



STANDING COMMITTEE ON CROWN AND CENTRAL AGENCIES

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STANDING COMMITTEE ON CROWN AND CENTRAL AGENCIES

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Lloydminster

Mr. Buckley Belanger, Deputy Chair
Athabasca

Mr. Denis Allchurch
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Mr. Fred Bradshaw
Carrot River Valley

Mr. Dan D'Autremont
Cannington

Mr. Randy Weekes
Biggar

Mr. Trent Wotherspoon
Regina Rosemont

[The committee met at 10:00.]

Inquiry into the Province's Energy Needs

The Chair: — I'd like to welcome everyone to our 11th day of public hearings from the Standing Committee on Crown and Central Agencies into the inquiry into Saskatchewan's energy needs. I'm Tim McMillan, Chair of the committee. I would like to also introduce the other members of the committee. We have Mr. Weekes, Mr. D'Autremont, Mr. Allchurch, Mr. Bradshaw. The Vice-Chair is Mr. Belanger. Today we also have Mr. McCall and Mr. Taylor.

All the committee's public documents and other information presented to the inquiry are posted daily on the committee's website. The committee's website can be accessed by going to the Legislative Assembly of Saskatchewan website at legassembly.sk.ca under "What's New," and clicking on the link on the Standing Committee on Crown and Central Agencies.

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

Before we hear from our first witness, I would like to advise witnesses of the process of presentation. 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 you hold within the organization you represent. If you have any written submissions, please advise the committee if you would like to table your submissions. Once this occurs, your submission will be available to the public. Electronic copies of tabled submissions will be available on the committee's website.

The committee is asking each submission and presentation 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, environmentally sustainable while meeting any current and expected federal environmental standards and regulations and maintaining a focus on the affordability of Saskatchewan residents today and into the future?

Each presentation should be limited to 15 minutes. We have set aside time for a question-and-answer to follow. Our first presenter, there was some confusion as to length of time and presentations and he has two prepared presentations. And if it's the pleasure of the committee we will allow 15 minutes for each of his presentations. I think that that is accepted by all. And with time permitting, the question period will follow.

I will direct all 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 for public viewing. With that I would ask our first presenter to introduce himself and please go ahead with your presentations.

Presenter: Jack Jensen

Mr. Jensen: — Thank you, Mr. Chair. My name is Jack Jensen and I'm representing myself. And my topic is alternative energy use in government-owned and government-funded facilities.

And under the topic schools, I can envision the use of alternative energy in government-owned buildings and government-funded buildings such as schools. This is not much of a vision on my part, as Googling the words, alternative energy in schools, yields 24,300,000 hits. To determine what can be done here in Saskatchewan without reinventing the wheel would require a more refined Internet search, preferably by people with a background in education, with a concern for our environment, plus significant knowledge of alternative energy usage.

I think that as a society we do not give enough thought to the relative importance of energy. Energy is a subset of the shelter component of our basic needs of food, shelter, and clothing. The expansion of the electrical and natural gas grids throughout the province over the past 65 years has given us the impression collectively that energy will always be there with the flick of a switch or the turn of a thermostat, and thus we give energy no further consideration.

With an annual production of 72 tonnes of greenhouse gas per capita, Saskatchewan is a dubious leader within Canada. Internationally Saskatchewan's per capita greenhouse gas production is 20 times that of the average world citizen.

But all is not doom and gloom. The Pembina Institute advises that 50,000 net new Saskatchewan jobs can be created by adopting renewable energy programs. On a national level, the Jaccard study, commissioned by the Pembina Institute and the David Suzuki Foundation, has found that Canada can succeed economically while meeting greenhouse gas targets to reduce global warming.

Clearly Saskatchewan has to make a lot of reductions, which won't happen without changing the way we think and act. Primary questions of our teachers and their administrators might be, are you aware of the above facts? What is their implications, and what can be done within the education system about them?

I can see an alternative energy source at a school being more like a chemistry lab or a student garden project. The chemistry lab is not intended for breakthrough chemical experiments, and the student garden project is not intended for breakthrough biology experiments. Rather they're used to make the topics that in text alone would be very difficult to understand, physically doing the experiments and tending the garden make the lessons more understandable and memorable.

A talented teacher can bring these experiences, can take these experiences and apply them to a multitude of other related topics: in the example of the student garden, to nutrition, to the

issues of transportation of food, to safe food handling, and so on. Similarly energy produced by an alternative energy source at the school can be measured directly, can power specific appliances and can provide a host of other experiments and experiences that can be understood because the apparatus is right there.

The same talented teacher can apply these experiences to other related energy, grade-appropriate topics. The alternative energy source may only be providing a fraction of the school energy requirements, but it is a constant reminder of the energy alternatives required to narrow the twentyfold difference between our per capita greenhouse gas production relative to the world average.

It is a known fact that people who generate a portion or all of their energy needs cut down their unnecessary energy consumption. This is a teachable experience. Integrating alternative energy sources into the curriculum would cause students to really think about their energy usage. Awareness of energy consumption should be incorporated into all aspects of curriculum, much like numeric skills and literacy are present in the entire curriculum.

Every parent knows that students bring home what they learn and apply it in their home setting, which would have an overall improvement to energy use. I do not know what was taught about energy conservation at schools, but based on the lights I turn off as I follow my grown children around the house, that energy conservation message did not stick.

The topic of energy is very complex and covers the environmental issues, sustainability for ourselves, and through international agreements with neighbouring countries, choices such as transportation with its energy implication options that we make individually or as governments, and a host of other issues. These are all issues that we must deal with at some level, which issues must be best presented to students through a series of age-appropriate school classes.

I've spoken to an administrator at a local school division regarding alternative energy in school curriculum and have determined that there are subjects within the curriculum where alternative energy is or could be included, such as: grade 3, fuels, which I understand is an optional topic; grade 4, forms of energy; or grade 6, energy in our lives. My understanding from a high school teacher is that the sciences in the upper grades are more about applying the laws of physics or chemistry which, if that is the case, is the same as when I was in high school 40 years ago.

New schools and government buildings should be built to LEED standards — leadership in energy and environmental design. Alternative energy and conservation retrofits should be employed whenever buildings are altered. I understand there is only one building in Prince Albert that meets LEED standards — that might be one government building.

I have spoken to another administrator about school infrastructure and have found that there is no schools within the school division with alternative energy providing any portion of the energy requirements in the building and hence also not providing an alternative energy, interactive laboratory for

creative teachers and inquisitive students. Construction and retrofitting to date incorporates energy conservation, which is the cheapest alternative. I was told that new facility management software will be able to provide energy cost scenarios for a variety of energy choices which will increase viable energy options when legislation assigns carbon taxes.

On the topic of government buildings, two local examples of where alternative energy could be employed in Prince Albert would be solar water heating at the SIAST [Saskatchewan Institute of Applied Science and Technology] building and at the MacIntosh Mall. Both buildings have completely unrestricted access to the sun. Both buildings have high public exposure which makes a very strong positive statement. The SIAST food services teaching area/kitchen, which would be a significant user of hot water, is directly behind a sloped, exterior metal awning that could serve as the support system for the solar water heating collector system. The top floor of the MacIntosh Mall is the mechanical room, which would simplify the tying of the solar water heating system into the existing hot water system.

There are several reasons for incorporating alternative energy technologies into government-owned and government-funded buildings. In relative terms the projects are small yet very visible and send a positive message to the community. Government buildings and schools are spread throughout the entire province, bringing benefits to all parts of the province. Local consultants, contractors, and suppliers would be able to design, install, and service the projects. The more energy that is developed locally, the less reliance there is on transmission lines and the requirement to upgrade these transmission lines. Energy that is produced and used locally does not undergo transmission losses. Alternative energy does not generate greenhouse gases in the course of their operation.

[10:15]

The first step is to consider a comprehensive review of the government buildings and schools within the province by consultants with alternative energy experience to determine appropriate alternative energy retrofits, followed by the installation of such retrofits. The second step is to introduce a comprehensive energy awareness curriculum into schools and a public awareness campaign. Thank you very much.

The Chair: — Thank you for that presentation. Why don't we go on with your second presentation and we'll do our questions at the end.

Mr. Jensen: — Okay. And this is actually a series of letters, some referencing nuclear power because they were written on July 11th before there was a decision made on not proceeding with a nuclear power plant. So I have attempted to take out parts of those where it dealt specifically with nuclear power, but where it's referenced within a paragraph, then I've just kept it in. So I apologize for that.

