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Chair

Mr. Leon Benoit

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• (0905)

[English]

The Vice-Chair (Mr. Alan Tonks (York South—Weston, Lib.)): Good morning to our witnesses and to members of the committee. Welcome to meeting 11 of the Standing Committee on Natural Resources on Tuesday, April 27, 2010.

Today we're going to be into wind and tidal, well represented by Mr. Sean Whittaker, vice-president, policy, for the Canadian Wind Energy Association, and Mr. Ronald Scott, from the Maritime Tidal Energy Corporation. Welcome to both of you, and thank you for being here.

Today the committee is resuming the study on the status of the ecoENERGY program. Today's session is on alternative renewable fuels.

Generally, we have eight to 10 minutes for presentations. Then we have a round of questions and answers from the members of the committee. It's in a particular order. Feel comfortable to ask for clarification on the questions. On the part of the committee, they will direct who they would like the question answered by. This is a fairly freewheeling event.

The other chair is in transit.

Maybe we'll just begin. Who would like to start?

Mr. Whittaker, would you like to begin?

Mr. Sean Whittaker (Vice-President, Policy, Canadian Wind Energy Association): Yes, I'd like to begin.

Thank you very much. It's a pleasure to be with you here today. I certainly appreciate the invitation.

My name is Sean Whittaker. I'm the vice-president of policy for the Canadian Wind Energy Association. Today it's my pleasure to give you a brief presentation on the status of the ecoENERGY program, particularly as it pertains to wind.

I have a slide deck, and it'll be distributed afterwards to members of the committee.

[Translation]

I am going to give my presentation in English. However, if you want to ask questions in French, please do not hesitate.

[English]

Just to start off with an overview of the current situation of where wind is in the world, there are about 160,000 megawatts of wind

turbines installed globally. There are close to half a million people who work in the wind industry in manufacturing, in development, and in support services.

An interesting statistic is that in 2009, in both Europe and the United States, more wind capacity was added than any other new electricity-generating source, so it's the number one newly installed electricity-generating capacity in Europe and the United States.

Here in Canada we've had similar kinds of growth curves over the past six years. We've had a tenfold increase in the number of megawatts installed. We now have about 3,400 megawatts in the ground, which provides electricity for about one million Canadian homes, and that satisfies pretty close to 2% of Canada's electricity demand.

It's interesting to note that in the midst of the current global economic recession, in 2009 we saw record installation years in both Canada and the United States. That shows that even under difficult economic times, the drivers and benefits of developing wind are evident enough that growth has continued unabated.

Looking forward, wind certainly has a very promising outlook. Looking globally, it's been estimated quite conservatively that there will be about \$1 trillion invested in the wind industry globally between now and 2020. That support for wind takes really two forms. There is direct support with things like the ecoENERGY program and, in the United States, the production tax credit. In the United States they are also pursuing renewable portfolio standards, so direct incentives. At the same time, there are also indirect incentives, which are essentially carbon pricing, regulatory regimes to establish and put a price on carbon. And the two of them work hand in hand.

In Canada, looking forward, certainly the growth prospects are extremely good. If you take all of the commitments the various provinces have put in place and add them up, we come to about 12,000 megawatts by 2015. But we really think that's just scratching the surface of what's possible. CanWEA has put forward a vision whereby wind would satisfy 20% of all of Canada's electricity demand by 2025, and this is a figure that's already been attained by countries like Denmark. If we get there, that will represent about \$80 billion in investment, about 52,000 jobs, and GHG reductions of about 17 megatonnes per year.

Turning our attention to the matter at hand, to the ecoENERGY program, quite frankly, the ecoENERGY program by almost any measure was an extremely successful program. To be honest, wind would not be where it is right now if the ecoENERGY program didn't exist. It was a very effective program at kick-starting the industry and in really driving growth across the country. In fact, it was the victim of its own success. The funding was supposed to last until March 2011, but all funds for ecoENERGY were fully committed one year in advance. So no new projects as of March 2011 will be able to receive any ecoENERGY funding.

In the 2010 federal budget, unfortunately, new funding was not provided for the ecoENERGY program, so it's assumed that, as I said, after March 2011, no new projects will receive ecoENERGY funding.

Minister Prentice has indicated that the government's view is that the best way forward is to support renewable energy through regulatory frameworks, particularly around the introduction of carbon pricing. That's certainly something I'll talk about a little bit later.

At the same time as all of this is happening, the United States, through the U.S. Recovery Act, has introduced incentives that are about three times the size of ecoENERGY. Not only are they three times bigger, but they are slated to last until the end of 2012. So they have an incentive that they've just put in place that's three times bigger and lasts much longer. While Canada's commitment to ecoENERGY is declining, the U.S. commitment to their incentive is actually increasing quite rapidly.

● (0910)

It brings one to the basic question of why ecoENERGY is important for wind growth in Canada. There are really four basic reasons. One, it's a bridge to a future where there's a price on carbon. I think everyone recognizes that within the next three to four years we are going to see a North American approach to carbon markets. We believe that once in place, carbon markets will essentially close the cost gap between wind and conventional or fossil technologies. EcoENERGY basically serves as a bridge to get us from where we are now to that time when the carbon markets exist. But if that incentive is not in place when carbon markets come in, we risk being caught flat-footed.

The second reason is that ecoENERGY really helps Canada to compete for wind investment. Quite frankly, North America is seen as the next great opportunity for wind. We compete directly with the United States for this investment, and as I said, they are trending up in their support and we are trending down. This presents competitiveness issues.

The third is that ecoENERGY is a stimulus with net benefits to the federal coffers. GE Financial Services did an analysis of ecoENERGY, and they actually found that for every \$1 the federal government invests in ecoENERGY, it gets about \$1.30 back in terms of tax incomes and associated revenues. Over its lifespan you've got a 5% positive internal rate of return on ecoENERGY, so it's a good investment.

And fourth, it supports the government's objective of getting 90% of generating in Canada from non-emitting sources by 2020. There

are three ways you're going to be able to get that: switching to natural gas, energy conservation, and wind.

Although ecoENERGY is and has been an extremely important element of supporting wind, it's not the only area where we believe the federal government can support wind energy. There are really three that I'll highlight here. The first is providing clarity with respect to carbon markets. We really do believe that once the carbon market is in place, you don't need a direct incentive for wind any more; it'll cover the cost gap. But there's an interest in having the government be proactive about looking at what that market is going to look like and providing the kind of certainty in terms of the basic rules of the game that will be in place once a carbon market is established. That provides a clear signal and certainty for investments, so that we can continue to attract investment to Canada.

The second area where we feel the federal government can play a very key role is in providing support for new transmission lines. I remember being at a conference once and they said if you love wind energy, then you have to at least like transmission. The provinces haven't made serious investments in transmission in the last 30 years, so we have to do it anyway. To make that transmission wind friendly, the incremental cost is actually extremely low. But it's a huge cost for the provinces to bear, and they are looking for support at the federal level to assist in what it would look like. Is that an east-west grid? It could take many different forms.

The third area is in terms of supporting R and D across the provinces. One of the most obvious areas is looking at what the economic impacts are of integrating large amounts of renewables into the grid. You can't do it on a purely provincial basis. You have to do it on a pan-Canadian basis. So that's an area where federal support would be welcome.

Also, there's a document that just came out. It's called the *Wind Technology Road Map*, an excellent document that Natural Resources Canada brought to the fore, and it provides a whole slew of recommendations on R and D actions the federal government can take.

Before closing, there are three myths I just want to address. They come up frequently, and I thought to open it up in the spirit of discussion, I would address them here.

The first myth we often hear with respect to wind, and particularly around the discussions on ecoENERGY, is that wind is significantly more expensive than conventional generation. It's important to understand that new conventional generation is much more expensive than the conventional generation of 20 or 30 years ago. We don't see the days of 3.5¢ for a kilowatt hour hydro-electric any more. New hydro developments are coming in north of 10¢ a kilowatt hour. Fossil fuel-fired plants, obviously, are increasing in price as fossil fuel prices go up, so in general we see cost trends going up. At the same time, cost trends for wind are coming down. And the remaining gap between this is covered once there is a price on carbon.

• (0915)

The second myth is that wind needs 100% backup power. We've found that the variability of wind is greatly reduced through geographic dispersion and forecasting. If you talk to any utility that has any amount of wind on their grid, they will say that the cost of backing up that wind is not 100%. In fact, it's less than 10% of the generation costs of wind. That comes from experience.

The third myth is that wind is the solution for Canada's electricity needs. We've always contended that wind is a part of a balanced energy diet going forward. It works very well and needs other forms of generation. Hydro is a particularly good complement, with 60% of Canada's generation.

In closing, ecoENERGY has been an incredibly successful program, but with its expiry Canada will be extremely hard-pressed to compete with the U.S. for global investment. It represents a huge opportunity to stimulate investment in manufacturing, provide benefits to rural communities, and meet the government's objective of 90% non-emitting generation by 2020.

There are lots of other ways the federal government can support wind: clarity on carbon markets, support for R and D, and investments in transmission. But in all these cases we really need to act very quickly if Canada is going to get its part of the growing global wind energy boom.

