of keeping power down and of serving people. I mean the rural electrification was amazing.

Mr. Cazakoff: — Part of the reason that we think that a feed-in tariff is wise is because of the degree of investment that's required here. I believe the number that SaskPower quoted was 15 billion over the next 10 years. That's quite a lot of money, and a feed-in tariff can stimulate public interest. So the general public can say, or just a farmer, my dad, can say, I would like a wind turbine. And he can put it up. So it's not quite the difference between a public utility and a corporation providing power. It's enabling citizens to involve themselves directly in the grid.

Mr. McCall: — And I certainly recognize that point. It's just in terms of, the quantum involved is important in terms of encouraging citizens to enlist in the cause and put up their own wind turbine versus handing off a quarter of your grid's capacity to multinational X. So again perhaps that multinational is doing their 25 per cent in a whole whack of small projects. But does that control necessarily follow with that kind of involvement in the grid? Some would argue that it does.

So I guess we're looking for ways to ensure that balance. And if that really is the objective, to make sure that we don't have other unintended consequences following in the train of enlisting your dad to put up the wind turbine.

Mr. Laskowski: — And it's important to differentiate between those because while his dad may want to put up a wind turbine, SaskPower might have to break the news to him that he just won't make any money. He just can't, you know, he won't make a profit in that because it's too small of a venture. Right? It's like, it's not windy enough, Mr. Cazakoff, you're not going to be producing much. You're going to lose your money.

And it's difficult to convey that to a normal person. I was reading SaskPower's documents, and it's hard to convey to them that you're not always going to make your money back. You know, you may want to make this contribution on your farm, but it may just make more sense to put money into the green energy project where we can build it somewhere else, where it's more windy.

And from large corporations, something we didn't mention in the presentation but it's a very big contribution to our power is cogeneration by large industry. And while that is putting your power a little bit out of the government's hands, scientifically there's a lot of advantage to that. You're taking what would be considered waste heat, it would be dumped into a large reservoir, and you're contributing to your province's industry. That steam is going towards potash production, which is intelligent. It's efficient; it's cheap. There's a lot of advantage to that. But good legislation can make sure they don't have a club to beat the government to death with. But it's still something. It's wise to use.

Mr. McCall: — The problem is when they beat the government to death, they're usually beating the people along with the government. But anyway, thanks very much. And thank you, Mr. Chairman.

The Chair: — Mr. Weekes.

Mr. Weekes: — Thank you, Mr. Chair. Thank you for your presentation. Just one comment about the green power. I believe the vast majority of the green power produced in this province has been purchased by provincial government or agencies or federal government or, you know, like the university. So I'm not sure of the uptake, what the uptake was as far as residential purchases. But just a comment on that.

Going back to . . . You just had the kind of the debatable private power producers. And the government just came out with a announcement about small power producers and so that plan is taking hold and coming into force. Do you have any philosophical concerns about how much could be privately purchased?

You've talked . . . You know the big fear, I guess, is this multinational, but in Saskatchewan we have a history of, first of all just residential people like your father might want to put up a turbine. I know there is at least one in my constituency that people just take the programs and have done geothermal and solar and the wind turbine. And it's the people that purchased the Radisson School. So they've all ready done that and there's other geothermal projects around.

But getting back to other, whether it be corporations or a co-op, we have a history of co-ops. There's the co-op upgrader and very successful co-ops in retail and other businesses. Someone like a co-op, existing co-op or a new co-op that would be formed for producing power, do you have any, do you have an idea of what the mix could be or should be between power generated by SaskPower versus private, whether it's small or large?

Mr. Harack: — My first response to that is based on information I have read about the feed-in tariff implementations in other jurisdictions such as Germany. I know that in Germany they have a large spread of different ownerships. So there is state ownership, there's different levels of government that own power generation, I believe. There's corporations. There are people. There's a large number of farmers who realize that they would gain more profitability from their land by taking out a loan, putting up a wind farm, and continuing to farm on that piece of land.

So they have participation at every level. From what I understand, there's been no problems introduced by this participation at every level. It's not to say it's impossible, but the examples I have read led me to believe that there shouldn't be, there shouldn't be a reason to really fear that at this point, especially with careful legislation leading to that investment.

Mr. Weekes: — Yes, interesting. And we've had presentations from First Nations and their Meadow Lake Tribal Council representative, and they're certainly game to go produce power. And so there's certain to be First Nations involvement as well as Saskatchewan-owned corporations or individuals or co-ops.

[10:45]

Just a thought on renewables. What is your thoughts on, you know, we have the green power, you know, costing more. Like we'd spoke, most of that was purchased by government or government-like agencies. What are your thoughts on bringing on renewables that cost more and should it be subsidized to the consumer and businesses, or should everyone pay a little bit more because of the renewables and the mix of the power bill? What are your thoughts on that now? How that should play out in the future as far as pricing?

Mr. Cazakoff: — First on that, I want to be absolutely clear that there is a lot of room to grow still in Saskatchewan before we hit that threshold of building more renewables would actually be more costly, I think. I think it's important to remember that we are the Saudi Arabia of wind. We can put up a great deal more renewable generation than we currently have before we start having to make trade-offs between, all right, well we could put up another wind generating centre and we'll sell that too, using the green power purchase program, but it will actually cost more.

Given the uncertainty of legislation on what exactly is going to happen with cap and trade or whatnot, I think that we should remember that that's going to be very, very valuable, that wind resource to us. After we do reach whatever the threshold is that wind is now not actually really cheap for us, I guess that we'll sort of have to cross that bridge when we come to it, what sort of level we want to have of . . . perhaps gauge the demand of renewables to be bought by individuals.

Mr. Weekes: — Thank you.

The Chair: — Mr. Belanger.

Mr. Belanger: — Thank you very much and bravo on your presentation, gentlemen. Ladies as well, in the back — I'm not sure if they're part of your group. But one of the things that I'll point out that gives us an advantage is we've had presentations by the SaskPower executive, we've had professional people, we've had industry, we've had environmental groups make presentations to us. And that's the only advantage we have over you is that we've had more information presented to us. So it doesn't make us brighter; it just makes us have more access to information.

So I want to encourage you and certainly point out that the presentation that you made was impressive. And I certainly do have a lot of confidence in the future of Saskatchewan when you see young, bright, articulate people like yourselves take up the challenge of where do we get our energy from and at the same time balance that off with environmental issues. And 30 years from now it might be us making presentations to you here, telling you to keep some medical support program in place. So we might change our role here 30 years from now.

But in terms of your proposal on the pricing, why did you go to the under 100-kilowatt presentation on your pricing scheme?

Mr. Harack: — That was my portion of the research, so I'll answer this. Currently SaskPower splits up the different types of procurement programs for the power according to 100 kilowatts or less and 100 kilowatts or more. And there's actually several different kinds. I based the 100 kilowatts or less just on that. And I used information from Ontario and Germany, so it was a few other feed-in tariffs for gauging where those prices should be just as an estimation. More information is in the tabled document. I'm not sure what information you're specifically looking for regarding that.

Mr. Belanger: — Well what I'll point out is that I think SaskPower recently made an announcement that they're looking at under a certain amount of megawatts and nothing beyond that, which really limits a lot of companies from participating, given the economies of scale and so on and so forth. And that's the reason why I asked the question, that if we're going to do this, we have to do this right.

So the other point I'd make out in terms of the . . . A good example is biomass at 13.8 cents, as you presented, as you proposed, and I think Ontario has pretty much the same price as well. I think SaskPower is much lower than that. So given your 13.8 cents and your 100-megawatt proposal, SaskPower is a lot less on both fronts — on the megawatts and on the price they're willing to pay.

So given that scenario, what advice would you give SaskPower? Because it just doesn't seem right that most people are telling SaskPower, this is where you've got to go, and yet they're saying, no we're going this way. So what advice would you have for them?

Mr. Harack: — Just to clarify, the proposal that we put forward is for 100 kilowatts or less, which is relatively small in terms of even our grid.

Mr. Belanger: — Right.

Mr. Harack: — Most biomass systems being proposed are numbered in the megawatts. I believe the smallest one you guys looked at was 3 and the largest is 80-something or maybe it would be hundreds. This is small. What we proposed there were prices for small-scale producers, and compared to the size of our grid, a relatively small cost.

The larger scale producers would have the larger effect on the cost of electricity and on SaskPower's ability to regulate that in with . . . Because in theory a feed-in tariff is paid for by the consumer's power bill so it would be SaskPower's place as the jurisdiction, the arm of the jurisdiction for energy, to administrate that and to integrate these projects as they came in.

Ontario predicted I believe a 1 per cent increase for 10 years, 1 per cent per year for 10 years, because of their introduction of their very aggressive feed-in tariff scheme. I'm not sure if that answered your question or not.

Mr. Belanger: — Yes, but you see it was my error. I was thinking megawatts. You're talking kilowatts. So you see

sometimes older guys, older guys make mistakes. So I guess I would want to clarify. Like what I'm trying to see is that the mix between what you see as a populist movement — people generating some of their own power — to medium-scale generation to larger scale generation. Like where is SaskPower in the scheme of things? And I see that there's just night and day here in terms of what is required versus what SaskPower's willing to look at.

And in some of the discussions that we've had, there's been a number of factors that have not been considered. My final question now, I'd want to go to the whole notion of your point, sir, in terms of the price of power.

Right now in northern Saskatchewan we pay about 200 to $250 a month in my household. And based on some of the projections, I might pay 500 a month. Okay, fine. If that's what the price is going to be, I got no choice. However, if we're seeing some of that 500 bucks go to, say, cover a deficit or a debt by government, then no way. But if it's going towards some wind projects, some conservation projects, some hydro projects, and on and on and on and on, then I think some people might have appetite depending on the cost here, so all depending on the cost. I'm not going to pay it out of my own pocket, but if it's 30, 40, 50 per cent more and it's for a good cause, then I think the public would generally accept that. But if it's being used as a hidden tax or as some form of revenue to offset a deficit, so to speak, then I say, no way, José.

So my question to you would be, how would you ensure that that didn't occur? If you've taken the good intent of yourself and many other people of Saskatchewan and trying through a backdoor taxation trying to cover mismanagement, if you will, at a larger political level.

Mr. Cazakoff: — If I could address that first. I think that there's a bit of a ways to go before we reach that sort of a situation right now. I think that given the amount of money that SaskPower needs to revitalize the grid and put in all of the new — what is it? — 4 gigawatts over the next 30 years, 50 years, that's a really large investment.

So I think that you're absolutely right that we can communicate that this increased price that the consumer has seen on their bills is because of that necessary investment. That it's not going to be taxation; it's just really expensive to do this.

Now in the longer term, it's really difficult. It's extremely difficult to separate out funds because once funds go into the government, it gets put in a big pool. And then funds can slosh around, and it's hard to say, well this should only go to this area.

I think that's more of a question for a decade down the road once we've made some of these investments and we're caught up and we've got some new infrastructure. We have raised those power rates up to that, whatever SaskPower's recommending, like double or something or even 50 per cent extra. If you saw any increase from that point, I think that would be . . . Then you'd be wanting to ask, well where is this money going? Right now I think it's really clear where that money's going. It's going to fund that $15 billion.

The Chair: — Well thank you very much for your presentation and taking the time to answer our questions today. The committee will now recess for a short five minutes to allow our next presenter to get set up. So thank you again. Thank you very much.

[The committee recessed for a period of time.]

[11:00]

The Chair: — Before we hear from our next witness, I would like to advise the witness of the process of presentations. I'll be asking all witnesses to introduce themselves and anyone else that may be presenting with them. Please state your name and, if applicable, your position within the organization you represent.

If you have a written submission, please advise us you would like to table it. Once this occurs, it will be available on the committee's website for public viewing.

The committee has asked all submissions and presentations to be in answer to the following question. The question is: how should the government best meet the growing energy needs of the province in a manner that is safe, reliable, and environmentally sustainable, while meeting any current and expected federal environmental standards and regulations and maintaining a focus on affordability for Saskatchewan residents today and into the future?

Each presentation should be limited to 15 minutes. Our presenter is understanding of that requirement, has asked that we indulge him slightly as it may run slightly over. We have set aside time following the presentation for question-and-answer.

I will direct questioning and recognize each member that is to speak. Members are not permitted to engage witnesses in debate and witnesses are not permitted to ask questions of committee members. I would also like to remind witnesses that any written submissions will become public documents and posted to the committee's website.

I'd also like to remind members that we do have a flexible tradition of keeping our questioning to roughly 15 minutes. In the last presentation some of our questioning did run closer to 15 than five, but if we could be respectful of each other's time that would be appreciated.

With that I would ask our presenter to introduce himself and please go ahead with your presentation.

Presenter: CCG Trade & Development Corporation

Mr. Kutcher: — Thank you very much, Mr. Chairman. My name's Dave Kutcher and I'm a partner in a company called CCG Trade & Development Corporation. And I'm here today to talk to you about biomass power generation in Saskatchewan and the potential for it. And I had presented last fall on the same subject and I'm here today to just sort of expand on where we've gone since then and some of the things that I've learned and encountered. So I appreciate your patience with me. As Tim mentioned, my presentation is a little bit lengthy, but I think you'll find it very valuable.

CCG Trade & Development — just to go over a few things that I had presented last fall before — we're a Canadian company with a focus on business development between China and Canada. We've got projects in energy, mining, and manufacturing. We have an agreement with a company called China National Machinery Import & Export Corporation. And they're a very large engineering firm; they're one of the top 300 engineering firms in the world. They're China's largest exporter of turnkey power generation facilities. Their revenue alone from that was 1.8 billion in terms of engineering.

They have projects, many projects in many different countries. They do a lot of power projects, the thermal, whether it be coal, natural gas, coke, biomass, and hydro projects. Done projects, like I say, in many different countries, mostly in the Middle East and Far East. And as I said, they're also involved in other sectors.

And we're the agent for them in Canada because they have an interest in developing the North American market for Chinese equipment and expertise. And so we're interested in the development of biomass power production and other opportunities in concert with CMEC [China National Machinery Import & Export Corporation].

We wish to partner with northern communities, Aboriginal groups, First Nations, and forestry operators to develop biomass power generation in the North to supply it in the SaskPower grid. We're looking at capacities anywhere from 4 megawatt and basically the sky's the limit depending, of course, on your biomass sources and the related economics. And I'll get into that in future slides. But we're looking at forest as a biomass supply.

We're interested in development of multiple facilities, not just one, but the facilities we're looking at would be owned by community and local industries. CMEC China is not looking to own these facilities. This would be majority owned by the local communities. Profits would stay in Saskatchewan and they would employ, of course, local people and forest industry professionals.

China has a lot of expertise in biomass power plants. They've got expertise anywhere from 4 to 50 megawatts or even larger biomass power facilities. As of 2005, China had 2000 megawatts of biomass production capacity. So if you put that into perspective, in SaskPower they've got I think it's 3600 megawatts of power generation capacity right now. So over half of that, China already has in biomass.

At the end of 2010, they are predicting a capacity of 5500 megawatts. So basically more than all of Saskatchewan could be powered by biomass of what's already happening in China. And they have a goal of 30 000 megawatts by 2020. So anybody that thinks China is not doing anything in terms of renewable energy is mistaken. They use wood waste, agricultural straws, gas, peanut shells, corn stalks, etc.

I thought I'd just give you a couple of pictures of what a facility looks like. This is a 30-megawatt biomass power plant, a pretty substantial operation. You can see the two towers that you can see with the angle of the roof. Those are the combustors. You can see the cooling towers and of course the exhaust stacks. So it's a pretty significant operation and you need about 700 tonne a day of biomass to feed such a facility.

There's a picture of a guy delivering straw bales to the combustors. You can see this is a different plant — three combustors in the background, a gas cleanup train, and your smokestack.

There's a picture of sort of biomass inventory. That's piles of a grass that they grow over in China and it has a high BTU [British Thermal Unit] content, so they like to use that for their biomass.

There's a picture of a control room. You can see a number of guys in there watching everything going on all day long. And so it's, you know, pretty good jobs for those guys. And there's a picture of a turbine installation at a biomass power facility.

A 2 by 15 megawatt facility will roughly employ about 100 people. You've got very good, skilled jobs. You've got engineers, control room personnel, and maintenance personnel, biomass supply, preparation, delivery, and handling people. And it takes about 14 months to construct and commission one of these facilities, so you can put them up pretty fast. So we think there's a significant opportunity for these types of facilities in northern Saskatchewan where there isn't any, where very little or no industry currently exists. You've got communities up there that all they have around them is trees, and we think there's a good opportunity there.

But of course it depends on the economics. And you've heard this all along in your committee hearings. Our business depends upon a profitable, long-term power purchase agreement from SaskPower. And as I mentioned in my previous presentation, biomass is your biggest cost component in a facility like this. It's normally more than 60 per cent of your operating costs. And I want to give the committee a bit of background on really what the opportunity is for biomass because I think there might be misunderstanding of what the potential is.

There's really three sources of forest biomass in Saskatchewan. Number one is you have waste piles. We've all heard about these piles around the province that have been there for years. They're from a saw mill or an OSB [oriented strand board] mill or whatever and they've been getting bigger, and there's a number of those around the province. And I'll get into that in future slides. Next you have a potential to integrate with a saw mill or a forestry operation of some sort, be it an OSB mill or a pulp mill. You can tie your plant to that. And the third option, which is your largest option, has the most potential, is you either piggyback with existing logging operations — and I'll get into that — or you develop new logging where basically you're going in and cutting trees specifically for your biomass plant.

In terms of the waste piles, there was a study done about in 2001 by AVG Technologies. I have a copy of it here today. I can't table it but basically it outlines all of the waste piles around the province and what the sizes are and how many tonnes are there. These are the main piles. You have a couple of big piles in Prince Albert. There's one at the Domtar mill. It's a very large pile but it's quite dirty. It would require some cleanup before you could put it in and make biomass from it. That pile probably is tied up for some time because of you have

Iogen discussing putting an ethanol plant there. So if anything happens to that pile, we're probably looking at quite a while down the road before it does.

Hudson Bay, you got the Weyerhaeuser OSB plant and you have a company that's tied up that plant. It's a decent size and they're looking at making pellets. Glaslyn, you have a decent-sized pile, might support a small-scale biomass facility; and La Ronge, you've got the same. But if you took all of those piles in total, took them all and you aggregated them all together, it would only provide enough biomass to supply a 20 meg plant for 20 years. So as large as we think those piles are, we're not talking a lot of generation if you even aggregated them all together.

So if you looked at integrating with a saw mill or an OSB mill or a pulp mill, there's also a limited opportunity for that. You only have two saw mills operating in Saskatchewan currently. If you're going to tie yourself to a saw mill, you need to have that saw mill operating for 20 years. You've got to have a steady supply of feedstock so you're tying yourself to a lot of risk to tie yourself to that for 20 years.

But it does enable some synergies through heat integration. You can use heat coming out the back end of your plant to dry some wood so you got some synergies between the two operations. And you've heard about that. You know, Mr. Voss has presented on the MLTC [Meadow Lake Tribal Council] proposed facility which is a natural gas plant with a bit of biomass component to it tied to the saw mill, but once again there's very limited opportunity to do that.

So if you want to generate any significant amount of biomass power, you're looking at two options. One, you can piggyback on logging operations. And if there's some logging going on, basically . . . And there's the picture in the corner is basically what's kind of left after the loggers have gone through. You've got slash laying on the forest floor. You've got underutilized standing that they don't want to take. It's uneconomic. It doesn't fit what their business is and so they leave it standing. Or even diseased or insect-killed forests. So you've got that as a potential supply. And that's about 10 per cent of your logging operations is basically left on the forest floor.

Then you have . . . Basically you can go in and cut trees for your biomass operation and you can basically look at uneconomic stands located in regions unlikely to get value-added forest business. And we know there's a lot of communities that'll likely never see a saw mill, they'll likely never see an OSB mill, and so they got trees around them but they'll never see a value-added forest business.

There's fire-killed stands, there's diseased or unhealthy stands, and there's normal forest. And this is where your huge potential exists. And you can develop hundreds of megawatts if not, you know, in the thousand megawatts of biomass power from these two sources.

So we did a model on that, on what your biomass costs would be. And I mentioned in my previous presentation that there's a software program from FPInnovations called BiOS [biomass opportunity supply] where they can actually model the existing logging operations in an area and determine what the biomass might be available for a biomass facility and your costs to get that to your plant gate.

So we ran that model for the Prince Albert FMA [Forest Management Agreement] and they based it on a Domtar proposed cut. And of course we all know where Domtar is at these days, so there isn't any logging. This is sort of a fictitious modelling, but basically we based it on some, you know, forestry activities going on, some logging activities.

Here's what we came up with. Here's what was spit out of the model. If you look at the top line, the radius from Prince Albert, basically if you look at 100-kilometre-out radius, you've got about 13 cut blocks of forestry. You've got 4300 hectares of forest. You got a potential for 53 000 tonnes of biomass there available for a power plant.

You go across to the right side, and basically the projected costs of getting that to a biomass facility is just over $41 a tonne. So that's 53 000 tonnes would roughly feed a 6-megawatt power plant.

I mentioned a 30-megawatt power plant. Thirty meg needs about 250 000 tonnes a year of biomass. So you're looking at the 150-kilometre radius from Prince Albert to get that much biomass to feed that plant. And of course the farther you go out, the more your trucking costs are. So you're looking at a total of about, projected, about $47 to get that to your plant gate.

[11:15]

So we plug those numbers into our model and see what kind of costs we get out for power costs. And this is based on a stand-alone plant where you don't have an industry where you can sell heat to, as many of these communities, that's the situation you'd be in. They don't have an industry that you could market your heat to. A 6-megawatt plant, you plug in that cost and you come out . . . spits out 14.8 cents a kilowatt is what you need for your power.