And this is a letter that I'd sent to all MLAs [Member of the Legislative Assembly], so they should be aware of it.

Re: The Cogeneration Option for Our Future Energy Needs

I am sending this letter to each of the province's MLAs. I am not an expert in the field of cogeneration, but I believe I asked the right questions of experts and have correctly interpreted their responses. I'm also including a proposal of how additional electrical energy can be financed.

Cogeneration essentially captures remaining energy from the hot exhaust gases of existing large industrial plants or mines. Cogeneration energy can be brought on stream incrementally to match the province's needs. Cogeneration plants can be built in approximately two years, reducing the uncertainties associated with longer building schedules. The unit capital cost and the unit operating cost of cogeneration plants are lower than for the nuclear [power] plant option. The technology exists and can be operated and serviced by our existing workforce. Cogeneration provides no long-term waste disposal problems. Decommissioned cogeneration plants are not toxic and the materials can be recycled. Cogeneration plants can be sited throughout much of the province where there are existing mines, industrial plants and mills, bringing a share of energy production and its benefits to numerous constituencies while, at the same time, reducing transmission losses and the need for extensive improvements to transmission line infrastructure.

Cogeneration is essentially the replacement of less efficient steam plants that produce only process steam with the more efficient cogeneration train that produces process steam, then takes additional energy out of the hot exhaust gas to create electricity. To my way of thinking, cogeneration has no carbon footprint aside from its construction, as the natural gas usage before and after the cogeneration construction is the same, it is just used more efficiently.

I made inquiries to SaskPower and to a firm with worldwide experience in constructing and operating cogeneration projects regarding cogeneration opportunities. I learned the following from my conversations.

1. There is nothing special about the Cory Potash Mine cogeneration project. Cogeneration can be duplicated at any large industrial site that generates steam for its own operation.

2. The capital costs of constructing cogeneration plants is in the range of \$1.5 million to \$2 million per megawatt. The cited capital cost of constructing a nuclear plant can be as low as \$2.5 million per megawatt according to Bruce Power, up to 7.5 million megawatts according to Moody's, one of the world's largest bond rating firms with some estimates even higher. The Bruce Power estimate may be somewhat optimistic as apparently the Darlington Nuclear Power Plant, built between 1981 and 1993, cost \$14.4 billion, approximately \$4 million per megawatt . . .

3. The lifetime cost of power from a cogeneration plant is in the range of \$50 to \$70 per megawatt hour versus \$100 per megawatt hour for nuclear power, based on the firm

with the worldwide cogeneration experience.

4. Cogenerated power does not require significant upgrades to the power distribution system. This is because each cogeneration plant is small, relative to the overall provincial power production, and the existing distribution system is sized to provide significant power to the mines and mills that can now send cogenerated power out to the system on these same lines. There are significant costs to the upgrading of the power distribution system for the nuclear power option.

5. In the case of potash mines, the potential amount of power that can be created by cogeneration can be approximated by comparing the ratio of power to potash production at the various potash mines. The total annual PCS potash production (2006 figures) is 12.1 million tonnes. The Cory potash mine cogenerates 228 megawatts and has an annual potash production of 1.36 million tonnes. The cogeneration capacity from PCS potash mines is therefore, based on these ratios, 1800 megawatts of cogenerated power just from PCS potash mines.

In 2008, SaskPower initiated a Request for Proposals for baseload power production of 200 to 400 megawatts to be in service by December 2012. These options could include the proposed Iogen cogeneration plant near Prince Albert plus other options. I understand that the cogeneration capacity of the Iogen site is 30 megawatts. There is the opportunity to use existing wood wastes at the Iogen site for additional cogeneration of electricity.

And I realize that that is up in the air, but the potential power availability is still there.

I presume that the government will ensure that the SaskPower Requests for Proposal information will feed into Mr. Perrins's report-making process and a broader report on all forms of power generation. Specifically, we (as concerned citizens) deserve to know whether other viable options, such as cogeneration, are receiving adequate attention from provincial policy makers . . .

Here is my proposal for the funding of cogeneration and other alternative energy projects. Mr. Dwight Willett Executive Vice-President of Corporate Services for Bruce Power stated in his meeting with the Prince Albert Chamber of Commerce that their company does not require money from the government but requires a guarantee to purchase their produced power. This guarantee, in the form of a framework for power payment, I presume has been given by our provincial government to Bruce Power before the province embarked on a \$3 million [plus] UDP report.

If the decision has been made that no provincial money would go directly towards the capital cost of energy projects, the money could be raised within the province through an instrument like the labour-sponsored investment funds and then invested into cogeneration plants and other alternative energy projects. I envision that the terms would be similar to those for Saskatchewan Savings Bonds, allowing investments of \$100 to

\$200,000, thus affording a safe, in fact, guaranteed return that would even increase with the cost of energy. I say that the return could be guaranteed, since that is what our provincial government is doing with an out-of-province energy company and, using reverse TILMA logic, our province should treat its citizens as well as it treats out-of-province companies.

The interest rate payable on these proposed Saskatchewan Alternative Energy Bonds should also include a percentage that equals the avoided cost of decommissioning the nuclear plants, the avoided cost of transmission infrastructure related to the nuclear option, the avoided cost of liability in the event of a catastrophic nuclear accident, and the avoided cost of storing nuclear wastes, basically forever, as these are actual costs that the public must eventually bear.

I appreciate that, if this rough plan were adopted, there'd be a lot of work to be done. I have not obtained some significant information, such as the guaranteed power rate from the Government of Saskatchewan/Bruce Power framework document, which would affect the interest rate that the government would pay on Saskatchewan alternative energy bonds.

Some existing work can be modified to assist the creation of the Saskatchewan Alternative Energy Bonds. There is a template for the cogeneration agreement between SaskPower and ATCO, the 50/50 partners in the Cory Potash Mine cogeneration plant. There is the labour-sponsored investment fund template, there is an existing network of financial institutions that sell such funds, and there are viable cogeneration opportunities, which may be included in the submissions to the SaskPower Request for Proposals for base power plants.

As I said in my opening paragraphs, I'm not an expert on cogeneration field, but I think I've asked the correct questions to experts and have correctly interpreted the answers.

So, in conclusion [and this is kind of related to the nuclear one] why would Saskatchewan citizens pay a minimum of \$10,000 per man, woman, and child for nuclear power when we could incrementally pay a fraction of that amount for energy as our power demands increase through cogeneration, receive the equivalent of a labour-sponsored investment fund tax credit, add a guaranteed long-term financial instrument to our retirement portfolios, rid the province of a long term nuclear waste legacy and reduce inefficient use of non-renewable energy resources?

Please provide your assessment of my proposal.

Thank you.

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

Mr. Weekes: — Thank you, Mr. Chair. Thank you, Mr. Jensen. I appreciate your two presentations, especially your first one.

There was a presenter yesterday, a man and a lady that made a presentation. And it spoke to what you talked about — educating people, youth, but everyone in society. Her one example was that her mother, and this lady was fairly elderly, but talking about energy, talking about recycling, reusing, conserving. And her mother said, well that's what we always did. You know, this is going back many decades now. But society has changed so much that yes, I think we do have to re-educate ourselves about those items.

You know, you've talked about the cost of infrastructure. And certainly if there was a major nuclear generation plant built, that was one of the big issues — the cost of infrastructure, getting the power out to wherever it was going to go, whether it was southern, if it was built in this area. And I don't know that; I wouldn't know that. But if it was, I mean you still have to build transmission lines through oil sands in southern Saskatchewan and potentially to export markets. So that was one of the big concerns.

You talk about cogen. I think all these things are going to be part of the energy answer. It's not going to be just one thing. But the one item I guess that I have found listening to the various presentations from last fall and now is people . . . It's again an education process, not only for the general public, but for myself and I think other members of the committee, that the cost of power generation is going to go up. Could you comment on that? What is your feelings about the uptake of the public on paying more for power as we move ahead?

And why I say that cost of power generation is going to go up, the cheapest power generation we have is coal. But we have obviously a carbon footprint problem, continue to burn dirty coal, you know. If we can develop technology to burn clean coal, that will help. Natural gas is cleaner, but there's still a carbon imprint. Could you comment on what do you think the people's acceptance of higher cost of power will be?