Mr. Chair, thank you very much.

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Whittaker.

I appreciate you trying to stay within 10 minutes, because we really want to get to questions.

Mr. Scott is next on tidal energy.

Mr. Ronald Scott (President, Maritime Tidal Energy Corporation): Thank you, Mr. Chairman and members of the committee. It's a pleasure to be here. I hope I can help with your deliberations and your effort to effect policy in the renewable energy world. Ten minutes goes by quite quickly, so I'll get right at it.

Maritime Tidal Energy Corporation was founded and incorporated in Halifax in 2006. We like to think of ourselves as folks who are facilitating, advocating, and being the catalyst for the development of commercial tidal energy in Nova Scotia waters. We also like to think of ourselves as people who are interested in developing a tidal energy or ocean energy industry around those very impressive tidal energy waters.

Most of you know that in Nova Scotia we have a tidal plant at the moment. It's based on barrage technology. That basically means that water is captured behind a dam. When the tide comes in, when the tide goes out, it's let out through a turbine, and it generates about 20 megawatts of tidal power. In the 1980s there were plans to expand that to much larger estuaries, but investors didn't come to the table because the capital costs were extremely high—in the billions—and the environmental damage was seen to be a huge problem.

Recently there has been bubbling into the marketplace a new technology, if you like. They are tidal turbines, which look very much like wind turbines except they operate underwater. You can install them one at a time or in farms, underwater, just like you do on land with wind turbines.

There are a lot of advantages, of course. Because of the modularity, the big capital cost experienced with barrage doesn't happen. The experiments and demos that have been put in place to date have shown that environmentally they're pretty sound. They're basically invisible, because they're underwater and below where transportation on the seas operates. They don't make a lot of noise above water, at least, and they don't produce any carbon dioxide. They're sustainable. As long as the moon is going around the earth and the earth is going around the sun, we're going to have flow in the tidal regions.

All of that has the effect, long term, of leveling energy costs and improving the security of supply, because we can provide it to ourselves locally as opposed to Nova Scotia having to import non-renewables.

With all those advantages, what the heck is the world doing about tidal energy these days? Well, I can't talk about it all, but I'll highlight two things that are happening that I think are extremely important.

One is in the U.K. They've installed three test turbines, and there's one to be installed this coming year. Second, in Canada we've installed two test turbines, one in Race Rocks and one in the Bay of Fundy. We plan to install two more in the Bay of Fundy in 2012.

The U.K. has really become excited about what they've learned from these demonstration units. They're surrounded by water, like Nova Scotia. Their security of supply is somewhat problematic, like Nova Scotia's. They've looked at the potential and said, look, we can, in the next 10 years, produce one gigawatt of tidal energy. That's about 1,000 turbines they're going to install. Only one is producing energy to the grid right now in the U.K.

Scotland has really gotten behind this thing. They're very excited. They've said, look, we'll lease some undersea land or property to tidal developers in exchange for their generating some 600 megawatts of power in the next 10 years. So they're moving.

● (0920)

In Canada, we have a really big lead, relative to any other country in the world, except perhaps the U.K., with our demonstration projects, but we have no commercial activity at the moment. Given that lead, there is no reason why we shouldn't be able to think we can install about 600 megawatts of tidal energy power over the next ten years.

We think that tidal energy will be very competitive with wind. Clearly, we have to come down. With multiple productions, the curve will drop. As our learning curve improves, the price will come down.

The reason we think it will be in the neighbourhood of wind is that there is much less steel required in a tidal turbine to produce the same amount of power as a wind turbine produces. Because steel is one of the major costs in these turbines, we think we can get there. I'm not the only one saying that. A lot of people who have done pretty significant analyses are also saying that.

What do we need to do to get into the ocean energy business in Canada? We need to understand the opportunities that are open to us on both coasts—and on the north coast, for that matter. We need to define our targets to capitalize on those opportunities. Together, with government, we need to support with actions and confidence the ocean energy industry and marine industry in general. We need to understand the rules, and they have to be clear. The permissions process has to be easy. That's no small task, given our multiple levels of government and the multiple departmental approvals that have to be obtained in order to set things on the bottom of the ocean.

Finally, we need to put sufficient incentives in place so that the early investors can make a reasonable profit. The early investors will allow us to continue to build on the leadership we have displayed with the demonstration units. We, together with Scotland, could, if we tried and wanted to, be ocean energy what Denmark and Germany have been to wind and solar.

Thank you.

● (0925)

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Scott, for that presentation.

We'll now go to questions.

Mr. Regan, would you like to lead off?

Hon. Geoff Regan (Halifax West, Lib.): Thank you very much, Mr. Chairman.

Thank you both for coming today.

Mr. Scott, we arranged this weather for you so you and I would both feel at home today here, although usually, of course, it's tropical in Halifax, so this is really unusual for us.

Mr. Whittaker, you talked about the fact that basically nobody can apply now to the ecoENERGY renewable power program, although

the funding goes to 2017 and is committed, and the application period theoretically goes until March of next year. Really, it's totally used up. I'd like to ask you about that as compared to the U.S. program. You got into that a little bit, but I'd like you to expand on that.

To what degree has the program accelerated the development of alternative energy sources? And do you think the government should consider extending the program and expanding it?

Mr. Sean Whittaker: Thank you very much for the question.

There's no doubt on ecoENERGY. We went back to our members many times and asked what the single best driver for wind is in this country, and it always came back to ecoENERGY.

The nice thing about ecoENERGY is that it really had two things about it that people liked. One is that it was very equitable. Whether you had one turbine, a community group, a municipality, or a large developer based in Canada or elsewhere, you could access ecoENERGY. So it was well thought out in terms of being equitable. It was also nice and consistent. It provided funding over 10 years.

Now, in the States, their program, the production tax credit, had two problems with it. One, you could only actually use it if you had a big tax appetite, so it was only really big players that could access it. And it kept coming in and out: they would renew it, there would be tons of builds, they'd drop it off, there would be nothing, it would come back in.

The Recovery Act did two things to the production tax credit. One, it made it refundable, so everyone could access it, again whether you were a farmer or a large corporation. The second thing is it extended out to 2012. It took all the advantages of ecoENERGY and then bumped it up, and it has been a huge driver.

On ecoENERGY, it is true that projects are being built this year that are receiving ecoENERGY and they will continue to receive it for 10 years, but after March 2011 Canadian projects will not receive any money from ecoENERGY. The same developer could go into the United States, spend \$100 million on a wind project, and receive \$30 million back in incentives from the federal government.

The Recovery Act really identified wind as being a driver for economic reform, particularly in difficult economic times. They were counting on their industry to jump up to meet that rising demand, and that's what they've done. In the last year we've seen 44 new wind facilities installed in the States, mainly through the rust belt, and their manufacturing has really gotten a shot in the arm. It's a very effective mechanism and we would very much like to see it continued.

Hon. Geoff Regan: Let me ask a variation on that question, and I'll start with Mr. Scott and turn to you if you have something to add to this, Mr. Whittaker.

How do our federal programs in this regard stack up against programs in Europe, the U.S., and even provincial programs like those in Ontario or Nova Scotia?

Mr. Scott, do you want to start?

Mr. Ronald Scott: The Dexter government has just announced some very forward-thinking plans that will positively affect the tidal opportunities in that province. We have to begin to think along the lines of incentives that Ontario had given to solar in order to really move tidal ahead.

For example, in the U.K., as you mentioned, where Scotland has taken the lead, the incentive program there I believe is north of 30¢ a kilowatt hour for these tidal projects that they're planning in the Pentland Firth, in the north of Scotland.

Does that answer your question?

• (0930)

Hon. Geoff Regan: Yes, it does.

Do you have anything to add to that?

Mr. Sean Whittaker: There was an analysis done recently that looked at comparative per capita spending in the U.S. and Canada on renewable energy. The per capita spending in the U.S. outstrips or outpaces Canada by about a factor of 18 to 1. So, yes, there's no doubt that there is a gap.

In terms of Europe, it's important to note that Europe is doing two things. There is the creation of a carbon market, which is kind of an indirect benefit to wind because it applies to many emitting technologies, and that bridges the gap. But they also provide direct incentives for wind, mainly as industrial developments. So they're certainly outpacing us at the moment.

Hon. Geoff Regan: Mr. Whittaker, you mentioned that in Canada we could have 20% of our energy needs met by wind by 2025. Is that an optimum level if there was maximum support from government, support that isn't really there at the moment in terms of ongoing, or is that where you see us going at the moment?

Secondly, Mr. Scott, a similar question: how much of Canada's energy supply do you think tidal can meet?

I'm going to complicate this question even further. Some on this committee suggested that investing in wind was not a good deal for the government because it's intermittent. Of course, this could apply to both, so I'd like your thoughts on that as well.

Mr. Sean Whittaker: On the 20% target, Denmark is already at 22%. There are times when Denmark runs 100% on wind. Other countries are fast approaching 15%. So we think it's certainly very reasonable.

One of the things that Canada has that is a remarkable attribute.... Well, first of all, we have a lot of wind and we have a lot of hydro, and hydro and wind are perfect dance partners, as it were.