You can see the benefits of scaling that up a little bit. You go from a 6- to a 30-meg facility — even though your costs are way out there, are much higher at 47 — you're looking at a cost of 11.2 cents a kilowatt, which is a huge difference, which is pretty significant in terms of scaling.

Now if we just go in and just cut forest, not rely on logging operations because we know what's happening in logging in northern Saskatchewan these days, I talked to some experienced loggers and saw mill owners and that, and their estimate was that of course by the time you pay stumpage and reforestation fees and everything like that, you're going to drive up your cost of biomass. And they estimated it to be about 60 bucks a tonne. Plug those numbers in, you're looking at 16.8 cents a kilowatt for a 6-meg facility. You still get significant benefits by scaling up to 30 meg at 12.6 cents. So pretty reasonable when you're able to scale up.

Now I'll get in to SaskPower's green partners program. I imagine you've heard of that and people have presented on that. But I want to talk about that for a bit. They're offering to purchase power from environmentally preferred technologies including biomass, flare gas, heat recovery, low-impact hydro,

solar, and wind.

And basically what SaskPower has said, that they're willing to pay the same for all power production technologies, whether it's a solar or a biomass or whatever, wind power, they're going to pay you the same. They've limited the capacity between 100 kilowatts and 10 megawatts, and they've put an annual cap on it of 50 megawatts annual. And they've said that not more than 25 can be from wind.

They've also said that they're going to do it as a lottery draw. So you put your name in the hat and you hope that your name gets picked if you have a project you think is feasible.

But here's the rate that SaskPower's come up with, and it's a 9.4 cents a kilowatt rate. It does escalate; they have a 2 per cent inflation rate in there. So although the number gets bigger, it just gets bigger by 2 per cent. That's the inflation component in there. So it's 9.4 cents that they're offering for those technologies. As I demonstrated, a 6-meg facility requires 14.8 to 16.8 cents a kilowatt. We're not even close to SaskPower. A 30-meg facility, we're 11.2 to 12.6. We're getting close but we don't qualify because of the size. We're well beyond the size restriction so we can't even scale up to try and get close to the SaskPower number. Compare that to the Ontario feed-in tariff rates, and you've heard about that from everybody.

And of course biomass, for less than or equal to 10 megawatts, they're offering 13.8 cents; greater than 10 meg, 13 cents. They have a point six cents bonus if there's Aboriginal participation and point four if there's community participation, so a maximum of 14.4 cents. So we're close to our 6-meg facilities, feasible in Ontario; 30-meg facility definitely would be feasible in Ontario.

Wind, they're offering 13 and a half cents and then you get a bonus up to 15. SaskPower's offering 9.4. Low-impact hydro, up to 14 cents; SaskPower's offering 9.4. Solar, they're offering up to 45.8 cents; SaskPower's offering 9.4.

So you look at SaskPower's presentation that they'd given the committee back in the fall, and you look at their numbers and they say, well they think they can produce biomass for 6 to 11 cents. Well I'm just here to tell you today that you're not going to get a lot of production at 6 to 11 cents. You're going to be using those waste piles or maybe integrating with a saw mill if you can do that, and you may be able to come in around those numbers, but you're not going to get any significant amount of power.

Run-of-river, SaskPower said 7 to 10 cents. I talked to an engineering firm that looked at it pretty extensively in northern Saskatchewan and their estimate was 12 cents. SaskPower presentation said a 1- to-10 megawatt wind farm would cost you 12 to 22 cents to generate power. SaskPower said solar would cost you 43 cents to 180 cents. And then they offer 9.4 cents from the green option program.

So you kind of wonder why they would come out with that. And I'm not sure, but I found it interesting in the slide, 80 slides SaskPower had when they presented last fall, I didn't see one slide on greenhouse gas emissions. I didn't see one slide that said, here's our greenhouse gas emissions today, here is our greenhouse gas emissions in 1990, here's what Kyoto would have required us to meet. I didn't see any reference to that at all. I didn't see any reference to any emissions target or any emission reduction strategy. I found it quite interesting that you have the third largest greenhouse gas emitting corporation in Canada without a clear, concise emission reduction target and strategy.

This is a couple of quotes from SaskPower's presentation. It says they have historically relied on coal because of the abundance of this secure and low-cost fuel in Saskatchewan. And absolutely, SaskPower has done their best to try and keep power costs low in Saskatchewan and they've done a good job of that. But they then say, coal generation may not continue as it has in the past. And that word, may, is pretty strong. To me, I got the impression that SaskPower would still build coal-fired plants.

But they also say, coal costs 7 to 10 cents. Now to me that's huge. You got a huge variance in price. Is coal 7 or is coal 10 cents? Because if coal's 10 cents, I don't understand how they could offer 9.4 cents for small-scale biomass. What SaskPower's saying is that small-scale biomass should be able to compete with large-scale, low-cost, GHG [greenhouse gas]-emitting coal.

So the key issues I see for the standing committee: of course I didn't put them in order of importance, but you have cost. You want to meet increased power demand and the need to build new facilities. And if this is your only issue, yes, coal is likely the answer. It probably is because of, you know, the low cost.

But you've got this other thorny issue called environmental sustainability. You've got Kyoto, which we're supposed to meet targets by 2012. We've got a potential agreement coming out of Copenhagen. We don't know if anything will happen. But yet SaskPower admits they have declining public acceptance for GHG-polluting facilities.

So without a hard emission reduction for SaskPower, adopting GHG-friendly power will probably continue to be piecemeal and result in little progress. And I think you can see that from what I demonstrated on the green power program, how much success it probably will have.

If a global GHG agreement is adopted, what will SaskPower do? Is buying credits the right answer? I don't think so. So I think you need to examine GHG reduction scenarios and their costs — historical and current and future emissions forecasting. Is coal 7 or 10 cents? Because that's a huge difference. If coal is 10 cents, I showed you a scenario where biomass is 11 cents. We're not that far off. We're not much of a price premium. So you have to take that into consideration.

And so then what would be the final impact on the average consumer? Because if you added, say, SaskPower's grid is now, you know, 36 megawatts is their production capacity. If you added 400 megawatts of biomass, you're adding 10 per cent of renewable generation technology. If you're only 1 cent premium, you're only looking at point one per cent difference in your power cost. Point one of a cent. One-tenth of a cent difference in your power cost. It's not that big. So there's a huge thing. Is coal 7 or 10 cents? And that's dirty coal; that's

not clean coal.

So and then you can also take into consideration the economic generation of adopting various renewable generation technologies. And in Ontario's *Green Energy Act*, their goal is 50,000 jobs from this sector. You know you have to take that into consideration as well. And so you have to develop targets, aggressively develop a strategy, and implement targets and timelines. And you know, we're probably looking at 2020 if there's a global agreement on greenhouse gas emissions, and it's probably going to have to be met.

So to just wrap it up, I'd just like to talk about biomass again. You have an opportunity to produce hundreds if not thousands of megawatts of green power from biomass. You're developing much-needed jobs for northern communities. You're stimulating potentially other industrial development in these communities. You're promoting healthy forest development. You're generating green power credits. And this can be a steady baseload power supply.

So I thank you for your patience and we'll be pleased to take any questions you might have.

The Chair: — Well thank you very much for your presentation. Do the committee members have questions? Mr. Belanger.

Mr. Belanger: — Yes. Thank you very much for your presentation, Dave. I think it's very good information for us today and I just wanted to ask a couple of more questions because obviously we've had a number discussions on this particular scenario and this particular proposal. Have you incorporated or extrapolated any of the benefits of a line loss scenario in some the figures that you've presented? Like for example, in northern communities, there is a line loss. Has there been any kind of extrapolation of that particular matter when it comes to SaskPower's service?

Mr. Kutcher: — I haven't put that into my model at all. So that's another factor that would come into play for sure. Yes.

Mr. Belanger: — And the other notion of carbon credit, I know we had this discussion before but carbon credit, that . . . If there was the effort to look at biomass, I think, I'm not sure who made the comment, but we put more carbon in the air through forest fires than we would under this scenario of biomass production. Right?

Mr. Kutcher: — Well in a forest fire of course you're releasing carbon that's in that tree already. And in essence in a biomass plant, you're doing the same thing. So overall you're net, net, you're not adding any carbon really to the air because what's in that tree is just released back into the air in either scenario. But in a biomass power plant — and this is where there is some debate — you are potentially replacing fossil-fuelled electrical generation and so how many credits accrue to that is still under some debate.

Mr. Belanger: — And was SaskPower quite clear that the credits for that, for carbon, under any scenario, they would claim those credits?

Mr. Kutcher: — Yes. In the green power program, they would claim all credits related to your project. Yes.

Mr. Belanger: — And there's no consideration for the Aboriginal involvement option.

Mr. Kutcher: — None that I've seen.

The Chair: — Mr. Bradshaw.

Mr. Bradshaw: — Yes. Thank you very much for your presentation again. And I can't remember if I asked this question last time around or not. But it is when you're going to a large, fairly large biomass plant, what are the considerations for the using of fossil fuels when you are hauling the product to the plant? Like obviously when you're talking about the wood end of it, because you're talking about fairly substantial amount of wood, you know, you're also going to be using fossil fuels in order to harvest that wood and get it to the plant. What consideration was taken in that end of it?

Mr. Kutcher: — You know, I don't know. I'm not privy to the discussions on the, you know, all the renewable generation technologies and how those credits will work and how those certain factors are factored into that. Because you're right. You do use fossil-based fuels to run your operation. And how that factors into your overall credits, that's a probably a discussion around the table that people are having in terms of coming to an agreement about how many credits these types of facilities get. So I can't answer it directly. Sorry.

Mr. Bradshaw: — Okay. And I guess another question on that. If it is a fairly, let's say a 30-megawatt plant, what size or how far out would you be going to look at getting the wood to run this plant?

Mr. Kutcher: — Well as I've shown on my presentation around the Prince Albert area, if there's some logging going on there around the P.A. [Prince Albert] FMA to feed its 30-meg plant, you have to go out about 150 kilometres. Now that's basically getting what's left from the logging operation.

Now it'd be a totally different story if you're going in and you're doing your own cutting, of course, because you're pulling out 100 per cent of the biomass for your biomass plant. So with a logging operation, you're only getting 10 per cent so you've got to go out further. If you're taking 100 per cent, you're within a very close range. So in a lot of probably scenarios you're probably well within, you know, 50 kilometres less.

Mr. Bradshaw: — But of course if you're doing that, it would have to be in an area that is certified for reforestation, if that is correct.

Mr. Kutcher: — Yes, you have to be able to do that. Yes, you'd have to have an agreement to be able to do that, with the province.

Mr. Bradshaw: — Okay. Thank you.

The Chair: — Ms. Morin.

Ms. Morin: — Thank you very much for your presentation. I

found it very interesting. There's examples given . . . And I know you sat in at the end of the previous presentation. They used the example of Germany quite a bit in their presentation and my understanding from my visits to Germany also is that the biomass is something that is used very extensively in Germany as well.

I'm just wondering if you could expand a little bit on what China is doing, what Germany is doing, and just give us a bit of a flavour of what type of success it's enjoying in those situations.

Mr. Kutcher: — Well in terms of Germany . . . And I don't know, but I firmly believe that their power rates are much higher than we have in Saskatchewan, North America. And so when you've got a much higher power rate, these projects make economic sense and we've seen that throughout Europe. Basically they're used to a much higher power rate than we are and these projects just make economic sense. And so that's why you're seeing the growth of these and substantial penetration of these types of plants into their power supply.

[11:30]

In China, as I said, I mean they're growing tremendously. They're popping these things up all over the place and they hope to have 30 000 megawatts within the next 10 years. They're all privately owned. They're profitable facilities. And they're tremendous economic generators in rural areas where there aren't any jobs, there aren't any industry, and it's desperately needed.

Ms. Morin: — And so, like for instance, what would the power rates in China be, comparative to Saskatchewan for instance? If you could do such a comparison at all, I'm not sure, but could you give us a flavour for that as well?

Mr. Kutcher: — I couldn't tell you what the power rates in China are. I think they do provide some subsidies to these biomass facilities, but I think I can safely say their rates are higher than what we're paying here in Saskatchewan. But I don't know the exact number.

Ms. Morin: — So it's my understanding, I may be incorrect in this, that there are subsidies provided, for instance, in Germany as well. Is that fairly common for this type of technology, that there has to be a serious amount of buy-in by the government of the time to ensure that this technology can be promoted, and that there's also then that buy-in from the public as well as to why they're paying what they're paying for their power rates?

Mr. Kutcher: — Well you can do it one of two ways. You can either subsidize your facility to make it economic, or you don't have to subsidize it and it's just an impact of the power cost to the consumer. And that's of course a choice of government, so either direction you want to go.

Ms. Morin: — But for the most part, is my understanding correct that it is for the most part fairly heavily subsidized in most areas that this technology is being utilized?

Mr. Kutcher: — Probably. Although if you look at Ontario, you know, I think it's just a straight feed-in tariff rate. I don't think there's any additional subsidies to plants. They've put a number on the price of the power that they're willing to pay that makes these plants economic.

Ms. Morin: — I find it very interesting, the comparison between what the feed-in rates — tariff rates, I should say — for Ontario versus what SaskPower has been offering so far. It's a very blatant comparison and very glaring, shall we say.

So it'll be interesting to see what happens going forward as the promotion of these technologies becomes more prevalent in the province. And I think we're on that edge of change here, clearly in this province because of the notion of the fact that we are producing such a high amount of greenhouse gas emissions, and that we do have a responsibility as citizens in the country, not to mention as global citizens, to do something to curb the greenhouse gas emissions that we are releasing into the atmosphere.

Mr. Kutcher: — Yes.

Ms. Morin: — Thank you very much for your presentation.

Mr. Kutcher: — Thank you.

The Chair: — Mr. D'Autremont.

Mr. D'Autremont: — Thank you. Very good presentation. Thank you. The last comments on the feed-in tariff, from your understanding, in Ontario what they're doing is they have their feed-in tariff set for whatever generation, and that's simply added to the power bills across the province. Is that the case?

Mr. Kutcher: — I believe so. Yes.

Mr. D'Autremont: — Yes. So it's not the collection of taxes that's paying a subsidy. It's the consumer of electricity who is paying the full cost.

Mr. Kutcher: — Correct.

Mr. D'Autremont: — So if that was to happen in Saskatchewan, then would you foresee that the price of electricity would then rise?

Mr. Kutcher: — Well as I said, you know, if you're looking at comparing our future costs of power and adding to the grid, if SaskPower's saying that coal costs 10 cents a kilowatt to add to the grid, to add some new generation to the grid, and I just showed you that I can do a 30 megawatt biomass plan at 11 cents, if you're adding 400 megawatts to the grid, you take that, that's only 10 per cent of the generation in Saskatchewan. And you only have that 1 cent premium, so your bottom line to the consumer, to the businesses or whatever, your power is going to go up one-tenth of 1 cent. And so, the impact of the bottom line isn't all that huge, you know.

So that was part of my presentation that I wanted to point out, that maybe this committee wants to take a serious look: is coal 7 cents or is it 10 cents? Because if coal's 7 cents, then the premium for biomass is much larger. But if coal is 10 cents, your premium isn't all that large. If you give us some flexibility, you try and make an economic scenario.

Mr. D'Autremont: — Well we've heard a number of complaints when SaskPower came out and indicated that the cost of power was going to rise 8 per cent per annum, that that was gouging — the members opposite certainly led the charge on that — and that there was no need for additional generation, that we should simply do conservation and therefore there would be no need for SaskPower to raise the rate. And we've heard the member from Athabasca trying to say that any cost increases by SaskPower would simply be to pay off the provincial debt and not related to the cost of electrical generation.

So what you're saying then is that any new generation is going to cost more money regardless of what it is, and that because of that, biomass is not going to be significantly out of line with any other new generation that may come online. Is that the case?

Mr. Kutcher: — That's what I'm saying. Yes. And like I say, you know, SaskPower, their range of what they thought coal would be was quite wide. And I guess the other outstanding question is they don't even know if they can do coal; if they have to do clean coal, then that number goes up significantly. And so then price of biomass is probably cheaper than clean coal. So I think you might want to get, if you can get the numbers refined to see what the price difference really is.

Mr. D'Autremont: — Yes. I think part of the problem there is that nobody knows what the price of carbon may be. If there is going to be a price, what is it? And we hear numbers from 15 to 30, $40 a tonne. So that's the problem. Nobody knows what that value is.

Mr. Kutcher: — Exactly. But that's not even factored into the equation. I mean SaskPower's . . .

Mr. D'Autremont: — Not yet. No.

Mr. Kutcher: — No. SaskPower's just saying that here's what it costs us. We think . . . It costs us to make a new coal plant and here's what it costs. And that's not even factored in . . . [inaudible] . . . exactly right. And you know, SaskPower's looking at the clean coal option, and the jury's still out on what the final tab of that is going to be.

Mr. D'Autremont: — You mentioned the Ontario scenario with their green investment, that it's going to create, they say, 16,000 jobs.

Mr. Kutcher: — 50,000.

Mr. D'Autremont: — Oh, 50,000. Okay.

Mr. Kutcher: — That's their target, yes.

Mr. D'Autremont: — Their news release ". . . will lead to more than 16,000 green energy jobs over six years . . . "

Mr. Kutcher: — Is that news release related to, is it Samsung indicated they would set up a wind mill facility?

Mr. D'Autremont: — Samsung and Korea Power.

Mr. Kutcher: — Yes. So that's just part of the equation. I mean. But the overall target is higher, at 50,000, they hope to generate overall.

Mr. D'Autremont: — Yes. If the . . . [inaudible interjection] . . . Well I'm still working on this.

So 50,000 jobs. If in Saskatchewan we were to generate . . . And their proposal is 5000 megawatts of green energy. If we were to implement that in Saskatchewan, with 50 per cent of the manufacturing of whatever goes into this power generation is done locally. So you're sourcing your fuel. You're sourcing your equipment and manufacturing and your plants. Regardless of the kind of power used, how many jobs do you think might be created under that scenario?

Mr. Kutcher: — Well potentially you could create a lot of jobs. But whenever you try and force industry to locate where they wouldn't naturally locate, you're going to skew some, potentially skew some economics. And if you force a wind mill manufacturer to locate in Saskatchewan, potentially you might drive up their costs of production because of course they're based wherever they are based on their best economic scenario. So you have that danger of then driving up the cost even further of these alternative generations.

So I'm just saying where it makes sense, yes, and let it happen. It might happen naturally. If you get a big demand for some of these generation technologies in Saskatchewan, you might get some guys locating here. But I don't know if it's a great idea to force the issue.

Mr. D'Autremont: — That's what Ontario's doing. They're saying 50 per cent of the manufacturing, the components, have to come from Ontario.

Mr. Kutcher: — And you know, and you look at, you compare the volumes of stuff that would go in Ontario as compared to the volumes of stuff going into Saskatchewan, and there's a better business case to be built to locate in Ontario because of those volumes.

Mr. D'Autremont: — Okay. Thank you.

The Chair: — Well, thank you very much for your presentation this morning, and we appreciate you answering our questions as well. So thank you. The committee will now recess until 1 o'clock.

[The committee recessed for a period of time.]

[13:00]

The Chair: — Welcome back. I'd like to advise witnesses of the process of presentation. I'll be asking all witnesses to introduce themselves and anyone that may be presenting with them. Please state your name and your position within the organization you represent. If you have a written submission, please advise us and your submission will be published to our website and available to the public.

The committee is asking for submissions and presentations to be in answer to the following question. The question is, how

should the government best meet the growing energy needs of the province in a manner that is safe, reliable, and environmentally sustainable while meeting any current and expected federal environmental standards and regulations and maintaining a focus on affordability for Saskatchewan residents today and into the future?

Each presentation should be limited to 15 minutes. And we have set aside time for question-and-answer to follow. I will direct questioning and recognize each member that is to speak. Members are not permitted to engage witnesses in debate and witnesses are not permitted to ask questions of committee members.

I would also like to remind witnesses that any written submissions presented to the committee will become public documents and will be posted to the committee's website.

With that, please go ahead and introduce yourself and give us your presentation. Thank you.

Presenters: George Gordon First Nation, George Gordon First Nation Holdings Inc., and ATCO Power

Mr. Sinclair: — Okay, first of all, good afternoon. My name is Chief Ken Sinclair from the George Gordon First Nation. I want to thank the standing committee today for giving us the opportunity to present to you basically our position from the George Gordon First Nation.

I have on my left our CEO [chief executive officer], Trent Blind. I'll let him introduce himself in a minute here. And also from the ATCO, well I have Paul here.

But I just want to first of all say a few things. Our First Nation is located north of Regina about 100 kilometres. We are situated in the Touchwood Hills area. Touchwood is one of the highest, second highest points in the province from what I understand. We are predominantly a Cree Nation. We have approximately 3,200 members. The majority of our members are probably under the age of 25 years old. Right now we have approximately 260 homes on the George Gordon First Nation. We have approximately 1,200 people living on the First Nation right now as we speak.

Our land basically is about 56 square miles. We are right now in a position to go out and purchase treaty land entitlement land in the amount of 9,000 acres and 115,000 equity acres.

That's just a little background information on our band and myself. I'm going to hand the floor over to Trent over here.

Mr. Blind: — Okay. Well good afternoon members of the standing committee. Thank you for giving this opportunity to myself and my colleagues here to speak about our position on alternative energy in the province. My name is Trent Blind. I'm the present CEO of George Gordon First Nation Holdings, Inc. and this afternoon we'll give you a presentation on our position.

Before we do that I'm going to let Paul Blaha from ATCO Power introduce himself, and then we'll start our presentation.