Mr. Jensen: — Well I think that there is already a higher cost. It's just that it's not coming out of our pockets; it's coming out of the environment. The environment is picking up the extra cost, and I think as citizens we're going to have to appreciate that we're going to have to go to sort of offload some of those costs from the environment and pick them up ourselves.

So I think that one way or another, energy is an absolute requirement. And we have to pay for it one way or another, so the more we conserve, the better off we are.

Mr. Weekes: — Yes. Thank you.

The Chair: — Mr. McCall.

Mr. McCall: — Thank you very much, Mr. Jensen, for both, both rounds of your presentation. I guess I'm glad that you'd highlighted in the possibilities for cogeneration. And I think part of the situation we face here in Saskatchewan is that proposition of using the resources that we have in a smarter fashion, in a more efficient fashion. And in terms of assembling some kind of a plan of attack, in terms of what the possibilities are around cogeneration, I think that would be a great place to start inventorying, providing an inventory of all the cogeneration possibilities.

The other thing that I particularly liked about your presentation was the thought of governments leading by example. And certainly the forestry centre here being built to LEED standard was one small measure in that regard. And certainly Mr. D'Autremont yesterday and, you know, former minister of Government Services, there has been a continuation of that attention to building to a LEED standard for government buildings.

But I think you open up a broader front in that effort when you talk about what we do with school divisions and the buildings that we construct in school divisions.

[10:30]

One I would add to that in terms of sort of quasi government buildings, quasi government infrastructure would be in the health division. There's a tremendous amount of infrastructure that gets put up in health. And if we're not paying attention to that footprint and to making those smart investments upfront and realizing those gains down the line in terms of more efficient, smarter use of energy, there's a long-term price that we pay, not just out of the taxpayers' pocketbook but of course for the environment as well.

So another inventory that we'd do well to compile would be, what are the possibilities there in terms of all government buildings, broadly construed? Do we have smart controls in all these buildings? Smart controls alone for different of the school divisions that have brought them into operation have provided real savings and paid for themselves in fairly short order.

So I guess in terms of pointing us in some directions, I'm glad that you're pointing us in those directions with cogeneration and with government buildings and leading by example.

The last thing I'd like to say, and this is a bit of a side note, but I'm glad that you've brought up the experiential learning component of the alternative energy projects in each school. There's lots of ways to grab kids' imagination in terms of the importance of maths and science, and we hear a lot about the work that we need to do to catch up or to exceed expectations or to excel in terms of the maths and science competencies of the average student in Saskatchewan. The environment provides a huge learning opportunity to grab those kids' imagination and not just to build those maths and science competencies but of course raise that consciousness as to the environment and to what we can do as our part as citizens in preserving and better protecting the environment.

So I guess this is a long way, a long way around to say thank you for the things that you've brought to the table, that you've highlighted for us in our deliberations, and keep providing the good things to consider.

Mr. Jensen: — Thank you.

The Chair: — Mr. D'Autremont.

Mr. D'Autremont: — Thank you. Thank you for your presentation, Mr. Jensen. I just wanted to comment as well, as Mr. McCall did, on the LEED standards. Government continues to support the LEED standards and to move ahead with that in

government buildings.

I was wondering though, with your suggestions that we should be looking to the partners of government, education in particular but health care as well, when we're refurbishing or building new facilities . . . And there's not a lot of new facilities, but there's some that are going ahead, going to LEED standards.

Should we be looking to refurbish current existing facilities, perhaps prior to their normal date of refurbishment and placing a priority on doing that, rather than going through their life cycle and then doing the refurbishing and going to a more efficient standard at that point in time? Or should we be doing it sooner than we would normally do so?

Mr. Jensen: — Okay. I'm not an expert in that field but I would suggest that, because I think we have a simplistic view of our cost of energy, that if its true cost were taken into account, then that would probably change when we go about making retrofits to buildings. If you have an environmental cost that is not being picked up out of the government coffers or out of people's wallets, then you're not really seeing the true costs. And I think if you took all of those costs into consideration, that probably would change your timetable for making retrofits.

Mr. D'Autremont: — I suspect we are going to see — at least people are talking about seeing — a cost for carbon emissions.

Mr. Jensen: — Yes.

Mr. D'Autremont: — And when that happens, there will be a visible cost . . .

Mr. Jensen: — Yes.

Mr. D'Autremont: — Associated with energy production, and we will all be paying it. So then it certainly becomes an incentive for people to become more efficient or pay more, as the case may be.

Mr. Jensen: — That's correct.

The Chair: — Mr. Taylor.

Mr. Taylor: — Thank you very much. And, Mr. Jensen, welcome to the committee. It's nice to see you. I see from the bio that was provided to us in advance that you're a retired professional engineer and had completed your career with the city of Prince Albert. From that perspective, I think it's obviously provided you with a lot of information that you've evaluated and digested over your career.

I think now about potential future growth for the need for additional energy in Saskatchewan is in the North. A lot of our resource sector is where the growth in Saskatchewan is occurring. We've had presentations about local production of power, much like you've suggested on cogeneration. But there's also biomass. There's geothermal for heating at the community level. There's a lot of opportunities available in the renewable sector in northern Saskatchewan. Prince Albert is very well positioned to be able to advance a lot of renewable technology, I believe, not only for the community and the

region, but for the province as a whole.

My question to you is partly from those who have been disappointed by the decision about not proceeding with Bruce Power's proposal immediately, has to do with jobs — that Prince Albert was seen as a site, and now there's the potential loss of new jobs in the community. But from your experience, from your background — and I think you referenced it in your introduction to your first presentation — there are a lot of jobs that are created in the economy in the renewable sector. Can you give us some idea of, and for the people of Prince Albert as well, what sort of job creation opportunities there are as we look to expand ... not necessarily expand, but meet Saskatchewan's future energy needs?

Mr. Jensen: — Okay. Well I'm not an expert in any number of fields here, but I know that the city of Prince Albert is creating a green industrial park. And what exactly are the plans they've got for that, what jobs are coming out of that, I don't know. I had referenced sort of the tabletop exercise of the Pembina Institute which said that renewable energy could create 50,000 net new jobs. And I guess it's a matter of looking at what they use as their assumptions for coming up with those numbers. And I would refer you to that source.

Mr. Taylor: — Okay. That was partly what I was looking to see — if you could expand on it all. What I was looking at, of course, what Pembina is talking about, is not only installation but manufacturing sectors for solar panels, for wind turbines, the technology that is sometimes needed to support the creation of alternative power, geothermal systems. So there are a lot of professional jobs, engineering jobs, as well as installation jobs that would be required as we not only talk about government buildings, retrofitting them in a way, but also in terms of dealing with larger operations like cogeneration. Or smaller — for example, a single household, whether it be within a community or on its own, either on an acreage or a plot of land in the North.

So I was just looking to see your experience in the Prince Albert community and your experience as an engineer, whether you would see these as being significant job opportunities throughout the northern part of Saskatchewan.

Mr. Jensen: — Okay. I'm a member of RPIC [Renewable Power — the Intelligent Choice]. I'm not on the executive or anything, and that's kind of a group that grew up as a response to the nuclear power proposal. And they have generated a pamphlet that is probably two or three pages long of suppliers and manufacturers of alternative energy producers, and so that is probably a list that's going to continue growing. And it was sort of a resource that we didn't have available until somebody got together and said, well what all is there available? And it's wind turbines and solar energy and what have you.

Mr. Taylor: — Okay. Thank you very much, Mr. Jensen. Thank you, Mr. Chair.

The Chair: — Mr. Belanger.

Mr. Belanger: — Yes. Thank you very much for your presentation. Very quickly, I think one of the things that I certainly look for in some of the presentations is ideas and

concepts and the whole notion of having the correct attitude. It's important that we sell hope and certainly not fear of some of the challenges we face, but rather hope on the alternatives. I think we've been hearing a lot of eloquent presentations, along with yours certainly, that highlight those particular issues.

I want to note for the committee's purposes, to our researchers that work with the committee, the whole notion of the point you brought up with the alternative energies bond strategy that you articulated. Obviously government wants to lead. But I think it's important that government also follow leadership where the opportunity exists.

When you look at the notion of your alternative energy bond, kind of the strategy, how would you see such a strategy and such a bond savings being administered?