For example, in Quebec's energy strategy, they have actually pegged wind development to hydro development, recognizing that

synergy. So 20% is certainly achievable. Is it optimal? We certainly think twinning it with hydro and other sources will allow us to get there quite easily.

In terms of the intermittent question—and I mentioned this before—one of the funny things that you see with wind is that individual turbines will come in and out. A single turbine generally will generate some amount of electricity about 70% of the time; otherwise it's not a well-sited turbine.

The Vice-Chair (Mr. Alan Tonks): I'm sorry. I'm going to have to interrupt you, Mr. Whittaker. We have come to the end of the time for that particular question.

Mr. Scott, if you could just hold that thought, you might want to incorporate your answer into a question asked by Monsieur Guimond.

Monsieur Guimond, s'il vous plaît.

[Translation]

Mr. Claude Guimond (Rimouski-Neigette—Témiscouata—Les Basques, BQ): Thank you, Mr. Chair.

Good morning, gentlemen. I found your presentations very interesting.

I am going to address Mr. Whittaker first. How many years has Canada been investing in windmills?

Mr. Sean Whittaker: The first large-scale windmill project in Canada was Le Nordais. For nearly 20 years Canada has invested mainly in research and development. However, particularly since the creation of the ecoENERGY program in 2001, there has been considerable expansion in the industry.

Mr. Claude Guimond: If memory serves me, the Le Nordais project is located in the Matane region in eastern Quebec.

I come from Rimouski and I'm an agricultural producer. In recent years I was president of the Union des producteurs agricoles. At that time, a lot of windmills were built in eastern Quebec. There were 75-megawatt or 100-megawatt wind farms, and a number of companies. I was very active in this issue, when wind energy came onto the scene. I saw some beauty in it, but I also saw some negative effects, some collateral damage.

In your presentation, you talked about the benefits for rural communities. I have to admit that I was somewhat surprised to hear that. I would like it if you could elaborate on that subject. What do you think are the advantages for rural communities dealing with wind farms?

• (0935)

Mr. Sean Whittaker: Thank you for the question. A few years ago, I had a discussion with the mayor of Matane. She talked about the benefits of major wind infrastructures. Where she lives, Marmen Énergie makes the towers, and Composites VCI makes the nacelles. In Gaspé, LM Glasfiber makes the blades.

The mayor of Gaspé and the mayor of Matane said this gave the community hope for the future. Young people are coming back to their communities to work in these fields. Even the prices of houses in those towns have risen since the plants were built. That is what is happening with the industries.

In terms of the communities, some farmers have one or two windmills on their land. They receive money paid by the promoter. Very often that enables them to stay in their homes, because that income enhances the viability of their operations.

So industrial development creates benefits for farmers, communities and rural settlements, but we also have to consider the taxes paid. Public buildings are being built because of the payments made by the promoters or wind energy projects.

Mr. Claude Guimond: I see you are very familiar with your issue and your line of chat as a windmill salesman.

You talked about the industry in Matane and the Gaspé, in terms of making the blades. But I'm going to talk to you about the village of Baie-des-Sables. I first want to address the question of collateral damage. The village of Baie-des-Sables is in the centre of a 79-megawatt wind farm built by Cartier Énergie Éolienne. I know that the municipality and farmers have benefited from it. Four or five years ago, a windmill might net a promoter about \$125,000. The farmer who had a windmill on their land got \$1,500 or \$2,000. Myself, I didn't think that was very equitable. However, you say it's income for the farmer, and I can't deny it. On the other hand, the price of houses in Baie-des-Sables has fallen because when people see the wind farm they decide not to buy a house there. That is collateral damage.

In terms of agriculture, I would like you to give me some figures. Each windmill is built on farmland or on a private woodlot. I would like to know how much farmland is lost to agriculture each time a windmill is built.

Mr. Sean Whittaker: The loss is about 2 to 3%. For a windmill, you need a location with 60 or 70 or 80 acres. In the case of a 200-acre lot where there are two or three windmills, they occupy about 2% of the total land area. We have seen that a majority of farmers were really in favour of that. They get fairly substantial benefits from the windmills and are still able to carry on their usual activities.

In terms of land value, a study was recently done of house prices around Chatham-Kent, Ontario. There have been windmills there for several years. The study, which was completely independent, showed that the windmills had no effect on the value of homes in the Chatham-Kent region.

• (0940)

[English]

The Vice-Chair (Mr. Alan Tonks): We're out of time now. I hope we'll get a little more in. Thank you.

We'll go on to Mr. Cullen.

Mr. Nathan Cullen (Skeena—Bulkley Valley, NDP): Thank you, Mr. Chair.

Mr. Scott, I've always been a bit confused by the lack of support for tidal energy. Looking at the engineering and looking at the project intuitively, it seems to make sense. It's a consistent, reliable

source. We're a country with three long coasts. What would you say is the main factor for why countries like Canada have invested so little compared to other sources of energy? We've known about this energy source for 20 years. It's been proven there are some technical aspects, but every energy source has that. Why so little? I don't want to cast aspersions, but you feel like the poor cousin when you come in. It's there, but there's so little funding. There are two test sites and two more to go. I compare that to the growth of wind or the attention to the oil and gas sector and others.

Mr. Ronald Scott: There are several reasons. The old technology, the barrage technology, was too expensive and too environmentally destructive. The new technology is so new that people are still trying to figure out how it can work best. If you look at these test sites, they've had many difficulties with them. They've learned a lot of, course, but they've still had a lot of difficulties. It's a very tough environment to work in, under sea.

I was just talking with Sean about the difficulty of offshore wind and he said that's very tough. Take that a step further and put it under water. I'll just use one example to drive that point home. The last turbine that was installed in Canada was in the Bay of Fundy. They were monitoring it with remote devices. Suddenly those devices stopped, and now they don't know what the heck is going on down there. It's so dark down there they can't send divers down. It's a whole new area.

Mr. Nathan Cullen: Thanks.

Mr. Whittaker, you mentioned at the very beginning of your presentation that the wind energy incentive was a victim of its own success, that it works too well. You talked about investment ratios of \$1 to \$1.30 back for taxpayers. It got the program up on its feet, creating jobs. Canada lost 400,000 jobs during the last seven years in manufacturing alone. This is a manufacturing industry. It was the only industry to do well that we know of during the recent recession, with a gain in employment.

Why would government have a success like this and then run away from the project?

Mr. Sean Whittaker: We certainly felt that there was a very compelling case for continuing ecoENERGY from a purely economic point of view, just in terms of stimulating investment and stimulating industrial development, but also in environmental terms. As I indicated before, I think wind has to be a part of achieving the government's target of 90% non-emitting by 2020. There are very few options, and wind is one of the only ones you can put in the ground by 2020.

As I indicated, Minister Prentice had suggested that the way forward was to establish a regulatory framework for carbon emissions, basically a carbon market. We certainly support that.

But it's important to point out that the United States and Europe and most countries that have been successful take two approaches to it. There is indirect support, which is the creation of a carbon market, which helps to level the playing field. But then there are also direct incentives for wind. The Recovery Act has a production tax credit for wind, and it's also looking at establishment of a carbon market. The two work very much side by side.

• (0945)

Mr. Nathan Cullen: Some of your members work both sides of the border and some of them work internationally across the ocean. What signal was sent by the government to the wind industry, when the European regime and China and the United States are all ramping up their efforts to produce more wind power?

Mr. Sean Whittaker: It certainly has presented challenges from a competitiveness standpoint. Many of our members, many of the more active players in the wind industry, look at opportunities on a national basis. They look for signals coming out of individual countries at the federal level to see what the certainty is of that market. They'll look at investing \$100 million in Canada and \$100 million in Germany or the United States, and they'll look at the rate of return they can get there. Rates of return certainly have been made more advantageous with recent developments in the States.

Mr. Nathan Cullen: As it is right now, we are less competitive by a stretch. You talked about an investment ratio of 18:1 as between the U.S. and Canada. These numbers don't lie. Investors are going to sit and count the numbers and realize that Canada is not a place, as far as this federal government is concerned, to invest in alternative energies, particularly wind.

Other than being nice people, what incentive are we giving to industry at the national level to say to them, you should come here, not south of the border, and not into China, and not into Europe?

Mr. Sean Whittaker: As I said, we certainly felt there was a very compelling case for ecoENERGY. It has hurt our competitive position. Canada has an embarrassment of riches when it comes to wind. We have lots of hydro, we have lots of land, and lots of wind. We have a great manufacturing base that can easily be transformed into wind, so there are many positive benefits, but—

Mr. Nathan Cullen: And those are all the key elements: a manufacturing base, having a back-up on hydro, and being windy. We have all of these things.

You mentioned earlier the gap. The government has said we're going to put a price on carbon. We've heard that for awhile now. Apparently that policy is being written in Washington right now for us.

Between the gap in these incentives and having a price on carbon that will level the playing field between non-renewables and your industry and Mr. Scott's, can we survive the gap? There is a question whether, if the gap goes on too long, and there is no price on carbon, and it's promised and promised, and the environment minister goes to meetings and produces nothing, industry will.... I am concerned about flight. I am concerned about more manufacturing jobs leaving the country and Canada falling further behind in its efficiency and ability to put wind into the ground.