Mr. Blaha: — Thanks, Trent. My name is Paul Blaha. I'm vice-president of development for ATCO Power. ATCO Power is part of the ATCO group of companies headquartered out of Alberta. I just want to say it's a privilege to be able to get in front of you and speak about our project and also our issues we want to raise within the power industry and specifically to alternative energy and wind.

We do have some materials that have been passed around, so I will start by walking through these materials. Our presentation will be a summary of what you see in front of you. So if we go to page no. 2, we want to introduce to you the ATCO geo-wind project. This is a very interesting project that we have in the plans to locate on the George Gordon First Nation's lands. It's an 80 to 160 megawatt project that would be expandable because land is not our shortcoming here. As Chief Sinclair had mentioned, it's the second highest point in the province, and because of that it certainly has the underpinnings to be a very valuable resource for the province.

Secondly I just want to mention that we spent about a year so far with the George Gordon First Nations, not only ATCO Power on this wind project, but also on the broader basis, with other divisions of ATCO, namely our structures and work-site housing group, to actually come to some business arrangements which have been undertaken. This geo-wind project would be a 50/50 joint venture, and we're under partner arrangements to proceed down the development path.

Again just going back to the wind resource, we've got credible third-party validation of the wind resource. We've got a minimum one year of collected wind data that's done with a net mass device that's located on the lands. It's all been done. On the positive side it shows an average wind speed of 7.4 metres per second at turbine hub height and a gross capacity factor in excess of 40 per cent.

For context, in Alberta in the foothills, we're seeing those kinds of capacity factors and wind speeds. It's competitive to Alberta, and Alberta's the strongest wind regime in Canada. And by way of just context for yourselves, in Ontario for instance, which is very aggressively going down a wind path, their average capacity factors' gross are only 25 to 30 per cent. So this is a very strong prairie resource that is available to us. On the cost side, we anticipate this project will be anywhere from 200 to 400 million, depending on the ultimate project size.

So if we flip to the next page, we just want to talk about location of the project and what it's close to. So as you can see on page 3, as Chief Sinclair had mentioned where the George Gordon First Nation's lands are, they show up beside that red arrow, approximately 120 kilometres north of Regina. What's very interesting is that it's located in very close proximity to a very interesting growth area within the province, and that's the location of the Athabasca Potash Burr project and the BHP Billiton Jansen potash project. These are clearly areas that are going to need power growth and are significant power consumers in the near to medium term.

If we flip the page, just want to give you a brief overview of ATCO Power, our capabilities, and who we are. ATCO Power is an independent power producer, operates around the world. We've developed 15 independent power projects since 1989 at a total capacity with 3300 megawatts with an investment value

of nearly $3 billion. We've always been the lead developer on those projects. We own and we operate, so these projects are very dear to our hearts. We don't do this with the intention of moving out of the way for financial players to step in. We're long-term players in the markets we're in, and we intend to be that.

On that point, back in the early 2000s, some people may remember that ATCO Power was involved and may well be one of the only independent power producers in this province. We developed a project alongside SaskPower International in a 50/50 joint venture where we built 150 megawatt cogeneration plant up at the Cory site, approximately outside of Saskatoon. And what's interesting with this project, it's been on since 2003 and has been a major success for reliable, environmentally sound energy flowing to basically to the population and business community of the province.

Next, we even have more financial capacity than that. The third point there just shows that we're also the owners and operators of five legacy plants within Alberta. This was as a result of Alberta deregulation, so we own and operate those projects, most of which are coal projects, but they have an additional approximately $2 billion in asset value. So as you can see, we have a lot of financial strength.

And lastly the point I want to raise is that I would say how ATCO Power and ATCO Group differentiates itself in the market is we have many, and I mean many, successful First Nations partnerships that we're very proud of. And we've found very positive ways to make these ventures happen. But there's a lot of detail in the backup slides, which covers off that First Nation success. And I won't talk to the details here.

I'll just turn the page here; I'll probably skip over page 5. Page 5 just shows the geographies that we're in. I didn't mention it. We're in Australia. We're in the UK [United Kingdom]. We're in Canada. Within Canada, we've got projects in BC [British Columbia], Saskatchewan, Ontario, and Alberta. What this means though is we do have our pulse on power markets around the world. We do know how people have been able to provide reliable, cost-effective power within those jurisdictions.

We turn to page 6. I just want to highlight one successful project out of our many with First Nations. And this first one is the Oldman River hydroelectric plant in Alberta. This was a plant developed in southern Alberta near Pincher Creek. As you can see from the picture this is a small, a relatively small, 32 megawatt run-of-river facility. You see the picture in the background showing ATCO Power on the building. But what's important about this project is that we own 75 per cent and we're the operator, but we've got Piikani First Nation as a 25 per cent owner beside us at the table in the long term.

And what's very interesting about this is that Fisheries and Oceans Canada and Alberta Environment have all confirmed that this project has no significant environmental effects. We're very concerned about doing things environmentally sustainable, and that emphasizes our interest in this wind project in Saskatchewan. And lastly for context, that power facility is an important provider of energy. More than 25,000 households in Alberta are provided energy with that hydro facility.

I'd like to turn it over to Trent.

Mr. Blind: — Okay. Thanks, Paul. I just want to highlight some of the George Gordon First Nation aspects to this wind power project. First of all, we want to help industry and government meet its climate change commitments. We have one of the strongest wind resources in the province, and we're ideally located and situated to offer a large-scale wind development to offset carbon emissions against new potash producer emissions in the surrounding area.

The Government of Saskatchewan and SaskPower have both indicated their support for green energy solutions with a commitment and strategy to meet new load growth through environmentally preferred power produced from small and independent producers. Participation means in exchange for our land, labour, and equity, there will be sustainable job creation and economic prosperity for our community and the surrounding region. The socio-economic benefits of our wind project go far beyond the borders of our community, creating employment and wealth for all levels of government and Canadians alike.

George Gordon First Nation has widespread First Nation and local community support, representing a local population in excess of 10,000 that includes the surrounding school division. The business vision of the George Gordon First Nation is to provide green energy on the basis of sound economics and a business model supported by stakeholder commitment.

George Gordon First Nation supports working in collaboration with other First Nations and could supply a collective source of First Nations energy needs to organizations such as the Saskatchewan Indian Institute of Technologies, First Nations University of Canada, Saskatchewan Indian Gaming Authority, and the Federation of Saskatchewan Indian Nations. George Gordon First Nation is aligned with ATCO Power as a recognized industry leader in independent power generation.

What we wanted to do was point out what the Saskatchewan power market is as it is today. Approximately 5 per cent of power in Saskatchewan comes from wind power. Mature European markets have 20 per cent supply that comes from wind energy. In October 2009, SaskPower told us there was no assessment criteria for evaluating First Nations participation in wind projects. We received the same message from Minister Boyd in November 2009.

In essence this runs contrary to Enterprise Saskatchewan's strategy to increase First Nation and Métis engagement in the economy as partners, and the Crown Investment Corporation's procurement policy whereby every year the Crown corporations purchase more than $2 billion worth of goods and services from existing suppliers. This translates into a significant number of opportunities available for Aboriginal business. Enterprise Saskatchewan is committed to working with all businesses in Saskatchewan and encourages Aboriginal businesses to identify themselves through the Aboriginal Business Directory for these growing business sectors.

Saskatchewan is entering a period of growth and needs more involvement of Aboriginal business to meet corporate procurement needs and help sustain this period of growth. The

messages that we've received from SaskPower and from Minister Boyd is inconsistent with the agreement that was announced November 27, 2009, whereby the Minister of Energy announced wood allocated to forest companies and First Nations from the Prince Albert Forest Management Agreement in which the Agency Chiefs Tribal Council, Meadow Lake OSB, and the Montreal Lake Cree Nation were granted annual softwood and hardwood allocations irrespective of a collective agreement to include other First Nations.

[13:15]

SaskPower has commissioned a study by wind specialist Genivar which supports large-scale wind development across diverse regions of the province. However, the upcoming SaskPower procurement of 175 megawatts of wind power largely ignores the potential benefits of locating wind in different geographic locations such as central Saskatchewan, a region which will see considerable power demand growth from new potash producers near our lands.

Under the purchase of electricity from renewable resources, the PERR program, the Government of Canada is committed to purchasing 20 per cent of its electricity needs from renewable resources such as wind and biomass. In September 2000, Natural Resources Canada, under this program, signed a 10-year agreement with SaskPower and is currently receiving about 32 000 megawatt hours annually of wind power for its buildings and facilities located in Saskatchewan.

We understand that this program is under review for possible renewal and we would like an opportunity to provide wind energy on the basis of an Aboriginal set-aside.

When we look at the federal government's First Nation procurement policy, there are plenty of examples. While numerous social challenges, including despairing levels of poverty in Aboriginal communities, remain a very real issue, investment in Aboriginal business is seen by many Aboriginal leaders as a way out. By supporting and advocating Aboriginal ventures through procurement opportunities, many believe that increased prosperity will allow entire communities to become fully participating members of the local economy and by extension the national economy.

Working with Aboriginal business is now seen by the public as a hallmark of corporate social responsibility. An example of one of the federal government's procurement policies is CIDA's [Canadian International Development Agency], where they award Aboriginal suppliers the opportunity to compete for contracts on the basis of awarding bonus points to proposals from qualified Aboriginal suppliers, restricting certain bids to Aboriginal suppliers only, and providing information sessions on their Aboriginal procurement strategy. By 2003, under the procurement strategy for Aboriginal business, the federal government conducted $487 million worth of business with Aboriginal suppliers.

When we look at the provincial First Nations procurement policies, there are other provinces and jurisdictions that we can point to that have substantial First Nations procurement policies. Ontario, for example, has the Ontario *Green Energy Act* which was enacted in 2009. The Act makes available the province-wide surplus of 2500 megawatts transmission to renewable power immediately under a feed-in tariff model. The following First Nation procurement and stimulus incentives and initiatives stipulate wind projects with First Nations participation will be eligible for up to $15 per megawatt hour premium to the FIT [feed-in tariff] price of $135 per megawatt hour.

There's also a $250 million loan guarantee program to support First Nation equity participation in renewable generation projects. The Aboriginal energy partnerships program funds feasibility studies and community energy plans and, as well, the Ontario Power Authority states the following rationale driving First Nations incentives.

When we look at the Quebec market, Hydro-Québec has committed a purchase block of 250 megawatts of wind energy generation for an Aboriginal projects involvement. Hydro-Québec bases their Aboriginal incentives on the *Québec Sustainable Development Act*, which was developed and enacted in 2006 and has clearly stated development objectives which include respecting local identities, promoting social and personal equity, and developing participation and partnership. In 2008 Hydro-Québec paid 99 million to Aboriginal organizations and independent workers.

In Manitoba, another good example, the Manitoba government has introduced the Aboriginal procurement initiative, which aims to increase procurement from Aboriginal-owned business.

The policy directs all government departments to endeavour to increase the participation of Aboriginal businesses in providing goods and services to the Manitoba government. The policy includes four mechanisms to help facilitate the implementation of this policy. They have an Aboriginal business sourcing, Aboriginal business content, a set-aside component, and scoping. In the past 10 years alone, Manitoba Hydro has purchased goods and services from Aboriginal businesses worth a total of $300 million.

In Alberta, the Alberta electric industry in Alberta has deregulated and has competition in the wholesale power generation, power transmission, and electricity retailing market segments. Utility business in Alberta is guided by the Alberta Aboriginal relations consultation guidelines to consult with Aboriginal communities affected by companies' activities in advance of the project, work with other industries and government to understand community needs, identify opportunities to maximize Aboriginal participation, and contract Aboriginal companies. In 2007 Alberta-based oil giant Syncrude announced that its dealings with Aboriginal businesses over the past 30 years had surpassed the $1 billion mark.

Now turning our attention to George Gordon First Nation and Aboriginal groups, how we can participate in Saskatchewan's alternative energy future, SaskPower has recently indicated that two primary factors which are creating a requirement for new electricity generation sources are the need to retire or extend the life of current electricity-generating units in the overall growing demand for electricity in the province.

They have also stated that they will have to rebuild, replace, or

acquire approximately 4100 megawatts of power generation capacity by 2030, at a cost of $15 billion in just the next decade of that period alone. With such an unprecedented need for investment in the electricity generation sector of our province, it would be foolish not to explore all the options when trying to fill that need. Having diversified energy supplies would also help ensure the stability and sustainability of future electricity prices for consumers.

The opportunity for First Nations participation in sustainable energy projects has never been better, given the federal and provincial governments' focus on reducing carbon emissions and stimulating First Nations resource and economic development activity. By the year 2017, the potential of engaging Aboriginal people in the nation's workforce can increase Canada's GDP [gross domestic product] by $160 billion.

First Nations want to be part of the solution as the sustainable nature of wind aligns with our beliefs about stewardship of the land and our relationship with mother nature. Our tie to land, water, and air is central to our culture and our very existence. We are proud to have this opportunity to do our part in reducing our carbon footprint for the preservation and protection of the environment and for our children yet to come.

The current socio-economic conditions within First Nations communities will not be adequate to support their future or Saskatchewan's. First Nations must become part of the solution and must be involved in finding the means to continue to develop, contribute, and participate in all aspects of Saskatchewan's economy and society. The economic impact of the status quo is devastating for our Aboriginal people and Aboriginal communities. The net effect for Aboriginal people is ever-decreasing average personal income and more reliance on governments for assistance. This economic impact is of significant importance to the province of Saskatchewan.

The Aboriginal population of Saskatchewan is to increase threefold within the next half century. It is projected that the Aboriginal population of Saskatchewan will increase from 135,000 people in 1995 to 434,000 people in 2045. By the year 2045, Aboriginal people will make up approximately one-third of Saskatchewan's population. Aboriginal leaders see the future prosperity and health of Aboriginal community as they intertwine with the future of all Saskatchewan citizens. Aboriginal leaders want to plan for a stronger Saskatchewan economy which will improve the well-being of all citizens.

So when we look at the Saskatchewan Aboriginal programs, some examples where the Saskatchewan government is responding to the challenge and where there is an opportunity for improvement: there was the creation of the Aboriginal employment development program whose objectives are to foster Aboriginal employment development, economic development, and workplace cultural development. There's also Enterprise Saskatchewan's strategy to increase First Nations and Métis engagement in the economy as partners through the establishment of an Aboriginal economic development partnerships council.

The Canada-Saskatchewan Western Economic Partnership Agreement. There's an opportunity to build on community and regional development diversification, increase the capacity of Saskatchewan communities to implement strategies that promote sustainable development like wind energy, create greater collaboration and integration between and among government and communities including First Nations and Métis, increase investment and business opportunities, and also increase the economic infrastructure for the further development of leading industries like potash.

We encourage the Saskatchewan Crown corporations and the government to develop Aboriginal-specific policies and practices that will help Aboriginal business respond to procurement opportunities. With the will to be an advocate of change, the government can initiate the removal of systemic hurdles and encourage Aboriginal business to respond to procurement opportunities. The road forward begins with three crucial commitments: make an investment in procurement strategies for Aboriginal suppliers; offer partnership-based, not transaction-based, procurement; and mobilize the Aboriginal community with training, access, and support.

Finally we'd like to come forward and recommend the following to this standing committee. Review the Saskatchewan Aboriginal procurement practices in the context of other provinces, especially in the wind power sector. Review the Saskatchewan direction on renewable power, which lags behind other Canadian provinces and world markets. Consider geographic diversification strategy for wind power generation growth in Saskatchewan to improve electricity reliability as suggested in the SaskPower-commissioned Genivar study to enhance environmentally sustainable electricity with new carbon emitting potash mines.

The Saskatchewan government should consider immediately giving preference for wind projects with First Nations involvement similar to the wood resource agreement announced in November 2009, which was done on a First Nations selection basis. Consider programs like the purchase of electricity from renewable resources, PERR, where Crown investment corporations and the government can make a commitment to purchase a percentage of their energy use from Aboriginal energy producers.

And finally, to develop and implement a First Nation procurement strategy for wind power and other alternative energy projects. And that concludes our presentation. Thank you.

The Chair: — Well thank you very much for your presentation. Some of the members have some questions. Mr. Belanger.

Mr. Belanger: — Yes. Thank you very much for your very impressive presentation. I think there's a lot of good logic and a lot of good points to your presentation. And I've got a couple of questions. First for Paul: the initial deal you struck with SaskPower International, how has that deal worked out in terms of your profit line and the service and the relationship with your partner?

Mr. Blaha: — Yes. I'd like to first say that the overall relationship was been excellent. The foundation of that relationship was, at the time, SaskPower International teaming with, as part of SaskPower, wanted to get introduced first-hand

to independent power development. So it was a very good, open relationship early, with two strong entities at the table to bring their skills forward on a development path.

The second aspect of your question, which is around how profitable has it been and how successful has it been, is that the project is very successful. It has a 20-year offtake agreement negotiated with SaskPower in a very good way, and perhaps equally as important is the fact that it's actually a very good service relationship to PotashCorp because we are on their site. We are integrated within their operations and we provide them steam, which is a valuable commodity for their operations. So we've been able to strike that essential three-way balance.

I think if you step back and then ask the final question of how has it been for the Saskatchewan jurisdiction . . . Because obviously the energy being purchased by SaskPower is an important product for everyday use in the province. And I think you'll step back and realize that cogeneration power is very environmentally sustainable. It's inexpensive in a relatively low-gas-price environment. And so from all those measures, it's been very successful for us, and the relationship is still lively today.

Mr. Belanger: — So since that deal was struck, we now have an Indian band willing, in partnership with you, to invest between 2 and $400 million into what is a renewable energy source — wind power. It's going to be on-reserve. Investment is being done to the partnership, and it's great for the economy.

So what has changed? What has changed recently that would not encourage this kind of development when you talk about the recent approaches that you've made to, in this case, SaskPower and also to Minister Boyd's particular attention? Because I think there's a leadership question on Minister Boyd's position on this one.

But nonetheless I would point out that, what has dramatically changed? Because I think I look at the proposal from what partnership you enjoyed in the past to what is being presented now. There's solid investment, good for your First Nations partner, and a solution. So why all of a sudden are we getting no to what I think is a great answer?

[13:30]

Mr. Blaha: — That's a very good point. We were a little surprised with the response that we received in October with SaskPower and November with Minister Boyd because we believe this is the foundation for a very strong project in the province. I think what is happening today is that the province, and more particularly SaskPower, is going down a path of procuring wind projects. And so the response to us came back and said, well compete against all the interested parties who are trying to develop wind projects.

And I think the reality is is that . . . And as you see in the materials, the Ontario government has made it very clear. They've done all their homework on this, and they realize that these projects, wind projects with a commercial developer and a First Nations involvement, need to be treated differently.

And so what's different today is that there's a procurement practice in place today by SaskPower to buy wind competitively. We are all for trying to be as cost-competitive as we can be. But the basic fact — and Ontario and Quebec have got to this conclusion after a lot of research and work — these projects are a little more expensive. They take a bit more time. You have to get the relationships right. They're fundamentally a little more costly. And that's why we see these different incentives in Quebec and Ontario.

So to your question, I think that's what's different today than what might have been different for us trying to enter in the . . . well successfully entering the Saskatchewan market back in the early 2000s.

Mr. Belanger: — Chief — if I can ask you a question, Chief — in relation to the Athabasca Potash, Burr, and the Jansen potash project, would that be considered in what is your traditional territory as defined? And if it is within your traditional territory, was there much consultation and accommodation on supporting those projects when it comes to First Nations involvement?

Mr. Sinclair: — Absolutely it is in our traditional territory. And we have sat down with both companies. We have our own terms of, our own rules of engagement. And we will be sitting down with them again. I think there's an opportunity for us as a First Nation. However, there was no consultation done prior to that.

Mr. Belanger: — And my final question again going back to Paul. And I'll make this statement. I look at this on the duty to consult. Projects are proceeding. The Indian band has a good partnership with a reputable firm. They've had past success. And yet you're having the response that you had, despite a 200 to $400 million investment on what is considered clean energy, renewable energy. And basically there's been no response from SaskPower, no response even from Minister Boyd's position.

And I find it odd because it looks like a slam dunk to me. And what has changed since the initial agreement? And all I can see is value-add, value-add, value-add.

In relation to the pricing that you've negotiated, Paul, under this scenario versus your past project . . . And I can understand that there's some business issues that you may not want to discuss this matter as openly as possible, and I can appreciate that. But is there a significant difference in price where all of a sudden this deal doesn't make it any more attractive or in fact is a detriment to the deal? If you're able to share the pricing, if that's the issue, and give me the numbers. And if you can't, I understand that. But is that one of the disqualifiers or disclaimers in this particular deal?

Mr. Blaha: — Yes, a series of good questions there. On the fundamental question about how cost-competitive is wind-generated power or, more specifically, wind from this project in relation to the options going forward for SaskPower, I can just give you my view on that. But the cost of power from wind, according to the statistics there where there's an expected $15 billion billed for 400, for 4000 megawatts —sorry I got a mistake in my zeros there — but that's, order of magnitude, 4 million per installed megawatt. In general our wind project is going to be two to two and a half million dollars a megawatt.

So I don't know. I look at those numbers and I say this is going to be a very competitive outcome because the challenge — and here's the challenge we face forward — is there is not a price today on carbon, and most of the forms of generation available to Saskatchewan involve carbon. And so this actually has no carbon footprint. So that's why there's some difficulty in trying to look at different forms of power generation.

But to your question about this project, this project has a very strong wind resource that will translate into competitive energy. And if provinces in Canada have a capacity factor of 25 to 30 per cent and are actually building wind and building portfolios that are as much as, even in Ontario and Quebec, goals to be as high as that 20 per cent wind-provided energy within their markets, there is room for wind. And I guess that's what we can show and demonstrate going forward and that's what we're trying to do.