Mr. Jensen: — There must be some administration already in the labour-sponsored funds, and I would see it similar to that. There's institutions that sell those already and it would be a matter of collecting the money and designating where you would allocate the funds, to which projects.

Mr. Belanger: — Right. But I'm just saying, suppose we really got innovative, we got exciting, and we embraced the notion of having to do something and the opportunity to provide such a huge investment in this particular idea that you presented. Again how would you envision — being a series of different managers in different sectors or government initiating that or it becoming totally independent of government, period?

Mr. Jensen: — Okay. Well I guess I came up with the idea because I got the impression that the government really did not want to be providing a lot of the ... Like they wanted private money coming in to creating some energy projects. I thought well okay, well if they're not going to step forward, what else can step forward? And so I've really not thought it beyond a point like that.

Mr. Belanger: — Yes. And the reason why I asked the committee to take special note of this is to ensure that your idea certainly is highlighted. And that's one of the purposes of this committee, is to get ideas and concepts from people. And I'm just trying to wrap my little brain — I have some trouble sometimes comprehending things — but trying to wrap it around as to how you would envision such an effort being undertaken and managed properly.

Because I do know there are green funds out there. There's environmentally sustainable funds. There's all kinds of funds of that sort out there. But is there a specific Saskatchewan solution to one central kind of concept where people that wish to invest into the sustainable energy bonds in co-operation with, say, a government investment, that this investment going to a neutral, well-managed, well-thought-out process that really brings some new, innovative strategies to dealing with our challenges here as a province?

Because there's no question that we have to embrace the notion that there are going to be rising costs, but we can't let that be a fear. We have to embrace that and say, how do we best solve these problems attached to that rising cost to make it more sustainable? And your idea of an environmental bond is

something that I take a lot of interest in because there's been some discussions along the way that pointed out that idea.

Mr. Jensen: — I would suggest that you not reinvent the wheel. I think this kind of thing is going on in the Scandinavian countries already and they're getting significant buy-in by the farmers and whatever to put up a wind turbine on their property if they are seeing a direct benefit as being a part owner themselves. So I would think that the template is out there. It's just a matter of tweaking it to our own Saskatchewan needs.

Mr. Belanger: — My final question is really on the notion . . . And I'm just being a devil's advocate here so don't misinterpret what I have to ask you. But the question that we get thrown at us . . . And we hear a lot of presentation. I think five of our basic industrial customers right now within SaskPower, I think, account for 45 per cent of the consumption of power. I think it's five. Fifteen?

[10:45]

A Member: — 50.

Mr. Belanger: — Oh 50, sorry, 50. See I missed a zero there already. But nonetheless they account for 45 per cent of what our power consumption is.

They say to us that as much as you want to find alternative energies and sustainable energies and solar or wind and even hydro, really we'll never ever break our dependency on the growing demand for power and also our dependency on things like coal and gas. So we have to find some ways of getting the energy demand. And as much as some of the people are advocating for alternative energies, sustainable energies, it'll never meet the growing demand for our power needs. What would you say to them?

Mr. Jensen: — I would say that what you should do is wrench every bit of energy you can out of the natural gas that you're using. Instead of putting it like hot air up your smokestacks, you take the additional energy out through a cogeneration train and put that energy on the network.

Mr. Belanger: — Right. And I say this again with all due respect to all the presenters that made their comment to us. But it seems that people are narrowing our field of vision and our opportunities as people of Saskatchewan to say well the alternative energies process has limited opportunity for us. And I think that's a shame.

So you know, we ought to really, really start driving home the notion that that's the purpose of this committee. That's exactly what we want to do. And we ought to have people like yourselves engaged to see what other ideas and innovation can happen to really debase that whole argument that there's only one option for us in Saskatchewan. We've never accepted that in the past. Why should we do that today? That's my point. So your energy bond option is an idea I like as well.

Mr. Jensen: — Yes, and I guess maybe my response to this is that the government put \$3 million-plus into the UDP work. And I think it would be only fair to put money into researching with experts in the alternative energy fields as to what actually

we can do.

Mr. Belanger: — Thank you.

The Chair: — Mr. McCall.

Mr. McCall: — Well you've raised it, so I guess I'll ask for clarification. So there is \$3 million-plus put into the UDP. And for alternative energies, you get us. Do you feel like that's a fair balance between the considerations?

Mr. Jensen: — If the shoe were on the other foot and if you were to ask the people supporting the nuclear power industry and you said you have to go around with your travelling road show and you don't get the money, I think they would say no, that wouldn't be fair to us. So I am saying no, that does not seem fair.

Mr. McCall: — Okay. But seeing as we are here and we are having a conversation, I was wondering if you might talk about your thoughts around building to a LEED standard. What implications do you think that kind of approach has for the building code generally in terms of building of new homes? And what kind of incentives can the government put up in terms of encouraging building to a more efficient standard for individuals building new structures? And in your experience, what kind of resources are out there for people that are interested in building to that standard?

You'd talked about the work that RPIC has done in putting together the resource on alternative energy providers and organizations. So again, the building code implication for individuals, what steps should the government take to promote that work, and what kind of resources are available out there for people, in your experience?

Mr. Jensen: — Okay. I'm not an expert in LEED either. I'm not an expert in so many things. But just by using common sense, there are some things that can be done that wouldn't cost anything. And that is if you're, for example, to take new subdivisions and lay them out so that they are basically running east and west as opposed to in any direction at all, so that if the homeowners say, well now, you know, 10 years down the line I want to add some solar panels onto my building, at least they're facing in the right direction. Simple things like that which wouldn't cost anything.

Mr. McCall: — So in terms of coming out of the city of Prince Albert, do you find that that sort of awareness is there in terms of the colleagues you had worked with in the city and then throughout municipalities generally? Is there that kind of consciousness around the broader question of urban planning or is it just still sort of haphazard?

Mr. Jensen: — I would say that that consciousness is not there.

Mr. McCall: — Okay. Again though, the question of, you know, how can government work in partnership with the urban planners or the municipal planners and individuals to better promote smart building standards, perhaps ease the transition into those building standards with different incentives? And what resources do you think are out there for individuals looking to pursue these kind of opportunities?

Mr. Jensen: — I'm afraid I don't have sufficient knowledge to give you a good answer.

Mr. McCall: — Okay. Okay. One last question for you on this round. The awareness of net metering and certainly the alternative energy production that you've outlined for, you know, be it in cogeneration or in buildings having their own sort of energy production capacity, there is a net metering program that SaskPower has undertaken for the past number of years. As a citizen who has an interest in this topic and on this issue, what's your awareness of the net metering program and are there ways that we can improve the uptake by the people of Saskatchewan on the net metering program?

Mr. Jensen: — Okay. I guess from my understanding there is something that goes beyond net metering. It's feed-in tariffs, where you can actually benefit from it as opposed to breaking even. And I think that SaskPower is a little inflexible if they say, well you can only get so much of a variety of energies in before it starts affecting the system. I would say, fine; worry about that when you approach those numbers.

Mr. McCall: — Okay. Thank you, Mr. Jensen.

Mr. Jensen: — Thank you.

The Chair: — We're getting close to the top of the hour but Mr. D'Autremont had some questions. I guess I would just have you keep an eye on the clock. We have another presenter at the top of the hour.

Mr. D'Autremont: — Thank you very much. Mr. Jensen, we've had now two sets of hearings, this one and the UDP process approximately six months ago. So I think people are having the opportunity to present their views to government and to the public as to what energy alternatives and sources there are available to meet the growing demand that we have in Saskatchewan.

I wonder if you recollect ever having had this opportunity in the past to address government as to the direction that energy use, generation, and consumption should take. I'm assuming you've been interested in the energy field for some period of time. Have you ever had the opportunity in the past to be able to direct comments to government in a public forum?

Mr. Jensen: — I never have. Whether or not the opportunity was there, I don't know. And probably as the question comes up, like here are your alternatives and the . . . You know, the nuclear option comes up then that really certainly sharpens everyone's focus. But you know, I appreciate that there is a forum for publicly presenting your concerns to the government. And I appreciate it and I thank the government for it.

Mr. D'Autremont: — I have asked this question at other times to other presenters when comments have been made about it and no one has expressed that they've had that opportunity in the past. And so I think we're breaking new ground here on this in giving people the opportunity to come forward and express their opinions on energy sources, energy production, and energy use in the province of Saskatchewan.