The Vice-Chair (Mr. Alan Tonks): You have half a minute for your response to that, Mr. Whittaker.

Mr. Sean Whittaker: It is definitely a concern. What we've seen is that many of the provinces have really tried to step up and increase their competitiveness, but it's hard to do without a national ecoENERGY program.

Certainly a carbon market is something that we feel would level the playing field. But there is a need to provide certainty: just what is that market going to look like, when is it going to be introduced, and how will wind play into it? That's the kind of certainty the investors look for, and it will help to reduce the flight.

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Cullen.

Thank you, Mr. Whittaker.

Mr. Harris, you now have your seven minutes, please.

Mr. Richard Harris (Cariboo—Prince George, CPC): Thank you, Mr. Chair. Maybe you could give me a two-minute signal, so that I might share my time with Mr. Shory.

Mr. Whittaker, I have a few quick questions. You can give me some short answers or say you'll provide the information to me at a later date.

You mentioned earlier that although the R and D for wind power has been around for 15 to 20 years, the actual government investment started in about 2001. Did I hear you correctly?

Mr. Sean Whittaker: That's the direct investment, yes. The predecessor to ecoENERGY—which was for the same thing, 1¢ per kilowatt hour—started in 2001.

Mr. Richard Harris: Okay. Prior to that, was it mainly private investors doing R and D?

Mr. Sean Whittaker: Yes.

Mr. Richard Harris: Can you provide me with the numbers, annually since 2001, for government money that has gone into the wind energy industry? Can you get those numbers for me?

Mr. Sean Whittaker: I can certainly get them.

Mr. Richard Harris: That would be how much it was in 2001, how much in 2002, etc., right up to date.

• (0950)

Mr. Sean Whittaker: Yes.

Mr. Richard Harris: I'd appreciate that.

You said that wind energy is producing about 2% of annual energy currently. How much revenue does this 2% energy that they're producing represent in dollars?

Mr. Sean Whittaker: Do you mean the revenue to the promoter or to the...?

Mr. Richard Harris: I mean to the facilities—the plants, the wind power farms. How much revenue does it produce?

Mr. Sean Whittaker: Take the case of a single turbine, a two-megawatt machine. It will cost you about \$5 million to install. Out of that, the rate of return really depends on the investor; it's anywhere from 8% to 10%. There is a large part of it paid to the landowner or paid to the community. It really depends on the nature of the arrangement they have with the utilities buying it.

Mr. Richard Harris: I guess what I'm trying to figure out is how far we are away from wind farms and wind power being self-sustaining and actually making money. Unlike some of my colleagues over there, I'm a little bit concerned about the massive amounts of money that governments put into projects for energy.

A good example in the U.S.—we talked about the U.S. investment—is that over the past twenty to thirty years the U.S. has put massive amounts of money into bioenergy plants. That was over, say, two to three cycles of spending. Frankly, many of those plants are no longer in existence; the money just seemed to disappear down a black hole, until the next cycle came along. It hasn't been a very good investment. What's to prevent the same thing happening with the massive amounts of money the U.S. government is putting into wind energy power, as has been cited?

Mr. Sean Whittaker: Thank you very much for the question.

The quick answer to your first question is that as soon as there's a carbon market, that covers the cost gap.

The other thing is, as I mentioned, that from a purely economic perspective, \$1 of ecoENERGY funding generates \$8 of private sector investment, and it returns, just to the federal coffers, about \$1.30.

Mr. Richard Harris: We don't have any numbers like that yet. Are you talking about when the carbon exchanges start up?

Mr. Sean Whittaker: No, this is right now: \$1 of federal investment in ecoENERGY triggers right now about \$8 of private investment, and it returns, by way of taxes and associated economic activity, \$1.30.

Mr. Richard Harris: If you could provide me with the source of those numbers, I would appreciate it.

Mr. Sean Whittaker: G Financial Services did a study. I'll send it to you.

The Vice-Chair (Mr. Alan Tonks): Mr. Harris, you're approaching that five minutes now.

Mr. Richard Harris: Okay.

Here is just one quick question now. The cost of wind energy in Ontario currently is about 13.5¢, I see, and nuclear is about 5.5¢, and hydro is about 3.7¢, the latter being, I think we could call it, clean energy. That's quite a difference; it's about an 8¢ difference over nuclear and 10¢ over hydro. How would an investor see that as an ideal situation to put money into when there's such a spread? Is some magical thing going to happen that we don't know about that's going to bring it all together? Is it the carbon exchange? Is that what we're waiting for, to make wind power...?

Mr. Sean Whittaker: Well, not exactly. I'll say a couple things.

First, in the case of Ontario, ecoENERGY always had a clawback provision. So if the price that was paid for wind exceeded a certain amount, you were no longer eligible to receive ecoENERGY.

In the case of Ontario, with the price they've established for the feed-in tariff, all those projects would not be eligible to receive one penny from ecoENERGY.

Mr. Richard Harris: Okay. I want to turn my time over to Mr. Shory, but perhaps we'll pick it up later on another round.

The Vice-Chair (Mr. Alan Tonks): One minute to Mr. Shory.

Mr. Devinder Shory (Calgary Northeast, CPC): Thank you, Mr. Chair, and thank you, Mr. Harris.

I have a quick question on wind energy. I understand that this is a mature technology and that the Government of Canada has committed more than \$314 million on wind energy. Also, under National Resources Canada's clean energy fund, we have picked up two projects.

It seems that the focus has been on large wind turbines. I'd like you to comment, Mr. Whittaker, on whether there is any research on the development of small wind turbines focused on small communities and individual houses.

• (0955)

Mr. Sean Whittaker: That's an excellent question. Certainly we have a lot of activity in terms of small wind.

People look at large wind turbines, and that's one thing. Basically there are two categories of small wind turbines: residential systems, small ones; and medium-sized systems, which are for farms and commercial applications. A little-known fact about the medium-sized systems is that Canada has half of all the world's manufacturers already. In fact, one of them is in Halifax. Anything we do to stimulate them will, we believe, turn them into the best of the world in terms of small wind.

So there is a huge opportunity just in terms of manufacturing and in terms of individuals interested in having turbines on their properties. Unfortunately, in Canada, there isn't the same kind of investment or incentive climate as there is in other jurisdictions, but it's something that we feel very optimistic about because small wind is now where large wind was 10 years ago.

The Vice-Chair (Mr. Alan Tonks): I'm going to have to interrupt you, Mr. Shory. You've exhausted Mr. Whittaker's and Mr. Harris' time. I'm just trying to be fair to both sides.

Mr. Whittaker and Mr. Scott, thank you very much for being with us. I hope you can stay. We do have another panel that is coming on. We're out of time with respect to continuing this panel, but we do appreciate you being here.

We're just going to break for a very brief time and we'll ask the next panel to come forward. Thank you so much.

• (0955)

_____ (Pause) _____

• (1000)

The Vice-Chair (Mr. Alan Tonks): We'll recommence with our next panel. This panel is continuing on the subject of alternative and renewable fuels.

We welcome, from the Canadian Solar Industries Association, Elizabeth McDonald, president; and Phil Whiting, president and CEO of EnerWorks Inc. We also welcome Équiterre and Steven Guilbeault—he's not here yet, but we'll play it by ear—and from Pembina Institute, Timothy Weis, director of renewable energy and efficiency policy.

Hopefully Steven will join us, but we'll begin and perhaps just go up to the beginning of the list.

Ms. McDonald, would you like to begin?

Ms. Elizabeth McDonald (President, Canadian Solar Industries Association): Thank you.

Good morning.

My name is Elizabeth McDonald, and I'm the president of the Canadian Solar Industries Association, known as CanSIA. We are the national trade association that represents the interests of the solar industry across Canada. We have over 500 members involved in manufacturing, development, retail, installation of solar photovoltaics, solar thermal or solar water heating, and solar air.

I'm accompanied by Dr. Phil Whiting, who is the president and CEO of EnerWorks Inc.

Dr. Phil Whiting (President and Chief Executive Officer, EnerWorks Inc., Canadian Solar Industries Association): Thank you, Elizabeth.

EnerWorks is Canada's largest manufacturer of solar thermal products. Our technology was developed at Queen's University in Kingston, Ontario, and we now manufacture and export products across North America, into the Caribbean, and soon will into Europe and Asia.

EnerWorks is located in Dorchester, Ontario, an interesting place for a young guy from Nova Scotia.

Ms. Elizabeth McDonald: We thank you for this opportunity to participate in these proceedings. We value every opportunity to speak with this committee.

Let me begin by reviewing a few technical facts about solar energy. Solar energy not only provides electricity, but it is also used for hot water heating and solar air heating, and soon, solar air cooling. It's a very scalable resource. It adapts to the home, to industrial settings, to large-scale development. It can be built quickly and can be used in almost any energy application, and for the record, Canada does have a good solar resource. We had it almost all week, except for today. It's much better than Germany, which is the poster child for the integrated alternative energy strategy.

We are here today as you review the changes and cancellation of the ecoENERGY programs. We are also pragmatic because we know that for the average Canadian there are two issues: the economy and the environment, so the good news is that every dollar invested in clean energy such as solar is an investment in Canadian manufacturing, local tradespeople, and family households. It is, after all, a local resource.