I hope I didn't misinterpret the first part of your question but I just want to clarify that we do not have a deal with SaskPower obviously and that would have to be a path we'd need to get to and an outcome we'd need.

Mr. Belanger: — Thank you, Chief, and Paul.

The Chair: — Mr. Hart.

Mr. Hart: — Thank you, Mr. Chair. I certainly would like to commend you gentlemen on the excellent presentation. Just for the record, I'd like to state that this proposed project is in my constituency and I would be very supportive of your proposal. However, as you know, decisions are made in consultation with other people and those sorts of things.

However, I have a couple of questions. First a comment. Mr. Blaha, you said you've been collecting one year of data on wind resources on Gordon's First Nation and you've come up with some very attractive results. I have done a bit of work in this area and I certainly agree that if you can achieve 40 per cent of the potential capacity of wind power, that it is an excellent result. How does that compare to some of your projects in Alberta? I know that, like, 40 is kind of the magic number. Are you achieving that in Alberta or are you somewhat lower than that? Or perhaps are you exceeding the 40 per cent with the projects that you currently are involved in, in Alberta and southern Alberta?

Mr. Blaha: — I certainly want to clarify just one thing without getting too technically involved here. But I do say that right now the project is showing above 40 per cent gross capacity factor, and we just have to be careful that we're comparing apples to apples. Because in Alberta, because of all our functioning wind, we can say comfortably that we have a net capacity factor of around 35, maybe as high as 38 per cent. The only reason I can't tell you the same terms today is we haven't done the work to say, okay, on a gross basis with technology we can produce availability factors above 40. But we need to take into account and do some work to understand the losses that will be there.

However, having said that, I will say that directionally we believe we're going to be over 35 per cent. We don't anticipate losses to push it below that, so a very strong resource. And I think what's interesting is you've got . . . There's a good array of different direction of wind in this province which collectively can be captured.

Mr. Hart: — Thank you for that. My next question I will direct to Chief Sinclair. Chief, I wonder if you could explain for the committee how long your First Nations community has been working on this project. It's my understanding that you've been working at this for a number of years, and I wonder if you could just perhaps explain the process that you and your community have gone through to arrive at this point in time.

Mr. Sinclair: — Okay. Thank you, Glen. We've been working on this project for approximately seven years. We had Saskatchewan Research Council actually come out and do the data research on the wind on our First Nation. It came to basically we were looking at the opportunities as far as economic development opportunity on our First Nation. At that time we got our community together and we felt that maybe wind power could be a viable option for us, a commercial venture we could look at. So at that time we got the help from INAC [Indian and Northern Affairs Canada] to do a business case. We did the research. We went out and looked for partners. We found a good partner in ATCO. And we also were endorsed by the Federation of Saskatchewan Indians through a motion that gave us, basically endorsed our venture.

So it's been about seven, eight years, Glen, we've been working on that.

Mr. Hart: — Thank you. I know we've had conversations, but I thought it'd be helpful if you could explain the process for the benefit of other committee members.

My final question, I suppose I should direct it to perhaps Trent or Chief Sinclair. You stated that the George Gordon First Nation is willing to work in collaboration with other First Nations in supplying a collective of a source of First Nations energy needs. I wonder if you could just expand on that. What do you mean by that?

Mr. Blind: — Okay. We knew right upfront that if we were going to be successful in getting this project off the ground, aside from bringing in a well qualified industry partner, that we would have to get community support — community support with respect to the surrounding First Nations in which we're a member of the local tribal council. Those First Nations populations represent 10,000 people.

We also went out and said, because we're a member of the local school division, that we should be getting support from those folks to say, you know, if we build this wind power project, would there be interest in supporting it through the purchase of alternative energy?

We took that a step further and we said, well let's talk to the major First Nations institutions in this province — and they're certainly using energy — the First Nations University of Canada. We've got the Saskatchewan Indian Institute of Technologies. So we actually went out and we solicited their interest. And we got letters of support stating that they would indeed purchase our wind energy if we built this project. And so we said, you know, we're open to working with other First

Nations.

There's always got to be one First Nation that takes the step forward first. We are well positioned because of the work that my chief and council and our community members have done over the past seven years, and consequently we feel that we want to be inclusive of not only the First Nations people in our area but the surrounding community.

In fact we're commissioning Statistics Canada to do an input-output shock analysis that will basically give us an indication of the benefits that the local community, the region, the provincial and federal governments will benefit from our investment of that 2 to $400 million in this project. So I hope that answers your question.

The Chair: — Mr. D'Autremont.

Mr. D'Autremont: — Thank you for a very good presentation. Looking over your presentation, I notice the comparisons with Ontario and Quebec. I'm not always sure though that such comparisons have real value. When I look at the comparison with Quebec and their commitment to purchase a block of 250 megawatts from Aboriginal projects, I think if you took that as a percentage of Quebec power's generation, you're looking at about a point five per cent which, in Saskatchewan, would translate to 2 megawatts. I think you're probably . . . There's very little additional value for First Nations to be limited to 2 megawatts. So I think sometimes those kind of comparisons don't work well.

The proposal that you're putting in place — and Mr. Hart was talking a bit about the efficiencies of the systems — the ones SaskPower already have in place down in the Southwest are about 38 per cent efficient. So of your proposal, what — I think it's, what, 175 megawatt capacity? — what's the actual generation that you're expecting from that?

[13:45]

Mr. Blaha: — Yes, a series of good points. I'll start with answering the question first and then I just want to make a comment on the lead-in to the question.

So on the question of how much energy will be produced, I don't know the exact number of megawatt hours at this moment in time. But mathematically it's anywhere from 80 to 160 megawatts depending on the size of the project that we finally hone in on.

By the way, we have all the land available and the study done on a project that would be as large as 160 megawatts. So we can accommodate that. What we're trying to do is figure out what's the right size for the provincial need and what's available to us. But mathematically, it would be as simple as take the 160 megawatts at a 35 per cent capacity factor, multiply it by the number of hours in a year, which is 8,760, and you would have your answer.

Mr. D'Autremont: — You're looking at about 35 to 40 megawatts really.

Mr. Blaha: — On an equivalent baseload?

Mr. D'Autremont: — Right. Yes.

Mr. Blaha: — Yes.

Mr. D'Autremont: — Okay.

Mr. Blaha: — And just for context though, the centennial project, which was the first wind project in the province, is at, I think it's 140 to 150 megawatts. So this project could be even larger than that project. And we expect comparable, if not a little bit better, wind regime from that project.

Mr. D'Autremont: — To quote my colleague across the table, Mr. Belanger, if this is such a slam dunk, why were the First Nations not involved in the Cypress project that the former administration did in the Cypress Hills area? . . . [inaudible interjection] . . . Thank you. That's a good answer.

ATCO is a private company involved in generation. Has there been a problem as a private company in providing that power, electricity, to SaskPower? And were the contracts that ATCO has negotiated at, say Cory . . . And I believe you're involved as well down with the wind project, are you not, with Enbridge? Or no?

Mr. Blaha: — We're not a stakeholder there.

Mr. D'Autremont: — Okay. Just at Cory then. Was that negotiated on a commercial interest basis for everybody involved, or was there any preferential pricing involved there?

Mr. Blaha: — There was absolutely no preferential pricing. The negotiations were done as ATCO Power and SaskPower International, as two independent commercial entities negotiating an off-take agreement with SaskPower on commercially marketable terms. And I can say from being involved in that project and seeing the end result, I think it's highly commercial compared to our dealings elsewhere.

Mr. D'Autremont: — Thank you. The new cost of generation, from what we're hearing from many of our presenters, is going to increase no matter what form of energy it takes. Whether it's wind, whether it's coal, whether it's solar or geothermal, regardless of the generation source, there is going to be an increase in cost.

From your perspective, and any one of the gentlemen can answer this, should that cost be paid through a feed-in tariff and spread throughout the entire system, or should there be a direct subsidy from the taxpayer to the generation source when it's not commercially viable?

Mr. Blaha: — My personal view on that question is that it's best to take the entire generation portfolio that is going to meet the supply for the province and to put it, to smear it over the whole. Today, wind would be arguably an incrementally higher cost form of power today. As I said earlier, the moving part that none of us have a clear angle on in Canada is the cost of carbon. So it is very difficult today . . . Well you can make the conclusion today that wind is incrementally more expensive than coal generation that's in the ground, but depending on the price of carbon, there would be a signal there to, at some point if the cost of carbon was high enough, that wind would be a

cheaper source overall.

So I actually believe that you have to balance and that's the dilemma that SaskPower faces. You have to look at your whole portfolio and add renewable in it to reduce your carbon footprint. And that's what others are doing.

Mr. D'Autremont: — Thank you. One of the comments that were made was that SaskPower and Minister Boyd had said, you know, put forward your proposal and compete with any other RFPs [request for proposal] that may be coming forward for the 200 megawatts of wind generation that are being proposed. And as an aside on that, SaskPower has indicated to us that the maximum they can really handle without getting into some difficulties with balancing the loads is 8 per cent on our current system without having significant ties to other provinces to increase the total capacity of the system that they can balance off against. So with 200 more wind, we would be up into that 8 per cent range.

My question is, with competing with all the other potential proposals out there, why would . . . And you've indicated it would be more costly to do it through the Aboriginal First Nation on-reserve. I'm just wondering why that would be because you have the land so there would be no land cost, which some other proposal would have to pay to somebody. There'd be no, I believe, no PST [provincial sales tax] paid on the equipment going in because Gordon's would be a part of that and they're exempt. No GST [goods and services tax] as well as on the Gordon side of it because it's generated on-reserve. My suspicion would be that there would be no income tax; ATCO on their share would have to pay income tax, but Gordon's would not.

So I'm not sure why there would be additional costs when you have those potential cost savings as part of the proposal that would benefit the Aboriginal First Nations.

Mr. Blaha: — Let me start. I think the two parts to the question are, one, the ability to expand the wind regime in Saskatchewan any more than some limits that are believed to be here. And then the second question really around why a project such as the ATCO, the geo-wind project wouldn't be able to compete on cost against other commercial wind projects. So I think those are the two aspects.

On the first one though, I will say one thing that's very interesting. When we think of the limit being 8 per cent in Saskatchewan for how significant wind could become, I think what's really interesting is that two years ago in Alberta, we had the idea that 900 megawatts of wind was going to be the limitation for how much wind on a system that would be 10 to 12 000 or 10 to 12 gigawatts. So roughly that limitation was believed to be around that 8 per cent.

And what's really interesting was the reason why. The view was that you couldn't expand beyond that, was that people didn't believe the transmission operator could actually function the system properly that way. Well what's happened since, that whole moratorium or limit has been raised. And the province is now charting a course to say, no, we've studied it more and guess what? From a transmission perspective, which is likely to be the main hurdle here as well, we can succeed and do that.

So I'm not so sure all the study has been done in this province to conclude that. And I think as we go forward in time, system operators are understanding other ways to accommodate. And so I put that out there.

On the second question about the cost-effectiveness of this project. A couple of the key drivers here, which is really why a project with First Nations participation would become more expensive despite some very valuable aspects you raised on to the why they could be a little bit cheaper too, but the big offsets . . . And this is what Ontario has realized, and that's why they're offering up to a 15 per cent adder, not quite as high as 15 per cent. That's why they're adding an adder to wind generation from First Nations projects.

But the main two are firstly the developer needs to go through a land designation process. And to actually go ahead and chart the course down that process, that takes minimum a year's time, likely even longer, and you need full engagement from the First Nations group. And to do that you have to motivate all the voters to participate in that process, so it is a costly process.

Secondly, the other side of that is there's always, there has to be the right for full consultation by the First Nation. And we do this in many provinces already. It's an expensive process and we will do it. And we will do every step the right way. I can't say all organizations do that. But we certainly do consultation properly, and therefore there's certainly can be a significant cost to make that happen. But we believe that's the best way to end up in a 20, 30 year partnership with a First Nations group. I'll turn it over to Trent to finish that.

Mr. Blind: — Yes, I think the other component to all this is that there is a cost of the land. Under the *Indian Act*, when a First Nation designates its lands for commercial development such as this, we have to charge market rent for that land and use of that land because we're giving it up under a long-term lease, whether it's to ourselves, our own corporations, or to our partnerships or joint ventures.

And so Indian Affairs has that fiduciary responsibility and obligation to all members of the George Gordon First Nation to ensure that we receive fair market rent for that land, and that gets deposited into our revenue account in Ottawa. So there is a cost of land. And then so it's no different than, you know, doing a wind development on fee simple land elsewhere. There is a cost to it. I hope that answers your question.

The Chair: — Well thank you very much for your presentation and taking our questions here today. It was very helpful.

The committee will now recess for about four minutes while the next presenter gets set up. Thank you.

[The committee recessed for a period of time.]

The Chair: — Before we hear from our next witness this afternoon, I'd like to advise the witness of process of presentations. I'll be asking all witnesses to introduce themselves and state the position within the organization you represent. If you have a written submission, please advise us of it and it will be tabled and it will be available on the committee's website for public viewing.

The committee is asking all submissions and presenters to be in answer to the following question. The question is, how should the government best meet the growing energy needs of the province in a manner that is safe, reliable, and environmentally sustainable while meeting any current and expected federal environmental standards and regulations and maintaining a focus on affordability for Saskatchewan residents today and into the future?

Each presentation should be limited to 15 minutes with questions and answers to follow. I'll be directing questioning and recognizing each member that is to speak. Members are not permitted to engage witnesses in any debate and witnesses are not permitted to ask questions of committee members.

I would also like to remind witnesses that any written submissions presented to the committee will become public documents and will be posted to the committee's website. With that, please introduce yourself and go ahead with your presentation.

Presenter: HTC Purenergy

Mr. Kambeitz: — Thank you very much, Mr. Chairman, and members of the standing committee. It's certainly a privilege to be able to present some views on energizing Saskatchewan and our view of energizing Saskatchewan. The view we take is not only about creating different forms and better forms of energy for Saskatchewan whereby we're turning lignite into electrons and using those, but also the view is we can produce more oil in doing such.

And the other view in energizing Saskatchewan is about capacity building, the ability to build capacity around an industry and build a human resource and corporate capacity so we can indeed move ahead and energize lignite. We can then use the CO_2 to ultimately produce oil and create an industry in this province. So I'll try to speak to those in the course of the presentation.

The company overview perspective of and where we've come from, we've been in business since 1997 and in earnest 2000 in the CO_2 business. We are licensees of the University of Regina's very famous CO_2 capture technology. And we have an enhanced oil recovery team whose learnings stem from the Weyburn field. We have commercial offices in Calgary, Regina, a virtual office in Vermont, and we're just finishing our fifth year of offices in Sydney, Australia.

We're very fortunate here. Recently, a little bragging if I may, we were awarded Deloitte & Touche's Green 15 award very recently, recognizing our company as a major contributor to Canada's green economy moving forward.

Our capabilities lie in the entire CO_2 value chain. And it is a value chain that I'm going to try to have you understand through the course of this presentation. We capture CO_2 from post-combustion and from other sources. We then manage the CO_2 into enhanced oil recovery whereby we deal with oilfield economics, compression, and the ability to use the CO_2 as a viable product to produce oil. And ultimately we manage the storage of that through risk assessment and finally through CO_2 audit monitor, and final monetization of a carbon credit.

We own 90 per cent of CCM [Carbon Capture Management Inc.], which is Canada's largest, its most recognized carbon credit arbitrage company out of Toronto and out of Regina. We made that acquisition in November, and we feel that we're equally or very well qualified for the entire value chain of the CO_2 business.

We made an investment in this technology for some 15 years. It's really building on the investment that we made at the International Test Centre for CO_2 Capture and the investment we made at the Petroleum Technology Research Centre. This is really building on that investment that's been made over the last 15 years by both our provincial government and our federal government.

The assets, the investment that the Government of Saskatchewan, the Government of Canada, and others made really manifests itself in the International Test Centre pilot plant where some of you perhaps have been through. Certainly the most advanced facility of its kind in the world. And ultimately an actual demonstration plant at Boundary dam whereby the U of R [University of Regina] technologies are demonstrated under real life conditions at the Boundary dam.

Ultimately what a capture system looks like, an artist's conception of that, is what you see here, whereby you can see that there's absorber and stripper towers. It's built adjacent to an existing power plant. It captures the exhaust of the power plant and then really separates the CO_2 from the rest of the exhaust and prepares the CO_2 to be used commercially for enhanced oil recovery or for storage.

That gives another shot of what we call our pure energy CCS [carbon capture and storage] system. That system is 1000 tonnes a day, which represents about 50 megawatt equivalent, really quite a small system in general terms. But ultimately that system is capable of capturing about 50 megawatt equivalent of CO_2. That gives you an idea of what that particular piece of infrastructure would look like. This is the first modular-designed system of its sort in the world to have a modular design system built for post-combustion, coal-fired power plants.

Why are we here today? It's really the current situation around carbon management — the opportunities in our energy economy and the opportunities related to enhanced oil recovery, stranded lignite and CO_2 capture technologies, and capability building around a multi-billion dollar industry.

What are our three strong points that we have in this province, and how can we exploit those in a very clean, climate change effective way? First of all, enhanced oil recovery. We're blessed with having reservoirs that need millions of tonnes of CO_2 to produce hundreds of millions of barrels of oil. There's been 80 million barrels of oil produced in Saskatchewan using CO_2, and it is the tip of the iceberg. And there's hundreds of millions of more barrels of oil that can only be produced if we have CO_2. Let's recognize that. They can only be produced if we utilize CO_2 to produce that oil.

Secondly, we have stranded lignite — stranded simply because it's worth nothing if we have to put it on a boxcar and ship it somewhere. Lignite is of such low value that it has to be used

mine to mouth. You have to do something with it right where it sits; otherwise it's a stranded carbon asset that will never be utilized or monetized for this province. We have an opportunity to take a stranded asset and produce an electron from that stranded asset and use that electron.

And I'll show you a profile of a company later in the presentation, Basin Electric in North Dakota, that has built a phenomenal infrastructure around stranded lignite and the use of CO_2.

And finally, of course, we have a capture technology after 15 years of investment by Saskatchewan. And that is of critical importance because that's the enabler. If we don't build the industry, we will not have the people that we need to enable those hundreds of millions of barrels of oil to be produced, and those electrons to be produced in a clean way from our stranded lignite assets.

Let's talk about history because it's about pedigree of time. The CO_2 is a new industry and there's not a lot of pedigree in it. We boast in Regina the most significant pedigree in the world: 1980s, recognition by the University of Regina that GHG was going to be a potential problem; 1985, recognition by our governments that we are going to need CO_2 to produce oil; 1996, Boundary Dam capture plant built; University of Regina, 1994, acquired Boundary Dam capture plant; International Test Centre for CO_2 capture completed 2005; 2002-2003, HTC and university enter a formal collaborative and a royalty agreement to commercialize University of Regina capture technologies; and from 2004-2010, HTC and the University of Regina globally brand the University of Regina International Test Centre technology as the world's best and come to be recognized as one of the four competing technologies in the world for this piece of business.

[14:15]

The partnership then goes beyond that because this is an industry of competitors and customers that are global giants. And you have to partner with global giants to be able to get market share and to be able to properly represent what our assets are here in Saskatchewan.

Doosan is one of the largest energy infrastructure providers in the world, out of Scotland — Glasgow, Scotland — and out of South Korea. We signed our agreement with Doosan for them to sub-license our technology and move it out around the world, through their 20 offices around the world, in September of '08. And this really was a winning partnership. Doosan Heavy and Doosan Babcock Energy also own about 14 per cent of our company today.

So we utilize this technology internationally and it's important to recognize that we've got traction internationally, that we've built technology. We've installed and designed technology whereby the world can look and view and see that we are one of the global competitors in this particular area.

Let's talk about scale. This shows size. Sometimes we don't understand when we're dealing with an industry what scale is, and this shows the scale of the infrastructure that would be typically put in in a CO_2 capture facility. You can see this is big infrastructure. and you can see where we're dealing in many cases with hundreds of millions of dollars, as opposed to tens of millions of dollars, to properly install CO_2 capture infrastructure on post-combustion plants, on refineries, and other energy infrastructure of that nature. This shows a much smaller plant that we've done a substantial amount of work on in Maryland, and just again giving you an idea of the scale of capture that we're involved in.

Design. This is an industry much like our project in Saskatchewan that's in design phase. Big, big plants are in design phase. So what we look for is international design experience. And our design experience comes with the designing of the CCS 1000 system. The Shell and StatoilHydro qualified us and one other in Mongstad, Norway and gave us several millions of dollars to design a system that's now being built in Mongstad, Norway. Our design contributed to that system. Ultimately the award was given to a Norwegian-based company, which shouldn't surprise us — Aker Kaverner — but nevertheless we are happy that they indeed paid us for some of our ideas to help build a better plant.

Kårstø, Norway is a government-owned gas utility called Gassnova. They paid us to do a preliminary study and ultimately paid about $5 million to do a final study on a 420-megawatt plant in Kårstø, Norway in preparation for that plant to be fired up to produce electricity. And they would be shipping CO_2 out to the North Sea for sequestration.

Masdar, United Arab Emirates where I was last week. We're in final design and selection, and in competition I might add, on a CO_2 capture facility in the United Arab Emirates.

And finally I'll spend a moment talking about one of our twin sisters here — or our step-brothers I guess we could call them — in North Dakota. And that is Dakota Gasification, Basin Electric. The facility in the foreground is what provides all of the CO_2 to Saskatchewan today, the 2.5 million tonnes a year that come from that gasification facility today. They travel up that 200-mile pipeline into Weyburn, Saskatchewan.