The current government has put forward an RFP [request for

proposal] to double the wind consumption or wind generation capabilities in the province and hopefully . . . I know that there are some presentations that have already come forward and I'm assuming there will be a number of them that come forward.

We're also continuing to do significant research into the clean coal, carbon sequestration which the former administration was very involved in as well, and there has been massive investments going forward into the clean coal down at Estevan. I think the project is 1.4 billion with \$250 million coming from the federal government. So there are lots of projects going forward to reduce our carbon footprint. I know the previous administration had looked at doing a clean coal project and then cancelled it just prior to the last election.

We're still moving ahead with other projects in that area, especially in conjunction with the U of R [University of Regina]. So I think that we're looking at a number of the alternatives. You mention the use of the waste heat from natural gas generation. That's called combined cycle and that's what is being looked at, I believe, for all the new projects that are going forward.

And certainly the need for cogeneration with plants was something that the former administration did do but seemed to be quite reluctant to allow to happen. I know in P.A. [Prince Albert] here at the pulp mill there was a desire to do cogeneration and an agreement could never be reached with SaskPower and the former administration at the time. And I think that was a shame. It would have been a benefit to the pulp mill and to P.A. had that been allowed to go ahead.

So I think that there are a number of steps that are being taken to move forward with conservation, with alternative energy sources. Some of them have problems. Obviously wind is termed as an intermittent source and you need to have backup. When you have backup, and gas is the source that most people look to, so there you're paying for both your wind generation source at a certain price and your natural gas generation as well.

When you use alternate energy sources such as wind or solar, who should pay for that backup generation that needs to be the redundancy that needs to be in place for when the wind isn't blowing or it's too cold or when the sun isn't shining? Because while storage is the solution, we don't have the storage units capability yet that needs to be in place. And when that happens, it certainly will be a benefit to wind and solar. But who pays for that redundancy in the system today?

Mr. Jensen: — Okay. I can see that there'd be a lot of residential usage of both solar and wind turbines, and in those cases it would be the individual himself. Like right within my neighbourhood, somebody has put up a solar water heater and has put up a solar collector as well, and in the West Flat, somebody has put up a wind turbine. And in those cases, they are obviously paying it completely themselves and are recouping their money over time from paying less money to SaskPower.

On the bigger scale, I would suspect there are redundancies even within the existing system. You have to allow for plants being down and whatever and something has to cover for it, so there are redundancies in the system even as we have right now.

And obviously they're paid for by the people, as they would be if you build in additional redundancies.

Mr. D'Autremont: — I know the chairman's giving me the evil eye here. The redundancy in the system though for wind, the SaskPower project down at Swift Current, Gull Lake is 38 per cent efficient. So that means it's generating electricity 38 per cent of the time. So you need a system in place to generate for the other 62 per cent of the time, which is significantly different than a baseload plant which probably runs at 90 to 95 per cent efficiency even though they may be down for an extended period of time when they're refurbished. But they're not refurbished very often. I think SaskPower does their refurbishings 30 to 40 years on a plant. So you need to have that in place a lot more. The redundancy needs to be there a lot more often than it does with a baseload plant.

[11:00]

One of the things though that you mentioned was that to be able to sell into the system. And that wasn't previously happening. But SaskPower has now implemented a program called the small power producers program that allows for exactly that, for someone to put in some sort of a unit, let's say a 10-megawatt unit, 5 megawatt — I know there's some of those in my area — where it allows the producer to sell at a contracted price to SaskPower. And those things are starting to happen, and that's a good program.

The Chair: — Well I would like to thank our presenter, and I would like to, I guess, make a comment. I said our next presenter was on at 11. I am seeing two 1's where there's only one. Our next presenter actually is scheduled at 1 o'clock. With that I would like to thank our presenter for the presentations and answering the questions that he did today. And we will recess until 1 o'clock. Thank you.

[The committee recessed for a period of time.]

[13:00]

The Chair: — I'd like to welcome everybody back to the committee. Before we hear from our next witness, I would like to welcome Nadine Wilson who has joined the committee to listen to this presenter.

I would also like to advise witnesses of the process of presentation. 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 any written submissions, please advise that you would like to table your submissions. Once this occurs, your submissions will be available to the public. Electronic copies of tabled submissions will be available on the committee's website.

The committee is asking for submissions and presentations that will be in answer to the following question. This question is: how should the government best meet the growing energy needs of the province in a manner that is safe, reliable, 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 questions to follow. I will be directing questioning and recognizing 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 for public viewing. With that I would ask our next presenter to introduce himself. And please go ahead with your presentation.

Presenter: Renewable Power the Intelligent Choice

Mr. Thornton: — My name is John Thornton. I am representing Renewable Power, the Intelligent Choice, and the presentation has actually been prepared by Rick Closs and myself, both of whom are members of RPIC.

I thought the first thing I would do would be to go through the written document and just highlight some of the things that I thought were most important, giving you a sense of that. And then I want to do little bit more of a hands-on presentation — although I won't make you work — to look at some of the possibilities and problems with conservation, especially in buildings.

So I'll begin with an overview of the document. It's our position that energy efficiency and conservation should be the leading strategy in meeting Saskatchewan's energy needs. Conservation is the cheapest way to add electrical capacity, by diverting usage where it is not needed. It can be done with no added greenhouse gas emissions and is sustainable.

RPIC's position is that the current uptake of efficient technologies and practices leading to energy conservation is too slow. We feel a sense of urgency that we need to limit energy growth, and therefore we are asking for the assistance of the Government of Saskatchewan in a expansion of incentives and public education, but probably more importantly that the power of government be used through legislation, regulation, and pricing strategies.

RPIC's interest is based on its promotion of renewable power sources. An effective energy efficiency strategy is important to renewable power. It makes the transition to renewable power easier by lowering the energy demands that must be met. And we feel that there are built-in efficiencies in energy efficiency and conservation, or in renewable energy, that complement an energy efficient and conservation approach. For one thing, most of the renewable power sources are potentially decentralized sources, reducing the problems with distribution systems. It eliminates ongoing resource extraction. There is no fuel processing involved, no transportation of fuel, and no long-distance transportation of electrical energy. I have written in my margin regarding passive solar in particular: no wires, no pipes; direct use of energy from the sun.

In contrast, coal faces environmental and financial challenges, problems of air pollution, carbon fees, and the expenses of

carbon storage. The broader implications of carbon restrictions are being seen, for example, in the United States where legislation has been brought forth for carbon tariff protection for industries so that countries that have carbon-intensive production cannot take advantage of that carbon emission to intrude into a country's manufacturing capability.

We are essentially arguing that increases in demand can be met through energy efficiency and conservation rather than new generating capacity. Projected demands often ignore the possibilities of conservation; they rather follow trends of the past. Efficiency Vermont has suggested that savings described are exceeding average long-term growth, effectively turning load growth negative. I did find out, in my review of SaskEnergy applications to the rate panel, that SaskEnergy has taken that same position in stating that its reduced demand can be directly attributable to energy efficiency practices.

We do have some cost examples in our presentation of the effect of energy efficiency in conservation. The Ontario Power Authority actually pays industrial consumers \$150 per kilowatt to reduce their electricity consumption. And they pay commercial and institutional customers in the same manner. A recent Ontario study has suggested that for every dollar they've thus spent on energy efficiency and conservation, there's been a savings of \$2.27 that's been achieved. They estimate the average cost of their energy conservation measures as being the equivalent of 3 cents per kilowatt hour.

Efficiency Vermont has likewise identified a conservation yield in its recent activity of 46 megawatt per every \$10,000 invested. And again they estimate their costs at about 3 cents, 3.1 cents per kilowatt hour. They have, at the same time, using American currency, estimated that other types of energy being supplied in Vermont can be costed at 14 cents per kilowatt hour.

California probably has the most progressive energy conservation programs. They have progressive, stringent, state-wide energy codes and standards for buildings and appliances. They have ratepayer-funded energy efficiency programs and are promoting a zero net energy code legislated for residential and commercial construction, with zero energy being the standard by 2020 for residential and 2030 for commercial buildings.

Saskatchewan has been less aggressive. It has primarily relied on incentive and grant programs. There have been some minor forays into legislative and regulatory actions, but in the end it seems as if the Eneraction program perhaps was the best program that Saskatchewan has developed to date. However without more staff, resources, targeted strategies, legislation, and a progressive pricing strategy, the uptake of efficient technologies will be slow. We are looking therefore in this presentation at regulation rather than relying only on incentives.