Canada currently lags behind our industrial trading partners in terms of investing in clean solar energy, and while it is true that many other countries do not share our wealth of natural resources, all

of us share the same environmental future. Therefore, we in Canada have an opportunity to grab hold of our future and start to invest in clean, alternative energy technologies and innovation as the world transitions toward a carbon-free economy. In the end, it is what Canadians want: a chance to reinforce our economy and ensure a sustainable future.

CanSIA is aware of the fiscal responsibilities the Government of Canada faces, and we appreciate the efforts made to be fiscally prudent. We are aware that the Government of Canada is investing hundreds of millions of dollars in carbon capture and storage to make our environment cleaner and more sustainable. Solar energy provides another solution to the suite of options available to the federal government to continue reducing greenhouse gas emissions.

Our message today regarding investing in Canada's alternative energy future, in particular, solar energy, touches on five key principles: one, fiscal responsibility; two, job creation; three, innovation; four, greenhouse gas reductions; and five, the impact on family households and small businesses.

Phil.

Dr. Phil Whiting: According to a recent C.D. Howe Institute study, solar thermal hot water and solar thermal air technologies, simply speaking, are the most cost-effective investment in renewable energies in Canada, and the most effective at reducing greenhouse gas emissions per dollar spent.

The ecoENERGY program support leveraged this advantage and proved to be a successful way of meeting environmental objectives while providing economic value for Canadian taxpayer dollars. For example, the retrofit energy program invested about \$2.2 million since it began in 2007, and yet it was able to reduce carbon dioxide emissions by approximately 3,000 tonnes a year. When we do the calculations, I think we would find that's the best return on investment for carbon dioxide reduction of any of the programs. With an expected lifespan of at least 20 years for solar hot water programs, this comes to a total investment value of about \$40 a tonne. When we compare that with other technologies, I think we'll find this produces the best return on investment—and it's really good for Canada.

The ecoENERGY program was also an effective method for job creation. It catalyzed investment in Canadian manufacturing, employing local tradespeople and engineers. Systems have been installed locally across Canada in family households and communities, and also in many businesses and industries. The market has been growing at about 25% to 50% for the past five years. My little company, EnerWorks, has grown over 13 times in that timeframe, creating jobs in Ontario but also across Canada for insulation, R and D, and engineering. It's a very exciting time for us. As well, we've been taking market share from U.S. competitors and from the big European players in this space as well.

The Electricity Sector Council's labour force survey of the Canadian solar industry indicates that job growth is expected to be about 100% per year after 2011. Of course, those calculations were done with the assumption that there would be an ecoENERGY-like program in place. In addition to these benefits, the solar industry in Canada is also beginning to become a more important member of the global trading community, as many of our revenues are now coming from exports outside of Canada.

Under the ecoENERGY program, funds were used to invest in the CSA certification of solar products. This is an extremely important development, and Canada was actually a leader in the field of developing proper safety and performance certification in solar energy. This process has helped to certify approximately 10 companies' products for the marketplace.

With that said, greater investments need to be made to streamline the certification process. This is an area where the federal government can really help. Competition is being reduced at the moment simply because many of the people who want to bring new products into the marketplace can't get their products certified and evaluated. This means that you can develop a product and then wait for a year and a half before you can get it into the market, and that's not good for innovation.

The success of the ecoENERGY programs has also been reinforced by the efforts of almost every Canadian province and territory to develop complementary programs to leverage the administrative strengths of Natural Resources Canada and ensure that energy audits are a part of the process. For example, the ecoENERGY retrofit program to date has provided support to thousands of homes in communities across Canada. So it's more than just about producing solar energy; it's about energy efficiency, lowering the monthly energy costs, reducing carbon dioxide, and creating jobs in Canada.

The ecoENERGY programs have been very effective in reducing carbon dioxide emissions as well. The foundation of the solar industry is solid, as all solar technologies continue to grow at a pace of well over—

•(1005)

The Vice-Chair (Mr. Alan Tonks): Mr. Whiting, could you just sum up, because we're running a little short of time? Thank you.

Dr. Phil Whiting: In summary, Canada needs renewable energy. Solar energy, particularly solar hot water, is the lowest-cost and most effective renewable energy source for reducing carbon dioxide emissions per government dollar invested.

The Vice-Chair (Mr. Alan Tonks): Okay, good. I'm sorry I interrupted you, but we try to get to our questions as quickly as we can.

Mr. Weis, would you like to take several minutes now, please?

Mr. Timothy Weis (Director, Renewable Energy and Efficiency Policy, Pembina Institute): Sure. Thanks.

Thanks a lot for having me here.

I apologize in advance that I'm flying a little bit by the seat of my pants. I've been on vacation for the last two weeks and I only found out about my invitation here on Friday. I'm still technically on

vacation, so I found a spot for my kids this morning, but I wanted to make sure I could be here. But I am winging this a little bit, given those circumstances.

Fortunately, I've had a few years to prepare for today because this really is an area that I've been focused on. My job at the Pembina Institute is to focus on renewable power policy in Canada. How I landed there was I started doing a PhD about eight years ago in remote Arctic wind energy development, and I started asking around the industry what the technical problems are that we need to solve. I'm a mechanical engineer by background.

It quickly dawned on me that technology isn't the problem that's preventing renewable energy development. Policies are getting in the way, are slowing down the development; whether it's in the Arctic or whether it's solar power or ground-source heat pumps, really it's policy that's slowing down the deployment, not the technology. So for the last eight or nine years I've been involved in focusing on policy issues and trying to push that forward.

I'm glad we're having this hearing today, and I think it's great that we're looking at the ecoENERGY programs. It's unfortunate we were not doing this last year, because right now we're in the situation where all these programs are going to lapse at the end of the year. Even if you were going to see a renewal of them in next year's budget, there's inevitably a gap between when the budget is announced and when they're ultimately implemented.

So not only are we ultimately moving toward a gap of some of these programs, but we also missed a big opportunity in the last two years where we had all sorts of opportunity to be spending dollars during the stimulus and now we're going into a situation of budgetary constraints. So I think we missed a big opportunity. Nonetheless, I still think it's important to be focusing on these programs and looking at what we can be doing and what we can be doing better. There are all sorts of programs. I know the ecoENERGY suite has about eight or nine programs within it.

The one program I'd like to focus on today will just be the ecoENERGY for renewable power program. I certainly don't want to exclude the other discussions, but it's just for the sake of time. The reason I think that particular program is important is because it's important to talk about the scale of development that we need to have in Canada over the next 10 years. This government has set an impressive target of trying to get to 90% non-emitting electricity by the year 2020. That's only 10 years away, and in electricity terms that's basically tomorrow. We have to have programs in place that are going to make that happen, and we have to have them in place today if we seriously want to meet that target. That's not going to be an easy challenge to meet.

I think what's also important to talk about is the scale of what's technically possible. We've seen other countries meet this type of challenge in 10 years if the government is determined to do so. Denmark is the classic example: it went from zero or about 2% wind to about 20% wind in about 10 years. Right now the state of Texas has three times as much wind power as all of Canada. So we're talking about technology that can be deployed very quickly and integrated in very large scales, if we want to do that.

One of the problems in Canada, though, particularly with the ecoENERGY program lapsing, is that we don't really have a national cohesive policy any more. I've had manufacturers ask me directly why they would invest in Canada when they have 10 different countries they have to deal with as opposed to one sort of national overview, or framework, I guess, to invest in. So I think one thing that's missing in Canada is to have a national strategy, a federal outlook on renewable development.

There are four things I want to say in terms of where I think we should be going in the next few years.

Obviously a carbon price is the one thing that everyone knows is inevitable and is needed to recognize the fact that we cannot continue to use the atmosphere as a garbage can. But we're not there yet, and we're not going to be there for a few years, and at this stage in the game it looks like we're waiting to see what the Americans are going to do before we get on with putting a price on carbon. So in the interim, in the next four to five years, until that world is a reality, we do need to continue to support these technologies if we want to meet our climate change goals as well as the government's targets for renewable energy.

A national strategy is another thing I think we need, at least. We have a positive example with the Council of Energy Ministers working on energy efficiency. I think a similar example around renewable energy would be something that would be important to look at.

•(1010)

Going forward, I think we also need to be considering strategic investments in the non-low-hanging fruit.

Right now we're supporting technologies through the ecoENERGY program. It supports wind, solar, biomass, and technologies that are fairly commercial and fairly accessible. Those technologies have all been developed—and I'll use wind as an example—in the windiest areas. We're going to need to be looking at programs that support wind in areas that aren't as windy, or areas that are going to need grid extension or a little more support.

I think that's where we need to be thinking about where the programs need to be going in terms of beyond the low-hanging fruit.

Finally, the last thing I think we need to consider is looking at the Arctic and renewable energy in remote communities. We have about 200 remote communities right now, and most of them depend on diesel power. It's incredibly expensive to get power up there, and at the end of the day it becomes unsustainable for those communities. We have Canadian technology that's been developed to look at wind-diesel hybrids, for example, and most of that technology is currently being exported into Alaska.