The facility in the background in blue is the Antelope Valley power station. That's a pulverized coal power station, two 450-megawatt stations, each a little bit bigger than our Shand station. We have been selected, University of Regina technology has been selected and ourselves as the single technology provider to capture a million tonnes of CO_2 a year and put additional CO_2 in that pipeline that goes from Dakota Gasification up to Saskatchewan oilfields.

So there's recognition by Basin Electric, who's an experienced power generator in lignite, that there's money in producing electrons from lignite, there's money in capturing CO_2, and there's certainty in selecting the best technology, the most capable technology, which is our own Saskatchewan-developed technology.

This is a vision of what you can do when you have a lignite-based business. Basin Electric has gone to 11 districts representing 125 electric co-ops right from the Gulf of Mexico to the Canadian border. Their core generation is based in the lignite, the stranded lignite fields of the Dakotas producing electrons and, of course, capturing CO_2 on many of their assets.

I want to speak for a minute about capacity to deliver and what we have to do in Saskatchewan to help energize Saskatchewan. We have to bring energy infrastructure partners into our province. We have to invite them in. And our partners at Doosan Heavy Industries and Doosan Construction are indeed, not to say it, the world's most recognized energy infrastructure provider, and of course we can see here by Boston Consulting, really well-recognized as an up-and-coming global powerhouse in the energy infrastructure moving forward.

This shows their offices; this shows our office. And ultimately the job now is to take Saskatchewan technology and move it across to the 20 offices that they have worldwide. So they're selling CO_2 technologies, built here in Saskatchewan, at all of their global offices. And that's really what we're doing today with Doosan's worldwide operations.

This shows their influence in North America. These are Doosan slides. This is what Doosan shows people in the world about Saskatchewan and the fact that they're utilizing our technology here, built in Regina. It is one of the largest, it is the largest energy infrastructure manufacturing plant in the world. They roll nuclear plants out of there under licence from Westinghouse. They rolled the largest tower manufacturing plant in the world there, move them on to ocean barges, and it's really quite a sight to see as they supply a lot of the China and India build out from that situation.

Back here in Regina, it's about creating capacity. We talked about that. And this is a case of Doosan having 18 engineers for up to six months having that technology transferred, taking these learnings so they themselves can move them across to location after location around the world and be effective with this technology.

I'm going to talk about a Cansolv recovery in my last three minutes here. The fact is that this is a Department of Energy number. There's 43 billion barrels of oil in the United States that need CO_2 to be produced. The provable reserves in the United States are only 22 billion barrels. You can double US [United States] provable on-shore reserves if you have carbon dioxide to put into that reservoir and produce oil.

We can produce hundreds of millions of barrels of oil in Saskatchewan if we have a source for CO_2. We have to match emitters with the EOR [enhanced oil recovery] opportunities. This is what we have to do.

This shows the infrastructure in Beulah, North Dakota, moving a pipeline up to Weyburn where those two and a half million tonnes of CO_2 are today moved through the system. Seems a little unusual that we'd have to be importing our CO_2 from the United States in order to produce oil in Canada. It would make a lot of sense if we can take the stranded lignite assets, capture the CO_2, and then ultimately use it in our oil fields.

What does it do? When you put a ton of CO_2 in the ground, it improves the viscosity of the oil and it swells the oil molecule and it allows you to produce oil that you normally would not be producing.

What are the other countries of the world doing? They're creating national champions. Norway has got a national champion called Aker Kaverner. Japan supports MHI [Mitsubishi Heavy Industries] at every step of the way to be their national champion in CO_2. France supports Alstrom to the point where they bailed them out many years ago in terms of some financial assistance, and also is a big supporter. The United States supports Fluor and a lot of its projects throughout the United States. And Australia supports its technologies on a global basis.

The second last slide here. And to bring perspective to all of this is we have a project today in Boundary dam that is going to take stranded lignite that is going to produce an electron for us cost effectively here in Saskatchewan, and that is ultimately going to capture some of the CO_2 from it.

This is a SaskPower slide. SaskPower has shortlisted for this project three technologies: Cansolv, Fluor Canada, and Powerspan. And the technology developed here at the University of Regina and commercialized by ourselves and Doosan is not being considered today for the Boundary dam 3 project.

We need — my last slide here — we need to build capacity. We need to build capacity to be able to have a model much like we see here with Basin Electric and Dakota Gasification whereby they're using the lignite, they're producing electrons, they're capturing CO_2. And the only thing they're missing, they had to come to Saskatchewan for. They needed oil fields to put the CO_2, and they needed our technology to be able to capture the CO_2.

It would seem that we've got all three of these lined up. We've got the lignite. We have the enhanced oil recovery fields. We have capacity. We have to build on that capacity and support our technologies. And I can say in closing that this technology, our technology, was selected in Basin over Powerspan's, over Fluor's, and over MHI's. We are the single technology provider on that particular project, and that was announced on December the 18th.

Thank you very much, ladies and gentlemen.

The Chair: — Well thank you very much for your presentation. We do have several questions. Ms. Morin.

Ms. Morin: — Thank you, Mr. Chair. Thank you for your presentation, Mr. Kambeitz. It was very interesting again.

I'm wondering if you could just elaborate on, for instance, the — what is it? — the third last slide with respect to the technologies that have been shortlisted. Fluor, you're saying, is an American company. And I wonder if you can just tell us where Cansolv and Powerspan . . . are those American companies as well?

Mr. Kambeitz: — Powerspan is an American company. It's a DOE [Department of Energy] licensee, and hence the DOE tries to advocate the use of Powerspan technology in its funded projects. In this case they were the proponent to defeat in the Basin project, and we're pleased that our technology did defeat them.

The Cansolv group is owned by Shell. Shell in the Netherlands

owns Cansolv. Cansolv originally originated out of Montreal and has been bought by Shell about 18 months ago.

Ms. Morin: — Thank you. So I'm just wondering, there was a news release by the Government of Saskatchewan saying that Energy and Resources minister Bill Boyd would be heading to China and Japan to tell Saskatchewan's dynamic story on oil and gas resources and carbon capture storage to potential investors.

Now one of the paragraphs in this news release talks about the fact that the Saskatchewan delegation will also promote the province's and SaskPower's leading-edge work on carbon capture and storage and related technologies. So I'm wondering if that would include the technologies that are being promoted and researched and done here in Saskatchewan, and obviously whether that would include the technologies that you're presenting us today.

Mr. Kambeitz: — Well I really am not aware of that. I read the press release that they were going to China, as we all have, and that was our first awareness of the fact that there was a trade delegation of sorts or investment delegation going to China. And I've only recently read subsequent to that that SaskPower also accompanied them. And of course I'm not sure, I didn't realize that SaskPower was doing business internationally. And I'm not sure really what the content of the entire delegation is over to China.

Ms. Morin: — Okay. So I guess to ask the question again, so there's no one from HTC or the International Trade Centre or PTRC [Petroleum Technology Research Centre] that's involved in this delegation or has been consulted with respect to this trade delegation?

Mr. Kambeitz: — I can't speak for the Petroleum Technology Research Centre. I don't know if they've been consulted or not. Certainly HTC and Doosan and the University industry liaison office has not been consulted on that. I could speak for that, but we're not aware of what's happening in China.

Ms. Morin: — And I guess then, just on another tack here, it's my understanding that there was recently, you know, been some money that's been allocated to the province for carbon capture and storage research. I'm not sure yet whether any of that money has been allocated or not, so I'm not sure if I'm even allowed to ask you this question, but can you tell us whether any of that money has been allocated to HTC research or not?

Mr. Kambeitz: — As far as I know, the $240 million was allocated approximately about a year ago. And that's being controlled by SaskPower, and they publicly stated that'll be allocated towards the Boundary dam 3 project, the 240 million.

As far as us receiving anything, we're a contributor to the University of Regina financially. I think maybe you'll find last year, I think we were perhaps one of the largest contributors to the International Test Centre financially. And we sponsor research Chairs. We continually sponsor research to keep building what we're now calling generation 5 technology to keep moving that along. And so that's really . . . We're not recipients of funding in that regard.

Ms. Morin: — Thank you for clarifying that. So with respect to the promotion of this technology throughout the world, because clearly there are examples now of various countries throughout the world that are very highly interested in this technology that's being produced here, this is obviously something that you see as being something very viable for Saskatchewan in terms of the energy mix that we're now looking for through these hearings, for instance. Could you maybe just elaborate a little bit on that?

[14:30]

Mr. Kambeitz: — I can. You know if we're going to produce hundreds of millions of barrels of oil, that's a very easy thing to say. Now let's look at the . . . In one case, we're looking for capital. Our Minister Boyd is over looking for capital and other people to invest to help us do that. One of the resources we need.

But the capacity building is essential. This is capacity that we have to build here. We have to understand the reservoirs, what CO_2 does, how to manage it, how to monetize carbon credits. This is a new industry that we're building around CO_2. If we're going to pump hundreds of millions of barrels of oil out of the Midale field and gather royalties on it, we have to have the capacity to do that.

That's why the International Test Centre was set up, and that's why we're commercializing the technology. We're building capacity here. And our first place to utilize that, the first recipient, should be the original investors in this, which is the people of Saskatchewan who support the International Test Centre. We like the way that sounded. It's a good message, if we can build capacity. To capture capacity as well is important.

Engineering, we have to build engineering capacity here. And we have to do it in Regina. We have to do it in the Weyburns of the world. And that's really what we're hoping to build the capacity of an industry here.

I cite the one article . . . Very recently, I was in Abu Dhabi last week at the World Future Energy Conference presenting. And a fellow from Denmark stood up and said that 28 per cent of every job in Denmark is directly related to the wind industry. They just embraced it. They had some natural reasons that it made sense. They embraced it. And this is what it's done now. And we think about building an industry here in Saskatchewan, and I think we're capable of doing that. And Doosan, Doosan is the largest energy infrastructure builder in the world. They think that too. They came here and they partnered with us. So I think that's an important recognition I think, you know.

Ms. Morin: — And my final question, because I know there's many others that have questions as well, you mentioned that you are now 90 per cent shareholders of CCM. I'm wondering if you could just expand on that a bit in terms of how that is also integrated into the business.

Mr. Kambeitz: — It is. It's the last part of the value chain. We know there's very complex issues going around carbon trading, and the fact is there's more questions than answers. And there's going to be regional and sectoral markets develop — Alberta, Saskatchewan may have one. California has one. Ontario's

developing one. And these will develop. And while they develop and emerge, you need to have organizations that inventory them and arbitrage them out — sell them, inventory them, and trade them.

CCM was developed by Front Street Capital, one of the largest investment funds in Toronto. And they're still our partners. And we've bought that CCM off of them believing that at every CCS project, every carbon capture storage project is going to produce millions of tonnes of carbon credits. Now who's going manage those? Who's going to . . . Whether we trade them, whether we sell them, however the final regulation comes forward, somebody's got to be there to arbitrage those carbon credits. And we've acquired CCM, really wanted to complete the value chain.

And it's headquartered here in Regina. We have a trading desk in Toronto. And we're going to continue to hire people. And we're right now negotiating to sponsor a carbon-financed Chair at the Faculty of Business Administration so we understand the new carbon economy. How do you finance it? How does that work in business, not only from the engineering perspective? So this is our view to the whole carbon value chain.

Ms. Morin: — Thank you very much for responding to my questions.

The Chair: — Mr. McCall.

Mr. McCall: — Thank you, Mr. Chair. And thank you, Mr. Kambeitz, for that very interesting presentation.

I was wondering if you could clarify for me. Certainly Premier Wall, Minister Boyd like to talk about Saskatchewan being a global leader on the carbon capture and storage front. And certainly that's in keeping with the things that the previous government had to say also in terms of the support that was forthcoming for the things like the International Test Centre and the PTRC, and by extension HTC.

I guess when Bill Boyd and Brad Wall talk about Saskatchewan being a global leader in the carbon capture and storage file, is there some other group of companies that's active on this file that I'm not aware of? Is there a group outside of the International Test Centre, HTC and the Petroleum Technology Resource Centre that somehow has escaped our notice?

Mr. Kambeitz: — If it's a question about global competitors, positioning, those assets do make us unique in Saskatchewan globally. There are industrial companies that are exceptional competitors, and MHI is one of them. When we turn the corner in the United Arab Emirates, our competitor is there and it's MHI. And we're nose to nose, and we were nose to nose with them with Basin Electric in North Dakota. So ultimately those competitive notions are going on.

But while our respective governments are deciding whether climate change legislation — what it's going to look like, how it's going to look — and we know that it's out there and it could be many years till it's solved, the unique advantage that we have is, we can use the CO_2 to produce oil. That does make our position unique. We can be engaged in the new carbon economy without having to have legislation. And the things that we're waiting for post-Copenhagen or post-Kyoto, pre this . . . I mean, we're all waiting for this legislation to emerge. But in the meantime, we have an industry we can build here. And so that is unique, and we have to support that with capacity. We have to build private sector capacity to be able to do that here.

And that's really the message that I think is equally important to that barrel of oil in Weyburn or that electron coming from Boundary dam, equally important to make this work.

Mr. McCall: — I guess, to perhaps state it a different way, and I'm not trying to be obtuse about this, but in terms of the assertion that Saskatchewan's a global leader on the carbon capture and storage file, would it be a fair statement to say that the International Test Centre, the PTRC [Petroleum Technology Resource Centre] and HTC have a tremendous amount to do with that position currently of global leadership?

Mr. Kambeitz: — I think so. Yes. And it's nice to take credit when it's offered. But yes, absolutely. Corporately we're pioneers. We've been in for ten years. Their pedigree speaks for itself. The Weyburn field is cited in every single, every single organization in the world understands the Weyburn field and the uniqueness of that. Yes.

Mr. McCall: — And also when you have things like Dr. Wilson being part of the team that won the Nobel Prize and other different accolades.

How is it then that we're not taking better advantage of this tremendous competitive advantage here in Saskatchewan through the work of SaskPower and through the resources that should be flowing from the federal and provincial governments?

Mr. Kambeitz: — I don't know the reason. My task in industry is to try to understand and have SaskPower embrace this technology or, if we could back up one stage, at least qualify it for a short list so they would understand the technology. That's a very good start here to be able to pick two or three people, give several millions of dollars to each one, to be able to present your best case. That's what happened here. These three technologies were given several millions of dollars each to present a FEED [front-end engineering and design] study, their best case. We certainly would like an opportunity to at least put it on that, on that playing field, that level playing field at the very least.

Mr. McCall: — And perhaps there are considerations, business considerations, around this question that you need to take into account. But in this last round of invitation to participate in the decision that's to be made shortly by SaskPower, was HTC invited or discouraged from participating in that process?

Mr. Kambeitz: — We were initially invited. In the request for proposal was initially put out, we were invited to initially do that and were in the process of . . . We were indeed submitting, along with our partners, Doosan, we were submitting the necessary requirements for the request for proposal and then in the course of that, prior to that request for proposal expiring, prior to the due date being up, we were discouraged from participating.

Mr. McCall: — I find that sort of staggering and hard to understand, but I guess this'll provide an avenue for further questioning. But for this round of my questioning, I thank you, Mr. Kambeitz, and Mr. Chair.

The Chair: — Mr. D'Autremont.

Mr. D'Autremont: — Okay. Thank you very much for your excellent presentation. I have two questions, and the first one deals with the viability of CO_2 sequestration. We had a group in earlier that, as one of their slides showed that the formations will leak, the CO_2 will, while you pump it into the ground, will all escape again, and therefore is of no value. What's your response to that?

Mr. Kambeitz: — Thank you for that. And of course it's the controversial question around the world today. As it relates to Saskatchewan, we know full well that we can utilize our CO_2 safely within the oil and gas reservoirs that exist here. We're lucky. Other jurisdictions aren't, where they have to answer that very question, can they properly sequester it?

Global science on it today . . . My view is that it's going to be deemed to be absolutely safe. In the next several years, it's going to be proven to be so, particularly when you look at abandoned natural gas wells that have held gas, sulphuric, with all sorts of nasty gases, in those reservoirs for hundreds of thousands of years. Those make exceptional places to store CO_2, which is really quite a benign gas compared to what you pull out of a natural gas reservoir.

But the jury's out, sir. I can say that. The global jury's out and it's trying to find out and unequivocally find out how safe that storage is. I don't think that's a factor here in Saskatchewan. We've proven it for eight years, where it stays in the reservoirs and what it can do for us.

Mr. D'Autremont: — Thank you. I'd like to go back to the line of questioning that Mr. McCall was asking about, your presentation to SaskPower. You say you were discouraged from doing a presentation even though you were in the process of preparing a presentation. Did you carry forward with that presentation or did you withdraw it or what happened with that?

Mr. Kambeitz: — We withdrew the day before the final RFP closed. It was requested and we were discouraged to continue with this application some 25 days before the RFP closed. And in that period of time we were trying to understand why we would not have been qualified to make the short list, which is what we were told, that we would not make the short list of SaskPower. And yet we had not submitted our final technology presentation. And yet we were advised that we had not made the short list and it'd be better for us to withdraw.

Mr. D'Autremont: — Why would you not continue with the presentation and force SaskPower to make a judgment?

Mr. Kambeitz: — Valid point. Our technology partners and ourselves just felt that it was better to follow the advice and the guidance — strong guidance — that was given from SaskPower on this. And the choice was made to withdraw, believing that there perhaps was another strategy that would allow this technology to be considered. Obviously that happened a year ago and there isn't another strategy.

And our concerns over the last short while are that the Boundary dam 3 project is going to go ahead and they will have a technology selection of one of those three technologies that have been paid to fundamentally present this design study. And that may indeed prevent us from entering this, entering that competition. This is why over the last 60 or 90 days we've been pushing this quite aggressively.

And we've sat back since January 23rd of 2009, quite bewildered by this whole event.

The Chair: — Mr. Belanger.

Mr. Belanger: — Yes. Thank you so much for your presentation. I apologize. I was being interviewed by the folks out here, but I missed part of your presentation. But nonetheless I'm quite impressed with your energy and certainly your salesmanship of the whole project.

But just for a quick reference, how deep are some of your test holes, so to speak, to sequester your carbon? Is there a minimum? Is there a maximum depth?

Mr. Kambeitz: — No, and in fact the new centre that was set up recently by our provincial government and Shell is really addressing that area of geological sequestration head-on. And the skill that's going to come out of that group . . . And I think I support that investment that your government has made, along with Shell, to find, to really get to the bottom of that question of pure sequestration and what's going to happen with the CO_2. So at this point it'd be premature for me to answer that.

We focus on . . . We have six people in our enhanced oil recovery, reservoir engineers in our enhanced oil recovery division. We focus on what CO_2 does in that oil reservoir in terms of producing oil.

Mr. Belanger: — And not to be . . . You probably have this question thrown to you a number of times. And please understand, we're just asking this from a devil's advocate perspective, not from . . . you know, also to teach me as well. But some would say that the sequestration process may be damaging to underground aquifers or even to low or shallow wells. How would you answer that challenge?

[14:45]

Mr. Kambeitz: — My first answer would be that all drillings, any time you're drilling through strata upon strata upon strata, there's risk.

The protocols that the oil and gas industry uses, in my view, are so thorough. Our province and Alberta have . . . or they're as good as any in the world. They're so thorough about those protocols that all of that is taken into consideration. Legal liability on gases within the reservoir, that's all covered under existing oil and gas legislation. I think we have a legal infrastructure here in Saskatchewan ready to go.

Now if we just simply sequester that CO_2, we'd have to have issues about who owns the CO_2 and how would you address

liability. But the first round, others can maybe show us the way in that jurisdiction because we can spend many years just producing oil and gas . . . or oil, I should say, with our CO_2.

Mr. Belanger: — And when I was in grade 11, I was the number one guy that brought down the class average. I was the guy that done that, so please bear with my limited knowledge.

When you look at the notion of bringing in carbon, sequestering it underground, and storing it, sooner or later you're going to reach the limit. How do you determine that limit, and how soon do you think that Saskatchewan will reach it? Because I know other groups such as the — what committee was that? — dealing with farmland, the soil conservation group. They were doing something along the lines of a carbon bank as well. So sooner or later there is a limit as to how much more you can store.

Mr. Kambeitz: — I think the answer, the view to that is that we will have more than enough capacity to store the CO_2 that we would produce from our lignite. I think our lignite can produce a cost-effective electron. I think SaskPower and the Government of Saskatchewan are in the right direction there. I think that'll happen. And I think we will have enough geological storage after enhanced oil recovery to store any CO_2 that we don't need to produce oil. So in that regard the . . . And around the world, generally speaking, there's an exceptional capacity to store CO_2 below ground — many gigatonnes of capacity to store CO_2 below ground.

At the recent World Future Energy conference, it was quite interesting. Over and over again — these are energy ministers from Europe; Premier Stelmach was there, others — they spoke about, in one breath, wind, solar, biomass, and CCS. And they spoke about CCS just like it was wind, just like it was solar, and just like it was biomass. And the fact is, on my *News Express* that I reported back from and send around, I really believe that Alberta and Saskatchewan, we're headed in the right direction, embracing the two technologies that really the World Future Energy Summit was embracing, which was wind and CCS.

So the philosophy is right in terms of where we're trying to go here. I certainly have to be a proponent of that philosophy.

Mr. Belanger: — My final question is in the notion of, again, the underground water supply. You mention it's very thorough. You've got these protocols and the process has been gone through over and over again. You know, I just mention that because we've had documentation sent to us saying that this is a growing concern. And anytime somebody says absolutely everything's safe; you have nothing to worry about, that's when I tend to worry.

But I think there is a PR [public relations] issue that needs to be addressed. Because if the technology's there, then people ought to be assured that it's not going to affect that particular aspect of what you're trying to do.