There have been legislative standards for new building construction. There is of course the national energy code. There is the model national energy code, which is meant to provide greater energy efficiency savings. Manitoba has already raised the standard by 25 per cent over the 1997 version of the model building code. Saskatchewan did a fairly similar thing in 2003, but limited that regulatory process to government buildings or buildings that were achieving 30 per cent funding in their

construction. So it's a fairly narrow window.

We are recommending that, in fact, the new version of the model national energy building code be put in place as soon as possible, and have put an end date for January 1, 2116, for the full implementation for all buildings.

The fourth recommendation is important, I think, to highlight because of its effect on renovation as well as on new construction, and we are promoting the notion of a residential and commercial standardized efficiency evaluation. I think probably the easiest way to think about this is the equivalent of an Energy Star rating for buildings — that when a person goes to buy a building or to rent facilities in a building, they will know what the energy costs of living or using that building are, and they will likewise be more aware of their carbon emissions as a person or as a corporation in the use of those premises.

California's been advancing the notion of a net zero energy building. Ninety per cent of the energy requirements of these buildings are to be reached through conservation and energy efficiency with a 10 per cent margin to allow for renewable power to complement the conservation practices that have been put in place. Net zero energy buildings need to be promoted in Saskatchewan. They need further research because of our climate, but we believe that the California approach will hold potential for Saskatchewan as well, so we're promoting the adoption of net zero energy standards for buildings.

We know that all of this will require both public awareness and a fair degree of training, for example, in the trades. We have looked at Humber College, which has instituted a program. The emphasis of that program is to produce graduates who can provide advice on renewable energy, building design, heating and cooling alternatives, energy audits, the cost of the energy system in a given building, and help select appropriate suppliers for those materials. The energy audit portion of that training would be particularly helpful in the evaluation of existing buildings, of which there's very little activity going on at this point.

All of this is not meant to be a source of cost to the economy. In fact quite the opposite is true. Ontario is predicting 50,000 jobs from its *Green Energy Act*. I did read a press release from Canadian Press yesterday morning. The ambassador of the United States to Canada yesterday stated that green jobs are key to long-term economic growth in both the United States and Canada. He says one of the reasons that Obama is so concerned with climate change is that he sees it as an economic issue as much as an environmental one, and that economic recovery in the United States and Canada will be fuelled by the creation of so-called green jobs.

Finally we want to look at electrical pricing strategy. We have come to the conclusion that pricing and rate design is currently being used to in fact punish people for conserving energy rather than encouraging them to do so.

SaskEnergy — and I'm using primarily SaskEnergy data here because it's the clearest — SaskEnergy presently relies on two elements for its pricing policy. One is the notion of a monthly service charge based on a service class or a customer class. It's a fixed charge which is not dependent on the amount of energy

that's used by the customer. I've listed the classes in there. As far as I can tell, the residential class, which now includes what used to be called the farm class, is applied to people with a range of from 1000 to 10 000 cubic metres of gas usage.

The second charge is important as well, and that's the volumetric charge. That's the charge, not a fixed charge but a charge that changes with the amount of energy that is consumed by an individual user.

[13:15]

Anyone who thinks that conservation measures cannot reduce energy use needs to go back and reread SaskEnergy's presentations to the rate review panel. They have clearly identified conservation and energy efficiency as being the source of a drop in their volume of revenue. The challenge . . . And I'm quoting from the review panel: ". . . the challenge that declining consumption presents to SaskEnergy's revenue stream [is evident]."

SaskEnergy has responded to that loss of income primarily by focusing on raising the fixed charge cost to consumers. The effect of that has been that the cost per cubic metre has risen for those people who have taken conservation measures in their house because of the offsetting effect of the fixed charge.

The Consumers' Association of Canada identified that as being a source of great concern. But as well, the rate review panel, in its tabulation of complaints about the commodity charge by SaskEnergy, has pointed out that complaints by energy conservationists represent the second largest group of complaints received by the panel, the first largest group being those who are concerned about SaskEnergy's lack of efficiency in its delivery of the commodity.

There is an alternative perspective on rate design that can be based on carbon emissions generated by the end-user, and we would heartily endorse the notion that that be adopted as a measure of the cost paid by the consumer. Fortunately it is very closely in line with the actual volume of delivery, and so in essence we're arguing to do away with the fixed charge and rely simply on the volumetric charge as providing the consumer the best measure of the actual carbon emissions involved in the heating of the building in this case.

I had hoped to have time to present to you some practical applications of where energy conservation possibilities are available for buildings. I will identify five elements that are of concern: insulation; infiltration — the ability of air to move in and out of a building; the orientation of the building, making maximum use of the solar . . . availability of sun; and size; and finally, occupant behaviour. Each of our recommendations can be directly targeted to those five elements of conservation.

I have provided in an appendix, which I will move to conclude, to indicate why we are in the end supporting the volume charges.

You will see that this is personal to me; this is based on my home energy bill. I have over the last 10 years or so managed to reduce my energy consumption. It is electricity. I do use electricity to heat water. I've reduced my total consumption by

about a third. By doing that I've raised the price of every kilowatt of energy that I use. I started out with a kilowatt hour price of 13-plus cents. I'm now paying almost 15 cents per kilowatt hour because of the energy conservation measures that I've taken. That's the effect of that fixed charge.

I've done a payback. I'm just going to say, maybe you can help me here. I want to put in a water solar heater. I want to get down to that . . . I want to drop another 25 per cent off. I heat water with electricity. I want to drop my energy use. So I've looked at what the effect would be of a 25 per cent reduction. I would end up paying 16.71 cents per kilowatt hour for installing a solar hot water heater. If in fact I used that as the determination of my end point or my payback period, it would take me 12.78 years with the fixed rate attached. I can get my payback period down to just over eight years on adding a solar water heater if I look solely at increases in the charges for the electricity delivered to my house. So I guess that's the problem I'm leaving you with. Do you think I should put in a solar water heater at this point? Thank you.

The Chair: — Well thank you very much for your presentation. Several of the members have indicated they have questions. Mr. Weekes.

Mr. Weekes: — Thank you, Mr. Chair. Thank you, Mr. Thornton, for your presentation. Just a couple questions on your group. I believe it's called a group. You have members. And how many members do you have and who do you represent? I think there's about 100 members.

Mr. Thornton: — It's actually been a quite useful group in that it's provided a sounding board for many of us who are interested in energy sources. It did arise around the question of nuclear power and our dislike of nuclear power, but it's led to much further discussion about renewable power as the alternative. And conservation, essentially.

Mr. Weekes: — Thank you. I can't disagree with your presentation. Conservation obviously has to be a major part of the future of energy production and the energy challenges we face in the future. The problem is how do we get from A to B, and the cost of it and who's going to pay and all those issues. But I just want to . . . I'm sure there's going to be many questions, but one area I just want to ask you or challenge you on, or if you could give us . . . Not challenge you so much. Give me the answer to the problem.

Fifty companies use 45 per cent of the electrical generation in the province. Now these are obvious — mines, big operations. You know, as far as I'm concerned I think from the consumer residential to the small commercial, I think education and different programs can be brought in. You know, people are already starting to make some changes. But how, how do we get the larger users to conserve, to buy into conservation but also just the whole energy picture? The added-on challenge, I mean the province is growing. I suspect there's going to be more mines opening up, not less. There'll be more larger producers. I guess if you could comment on that side of the issue.

Mr. Thornton: — I think there's two things that I would respond with. One is that I think we need to re-examine rate design quite seriously. And this is where the notion of reflecting

actual carbon emissions is concerned. We do have the consumer reports with respect to energy. They report that the majority of the burden of the increased revenue to SaskEnergy, in this case, has come from the residential class which represents only something like . . . I think it's in the 60 per cent of the revenue increase with that fixed charge is coming from the residential class, but they're only using something like 23 per cent of the energy. So I think there's room to think about assessing rate design as a way of having an incentive, if you will, to heavier users to recognize their contribution to climate change and through carbon emissions.