Sarah Palin, when she was governor, put \$250 million into wind energy development in Alaska. They have about 30 projects on the go right now. We have one operating in Canada and one other being developed in the Northwest Territories. Basically we're exporting Canadian technology to Alaska, but we're not using it here domestically. I think that's another important opportunity that we need to consider.

I think I'll wrap it up there. The point I really want to make at this stage is that this is a strategic time to be investing. The scale of investments we need to talk about are beyond the token investments and beyond treating renewables as a fringe or side market. We need to be seriously considering renewables in terms of the type of development they can be: 10%, 20%, or 30% of our overall electricity supply. We can consider renewables as being a major opportunity to get us to the government's target of 90% non-emitting by the year 2020.

Thank you.

•(1015)

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Weis.

We now have been joined by Mr. Guilbeault. Welcome.

We've been taking about seven minutes for presentations and then we go into questions.

You'll be the last presenter, Mr. Guilbeault.

[*Translation*]

Mr. Steven Guilbeault (Deputy Executive Coordinator and Co-founder, Équiterre): Thank you, Mr. Chair. I would like to thank the committee for inviting me here this morning. I apologize for being late; there was a traffic jam at security.

My name is Steven Guilbeault. I am the Deputy Executive Coordinator of Équiterre. I am also co-chair of the international Climate Action Network, an organization of over 500 non-governmental organizations that works with the United Nations on climate change. In addition, on behalf of the Minister of Natural Resources and Wildlife of Quebec, Nathalie Normandeau, I chair a special team on emerging renewable energy sources—but I am not here today in that capacity. The issue you are interested in has interested me, personally and professionally, for several years, but particularly in recent months, in relation to that office.

I would like to echo what Mr. Weis said earlier. First, I would like to start a little farther back to get a little closer to where we are. When we examine the global situation, we have seen, since the early 1990s, that the forms of energy production with the highest growth rates, whether in terms of jobs or investment, are renewable energy sources—wind energy, solar energy.

In February 2009, the HSBC Bank produced a report that you have certainly heard about. The report studied the G20 countries' economic recovery plans. The report noted that on average, in the industrialized countries, investments in green energy accounted for about 15% within the economic recovery plans. However, what we find behind that fact is that the countries that are investing the most, in absolute or relative amounts, are not the industrialized countries at present, but the emerging nations like China and South Korea.

South Korea is going to invest 82% of its economic recovery plan in the green economy—renewable energy, energy efficiency, sustainable transportation and clean technology. China is investing 36%. In absolute terms, China is making the largest investment in clean technology ever seen in history. This is even more than what is being done in the United States or even Europe—it will be 55% in Europe.

Where does Canada stand? We are at half the average for the industrialized countries. According to the HSBC report, Canada is not the worst country: it ranks fourth among the least bad countries in terms of investment in renewable energy. That was before the last federal budget, in which the money for the ecoENERGY program was not renewed. As a result, I imagine that if HSBC did its study over, Canada would lose more ground in the technological innovation race taking place before our eyes. Deutsche Bank has released a very similar report about three weeks ago.

What is the conclusion reached by these major research groups, these investment banks, and the International Energy Agency? Essentially, it is that the economy of the 21st century will be a clean and sustainable economy or it will not be. Massive investments are being made everywhere—I referred to South Korea earlier. Between 2009 and 2011, 150,000 jobs will be created in the clean technology sector. That is somewhat as if South Korea had taken virtually all program spending in Mr. Flaherty's last budget and invested it all in renewable energy, clean technology and energy efficiency.

What is happening is that Canada is rapidly losing ground... In fact, it is an ecological disaster, of course, because sources of energy production in Canada as a whole are still largely based on fossil fuels. As Tim said, if we want to meet our objective of having 90% of our electricity production sources in non-greenhouse gas emitting forms by 2020, it is possible to do it, but we have to adopt the measures for doing it fast. Tim gave the example of Denmark, but there are several examples of countries that have done it that are worth looking at.

That is exactly what we have done in the work done by the committee I chair for the government of Quebec. We observed what was going on at the global level, what examples were the most worth considering, and we asked how it could be adapted to the situation in Quebec. I don't see why we would not do the same thing at the national level. We have to look at what business opportunities there are in terms of technological development, job creation and adopting these technologies, in particular in industry, [*inaudible*]. When we talk about clean energy, obviously there are water and geothermal technologies. There are a lot that tackle reducing greenhouse gas emissions. In fact, that is where a majority of investments are seen. What is astonishing is to see how completely absent Canada is from this at present. We are missing the boat.

• (1020)

We could always say that this is not the role of the federal government, but when we look at examples—Tim talked about Denmark—like Germany, we see that it worked with its regions to create a major, massive, gigantic program to develop renewable energy, and did it in the space of 10 years. In the worst cases, over the last 10 years in Germany, regardless of the type of technology—whether biofuel, wind or photovoltaics—the Germans have doubled their production capacity from 10 years ago. In the best cases, they have increased production of these forms of energy by 300 or 400 or sometimes even 500%.

I was talking about China a moment ago. Two years ago, at a United Nations meeting, I had an opportunity to meet with the richest industrialist in China. He told us that when he finished university, he and his friends decided to start up a company manufacturing solar panels. Since the company was created, it has had an annual growth rate of 100%. Today, Suntech is the largest manufacturer of solar panels in the world. I built a small ecofriendly house that operates partly on solar energy. Part of the solar panels was in fact manufactured in China. You see them now in some of our hardware stores. You go to Canadian Tire or Rona and you will see solar panels often made in China. So we could be in this race. There is even a solar panel on the roof of my house made by a little company you may have heard of, called Shell.

The energy industry is changing very rapidly. In the world as we know it, the economy and energy are becoming increasingly closely related. Unfortunately, Canada is not at the table. The federal government can play a very important role in supporting provincial initiatives, as other governments are doing. The British, for example, with interest-free loans to install solar systems on the roofs of houses. The system will stay with the house because obviously people are not going to leave with it.

Wallonia, which has about 25% less solar potential than all of Canada, has new regulations made in 2006 where all new residential construction has to be equipped with solar systems, whether for heating water or air or for producing electricity.

So there is a very important role that the federal government can play and is not playing at present. Obviously, this has disastrous consequences for our greenhouse gas emissions, for Canadians' quality of life, for the quality of our environment. But on top of all that, it will have disastrous consequences for Canada's competitive advantage over the next few years.

Thank you.

[*English*]

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Guilbeault.

Now we'll go to questions, and Mr. Bains is first.

Hon. Navdeep Bains (Mississauga—Brampton South, Lib.): Thank you very much, Chair.

I want to thank everyone for coming this morning.

One thing I'm very pleased to hear about with respect to the discussion this morning is that there is a clear understanding that the environment, energy, and the economy cannot be treated independently, that they're strongly linked. That's very important, because that's taking place now in the public domain in terms of educating people. When we talk about the environment, it's not simply to reduce greenhouse gas emissions. There is a connection to our energy mix, which connects to our economy as well. And that was interwoven in everyone's comments, which was encouraging to hear.

My questions pertain to some of the comments made by our earlier witness, Mr. Whittaker. He's a representative from the Canadian Wind Energy Association and he indicated that in his discussions with the department and the minister's office he heard very loud and clear that there is a change in direction. Post March 2011 no new projects will be accepted for the ecoENERGY program, and the government is moving toward regulation and carbon capture and storage to deal with some of the initiatives we discussed this morning.

I want to speak specifically to how this will impact the solar industry, because I know from your remarks that this change in the government's direction, especially when the ecoENERGY program and the fact that there will be no new projects post March 2011.... How will this impact the solar industry in terms of jobs? As I said in my earlier remarks, it's not simply about the environment; it's also about jobs. How will it impact investments in terms of our competitiveness and how we compete with the U.S. and other jurisdictions? Also, how do you think this will impact our overall solar targets in the overall mix of our energy portfolio?

•(1025)

Ms. Elizabeth McDonald: Let me begin, and then I'll let Dr. Whiting finish.

Mr. Whittaker was talking about the ecoENERGY for renewable power program, which has really not been as significant for the solar industry.

We are here talking about the ecoENERGY retrofit program and the other programs that are—

Hon. Navdeep Bains: That would have a similar impact, or maybe not the same impact, but that's also being changed—

Ms. Elizabeth McDonald: No, they're different industries. The photovoltaics industry is in a different situation, and I don't think it is having as much of an impact on the investments, because they're particularly in Ontario. Large-scale investment is just outside of Ottawa, actually, as well as across....

I think Dr. Whiting is better able to talk about the solar thermal and solar air impacts.

Dr. Phil Whiting: There's absolutely no doubt that it will have an impact. This is still a relatively early stage industry. We provide a very good return for our customers on their investment, but at the end of the day, it's really about convincing a homeowner to spend money now to save money later. It's very difficult to do that in

today's climate without some additional incentive being provided up front. There's absolutely no doubt that the cancellation of this program will have an impact on our business in the residential market.