Mr. Kambeitz: — I think you're right. And the comparison that a very well-known Saskatchewan pioneer in energy has said, that perhaps if we'd addressed waste management earlier in the nuclear file, where would the nuclear industry be? It has been one of the impediments of the nuclear industry moving forward.

And do we have to address waste management in the CCS file early? And the answer is yes. And as a company, we are supporters of IPAC-CO2 [International Performance Assessment Centre for Geologic Storage of CO_2], which was set up just to deal with that storage issue, and with Shell's funding and government's funding and some industry funding. So we like where that's heading and I agree with you, sir.

Mr. Belanger: — The other notion you made when you spoke about . . . It seems odd because there's nobody else's hand going up so I'll have the floor for a bit longer. It seems odd that . . . And I used to think this as well until, you know, we started seeing some of the good work. But why would you bring a company, bring in all that carbon from the States to use in the oil fields to solve their problem? And you're actually paying for that. Is that correct? You're paying for that carbon which is largely a waste product from the States.

Mr. Kambeitz: — Yes, the oil producers are, the two large oil producers and half a dozen smaller ones that are lining up and wanting to have more CO_2. But those two large oil producers, both Apache and EnCana, are paying for that. And it's producing about approximately seven to nine barrels of oil, new oil, for every tonne of CO_2 put in the ground. That's an approximate. Most of the reservoirs around the world aren't quite that prolific. They'll produce four to six, four to seven barrels quite often but that seems to be very prolific. So it's producing that much new oil for every new tonne of CO_2 put in the ground.

Mr. Belanger: — And your theory that as you inject the carbon in, you swell the molecule of the oil and of course it rises. Now given that fact, are you getting any credit for the carbon you're taking out of the States now? Is it a growing bank? Are you swelling that molecule of carbon savings, I guess, is my question to you.

Mr. Kambeitz: — We're going to leave the EnCanas of the world and the Canadian and US government and other people work on that. There's going to be 20 or 25 million tonnes of carbon, CO_2, in the ground in Saskatchewan that's produced oil. It'll be interesting to see what the final outcome's going to be and how those carbon credits are going to be managed. And I have no view on that. I think that'll be between the corporates and the governments that ultimately negotiate the deals.

Mr. Belanger: — So that would suggest that one of the weaknesses in the environmental file . . . You talk about the notion of energy is that you're importing carbon to sequester oil so the oil companies get it and get more oil, which meets their benefit, but on the Saskatchewan position on the environmental front we still are importing carbon which is largely now being viewed as something that we have to tax on the environmental front. So we haven't done that part to see where the win-win scenario is. So that, I would suggest, is perhaps another daunting task of salesmanship that one has to undertake.

Mr. Kambeitz: — Well, you know, the hope is that we would produce . . . The hope we would produce carbon dioxide is an unusual thing to say, but the hope is we would produce our own carbon dioxide here, produce an electron from our stranded

lignite, take our carbon dioxide, produce oil, generate royalties for this province, and build capacity. And that's really what our view is here in terms of working with government, academia, and industry. And that's really what's required for this industry to emerge and evolve.

The Chair: — Mr. McCall.

Mr. McCall: — Mr. Chair, it appears I've got a bit more time to add another couple questions onto the record. So if you wouldn't mind, Mr. Kambeitz, to return to the question of the request being made of HTC to not participate in the RFP process with SaskPower, how was that communicated?

Mr. Kambeitz: — That came from SaskPower, and it was communicated to us via our technology partners. And again, we're perplexed that we would not be considered for the short list, considering that we had not yet submitted our final technology submission at the time.

Mr. McCall: — So was it the CEO of SaskPower or the Minister of SaskPower? And if you're not able to say, I'm . . .

Mr. Kambeitz: — I'm not able to say that. Thank you.

Mr. McCall: — Was there a rationale presented at that time?

Mr. Kambeitz: — No. The rationale was that we would not be selected for the short list. That was the rationale.

Mr. McCall: — Outside of that, there wasn't any grounds given for why the . . .

Mr. Kambeitz: — No.

Mr. McCall: — You wouldn't be making the shortlist. It wasn't a technology problem. It wasn't . . . nothing. Just, you're not coming so don't bother.

Mr. Kambeitz: — Correct.

Mr. McCall: — Again, I find that fairly hard to understand and we'll pursue it as we're able in the days ahead.

Mr. Kambeitz: — As I have over the last year.

Mr. McCall: — I can well imagine. Anyway with that, Mr. Chair, I'd certainly thank you again, Mr. Kambeitz, for appearing before the committee today and for the good work done by HTC. Cheers. Mr. Chair.

The Chair: — And with that we are near the top of the hour. So thank you very much for your presentation and taking the questions that you did today. The committee will now recess for five minutes.

Mr. Kambeitz: — Thank you, Mr. Chairman.

[The committee recessed for a period of time.]

[15:00]

The Chair: — Before we hear from our next presenter, I will advise the witness of the process of presentations. We are asking all witnesses to introduce themselves and anyone else that is presenting with them. Please state your name and, if applicable, the organization which you represent. If you have a written submission, please advise the committee and it will be tabled and published to our website.

The committee is asking all submissions and presentations to be in answer to the following question. That question is: how should the government best meet its growing energy needs for the province in a manner that is safe, reliable, and environmentally sustainable, while meeting any current and expected federal environmental standards and regulations and maintaining a focus on affordability for Saskatchewan residents today and into the future?

Each presentation should be limited to 15 minutes with question-and-answer time set to follow. I will be directing questioning and recognizing each member that is to speak. Members are not permitted to engage witnesses in any debate and witnesses are not permitted to ask questions of committee members. I would also like to remind witnesses any written submissions presented to the committee will become public documents and will be posted to the website.

With that, I would ask our presenter to introduce himself and please go ahead with your presentation.

Presenter: Council of Canadians, Regina Chapter

Mr. Elliott: — Thank you, Mr. Chairman. My name is Jim Elliott. I am the chairperson of the Regina chapter of the Council of Canadians. The Regina chapter has over 80 members and Regina is one of 66 across Canada.

My presentation is going to be in three sections. The first one will be a review and assessment of some of the assumptions behind the question. The second part is a series of responses to some of them, you know, supplementary questions but also some select paths. And then lastly I'll finish off with a list of recommendations that I hope will benefit the committee in its deliberations.

One of the first assumptions I think we need to deal with is the idea that growth demands more energy. There's been a long-standing thought and assumption that activity or growth will automatically demand more energy. And I'd tell you to look back into the '70s and in fact that wasn't the case, that in fact more energy was not demanded with the increased activity of society, you know, subsequent to that oil embargo.

If you're to have a higher percentage of energy-intensive activities versus more overall use of energy, intensive industries are the ones that should be of concern and not simply just figuring out how to provide more energy. If one is intent to reduce the amount of greenhouse gases being produced, and again one has to look at all sectors of the economy and not just electrical production, although coal-based electricity is the dirtiest.

The second assumption I've put before you is that growth will continue at a constant rate. I think in the last year it's been made perfectly clear that we can't generally predict more than a

few years ahead. We for instance have had a significant drop in the activities, for instance, in the potash production. And no one conceivably would want to respond to the potential, but at what cost are we going to burden this and future generations with a system that is overbuilt or overcapable?

Or do we begin to set some other options to respond to the potential demand and therefore put the entire system in jeopardy by bankrupting our current taxpayers, as we are currently seeing with pension plans with SGEU [Saskatchewan Government and General Employees' Union], where 50 per cent of their income is going towards covering the cost of pensions in the system?

The third assumption that I put forward to you today is the fact that fossil fuel supplies will not go on forever. And peak oil is dictating that we need to change, and not just modifications in our plans. Those who've been monitoring the fossil fuel reserves have determined that there will be a peak oil, and whether it's today or simply years from now, we should be cognizant clearly of the implications of such a future.

The acknowledgment of this likelihood should be dictating of what is called a peak oil depletion protocol or a planned gradual reduction in the demand for fossil fuels over the next few decades, not a continued increase in the use of these same fuels. Continued increase would only make these reserves drop even faster, and thus putting functionally everything we currently have in more jeopardy of collapsing or becoming redundant or obsolete. If you don't want this to be the result of our actions, then we should begin to respond with a readiness plan like a protocol.

The fourth point I'm going to put forward today is that in fact national and international energy policy will in some cases dictate changes in plans. The Conference Board of Canada says that energy is a major driver of the Canadian economy and society. And this may be in strict financial terms true, but a number of authors have clearly demonstrated that, although very lucrative, the oil and gas industry is very costly on the environmental and social sides. It also doesn't allow us to make our commitments to the Kyoto Protocol or on climate change, let alone achieving reductions as needed to address climate change.

Secondly, according to Nicholas Stern, governments must act soon to cut industrial emissions if the world is going to avoid drastic economic environmental consequences from global warming. And this could be in the range of 5 to 20 per cent of our world domestic product or total annual economic input or output.

The fifth point — I'll refer you to some of the attached material that I've provided to you — is called the Jevons paradox. And essentially what he found in the early 1900s was that if one was to be more efficient in the use of the fuel, and in his case it was coal, the amount of use of coal or the amount used by industry should in fact go down. What he didn't find was in fact it didn't go down. It in fact went up. Even though perhaps they were more efficiently used, in fact the use of coal in fact increased, not necessarily decreased as one would assume.

Now I'm going into part 2 which is talking about, I guess, responses to various paradigms that are out there. And the first one is the UDP report. It is our feeling that it's right and appropriate that we shouldn't be going down the nuclear energy path. We feel that it's economically, socially, and ecologically the most expensive and the least responsive to dealing with the issues around energy supply. It's very capital intensive. And by going in this direction, one doesn't have other options that are easier or less expensive to proceed with because we've used up all of our cash in the capital-intensive system.

It also perpetuates the whole aspect of megaprojects or centralized systems that, when they stop or when they have problems, leaves the rest of the system scrambling to replace or respond to the problems. Now this also requires a lot of backup capacity as well, which doesn't necessarily solve the problem in the overall sense.

Now socially I think we're also looking at . . . We're looking at a very capital-intensive system that puts less people to work. And in fact, as I've explained in some of this, that in fact has some additional social impacts, and we can only look at what has happened with the tar sands, with the devastation that some communities across Canada have had with all of their employable individuals and families moving out of their towns. And so in fact all you're doing is displacing one problem with another problem. And I think similarly this could happen if we were to go again to this, you know, megaproject approach to the issue.

The other aspect of all of this which I think is equally important is the ecological impact of nuclear energy, being that it introduces a toxic radioactive material into the biosphere that does not benefit life on this planet. The proliferation, redistribution of these materials actually make the problem worse, not better. And again as one of the radionuclides in nuclear energy production of tritium, there are clearly no barriers to it being, infiltrating into the entire system.

Now I've already given you a question around renewable energy as I think renewable energy is clearly the way we should be going. And again I'll briefly put a few points forward here. One, it's more labour intensive. Clearly the labour is also more distributed across the province and therefore less disruptive to human relationships. The trades orientation is to much of the conventional trades and therefore would not necessarily demand a lot of specialized training. And if managed correctly, renewable energy is virtually inexhaustible.

Now again all options should be explored, and that's options within the renewable energy field. And in fact we should be even looking at the potential is that some other countries are doing of going to 100 per cent renewable energy. Now this will require a transitional process and obviously those will have to be worked out.

The last aspect, and I don't think necessarily this is well within SaskPower's purview, but is the aspect of voluntary simplicity. And this is the idea that in fact we shouldn't be going down this more is better or consumptive societal path. And the example that I've given you is the aspect of the remote on the television. That may be a convenient process but what it demands is phantom power. And what I've seen in reports done in the US that, in fact, if those phantom powers were eliminated, we could

essentially eliminate or shut down a number of power plants in the US because we wouldn't need them any more. You know, they're simply there to provide that phantom power.

The other aspect of voluntary simplicity which again gets into everything, because of course energy is everywhere, is the idea of avoidance of waste. Energy conservation obviously is an option but as I've outlined before, it has some pitfalls.

The other area which I think bears some time is the idea around loss management. We're having to deal with the second law of thermodynamics, which basically is every time you transfer energy, you lose some. I think right now we don't have a lot of localized energy, which is the direction I think we should be going, but I think in the interim, I think the idea of trying to supplement the traditional transfer with additions of renewable energy at strategic points would be perhaps a way to go.

[15:15]

And again you've looked at demand-side management. I suspect SaskPower has done that a fair amount over the last number of years but I want to bring forward an example which some of you may be aware of. There is a house in this city that, in fact, doesn't need a furnace and I think there's probably houses across this province that don't need furnaces. If we were to go, in fact, in that general direction, we could essentially eliminate the need to have all of the natural gas pipelines all over the province. I think we could equally do this in a similar manner if the effort was there and the plan was there to go with a reduction of electrical demand in the same way.

Now the last point — and I'll briefly go through these — are the recommendations which are where we think you should be recommending towards the government as well as to SaskPower, SaskEnergy. I think we should be implementing a demand-side management system such that in fact you can control the use of power and when it is used. And that's the idea of around peak hours so that in fact you can be charging people more in peak hours and less in the other times of the day. That also gets into an aspect of smart grid processes as well, which means you can plan uses in off-peak hours.

I think we also should be going into promoting energy efficiency, you know, therefore reducing the demand for a grid-supplied energy. And again I think if we can in fact get to a point where we don't need grid-supplied energy, so much the better. I suspect that farmer down by Coronach in the last few days would have preferred to be off grid if in fact he, you know, had that option provided to him in the past.

The next one is a slightly different approach, and I think whether this becomes part of SaskPower or SaskEnergy's mandate or not or whether it becomes a solely owned Crown corporation, I think we should have a Crown corporation that its sole mandate is to in fact, you know, reduce peak use, reduce consumption, lower greenhouse gases, lower the electrical and energy bills for customers, as well as looking at job creation. This would allow for a maximum impact and control over the direction of the use of energy in this province.

I think this would also give some assurances to our private corporations that want to get into energy production as well. It would also move towards local control and local employment, again something that is beneficial. And I think with some of the significant projects across this province, I think if we don't go in that direction I think we're going to be left behind.

I talked earlier about strategic creation of supplementary grid support systems. Essentially what that means is that at points along the grid system where we, you know, have over a period of kilometres lost energy due simply to the transfer process, I think we could easily be tying in renewable energy sources into the grid to in fact kind of top up the systems when the energy at the end of the cord is in fact the same amount of energy that went in at the front end. And again obviously I suspect SaskPower has been looking at reducing inefficient lines and those types of things as well.

The last bunch are looking at getting electrical consumers to in fact start to install small-scale combined heat and power generation plants all the way through this system, whether that's in apartments, homes, shopping centres, hospitals, office buildings, and factories. The more that is provided on site, the less demanded to the grid, and therefore the less demand for expanded production.

Another option to overcome inefficiencies in the grid would in fact be to look at district heating or district electrical production, you know, so that in fact some of the rural communities could be totally independent of any demand for that type of energy. I think this could spur on local employment and capacity building. There's also examples of where small-scale systems work much more effectively and more efficiently if providing energy to the end use than in fact the large-scale megaproject approach that we've typically gone to before.

I think we also have to look at implementing legislative controls, such as what's being done in Ontario with the idea of using feed-in tariffs and supports for local production. In the same way that that's spurring on activity in Ontario, I think we could easily do something similar here.

The next one is one that I think may be going against the grain a little bit, perhaps, of some of your earlier presenters, but that's the idea of actually eliminating support for the oil and gas industry or in fact making it a level playing field. For so long the renewable energies or other alternative energies have been limited in their capacity to access equivalence within the system. And I think therefore, I think we need to either get rid of the current subsidies for the oil and gas industry, or in fact . . . And again I would even go as far as to include the nuclear industry because they've been getting federal subsidies for years.

Or we need to at least put the equivalent money into the renewables because I suspect there's a pent-up demand in there. And that gets to the last point that I had, was I think there's clearly an interest in our consuming and business community to in fact do some of this stuff — just a matter of getting rid of the barriers that are there.

And the one that I did skip over, which I think I'll mention as well, is the aspect of looking at the support of Manitoba Hydro's efforts to get into more hydro production. I think it

clearly makes it a good case for us to be investing in Manitoba's hydro projects by pre-approved purchase essentially, or being willing to purchase electricity from them over the next little while. And again I think that aspect of the green power subsidies that are currently there, I think some of that money could in fact be used to cover off some of that investment in that hydro project.

I guess those are my comments at this point, and I guess the only thing I will add to you or to the record today is that in addition to the presentation which you've gotten, I also provided a number of reports that are for supplementary reading that some of this information is based on. And therefore I can't necessarily answer questions to those specifics, but as you are recording this, so am I, so if you do in fact ask questions in respect to some of those, I'd be happy to pass along the comments to the offices of those reports and have them respond to you.

So thank you.

The Chair: — Thank you for your presentation. We have a few members with questions. Mr. Weekes.

Mr. Weekes: — Thank you, Mr. Chair. Thank you, Mr. Elliott, for your presentation. I'd just like to challenge you on one area, page 2, on your growth assumptions. It's interesting to note, and I'll quote what you said: ". . . are we going to burden this and future generations with a system that is overbuilt and overcapable?"

As we have seen under 16 years of NDP [New Democratic Party] administration, the whole energy production capacity was underbuilt, and it turns out now that this is a burden to future generations. Our generation right now, because we're having to pick up infrastructure costs that have been delayed or never happened in the past years, and so certainly there's a cost to underdeveloping power generation capabilities in the province.

Your assumption that the growth rate of the province is going to be, I guess, minimal, I think any government worth its salt should have a policy of growing the economy to create wealth for its citizens so we can pay, you know, continue to pay for our health care system and social safety nets that we have in the province.

SaskPower estimated that, you know, there's going to be an 8 per cent increase in the energy needs for I believe there's 10 years that they estimated. So we've come to this point where we need to develop. We need to upgrade our infrastructure. And it's a multi-billion dollar cost to this generation that has to do this now.

The other thing I would like to challenge you on, your assertion concerning the significant drop in activities around potash production. Last year we saw a considerable reduction in sales of potash but I'd just like to . . . Potash, activities around potash has certainly not reduced in any way. BHP Billiton is developing a multi-billion dollar potash mine and many other existing mines are expanding their production capabilities. So certainly there's lots of activity around the potash industry, and Saskatchewan as a whole is leading the nation in growth, in job creation, and employment.

So this is the task that we're faced with as a government to now — and you bring into the mix of the whole issue around carbon footprint — so now we are faced with producing or developing electrical generation capacity in today's world. So it's gotten much more complicated than it was in the past when all the province basically needed to do was burn dirty coal. And that's the cheapest form of electrical generation but that's not going to be in it for the future because of the whole issue around greenhouse gases.

But I'd just like to, you know, raise those concerns because I just disagree totally with your assertions around growth and the rate of growth and economic activity in the province.

Mr. Elliott: — Okay. I guess as to your first comments around growth, I guess I'm of the mind that in fact we should be going to what is called a steady state economic model rather than necessarily a growth model, and so that the idea of long-term stability and long-term capacity is there and not necessarily simply using the growth as a way to replace or supplement, you know, costs that are now being felt.

As to your question around potash, I guess I was looking at that as not simply the actual, you know, production per se. But the idea that of, you know . . . And why or how do we predict what in fact will be happening five to ten years down the road.

And I've heard a number of people, both in this House as well as in other places across the province that said well, we didn't predict this; we didn't think that this would happen in fact. So that's the aspect of the question around the potash issue that I was bringing forward that in fact, if we're trying to be I guess prudent with our, you know, predictive models, we shouldn't necessarily be simply projecting a growth model on to the system, and therefore we must automatically provide a system that will accommodate that growth.

[15:30]

I guess that's where I think the aspect of small, diversified renewable energy systems would solve our current demand for energy, but it also wouldn't necessarily burden our future generations with a plant that in fact . . . And again, I just use this as an example is if we decided to build a large, you know, 6- or 800-megawatt plant and then, you know, and then in essence the economy dropped again, you know . . . I know that in cases in the US, you know, there's places now where they can't sell their energy which means that, you know, we would still be paying for that power plant but yet in fact wouldn't be getting the revenue coming in from it.

I guess that's the two aspects of this that I think I needed to bring forward to you to, you know, to clarify kind of where my, or why my examples and why my comments were there.

The Chair: — Mr. Belanger.

Mr. Belanger: — Thank you very much, Jim, for your presentation and I would . . . I'm strongly encouraged by some of the positions and some of the things that you've articulated here in a sense of what needs to be done. Your message of

warning us of overbuilding a system, while anybody's confident and wants to grow a province, we have to be very, very careful as to how we project that growth because at one time — I think it was in the 1990s — I think it took us about 14 years to pay off a pulp mill in Meadow Lake.

So your message of you're going to build a big project, make sure you cost it out and make sure you have the population base to be able to sustain any kind of system that you're building for SaskPower because it could be a $15 billion investment or it could be a $15 billion environmental deficit — that's what you have to be very, very careful of.

So I think your advice is well made. It's well made. Because people ought to know what the challenges are. Now any time those guys talk about potash projection, it kind of sends a shiver down my spine so I'd just take it from you more so than them. When you look at this whole system of trying to look at alternative energies, we've got to be pretty darn careful and pretty darn intelligent as to what we do and where we invest our money in.

So one of the questions I had here and one of your points you raised, Jim, was to maintain all current Crown corporations while creating a new energy Crown corporation that has the mandate to look at peak use reduction, reduced consumption, lower greenhouse gas emissions, lower bills for customers. Do you see that particular Crown corporation as having overreaching powers of the SGIs, the SaskPowers, the SaskEnergys, and so on and so forth?

Mr. Elliott: — I wouldn't necessarily see that. I think what I was proposing is perhaps a strategy of dealing with the energy needs of the province and in fact if it can be built into the current structures of the Crowns, you know, I don't see that necessarily as being an inappropriate way to respond.