The second point that I would make is that if we don't do that, we're in trouble. We are going to run the risk of running into the notion of international carbon tariffs — which have been cleared by the WTO [World Trade Organization] and I suspect by the Free Trade Agreement as being legitimate reasons to penalize goods and products coming into another country. If we persist in having high energy extraction programs, we're going to likely face carbon tariffs at some point to balance off the fact that we haven't figured out how to do it without using those high carbon sources.

Those would be my two immediate — I don't mean to pretend to be an expert on all of this — but that would be my immediate concern.

Mr. Weekes: — Thank you very much.

The Chair: — Mr. D'Autremont.

Mr. D'Autremont: — Thank you. Thank you for your presentation. I'm interested in your discussion on your pricing strategies and the elimination of the fixed charge. If you were to eliminate a fixed charge, how do you build in the capital costs of the construction of the plant and the distribution system to your home? Whether you have an alternate energy source either locally, like your own, or a distributed local alternative energy, the transmission system to your home, be it natural gas or electricity, and the replacement costs or the depreciation of those assets, how do you build that into the cost?

A number of that has already been paid for. Part of it has not been paid for. Future construction has yet to be paid for. So do you build that in over a fixed period of time, five years let's say, into your consumption costs so that you — rather than paying the cost of natural gas, let's say the actual cost of the gas — that you would pay the cost of the gas plus then the capital costs and restructuring costs built into that? Do you pay that over the lifetime of your connection, or do you pay that within a fixed period of time on your connection?

Mr. Thornton: — Some of those problems apply to both the fixed rate charge and the volumetric charge. How do you assign costs? I can't help making a joke. The phrase that shows up in the SaskPower discussion before the rate review panel was the R to RR [revenue to revenue requirement], and I want to say the RRR kind of approach to it, but that was my joke. I won't do any more.

What the R to RR is the revenue to the required revenue. And they are actually using that as part of their breakdown of the rate design for the fixed charge to residential users.

If the consumer reports consultant was unable to parse all of this, you'll pardon me if I don't claim to understand it all. But the idea is that someone somewhere sits down and figures out which portions of new capital cost should be attributed to which customer class. I happen to think they're loading it on to the residential class through the fixed charge because that is the large basis of the . . . You know, you're not putting all of the costs of new construction on one or two high-volume users.

The short answer to your question is, the charges that are now in the fixed rate charges would be seen on a customer's bill as part of the volumetric charge, as simple as that. There is a cost to getting the product to the consumer. The consumer would be paying that cost under one charge based on how much of the product was consumed. Period.

Now we may not get there right away. I would be happy if you came away from this saying, there will be no more fixed rate charge increases; instead we will load them on to the volumetric charge. That would be . . . That's one halfway step.

A further halfway step I've included in the written presentation would be to actually look at the carbon cost of the delivery system — the guy who leaves his truck idling while he's out on a service call, for example. Those can be attributed . . . They're currently absorbed into that fixed charge. You could do a carbon analysis of the delivery system and maintain that as a fixed charge varying from customer to customer because a big-volume user may . . . I can see the possibility of a big-volume user requiring less upkeep of the system or something like that. But again, the short answer is, put the charge on the gas to the consumer, so that she's paying for what she's using.

Mr. D'Autremont: — Yes. I think every consumer feels that their class and category is paying too much no matter what class or category they are.

You mention the fuel of a vehicle. One of the difficulties now being faced in the US [United States] is that with the recession there, fewer people working, less business happening, fewer vehicles are on the road. Less fuel is being used. Therefore less taxes are being paid on that fuel and now they can't support their highway system because they don't have the revenues coming in.

[13:30]

So under a scenario where you applied a higher cost for consumption, energy conservation and savings reduces that consumption, in turn means the price will increase to continue to pay for the infrastructure system.

Mr. Thornton: — You have in fact identified where we want to go. We do want to reduce carbon emissions from petroleum products. We have to do that.

Mr. D'Autremont: — It doesn't even have to be petroleum. I'm talking electrical energy, no matter how it's generated.

Mr. Thornton: — Yes.

Mr. D'Autremont: — So what you're saying is that the price

will increase no matter what systems are used to either conserve or to generate.

Mr. Thornton: — Well as the price goes up, I want to buy less of it. I don't want to heat my house or use the electricity in my house that is going to cost me twice what I'm now paying for it. In fact you really are talking about some of the disincentives now, through using in effect cheap coal to produce electricity. That is a disincentive to conservation on one hand and microgeneration on the other. The payback periods on windmills as they're called, and I'm talking about the individual ones, are lengthened out beyond what any individual consumer would do. But yes, you've put your finger on the problem all right and the solution.

Mr. D'Autremont: — Nevertheless when the previous administration was in power or ourselves now, whenever the rate goes up for electricity, everybody seems to be mad about it and not concerned so much about whether there's conservation, whether there's alternative energy being used, but simply the price has gone up and that's bad.

Mr. Thornton: — Yes, and the guy who gets picked up for littering is mad because he's the one who has been picked up for littering while it's everybody else's mess. I'm glad I'm not a politician, believe me. And it is part of the education process that needs to be done because if I litter on Main Street now, somebody's going to call me on it. I don't think you're in that situation with respect to costs on energy yet, but sometimes wisdom needs to prevail.

Mr. D'Autremont: — I think what we're hearing from the presenters is that no matter what is done in the future, the costs will increase.

Mr. Thornton: — I think that's right.

The Chair: — Mr. McCall.

Mr. McCall: — Thank you very much, Mr. Chair. Thank you, Mr. Thornton, for a very thoughtful and thought-provoking presentation. I guess I'll start with the point on, perhaps just as an observation around the point on pricing. Certainly in the broader sort of approach to this subject, there's often a straight line drawn between, you know, you increase your conservation efforts that will save you consumption of the energy and will result in a savings. And in terms of the information that you provided and the analysis that you've provided, you've given us some pause for thought, in whether or not that's actually the case in terms of how the pricing structure is played out. So for that we thank you.

I guess the question I would have is in terms of SaskPower and the net metering program that they've undertaken, given the kind of analysis that you've done on SaskEnergy, do you have any observations to make around the efforts with the net metering program undertaken by SaskPower?

Mr. Thornton: — Yes. And this partly comes from a presentation by SaskPower that was done in North Battleford for rural consumers. The guy stood up in front of us and said, very apologetically said, I'm sorry but, you know, no matter how much energy you produce under the net metering program,

we're still going to charge you the service charge. And oh, by the way you're still going to have to pay tax on it. As my solar water heater extends out the payback period on the net metering, it means you can never in fact generate enough power not to be paying SaskPower to be hooked up to the larger grid.

It also serves to limit the generation of electrical power by small producers back to the grid. Because of the way the program is set up, you are able to reduce your consumption down to zero, but you can't reduce it down further than that, even if you want to apply it against the monthly charge.

So again we've designed a system that really tells people, we don't want your power. We don't want you to save energy; we're going to charge you one way or the other. And the more you save the more, we're going to charge you.

The net metering program is a step forward, but it's got to be . . . It's part of the idea that we're presenting. This general presentation is that we need to move faster than we are. We're taking little baby steps and we've got a train coming. We better be ready for when it gets here.

Mr. McCall: — So to turn net metering into a great leap forward or a great stride forward, do you have any specific recommendations to clarify?

Mr. Thornton: — Oh micro—producers should be allowed to produce as much as they can and be paid for it. Most jurisdictions actually pay a bonus for the production of green power. We're limiting it to cost of delivery is all that you can offset by your net metering program. No bonus for the fact that it's green energy.

Mr. McCall: — Thank you very much, Mr. Thornton. One last question in this series, if I might, concerning the labour force development component of the recommendations that you've presented. In the experience with Humber College, how long did it take them to get up to speed in terms of their programming offerings? Are you familiar with the spadework that was undertaken there?

Mr. Thornton: — No, I'm not. No. I'm not able to answer that specifically, and had I had more time in identifying those five elements, you would have . . . Insulation, the vapour barrier, all of those things require training. I know. I figured it out on my own how to do this stuff as part of a construction crew. You really need people who have energy efficiency and conservation as their rationale for the kind of construction that they do. That requires education. And don't I wish that a Humber College graduate had been here to make this presentation instead of me, given the description of what the program is doing.

Mr. McCall: — You've pointed us in a right direction in terms of we know where to go to find out the specifics. But I guess, with some familiarity around the SIAST system, do you see elements that can be pulled together there in terms of ramping up to meet, to provide that vital labour component to the green jobs strategy?