There will be a secondary impact on our business, which I think is perhaps even more devastating. We've already seen a number of the dealers and installers for our product basically decide that they're probably not going to continue in this industry. The problem is the rapid change, the unexpected change, that occurred. One of the things that experience around the world has shown is that for government incentives really to be successful in helping to build an industry, they need to be sustained, and sustainable themselves. When there are rapid changes back and forth, in the world of business people say, I'll invest my money elsewhere.

Right now, I'm a small company trying to raise investment capital to grow my business in Canada. I had an investment group that was very close to putting substantial money into the business, and they're probably going to walk now. They're saying, we can't be sure the market in Canada for your product is going to be there. They've seen what happens in other places.

Over time, this industry will be able to sustain itself without the benefit of incentives, but today it still needs that.

Hon. Navdeep Bains: When you say “walk”, where will they walk? Can you give an example?

Dr. Phil Whiting: Investors always have other options to invest. They will look to other investments. The hot place in solar thermal right now is in the U.S., actually.

Hon. Navdeep Bains: That's what I was getting at. These jobs, these investments, will go down south.

Dr. Phil Whiting: Oh yes, absolutely. Personally speaking, I'm recruited on a regular basis from states in the U.S. to pack up my business and move it to the U.S. I'm doing everything I can to resist that because we want to build these jobs here.

Hon. Navdeep Bains: I'm glad to hear that, especially for Ontario. That's very important. As a member of Parliament for the Mississauga area...we have a direct and indirect impact from these jobs that are created.

With respect to the return on investment, I know you made that comment earlier. We heard from the Canadian Wind Energy Association that they get about \$1.30 back on their return on investment, direct and indirect, to government. Have you done that type of analysis in terms of the return on investments? How do you measure that? You've mentioned a few times that it's a really good return on investment. How do you determine that? How do you calculate that?

•(1030)

Dr. Phil Whiting: Typically, solar hot water projects return for the customer, whoever that is, a return on investment in the 12% to 15% per year range. From that perspective, we're the best investment.

I haven't done the calculations the way the wind guy did his calculations, but there's a lot of independent research that shows that solar hot water is a less expensive form of renewable energy than wind, typically by about 50%. If he can return \$1.30, I can probably return \$1.75 or \$2—back of the envelope, without having done the calculations carefully.

Hon. Navdeep Bains: I appreciate that. I understand you have a different metric of calculating return on investments. I just wanted to gauge how that would compare.

Dr. Phil Whiting: We know we produce renewable energy in the form of hot water at less than half the cost of energy produced by wind and about one-fifth the cost of energy produced by photovoltaics. Those aren't my numbers; they're other peoples' numbers.

However the math gets done, we're going to be better.

Hon. Navdeep Bains: Okay. Good to hear.

I have a question for Mr. Weis.

In terms of the comments you made about our targets for 2020 and the 90% target the government has set for non-emitting electricity—I think you were saying by 2020—where does the current number stand right now? Where does Canada stand right now? What percentage are we at right now?

Mr. Timothy Weis: The way it was defined in the throne speech it was large hydro, nuclear, coal with carbon capture and storage, and renewables. If you take those four together, we're at about 77%.

Hon. Navdeep Bains: At present we're at 77%, based on that formula.

Mr. Timothy Weis: Yes, and this is nationally. Obviously, the provinces are all very different. You've got certain provinces like Alberta at about 70% coal; then you've got a province like Quebec, which is almost 99% hydro.

The Vice-Chair (Mr. Alan Tonks): I'm going to have to interrupt you there. Perhaps we can come back in the second round, if you could just hold that one.

We'll go to Madame Brunelle.

[*Translation*]

Ms. Paule Brunelle (Trois-Rivières, BQ): Good morning. Thank you for being with us, in spite of the bad weather.

Mr. Guilbeault, this morning I have heard about the damage associated with cancellation of the ecoENERGY program and the fact that there is no federal national strategy. On that point, however, we might take a look at what that means in terms of jurisdiction. In any event, the government certainly has no long-term vision.

Mr. Whiting told us that this would hinder development. In terms of the absence of a carbon market, there is no absolute reduction target. That is a problem. Mr. Weis talked to us about policies. If I understood correctly, these are government policies, and they are harming the development of ecoENERGY programs.

What impact is this going to have on the development of renewable energy? Do you have the impression that we are going to fall so far behind we will be unable to catch up? The other witnesses can answer as well.

Mr. Steven Guilbeault: I think we have already fallen very far behind. Some countries have already been investing in this field for several decades.

I would like to come back to what Mr. Whiting was saying earlier. All forms of energy are subsidized: oil, nuclear, etc. So we must not think that we are creating a category of exceptions with renewable energy. Look at the money that has been invested in the oil sands in Canada over the last 35 or 40 years. We are talking here about a massive investment, continued year after year, whether through direct subsidies, tax shelters, accelerated tax write-offs, or other methods.

We are not asking for an exception for renewable energy; we are asking that there at least be some balance among the various forms of energy, in terms of financial and economic benefits and incentives. That is obviously not the case. But these technologies are going to play an increasingly important role in the world portfolio. In fact that is already the case. They have quadrupled since the early 1970s. Because we are not investing in these technologies, we are going to have to import them, to buy them from other countries. That is where jobs will be created and investments will be made. It won't be in Canada because we have not created a regulatory, financial or economic climate that favours this kind of investment. The investments are going to be made elsewhere, and we are going to become importers of these technologies. Hundreds of thousands of jobs are going to be created elsewhere rather than here.

[*English*]

Mr. Timothy Weis: I totally agree that we are late to the game with most of these technologies. That's not to say that we're out of the game, either. I think Spain is a good example to look at. It was basically 10 years behind Denmark and 10 years behind Germany in investing in wind power, and they're the third-largest manufacturer on the planet right now. At points in time in Spain they can get 40% of their national grid from wind power—just from the wind. Even though they were a decade behind, they were able to ramp up very quickly when they invested in a serious way.

We're definitely late to the game, but I don't think we're out of the game, either. We have many technologies in Canada. I think solar is the one people overlook all the time in Canada. We have solar hot water companies. Technologies have been developed in Canada and researched in Canada. There are solar walls, for example. Heating of industrial buildings with solar walls is a technology that was invented in Canada. It's almost obscene that we don't use it and make it mandatory on every new building, because it pays for itself, typically, in one to two years when you're building a new building. There are technologies we're definitely behind in. But there are also technologies that we risk losing, particularly in the solar area, if we don't support that particular industry.

● (1035)

The Vice-Chair (Mr. Alan Tonks): Thank you.

Dr. Whiting wanted to get into that. Dr. Whiting, did you wish to comment?

Dr. Phil Whiting: I think the question was answered already.

The Vice-Chair (Mr. Alan Tonks): All right, good.

I'm sorry, go ahead, Madame Brunelle.

[*Translation*]

Ms. Paule Brunelle: I would like to know your opinion about carbon storage and capture projects.

In the last budget, \$1 billion dollars was provided for renewable energy, \$800 million of which was for carbon storage and capture. This committee has examined that. It is still somewhat worrisome. These are projects that seem not to be really grounded in science. Concerns have been expressed about water tables, about the type of rock used.

Do you think we should put all our eggs in one basket? My question is for all three.

[*English*]

Dr. Phil Whiting: I'm happy to comment on that. From my perspective as a business person, it's about the best investment of our dollars, and in particular our taxpayers' dollars. So I would look at all the renewable energy technologies and ask myself, in spending x number of dollars, how I would create the most jobs and reduce the largest amount of carbon dioxide? If you ask that question, with today's state of the technology, I don't think carbon capture would pass muster. I think it would be at the bottom of the list along with biofuels and other very expensive technologies, and solar and wind in particular would be at the top of the list.

[*Translation*]

Mr. Steven Guilbeault: I agree entirely with Mr. Whiting. Your question relates to development of the technology and investing public funds in those technologies. On the other hand, we are putting all our eggs in one basket, when this technology has not been tested. It is still at the research and development stage. I have no objection to oil companies investing in it, they have every right to do so. But I object to investing the little money allocated for what is called renewable energy, in Canada, in that kind of technology. We really are not certain that it will enable us to reduce greenhouse gas emissions, and if it does, we don't know the amount of time for it to be possible. It may be in 15 or 20 years. But we have Canadian technologies today that we could bring forward and that would enable us to reduce those emissions immediately. It's total nonsense.

Ms. Paule Brunelle: I have one short question, Mr. Whiting, about solar energy. We have an image in our heads of the 1970s, when a few crackpots out in the country were trying to heat their houses with solar energy. Can you give us an idea of size? You tell us you have grown your market share, but do we have a lot of solar energy? Is it widely used in Canada, and where?

[*English*]

Ms. Elizabeth McDonald: I'll take the first part of that.

You're talking about solar photovoltaics. In Ontario, we're close to 100 megawatts. We have a solar farm outside of Ottawa, which is 24.3 megawatts that will light up 7,000 houses. We're probably going to see in the next three to four years somewhere around 500 to 600 megawatts in solar photovoltaics in Ontario because of the feed-

in tariff program. However, in the rest of Canada it's still off-grid in some solar electricity, but not a great deal.

As for solar thermal....