The only thing that that does do is that doesn't necessarily kind of pull the expertise together, because if you go with the direction that you were implying with essentially having this as cross-Crown authority, essentially then, you know, that brings essentially everything into one room more or less so that you in fact have all the Crowns together talking about things together where if it was simply just to be distributed out through the various other Crowns, I think that's where, you know, it may be tough to implement it. Because I know when we were having discussions around the climate change stakeholders advisory committees meetings, around kind of what should we do, type of thing, in response to the, you know, the plans of the provincial-federal government type of thing, we had individuals coming in from the Department of Finance and we were, you know, trying to understand where their knowledge or expertise was on the, in the field of climate change and how to respond to that.

I guess I was not heartened by their ability to understand at least what we were attempting to preside, which was a type of an overarching strategy. And so I guess that's where I was thinking perhaps of another Crown corporation that's mandate would be in fact to be, you know, directing this across the entire set of Crown corporations so that . . . But like I said, I'm not wedded to either option. I think the potential is there to do it. The only aspect of it, as I've alluded to in much of this, is the idea of being proactive and being, you know, reductive in its goal rather than necessarily being, you know, simply to change things or to, you know, to add another Crown corporation into the system.

Mr. Belanger: — Well I'm certainly heartened by the suggestion and the notion that we ought to have some overarching, whether it's a Crown corporation or some entity, that dictates and mandates this new Saskatchewan in terms of energy conservation and new ways of doing energy development ought to be implemented. And so I'm encouraged by what you have to say and I'm not going to challenge your message of concern. I think that's something that we all have to learn.

Two other quick questions. You mentioned losing 11 per cent in the grid system and there's brownouts and many times there are blackouts. You maintain that having local facilities generate power through biomass or cogen in a regional basis may be the solution to the brownouts or to the blackouts because we're all kind of in one system. The 11 per cent loss of the line that you mentioned, it must be an averaging of the entire system because I know the North is probably higher than it is, say, around Yorkton area. Is that correct?

Mr. Elliott: — I would have to defer to SaskPower to some extent on their knowledge on this. This is only a number that I had received from them a number of years back, so I'm not specific to the aspect of exactly how much there is in loss of transmission. I just know that, okay, you are going to lose some and this is the way to respond to that loss rather than necessarily pump more into the system, but to in fact use kind of a supplementary kind of, you know, like pumping station type of approach to transmission of the electricity along the way.

The Chair: — Mr. Bradshaw.

Mr. Bradshaw: — Thank you, Jim, and thank you for your presentation. I was just running through here a part of it and I will actually quote out of what you said here.

> Another option to overcome the inefficiencies of a provincial grid system would be the taking off grid of small towns and farmers by implementing local farm production or district energy systems. This would spur on local employment and capacity building. It could utilize smaller systems that require less capital and unfamiliar knowledge.

I don't quite know what that means.

> It could also allow for other sources of energy in electricity that currently is not being utilized. Examples of this include biowaste use and biogas production as local sources for local electrical production.

Now I happen to come from a small town called Carrot River up in northeastern Saskatchewan, which is a farming community. So I guess I find it hard to understand how we could operate our farm. Actually we're out of the wind. If you look at the wind map of Saskatchewan, we're out of the wind area and I don't know how we could store that energy even if we were in it. Because what happens come harvest time in our

area, you know, quite often our crop, we may end up taking it off tough or . . . [inaudible] . . . whatever. We have to have our grain driers going. We have to have bin fans going, and of course we have to use a large amount of energy.

How are you going to set up a plant that is going to be able to supply us, or how am I going to be able to set up a plant on the farm to be able to supply that energy that I need if we are not on the grid system?

Mr. Elliott: — I guess that there's a few ideas or examples that I've seen and I guess one of the most common one now is geothermal or underground storage as a way to both engender or get energy but also an aspect of taking heat away.

I know in fact some cases, and this is in respect to the restaurant in Craik, is that in the years that are the year or so prior to the actual construction of the restaurant where they in fact would be needing heat, they were actually able to supercharge the ground systems with heat during the summertime and therefore could pull that back out into this system in the fall and into the winter. In the cases of grain drying, I think that option may be there, although this winter it probably . . . or this summer it wasn't necessarily a strong year for being able to get a lot of heat during the summertime to be able to utilize that.

I think also by taking some of your system out of the demand for electricity, that in itself may be a general saving so that in fact the electricity that you do need could be supplied through a different systems. And I understand your aspect of not having the wind regime there to get into and to use of wind, but I guess I also look at biowaste or biofuel production. I'm not sure whether for instance there's sufficient livestock operations around there where, you know, that manure can be utilized in that way.

Like I said, you know, it's hard to come up with a specific example that would fit exactly what your demands are, but I think we need to take all of those potentials in there and mix them in and take advantage of whatever options we have. Even if it's a matter of dropping our need by 10 to 15 per cent, that's still 10 to 15 per cent that wouldn't necessarily have to be provided by the grid.

The Chair: — Mr. McCall.

Mr. McCall: — Okay. Just very quickly, Jim, the question I have to ask is this: in terms of other jurisdictions, and certainly aspects of your presentation has touched on the experience in other Canadian jurisdictions, is there one jurisdiction in particular where, with regards to regulatory regime and the way that they've structured their grids, is there one particular jurisdiction that you'd point to for Saskatchewan to emulate? And if you could, briefly explain why.

Mr. Elliott: — I guess in respect to, you know, the grid system, I'm not sure whether necessarily there's anyone out there that's doing in essence what some of the suggestions I'm proposing. The only other aspect of this that . . . I'll bring it back to Mr. Belanger's questions around the Crown corporations. I know the state of Vermont has an actual solar energy Crown corporation. So in fact they've got a Crown corporation that is, it's in the similar manner as to what we have with SaskEnergy, SaskPower, providing, you know, solar power systems for their residents.

[15:45]

As to the grid, I think there's obviously been a fair amount of work put into, you know, what are called the smart grids now where in fact you're looking at a much more intensive control over use of energy within that system and being much more able to monitor and respond to it.

So as I said, I don't have any specific examples, but I guess, you know, those directions would be the directions that I would, you know, suggest that you proceed with. There may be, you know, localized options within that that could be expanded upon to solve some or, you know, parts of what we're needing to do within this province.

Mr. McCall: — Thank you, Mr. Elliott.

The Chair: — Mr. Bradshaw had a follow-up question.

Mr. Bradshaw: — Actually I did. Basically it's going right back to my original. We're also too far north to get into the geothermal end of it, and I find it hard that in a small town such as ours, we could produce enough biowaste heat to use or biogas production. We just don't have, you know, we don't have the stuff there.

But that being said, going back to the beginning of actually of that paragraph and another, and I'm going to quote again, "Pay electricity consumers to install small scale combined heat and power and tri-generation plants in their apartments, condominiums, shopping and recreation centers, hospitals, office buildings and factories." This also may work well in larger communities, but in your smaller communities that's going to be a little bit tougher. But anyway at the beginning it says, "Pay electricity consumers." Who are you suggesting should pay the electricity consumers?

Mr. Elliott: — Part of it would be, as I alluded to before, the aspect of the peak hour increase in payment, so that in fact some of that could be utilized to help out in that area. I think the other aspect of this, which I think may be beyond the scope of the committee but I'll put the example out there, and that's the idea of increasing the royalty structure within the province to in fact generate sufficient funds to do as I've outlined, too.

The other aspect of it, which I think is an example of something that has been done before, and that's the aspect of a revolving fund where in fact it's simply a loaning process and that the individuals that borrow the money continue to pay it back through their utility bills. So that in fact it's not necessarily always gone, but in fact there's sufficient coming back that over time, and again I'm looking at a relatively short payback period on some of this stuff as being, you know, five to ten years type of thing. I think as long as we can engender enough revenue in that fund to allow us for that 5- to 10-year payback period, I think as I said it will in fact maintain itself.

As to your earlier comments around geothermal in Carrot River, I guess I'll refer you to another housing project that I'm aware of in Regina. And again I don't think it's necessarily restricted

to Regina. There is an apartment building being built in the downtown area around the General Hospital area that the heating system for that building has the capacity to take heat out of the sewer system that they currently have, when in fact what it amounts to is all of the energy that is being lost through the sewer system in fact can be captured and again can be brought back into the building itself.

So I think there's a lot of potential for like I said some of these somewhat innovative ideas to be marshalled and tried and tested. And again that's where I was looking at some of these, the grants or funds approach to things to, you know, the idea that we can in fact try some of these. And so that until it happens, until you actually can see it working, a lot of people, you know, have no concept.

Well for instance you can't have a house without a furnace, you know. I know that there was cases in the US where building inspectors demanded that you have a furnace in their house when they built it. And to accommodate them, all they did is bought a whole bunch of baseboard heaters, screwed them to the wall, allowed the wires to disappear into the wall, thinking they were actually connected to a system. And then once the inspection was granted, they basically took them out because they didn't need them. And I think that's where I think, you know, we need to be a little more encouraging of our individuals, of our communities and look at different systems for energy supply.

The Chair: — Mr. Belanger.

Mr. Belanger: —Yes. Just one quick question, Jim. You mentioned in your presentation here, install small-scale combined heat and water and tri-generation plants under apartments, condominiums, shopping, recreation centres, hospitals, office buildings, and factories. And I know that in Hay River and in Whitehorse and a few other of the Northwest Territories communities — I'm not sure that there's one more community — they have a central heating system for three or four buildings. And I'm not sure how they work. Like I was really interested, and in fact I might even travel to Hay River to go and see how they did theirs.

But what do you see when you talk about apartment buildings and condominiums and factories doing their own tri-generation heating system, like how would you see that?

Mr. Elliott: — I guess obviously some of this would have to built into the system when they were actually building it so that, you know, when they're actually designing the buildings and designing how things operate that those features can be built into it.

I think it becomes a little more problematic when you get into retrofitting. Old industries are retrofitting buildings or even supplementing heating systems. As to, you know, how that can be done, I guess I just look at the number of examples around these types of features, where we in fact start to do this then things will change.

Again I look at examples of simply of designing buildings and apartments to be more energy efficient. I think we can go that route on its own merits. I think the idea . . . And again this Factor 9 house that I had mentioned, just to give you an example of how efficient that is. That only uses 20 per cent of what is considered an R-2000 house, so it's even a fifth more efficient, or five times more efficient than that.

And yet we don't put those same demands upon, you know, current or future industry, current or future hotels, hospitals, that type of thing, or don't even in fact encourage it. I guess I would like to see something like this being put on at the national level, so that basically from now on, you know, all homes, buildings, businesses, are all built to that level of efficiency.

And in fact you get into kind of co-operative heating systems as well. So the idea of going to a . . . When you build a new subdivision for instance, that you in fact integrate the heating systems into, you know, from house to house or building to building or area to area, so that in fact where there are some capacity to produce photovoltaic energy for instance, there's a wall that is workable on another building that you have that ability to integrate those power systems into your plans.

But that like I said, that takes a lot of proactive pushing to some extent. Although as much as one can, hopefully that will come from the designers or the homeowners themselves that they'll start demanding that happen.

The Chair: — Well we've now reached five to the top of the hour, so thank you very much for your presentation and taking our questions here this afternoon. The committee will recess for five minutes.

[The committee recessed for a period of time.]

[16:00]

The Chair: — Before we hear from our next witness, I will advise the witnesses of the process of presentations. We are asking all presenters to introduce themselves and anyone that may be with them. Please state your name and, if applicable, the position within the organization you represent. If you have written submissions, please advise the committee you would like to have them tabled. Once this occurs, they will be published to our website and available for the public to view.

The committee is asking all submissions and presentations to be in answer to the following question. The question is: how should the government best meet the growing energy needs of the province in a manner that is safe, reliable, and environmentally sustainable, while meeting any current and expected federal environmental standards and regulations and maintaining a focus on affordability for Saskatchewan residents today and into the future?

Each presentation should be 15 minutes, with question-and-answer to follow. I will direct questioning and recognize each member that is to speak. Members are not permitted to engage witnesses in any debate and witnesses are not permitted to question committee members. I would also like to remind witnesses that any written submissions presented to the committee will become public documents and will be posted to the committee's website.

With that, please introduce yourselves and go ahead with your presentations.

Presenter: Regina Regional Opportunities Commission

Mr. Hiles: — Good afternoon. My name is Larry Hiles. I'm president and CEO, Regina Regional Opportunities Commission. I'm joined by Clare Kirkland, the director of strategic development for Regina Regional Opportunities Commission. It's our pleasure to be here this afternoon to present to you on this topic. I'm going to be making some brief introductory remarks and then I'll turn it over to Clare to give you the presentation, which I believe has been circulated beforehand so you've had an opportunity to review that.

Our presentation is going to cover an approach that we think we should take in terms of answering the question and also include conclusion around a citizen engagement process that's fairly extensive in terms of gathering momentum on the direction that we're proposing.

Our content is based on observations, analysis, and experience that we've had over a number of years, working on a number of projects that involved large community involvement in order to get support for the initiative. Generally we look for things that are the right things to do for our community at the right time, but they also have an economic opportunity in them. And we're also looking at, can we get the community's permission to go there. And if we don't have the community's permission to go there, we typically find out that the best ideas don't go anywhere because somebody will find a way to stop it. And so that's why we think there's a huge need and opportunity to engage the citizenry of the province in this conversation.

So with that, I'm going to turn it over to Clare to run through the presentation.

Mr. Kirkland: — Great. Thank you, Larry. So the presentation, we worked with Stacey. The presentation I understand is in front of you. I'll go through . . . There's 16 slides. I've added one slide, Stacey, as a result of something interesting that came out today.

And it'll be apparent here. This is the new slide that I've added. This is based on a presentation that was done very recently in the US by one of the leading pollsters. And it got, urged by industry, got together with Republicans and Democrats really. This is regarding the cap-and-trade Bill that's in the US Congress. And basically what he's arguing — and I could actually make the whole thing available if the committee was interested — what he's basically saying is if we actually listen to what the American people are interested in and what they value, there is huge support, like 60 per cent of the adults want to move forward. But if we get it confused with negative, paternalistic language, the public support disappears. So this really goes to the theme of our presentation, which is we think we have some foundation work to do in getting common, shared understanding by the majority of interested adults.

So what I'm going to do now is I'm going to talk about three imperatives and I'm going to get into a very brief overview of the opportunities in Saskatchewan. I'm going to make that quite brief because I could tell by the previous conversation that I might get repetitive. And then we'll go into our sense of implementation.

So here is something which I call an imperative. There's a whole bunch of different ways of looking at this, but this is the human development index on the upper axis, and then electricity consumption, which of course is very germane to the committee. And what this basically says is as an economy develops, it consumes more and more electricity and as you reach the industrial nations, there at the top in green, they vary significantly in terms of electrical consumption. And that's mostly explained by actual industrial structure and to a lesser extent by actual lifestyle differences.

The point of this is, if you take a look at the sections that are growing in the world today, in the light blue, all those huge mass of humanity is very aggressively, very consistently, successfully moving up along that curve. So the first thing is, in the future of the world we are going to need a lot more energy. Certainly we need to move on energy efficiency, but fundamentally we're going to need a lot more energy, so there's going to be a lot of opportunity for people who are good at energy.

Second, and this is from Royal Dutch Shell. They're very good at scenario planning. This is one of their scenarios, based on 450 parts per million. And if you look at the hydro, which is that blue in the middle, that kind of caps conventional energy. So what they're arguing is we're going to, in the next few decades, substantially add to the electrical generation in the world with renewables, and they have a particular combination of renewables they're suggesting there. But here, again repeating this global imperative, if you're interested in economic growth, here is a huge opportunity and we think Saskatchewan could play.

Third imperative, everybody knows about CO_2. And what we want to emphasize here is that we don't think there's anybody on earth that's got . . . You know, we have 1 million people in the southern part of the province, 50 million acres with deep saline aquifers which are great for carbon storage, and 50 million acres of land which is good for soil-sequestered carbon. So we've got fantastic capacity here too as well, which is sometimes looked at as a side issue but is a major opportunity.

Here's my depiction of Saskatchewan. I chose this one because I wanted to be able to explain geothermal. I notice in the previous conversation that the committee's obviously been immersed in that so I'm not going to worry about too much detail here. But I just want to really . . . I call it Saskatchewan's bounty.

Again, let me repeat. For 1 million people, we've got a tremendous amount of resource potential, economic growth potential. Wind — we know about the wind. Our biggest problem with the wind is that so much of it is currently stranded. There may be technologies that emerge that allow us to use the stranded wind for other energy production. Wind is pretty much, and there's pros and cons of all kinds of energy, but wind is generally considered the best renewable.

Carbon capture and storage, already mentioned. Geothermal, the hot water in the basement as the geologists talk about it.

Biomass, we've got much more potential for biomass than I think we're currently taking advantage of. And solar, although I don't see us becoming active in solar photovoltaic; I don't think it's going to be competitive for quite a while. Solar thermal is, particularly given that we have sunny winters. So we have a lot of need for thermal energy in the winter and we have bright, sunny skies, just like today.

One of the other aspects that turns up is people say, okay so we're going to renewables but that's going to cost us money. Renewables, at a fairly fast pace, are approaching the costs of conventional energy, particularly if — and this is an if obviously — carbon gets appropriately priced, CO_2 gets appropriately priced.

So there's some long-term trends consistent . . . And this is just the thing that exists in all human endeavours called an experience curve. When you start something out, you think you've got it aced but you'd be surprised what you learn with experience. With experience, you get tremendous improvements in efficiency.

So this brings us to the summary slide, really sort of the core slide in the middle I should say, and this is really the biggest opportunity we've ever seen. So if you look at the last few hundred years of human history, we've been, as a society, we've been building up more and more sophisticated systems. This is the first time in human history where we've looked at a major system — and nothing's bigger than the energy system — and realized to more or less extents, we have to transform, we have to build it up, and we have to replace it. We've never done anything like this before.

There's a lot of estimates in terms of what it's going to cost. The International Energy Agency in one of their scenarios — the 450 scenario — says it's going to be $1 trillion, 1,000 billion, in the next 20 years. I've seen estimates which I chose not to put up. I've seen estimates approaching 10 times that. So it depends on what you count in, but if we're going to change the automotive technology, the smart grid, the electrical generation . . . You start working up the list. It's very, very large — unprecedented.

So it's an opportunity, we think. What will we gain from this opportunity? If we're very, very cautious and we want to wait for everything to be proven and we're averse to risk and, most importantly, we're not together as a society as leaders, we'll move too slow. If we move too slow . . . It's like I was talking with Larry over lunch — would you like to try to get into the IT [information technology] industry now with the new computers? I mean if you're too slow, all the big players are in, the market's established; you're done.

So the core of our presentation is, this idea in green, is that we think we need to, amongst the adults, get a better shared understanding of the energy opportunity, energy constraints, costs, etc. And out of that we think we'll get co-operation, decisions, and then of course the investment that we need in order to build and move forward.

Right now we observe and, you know, we're working on this on a number of projects for five years, we observe a surprising amount of confusion which really results in really ad hoc, short-term approaches which really sort of furthers the conflict and leads to ineffectiveness. So we think we can move forward.

Now I don't want to be negative about this, though. I don't want to leave the impression that, you know, we're . . . in economic development we have this idea that, you know, Saskatchewan isn't doing anything. And that's not true. We have a lot of positive things going on in the province. And I've put a list here and I'm sure that members are quite well aware of these.

Another perception, another problem perhaps, is when we look at this energy transformation there's a lot of people that we deal with that are imbued with the notion that this is about costs, increases in costs, harmful costs as opposed to the opportunity. And there's an emerging economic leadership among leading business people that this is really a false perception, that if you look back over economic history, when we were faced with the need to regulate business and it serves human needs, that in fact turns into an opportunity and the early adopters, in fact, are winners.

And I just put one example at the top of the, you know, well-known vehicle efficiency standards. And they were an opportunity for everybody, but only a subset of the automakers saw the opportunity. Others fought it and to their detriment. I mean Ford now, Ford has survived. Guess what Ford's doing? I mean they are trying desperately to get into being a major small-car manufacturer.

And there's a very good summary. It's not a very long article. It's a very good article in the *Harvard Business Review*, just out last fall, by C.K. Prahalad, probably one of the leading strategists in the world. And he's very explicit about this, about this idea that sustainability is now the key driver of innovation and industry. So a very compelling argument for me.

And here's an acronym we'd like to leave you with as well, to think about, and this is borrowed from some people in United States. This idea of TLC, you know, we all think about as tender, loving care. So it's easy to remember. The idea here is that electrical development policy needs to be transparent, long-term, and consistent. And you need all three of those to work together in order to be able to have the proper response, a proper, effective response from the business community.

Okay. So what . . . been talking about, how we think we need to engage the leadership in the province. So what, you know, what would we engage them on? Well we think there are a number of key decisions that have widely ranging responses. You know, for instance, I just was talking about costs. Are we looking at something that's a growth opportunity or are we looking at something that's a harmful cost? We need to know what the great bulk of people think about when they take time and reflect in some kind of interactive event that's well organized, what's the result in terms of their perception.

[16:15]

Second, should Saskatchewan stay as a largely stand-alone generator, or should we build and connect with others, our neighbours, to become a significant electrical exporter? Third, should we identify promising renewable energy technologies

and build export potential, or should we be cautiously following leaders who develop it elsewhere and adopt it when it's low risk and of proven efficiency? Fourth, do we want to become a global leader in carbon sequestration in both surface soil as well as aquifers, and other, you know, biomass and other approaches, or are we going to end up adopting technologies developed by others and just take an approach of sufficiency when we look at regulatory requirements?