Mr. Thornton: — I assumed that SIAST would be the appropriate delivery agency. But again it requires that shift of focus, that perspective on the kind of worker that you're putting

out and putting that into the training program. Once you've got that shift in perspective is relatively easy. There are specific techniques that need to be . . .

You know, I mean, I will get one thing in here about vapour barriers. Vapour barriers are not simply a matter of keeping air from going in and going out. Every time your outside air moves, every time there's a bit of a wind, the upwind side of the building has a positive pressure area located. The downwind side of the building has a negative pressure area created. So it isn't a matter of air wandering in and out of a building that a vapour barrier presents. It instead has to be resistant to pressure differentials from inside to outside. Air is actually sucked out of buildings. That requires backing for a vapour barrier so that it isn't moving back and forth on a nail into a stud and being torn open because 50 little holes around a nail are equal to a big hole in the middle of your door.

I'm always amazed at the . . . I guess I grew up with the bias of many people against trades and people who work with their hands, and I have recently engaged in learning how to be a farmer. I've never had such a steep learning curve in my life, you know. Oh you take the chain and you weld it to the bucket and you lift it up. And I'm standing there: chain? Welding? Trades don't get enough respect, and education is important for conservation.

Mr. McCall: — Thank you, Mr. Thornton, Mr. Chair.

The Chair: — Mr. Belanger.

Mr. Belanger: — Just on the notion obviously looking at alternative energies and looking at also the sustainability of alternative energies and the sustainability of our environment in general, there are some that believe that there is no such thing as the challenges of global warming and that we ought not to pay any attention to what this committee work is trying to do.

If you had your five minutes or — I shouldn't say five minutes — but a minute to say what you'd like to say to those people who persistently, persistently say there is no greenhouse gas problem; there is no global warming because there are those within the economic corridors of power that don't believe it's so. There are some that proclaim loudly to their U of R class that he doesn't buy the notion that there's global warming. And some of those people are leading this province. What would you say to that? What would you say to those people that consistently say there is no such thing as global warming?

Mr. Thornton: — I'd point them in the direction of a lot of work that's all ready been done. Most of the published deniers of global catastrophe, of climate change, have in fact been paid by the oil companies. Tim Ball comes to mind immediately. I just saw an article by him in the *Western Producer*. There's a series of think tanks that have been funded by energy producers, specifically to protect themselves. If that seems unusual, I'd refer you back to the controversy over tobacco. Some of the same people in fact who denied the connection between tobacco and cancer are now under the employ of these think tanks denying the reality of climate change.

And scientists are at a disadvantage here. Science always maintains a degree of skepticism. Trying to get a science to say

it is a certainty that this is going to happen, you're not going to get that. You're going to get, you know, there's a 90 per cent. Well then they'll say, well it's very likely. They just wouldn't, I mean, there is a 99 . . . You've seen the ads for the guys calculating the possibility of the big dinosaur coming on the beach. Maybe I watch too much television. I don't know. When something happens, it's 100 per cent possibility, but we can't afford to get there, you know.

Mr. Belanger: — The other question I have is in terms of the whole notion of the carbon imprint left by SaskPower. And you're saying everything, the guy leaving his truck running to the extra power consumed to a poorly insulated home. Do you think that . . . and I'm always wondering about the carbon tax situation. Like how will that be assessed against Canada, in particular Saskatchewan? Because this morning, as one presenter and many others did, but one presenter mentioned a fact that 72 tonnes per capita is what we generate or what we emit in terms of greenhouse gases. Now Saskatchewan's at a huge disadvantage. Some believe there's no clean coal, period. Just a phrase.

Mr. Thornton: — I'd be one of those.

Mr. Belanger: — So the whole notion of talking about carbon tax and using less energy, because you use your personal home as an example. A vast majority of Saskatchewan people want to pay less on their power bill. So as their power bill goes up because of carbon tax or infrastructure costs or alternative energies research, whatever the case may be, they're going to shut off those lights. They're going to turn down their water heater. They're going to put their car plug-in on a timer. They're going to put those new efficiency light bulbs and so on and so forth. I think the vast majority of people will do that. But they've still got to know that that effort is worth it, not just for the environmental perspective, but financially for them as well.

Like I come from northern Saskatchewan. In my house, we never pay under \$200 a month for our power bill — never. It's always over 200. And my apartment in the city, maybe 30 bucks. Mind you, I've got three daughters, and they like to take their showers and take their time. So that has an effect, I imagine.

But the point being is that if there was an incentive, and you made an interesting point, if I'm doing all these to conserve energy and reduce my cost, why is my cost still going up? And then you look at all the data that SaskPower has, is the carbon imprint going to cost us even more? So wouldn't it be to their advantage to reduce the energy in our homes, thereby reducing the carbon imprint they leave as a result of generating their power, which lowers our bill and lowers their cost through good efficiency programs, especially construction of homes? That seems logical. And you're saying that wouldn't apply in this case. I still can't understand why it wouldn't apply when you talk about your solar power, and why is it costing you more to put in solar power.

[13:45]

Mr. Thornton: — I was about to say, oh no, I think you've got it right. And then you said I said something different. So I'm lost.

Mr. Belanger: — No, you said when you'd done efficiency programs in your home, it ended up costing you more. We're trying to figure out how that costs you more, just in layman's terms. Because a lot of people follow these hearings and they wouldn't mind knowing, well why is he paying more if he's being more efficient? That's what they want to know.

Mr. Thornton: — It's that fixed charge. It's that fixed charge.

Mr. Belanger: — When you say a fixed charge, a base charge, electrical charge each month?

Mr. Thornton: — The monthly charge is not an electrical charge in any sense of the word. It's not a charge that is based on your use of the amount of electricity that you've used. It's because you're hooked into the grid. That's the cost of plugging in. And it's been rising. It's been used, in SaskEnergy's case anyway, to offset the decreasing revenue caused by conservation.

Mr. Belanger: — Okay.

Mr. Thornton: — And so therefore as I lower my usage, my cost per kilowatt hour keeps going up. That's the appendix. If you take a look at the appendix, I've tried to break it up. That's the sense I'm talking about.

Mr. Belanger: — And, you know, the point is the greenhouse gas emissions argument, global warming, it's there. And there's some people that say no, it's not true. And you kind of shake your head at some of those guys. Well, everybody's wrong; I'm right. Like my goodness, like where in the heck have you been for the last number of years?

Second notion, as you make energy efficient homes and you have more people participating in energy efficiency efforts in their own homes, that should reduce their costs or at least keep it on par. And then you look at the notion of the carbon imprint and the carbon tax costs to SaskPower and to us as consumers. You figure all those naturally connect and they all come to a conclusion that the more you conserve, the less your power bill will be, and the less the cost will be to SaskPower, and the greater benefit is to the environment. So all that makes sense. It all connects. But I still can't figure out why we aren't doing some of these things in that fashion.

Mr. Thornton: — Well I think that Mr. D'Autremont put his finger on some of it. You're going to be unpopular if you as a politician say we have to recognize that there are costs to reducing our greenhouse gas emissions. If you for instance, right now you can say that the cost of a kilowatt hour of electricity is, I think it's nine, it's seven one or something like that. You eliminate the service charge, the fixed charge, and you're going to have to say the cost of a kilowatt hour of electricity is now — and I'm guessing here — 12.3 cents per kilowatt instead of 9 cents per kilowatt.

And everybody's going to look at their bill and go, whoa. No, not everybody. Big users are going to look at their bill and say, what have you done to me? In fact the person who is the average user of electricity or less is actually going to see their bill go down, at least based on lesser consumption. So there is a populist appeal in here somewhere that the politician or the

government that can make sense, the way you have of the value of conservation, will eventually win over I think. As I said, I'm not a politician. I don't envy you.

Mr. Belanger: — Neither am I. I'm just a hockey player dabbling in politics. That's what I am.

Mr. Thornton: — I'm just a construction worker. Never mind, I was going to . . . Led me down the path of joking again, and I won't do that. Thanks.

The Chair: — Well thank you very much for your presentation today and taking the time to answer questions for us. I think this was very well laid out for us, so I appreciate it. Thank you.

Mr. Thornton: — Thank you very much. I appreciate the opportunity.

The Chair: — The committee will now stand adjourned until tomorrow morning at 10 o'clock in Saskatoon. Thank you very much.

[The committee adjourned at 13:50.]