Big decisions. And in our experience, the population is very broadly distributed across all those questions, and we think the population would coalesce with active engagement. So it really, you know, repeating this from another dimension is, we think there's a lot of myths and misunderstanding behind this. The public is seeming to coalesce around the idea of whether this is a cost or an opportunity, but still lots of work to be done there. The idea of the opportunity of being an electrical exporter, to date I would think that that is probably not supported, but some of the reasons for not supporting it are really insufficiently researched, I could say.

The idea of renewables and what are the risks and whether you can rely on them, I mean there's hardly a subject that has more sort of myth and misunderstanding than that. There are sort of all kinds of crazy opinions out there on the pros and cons of various kinds of technologies.

And in terms of becoming a global leader in sequestration, Saskatchewan of course, because we started more than 10 years ago, we're well along on that. But there's a lot more potential there as well.

So what we're looking for is, we're saying that we think we should establish a foundation for working together. This is the biggest opportunity we've ever seen. Saskatchewan's got tremendous resources. We've got some key starts in some key areas, but the upward potential is huge. We need to establish this foundation so that we understand the decision we face, share an agreement on what those are, understand as a result of that who we need to have as partners, understand the value propositions even: how do you close the deals in the marketplace? How do you explain this to people in terms of government policy, etc.? And as a result of doing all that, build a sense of opportunity and venture and move forward into the 21st century.

So here's our bold proposal, and it's based on the idea of using structured engagement events. So we're not talking about public meetings. We're talking about fairly small groups of people that meet on a particular day for a three- or four-hour period, perhaps longer, and deeply engage in some aspect of these issues, and as a result of that then take their understanding and interact with other adults in Saskatchewan.

And one of the interesting things about Saskatchewan, and I play this game all the time when I meet somebody I don't know from Saskatchewan, is I bet them in five minutes that we can find somebody we know in common, and have never lost. So if you have this kind of thing going on in Saskatchewan, those people will tell 100 people, 200 other people, you know, about their experience.

And so after doing a number of these events, as I'm suggesting here, you'd basically have a circumstance in Saskatchewan where every adult, interested adult had either participated in an interactive event on one of these issues or talked to somebody who did. We think it would have a tremendous coalescing effect on the population, and we'd be the only place on the planet that would have done it. And my back-of-the-envelope calculation of the cost — because I'm not trying to prescribe this specifically; I'm just sketching this out for conversation — the back-of-the-envelope calculation of cost is, it's about 3 million.

And final slide. What can RROC [Regina Regional Opportunities Commission] do? We look at our job as facilitating economic growth. This is an aspect of economic growth. Obviously we think it's a big opportunity, and we would really offer to work with, you know, perhaps the provincial agency Enterprise Sask to facilitate implementation of this kind of engagement process throughout the economic regions in Saskatchewan. The idea is that we'd work in 2010 on getting it organized; implement in 2011.

So that's our remarks. Thank you very much.

The Chair: — Thank you very much for your presentation. Mr. Belanger has some questions.

Mr. Belanger: — Yes. Thank you very much for your presentation. It's very thought-provoking, because as you mentioned at the outset, this 15 billion that SaskPower's supposed to send from the Saskatchewan perspective, how could we translate that into an investment and further beyond? That's certainly a daunting task and certainly a tough question to answer.

I notice in the presentation on the outlook in terms of coal production, it seemed to flatten out in terms of the demand for it. In Saskatchewan how would we prepare places like Estevan and other places that have a huge dependency on coal as kind of the mainstay of their economy? And of course coal is being tied to potash and other sectors and so on, so forth. How would we prepare for a peak of coal demand, then of course the gradual decline as your chart indicated?

Mr. Kirkland: — A couple of things. First of all, in terms of the solar energies, it's also the best place in the province for solar energies. It's also, with the current distribution system, it's one of the major nodes. There's a couple of major nodes on that network right there, so there's some advantages from that as well.

And the third thing is, to the extent that we get successful at you know post-combustion or pre-combustion carbon capture, then one would be converting existing plants. So then those jobs would go there as well. So I don't see this as something where if you're currently in coal-based electrical production, suddenly somebody just turns off the switch and the thing just disappears. There's an adaptation period. And they've got a lot more going for them than just the fact that they've got some lignite under the ground.

Mr. Belanger: — The other challenge obviously, you mention the notion that this is, it's too great to be political in terms of the challenge and the process. What do you foresee the next immediate challenges are? Obviously symposiums are very

helpful, but sooner or later we've got to stop the talk and start doing the walk, so to speak. How quick do you envision the process of embarking on this new energy initiative from our perspective? Is this going to take a year or two years? Because there's still a lot of folks that are still resisting that change.

Mr. Kirkland: — Okay. We're suggesting it's something in the order of you know 15 to 20 months, something like that, is the elapsed time. And what we're proposing that would . . . And that doesn't mean you stop everything else. But that would be an elapsed time that would be involved in establishing a far broader, deeper understanding amongst the adult citizens on the choices we face and the investments we need to make.

And really when you think about it, when you think about how large this challenge is, are you better off pressing on with inadequate foundation or are you better off making a modest investment and establishing the foundation with the prospect that your success in the future will actually be significantly enhanced?

Mr. Belanger: — Okay. My final question is, and don't perceive this as a loaded question, but obviously everybody's sold on green. I don't think anybody's arguing about solar and wind and geothermal. I think a lot of people are looking at this, and is this an opportunity. But the real question lies in what is the future for SaskPower itself. Is it going to be a consortium of new energy—producing companies? Is it going to have a percentage set aside for energy demands? Is it going to continue being a monopoly? Is it going to have part of a larger strategic alliance with other corporations? That is the million-dollar question. So how do you envision SaskPower's role, given this new green economy that we could possibly tap into? How would they play a role?

Mr. Kirkland: — Not a loaded question. The economic history, I think, is really quite clear that the number . . . If you look at areas in the world where you have economic success, it's explained to some extent by various kinds of cost factors. But by far the most important factor is capacity for innovation. And you're going to get more innovation if you have more players. And you're going to get more innovation if you have people disagreeing with each other and alternate choices and those kinds of things.

So a centralized, monopolistic approach, I mean, traditionally — there's a few exceptions — traditionally they don't produce the innovation-driven growth that we need.

Mr. Hiles: — One of the things to consider, something that's used generally in business, is that form should follow function. If you let the form dictate function, you're going to constrain where you can go. And so I think what you need to talk about, okay, so what is the function we need to have handled from more of a central aspect in our energy production and regulation and distribution, and then what's the best form that would actually allow us to achieve that? So I think to say, well you know, we think SaskPower should be a monopoly, or we think SaskPower should be just a regulator, like you need to find out what is it that we want to have happen from a provincial perspective first, and then say what's the best way to structure it to achieve that.

Mr. Belanger: — My final question is along the lines of I find it somewhat discouraging at times when they say, well the best we can do for wind is 20 per cent of what we need now. I'll say, well if we're the wind centre, we're the Saudi Arabia of wind generation, can we reach higher? And so there's only so much you can do on geothermal. There's only the southwest corner that's really of any value, or the southeast corner, in terms of the ability to generate geothermal heating. Then all of a sudden other people are saying, well we'll never get away from coal and oil.

So you start seeing how, you know, there's kind of blocks here and there. Are those blocks real or is it just people throwing out these figures? Because I wouldn't mind knowing, is there an opportunity as you've mentioned, as you've indicated to hit that green economy and hit that stride and be in that stream where we're able to benefit tremendously from this new economy?

Mr. Kirkland: — Yes, that's a great question because in the . . . So what you're recounting is similar to some of our experience. And I'm just going to you know unkindly describe it as sort of opinion-based. Okay? And to some extent it's . . . Often people get into these conversations. The whole test is, there is no silver bullet. There's sort of, you know, you put up something and the test is it has to be able to solve all the problems or else it's no good — well that, and it won't work. And so they end up with the idea, well there's nothing you can do.

Of course when you move to a renewable-based energy, as the Shell scenario shows, the complexity of distribution, the generation of distribution increases. But we've also got substantially more decision-making information management technology than in many other industries that is supplied in power generation. This is very well established.

I mean, one of the hottest areas in the world, and particularly in the United States right now, is the smart grid idea. Right? So the wind, absolutely renewables, all the renewables have this intermittency weakness which, you know, a coal plant's wonderful that way. Just dial it up to what you need.

But there is, you know, there's the portfolio effect of having wind and distributing it over a geographic area. There's the interconnect benefit. There's the idea that wind comes on at night comparatively more; in the calm, sunny days, solar is available, etc. So if you start putting those pieces together, and we get better at various storage technologies, we move a long way forward.

Now right now it looks like, certainly in North America and maybe more broadly in the world, there is going to be substantial natural gas production for quite some time. You know, there's a problem in terms of petroleum and how big are the nonconventional sources and how long will they last, but that fossil fuel problem's quite different than a natural gas problem. So natural gas is, roughly speaking, half the CO_2 effect, wonderfully good for peaking, inexpensive capital to put in place. So one of the things that we see as sort of an interim solution here — you know, who knows where we'll be in 2100 — but between now and 2050 is a robust system of renewables with extensive use of natural gas.

Mr. Hiles: — One of the things that we find very prevalent as a mindset locally is that we don't do the things that we know are impossible. And when we've talked to other folks on some of the things like wind, the question is, what's impossible that if I could fix your world, we'd be totally different? And it's just which side of the thing you're looking at.

[16:30]

The wind thing's a good example. I think, as Clare alluded to, we all know that you only get power out of wind when it blows, and that there's all these problems, that you can't rely on it for baseload energy and that. And so let's just not worry about it too much. You know, other folks are saying, okay but I think I can fix that. I can actually hook up a bunch of wind mills together that are in different areas where we know that at no one time is there no wind blowing.

We can also do what they call firming which is that when the wind's blowing and we don't need the electricity, just to use it to compress air underground in a cavern. When we need the electricity and the wind's not blowing, we release that air through a turbine and generate electricity. So it's just a matter of how we think about fixing these issues that we know are impossible.

And that's the approach that we're proposing, that we need to take all these things and say, okay so what do we know is impossible about this. And what could we do if they weren't impossible, and then challenge it from that end. And we'll find that there's lots of the things we know are impossible aren't, and that we just need to choose to take that kind of approach in our economy to solving these issues.

Oh, by the way, when you do that, you're away ahead of everybody else in this thing. You've now created intellectual property that you can build an economy on. And you can export that and become a leader.

The Chair: — Mr. D'Autremont.

Mr. D'Autremont: — Thank you very much. Excellent presentation. And I was glad to hear you say that sometimes disagreement can be constructive. So I'm going to take that role now with a comment made by Mr. Belanger that seemed to be dismissing the utilization of coal and that we were going to have to find something else for the people of Estevan to do besides generate power from lignite coal.

And yet when I look at your graph here that Mr. Belanger was talking about, it looks to me like from the year 2000 to the year 2050, you've got a tripling of the use of coal. And so I think if Estevan was listening to Mr. Belanger they may be a little nervous, but if they actually saw the graph, they would see that as a great benefit for them.

I think coal does play a role. I think we, as you've talked about, and previous presenters of carbon sequestration, there are huge potentials for us there. So I was wondering if you could comment on the actual use of coal, whether that in the medium to long term is a viable alternative for us to maintain, or if coal is going to cease to be a source of energy sometime in the near to medium term.

Mr. Hiles — Quickly, and then I'm going to let Clare go in on . . . If I thought I was in the business of producing VHS tapes, I'd be out of business. If I thought I was in the business of producing recordable media and I was tracking where it needed to go and I was leading those trends, I've got the biggest business I can imagine. And I think to some maybe that's the context around coal.

If we're going to keep using coal exactly as we always had used coal, we're going to find that the constraints on this are going to get too big and we're going to be out of business. Whereas if we say, how do I keep moving forward in the coal industry, I think we're going to find ways. You know, Africa uses gasification of coal to produce fuel. There's just another approach of looking at what they're doing. So I think that if we take that approach, we're going to find lots of opportunity to use the natural resources we've got, such as coal.

Mr. Kirkland: — Yes, and of course if you or I had a really good answer to that, we should be in some other room making a lot more money. But I'm not going to duck it, though. Coal has this huge advantage that it is really, really cheap to get, and it's got great energy intensity. So that's its big advantage.

It's got some obvious disadvantages, but there's a lot of answers. Larry suggested one, I mean, of the technology of the post-combustion. Capture is another technology. So I think that there's . . . You can combine coal. Let's say you can't get it perfectly clean and pure in terms of a greenhouse gas, but there's other offsetting things that you can do with sequestration, etc.

So some combination, I think, really, really has us looking at coal being around a lot longer than some people may desire and other people may fear. This is, you know, repeating ourselves, but this is the biggest thing we've ever done, and we're certainly not going to do it in a weekend.

Mr. D'Autremont: — Thank you. I look at your slide that says, what decisions do we face? And you ask the questions but I'm not sure you provided many of the answers.

The second question that you ask there: building connect to become an electrical exporter or pursue business as usual? We've been hearing from a number of presenters a third option to that, that we should conserve, and where we have a growing demand or a demand for more electricity, that we should import it from Manitoba. That we shouldn't be looking specifically to ourselves as a generator, but that we should be looking to Manitoba to import because they already have the hydro.

Mr. Kirkland: — Yes. And if I was in Manitoba and I had dispatchable hydro, I'd be looking for where's my most lucrative market. And my guess is, it's some warm afternoons in Chicago or something. So it's nice for us to sit and think we can get this cheap, reliable hydro out of Manitoba. Is that the best thing for the Manitoba citizens to do so? I don't know. I don't know about that one.

Mr. Hiles: — We're recommending that the biggest economic opportunity we've got as a province is to tackle this thing and move forward on an innovation basis and trying to get people that come here and solve these problems for a worldwide

solution. But if we thought that we had better opportunities, then we should just import. Right? We should chase those opportunities. But if this really is the biggest opportunity, why would we say, well we shouldn't chase it; we should just import it.

The Chair: — Mr. McCall.

Mr. McCall: — Thank you very much, Mr. Chair. And I guess first off, thanks very much for a very thoughtful and thought-provoking presentation. I quite like the perspective you've taken on the task in front of the committee in terms of, are we even . . . The process by which we're going about this, is that correct or is it geared towards some predetermined outcome that isn't equal to the task at hand?

And I guess off the top I'd also like to thank my colleague, Mr. D'Autremont, for taking a relatively benign comment from my colleague, Mr. Belanger, and twisting it into an attack on the good people of Estevan, and thereby pointing out just how difficult it is to have a straight conversation about the future needs of energy in this province.

I guess in terms of the, you know, the past two years and the work that's gone on on this front in terms of the UDP, in terms of Perrins's follow-up, in terms of the work of this committee, obviously you've evaluated what's gone before and found it to be at least somewhat wanting in terms of the task at hand. Are there things that we can take from the process that has gone on to date to bring them forward in the process that you envision — and I think with a lot of merit — going forward?

Mr. Kirkland: — We weren't involved in the uranium deliberations. And we weren't trying to infer anything about them in our presentation. But I do think that from that perspective, the pros and cons and all the arguments are really fairly well distilled there, and it really comes down to certain kinds of essential value judgments based around risk and safety.

So that part of it actually, paradoxically I think, that part of the energy system equation is actually fairly well understood. We think it's really a lot of the other aspects, and we're proposing a process that doesn't . . . that's done to promote understanding, not to provide an opportunity for conflict. That's the difference, I think.

Mr. Hiles: — Yes. If I had my druthers, I think I'd probably . . . the conversations that you guys are having here now would have occurred before the uranium one because I think we maybe should have had a back up and step aside and say, what are the choices we've got in front of us? And then had that conversation about between those choices before we say yes or no to one particular choice in there without having had that background.

I think part of that is what, you know, we're recommending, that we need to have a much deeper, stronger dialogue publicly to get some sense of coalescence on a direction which we're suggesting we think the opportunity is in. Let's chase all these and find out where we can go with them.

One of the things that we found in our work is that, you know, we've come up with some pretty silly ideas in terms of the work that we do day to day. Some of them actually could be very lucrative for the economy. But if we were to go out and go out and execute those, we'd find out we'd be flat on our face before we even started because the community wouldn't have given us permission to go there. And it's because we didn't go out and engage the community in that conversation to find out, if we did this, would you endorse us doing it? Would you be willing to see public money support this endeavour? The fact that we failed to do that, it doesn't matter how good the idea was because they didn't understand it; therefore they'll find a way to stop it.

And so that's why we think it's so important to have this much broader conversation going down this road. I mean, as Clare said, this is transformational. It's the biggest challenges mankind has ever had to do a shift from one way of doing things to another. And the implications of not getting this, not making progress, are pretty huge. And so let's get the whole team on the direction.

It's kind of like the man in the moon kind of thing and say you're going to have a man on the moon in 10 years, but nobody agrees with that. You aren't going to have a man on the moon in 10 years; there's just no way. But if you can capture their imagination around the opportunity that this presents us, that perhaps most other jurisdictions haven't captured and are waiting for somebody else to fix it, you're going to get there and you're going to get there with everybody's help because they're going to be part of the solution as opposed to part of the roadblock.

Mr. McCall: — Thanks very much for that. In the interests of, on the one track pursuing that broader, more thoughtful, more balanced discussion, pursuing that on the one track, but at the same time recognizing that there's . . . And I agree with you. I think we're standing at a epochal moment, a watershed moment in terms of our evolution, industrially or otherwise.

So for Saskatchewan's role in that having that broader, more balanced discussion, but at the same time making sure that we're not losing ground or losing competitive advantage on files that we've already got it — and certainly carbon capture and storage is one of those that I think, you know, needs that day-to-day sort of attention. Otherwise decades of work that has gone on, centred at the University of Regina, is surpassed and left behind by other jurisdictions that are being bettered resourced and better supported by their respective government partners.

So in terms of striking that balance between the broader discussion and the particular day-to-day work of making sure that we realize the potential that we've got already at play in the Saskatchewan context, any advice on how to pursue that?

Mr. Kirkland: — Probably not. But to answer the question, yes. So when you've got promising new technology, I mean it's always a, you know, what's the optimum? How much nurturing and protection and encouragement do you give it to begin with? And then at what part of that process do you say, you know, we've given you your chance? It's time to go out now and compete with everybody else. And so, you know, that's always a dilemma.

And I think it's situational specific, particularly in this case. The need for carbon capture in coal, I mean, that's talked about the . . . Coal is actually going to grow over this time period, you know. The fossil fuels are going to level out, but coal is going to grow and fuel oil is going to go down, etc., so this is going to be a gigantic market. So it's worth putting a little bit of time and capital into it to see whether or not we've got a horse that will run. And then at some point everybody's got to get out there and compete.

Mr. Hiles: — Anyway I think at some point in time we need to make the assessment, okay, so this is a problem worldwide. It's going to be a bigger problem worldwide. Can we be part of the solution? Can we win this game? Can we get ahead in this game, or are we the guys making pins that have got to fill the hole in the dike this big? And as much as we work on this pin, we're never going to get there. Somebody else is first.

In terms of approaching opportunities, we've put together a bit of tests that we put things through in terms of, you know, should we chase this opportunity? Because lots of opportunity's just not ours to chase as much as you might think. And one of those is that, do we have any of the fundamental things to do anything in this area? And second thing is, do we have demanding local market for whatever we create in this? Because if we don't have a demanding local market, you know, there's others that do. They're going to get away ahead of us. And third, do we have the infrastructure to go there?

And so I think if you did tests on the clean coal and sequestration, you know, we need a lot of those tests. Right? We have the resource base that's based on coal, so this is going to be around. So we've got to deal with this issue. We have a local demanding market as a result of this and if we fix this, man, we've got a tremendous export opportunity in this thing.

[16:45]

But it draws well that any company that's highly involved in innovation, which this is kind of an innovation curve that we're trying to go through. 3M is an example; 30 per cent of their revenue through five years from now better come from new products and services that don't exist today. So they've got a lot of things they're working on. They don't go from zero to the end of the game on every one of those. At some point in time they got to cut bait on a lot of those things that they're chasing too. So that's kind of the rider on that is, at some point you got to say, is it worth more money or are we not going to get there?

Mr. McCall: — Thank you very much.

The Chair: — Mr. Bradshaw.

Mr. Bradshaw: — Yes. Mine won't be very long here. I just, reading it, you know, it's time for a green new deal and it says, ". . . the economic crisis is serious . . . Yet when it comes to climate change, the stakes are far higher," he said. This was UN [United Nations] secretary had said at the recent UN conference on climate change, adding that "What the world needs is a 'Green New Deal' . . . "

Anyway and it goes on to say how climate change is affecting the world, and I guess maybe there is climate change. It went from global warming to climate change.

Let's just imagine. Let's imagine if Saskatchewan took and all of a sudden they managed to come up with a way to get rid, you know, of course all the CO_2 off of the coal plants, and we all cut down, and Saskatchewan cut down and Canada cut down and everybody across the world cut down. All of a sudden we're not releasing any more CO_2 to speak of. How long is it going to be before we have another ice age?

Mr. Hiles: — I'm not sure we came prepared to answer that question.

Mr. Kirkland: — I don't think I have any resources to answer that one.

Mr. Bradshaw: — Oh I'm sorry. I was quoting from a wrong one. I thought it was one of yours here but anyway, it was just kind of a fun little thing to throw in.

Mr. Hiles: — It's an interesting question. I have a neighbour that says, you know what, this CO_2 in the atmosphere is actually good because that's creating the vegetation that we're actually creating economy out of. So it's a matter of perspective.

Mr. Bradshaw: — That was all. Thanks.

The Chair: — Okay. Well thank you very much for your presentation and taking the time to answer our questions. With that, we will adjourn until 10 a.m. tomorrow morning.

[The committee adjourned at 16:47.]