Dr. Phil Whiting: In solar hot water, the market in North America is still very small. The market in Europe today is about \$4 billion a year. North America's market is \$100 million, so it's 40 times difference in scale with a similar kind of population base. The market in North America is now beginning to grow at about 50% to 70% a year. It's growing, not surprisingly, in those areas with the highest cost of conventional energy—areas with the best sunshine, of course—and also in areas where government regulations, whether they be incentives or other non-barriers that can be created, incentivize the growth of the industry.

• (1040)

The Vice-Chair (Mr. Alan Tonks): We're out of time now. Thank you.

We'll go to Mr. Cullen.

Mr. Nathan Cullen: Thank you, Chair.

Thank you to the witnesses.

I have a quick question. I think it was asked earlier about the total amount of money that Canada has invested in all the various energy streams over the last decade. At the very beginning of these committee hearings, I asked that of government officials. They committed to provide the committee with those numbers, through you, Chair, to the parliamentary secretary. I'm wondering if we could get an update as to when the government is going to come forward with the numbers. They committed they could do it. They said they would. We haven't seen them yet, and it's been a number of weeks.

The Vice-Chair (Mr. Alan Tonks): Can we just leave that and go to our questions? We can then reflect on that.

Mr. Nathan Cullen: I'm trying to understand this. We've got a strong public case for these technologies, for alternative energy. There's a strong economic case. Various streams mean different things, but the economics, the return on investment, we've been talking about consistently this morning, and with other technologies as well. There's an obvious environmental case to be made, as well as competitiveness with our major trading partners.

Can anyone on the panel explain why, with those four key elements of public interest, the government is refusing to support these technologies? I'm trying to find a reason. If it makes economic sense, if it makes environmental sense, if it makes the country more competitive and more energy secure, and if it creates jobs that we need in manufacturing, I can't find a stream of logic within the government's decision to say this is exactly the kind of industry they will not fund, and they will fund other things of much more suspicious intent.

Dr. Phil Whiting: I'm not going to try to second-guess the government's decision.

Mr. Nathan Cullen: I might be looking for a first guess.

Dr. Phil Whiting: Yes, so I'll give you a first guess, and understand that I'm saying this as an eternal optimist.

My eternal optimist says that the Government of Canada will hopefully understand that there are places where investment in renewable energy makes sense and that what we're going to do is take a very broad program, the previous program—a lot of that investment was really spent on doors and windows and furnaces for people's homes under the ecoENERGY heat program—and take the money to focus it on renewable energy generation, which is the long-term investment that Canada needs to make.

If the objective is to refocus that investment, then I'm all for it. I just hope it happens really fast, because right now, as a result of that gap in the middle, I'm already seeing my business being hurt today.

That's my first guess.

Mr. Nathan Cullen: Thank you.

Monsieur Guilbeault?

[Translation]

M. Steven Guilbeault: Thank you, Mr. Cullen.

In fact, I often ask myself that question, and the only answer I come up with is that it's ideology. For one thing, they don't believe that climate change is really a problem. So why worry? They don't believe in these technologies, and I'm talking about a belief in the virtually religious sense of the word, when the whole world around us is doing it. They believe in one form of technology or industrial energy development only: the 19th century one based on fossil fuel. That is the only thing they seem to understand and to all appearances the only thing, budget after budget, that the government is prepared to support.

[English]

Mr. Nathan Cullen: Mr. Weis, return on investment has been calculated in different ways, but just about every renewable technology witness we've heard from can present some case for the dollars going in from the public and for what the public will get back, either directly to the consumer or through government revenues.

What case can be made for the \$850 million going into carbon capture in terms of return on investment to the public or to individual consumers?

Mr. Timothy Weis: Carbon capture and storage really isn't my area, but Pembina takes a bit of a different tack concerning investment in carbon capture and storage. I think we agree that the government probably isn't the best place for that money to be coming from. We feel it should be coming more from the industry itself to clean up their own pollution.

At the same time, looking at the numbers, if we want to get to where we need to go, the challenge is going to be a difficult one without some type of carbon capture and storage. The question of where the investment comes from is a legitimate one, but whether it's from Canada or is globally sourced, particularly in China, is a difficult case to make without some sort of carbon capture and storage.

●(1045)

The Vice-Chair (Mr. Alan Tonks): Just for the information of the committee, it's a 30-minute bell that is ringing, so I'm suggesting that we finish our line of questioning on all sides, and then we can adjourn.

Mr. Cullen, I'm sorry to interrupt.

Mr. Nathan Cullen: I think someone was about to jump in—Mr. Whiting.

Dr. Phil Whiting: The \$850 million for carbon capture doesn't mean a lot to me on its own, as a stand-alone number; it's rather in the context of the total investment portfolio. If it's \$850 million being spend on carbon capture out of \$900 million, I'd say that's a wrong priority. If it's \$850 million being spent on the long-term development of an important technology out of \$100 billion, I would say that 1% of our investment in renewable energy on carbon capture might make sense.

Mr. Nathan Cullen: So it's the proportionality and the choice made.

Dr. Phil Whiting: That's my guess, yes.

Mr. Nathan Cullen: The example of Spain was used earlier, that it was a country that for many years had lagged behind in competitiveness and on the energy security question. What changed for Spain? I'm assuming there was some sort of political mandate offered up, for them to suddenly ramp up and start to invest in things and then become a proud world leader on this stage.

Ms. McDonald could answer, then Mr. Weis.

Ms. Elizabeth McDonald: What happened in Spain was that there was both an economic need and an environmental need, so they adopted a national feed-in tariff program. There are some weaknesses to Spain; actually, Germany is the better example. It might be better in wind, but in solar, at least, they come and go on their incentives. They have stop-go programs, and we can give you little examples of the problem of stop-go programs.

One of the problems with a stop-go program is that almost all the Spanish investors in solar were at the Canadian Solar Industries Association's annual conference in December, so that's how moveable the investment is. But it was a recognition of the combined environmental requirements—three, actually—in Europe: environmental security, environmental concerns for sustainability, and thirdly, economics, because their economy is hurting now and has been hurting for a long time. It was on that basis that they created the program. It had three policy prongs that were critical to the Government of Spain at the time.

I'm not sure I'd use their total program design, though, although it has benefited the Canadian industry.

Mr. Nathan Cullen: Does it not by intention or unintentionally sabotage the renewable energy system by not placing a price on carbon? If it's just a question out there constantly.... You used this as one of the factors, that Europe was contained within a known price for the pollution. It's Canada that just keeps ragging the puck. Does it not simply delay and stall the industry from being created if that price point is just removed? Now you're dependent on every single budget: is there an incentive in the budget or is there not; is it going to CCS or is it not?

Without that regime of a price, either by intention or not, the fact of the matter is that it stalls and suffocates a renewable industry that has to rely on public subsidies for its basic existence.

The Vice-Chair (Mr. Alan Tonks): This will have to be the final response, Mr. Cullen.

Mr. Timothy Weis: I can make it quick. I think it also ultimately hurts the oil and gas industry as well. We've had all sorts of discussion with gas and oil developers in Alberta, where I've lived for the past decade. They're saying the same thing, that we need some sort of certainty to start planning around; we know this is coming, but maybe this year, maybe next year, or the year after. This really makes it difficult, because whether it's oil and gas or renewables or what have you, energy infrastructure is a 20-, 30-, or 40-year investment. Not knowing this year or not knowing next year makes it difficult for everybody, at the end of the day. That's what it comes down to.

The Vice-Chair (Mr. Alan Tonks): We'll bring this to a close, Mr. Cullen.

Thank you, Mr. Weis.

We'll go to Mr. Anderson.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): Thank you, Mr. Chair, and thank you to the witnesses for being here today.

I have a comment before my questions. Mr. Cullen insists at pretty much every meeting on talking about the importance of carbon pricing, but he never mentions the impact of it on consumers. I think our prior testimony, including that last week, when we heard that there was basically no agreement on whether the price should be somewhere from \$40 to \$200, reflects the fact that if it's put in place it has to change consumer prices. That's pretty much the point of it, to drive the price of conventional supply of energy up to the point where other sources are now going to be competitive with what we have conventionally.

I think we need to keep that in mind as we're having the discussion as well.

I would like to talk to the solar folks.

Where do you see the future of solar in the next ten years? You're talking about the different types of solar developments that have taken place with thermal, hydro, and the photovoltaic systems of the past, which have been the focus of attention on solar. Where are we going to be in ten years in terms of technology, and where are we going to be in terms of the size of projects?

I think in the past the public would typically think the solar is geared more toward individual applications. Mr. Shory earlier asked

whether the wind folks were gearing towards individual applications as well. But where is your future?

• (1050)

Dr. Phil Whiting: I think part of the beauty of solar is that it's a technology that lends itself to both small-scale and large-scale applications. You'll still see lots of residential applications of solar projects, as you do in Europe. If you want to look towards our future in the ten-year timeframe, I think that looking at Europe today would be a pretty good model for it.

You'll see lots of systems with one or two panels on peoples' homes, and then you'll see large community developments. There are projects in Europe now with 30,000 or 40,000 or 50,000 panels in community dwellings from which they're providing heat to homes from the shared energy of all these systems.

You'll also see large commercial projects. We've done some very large commercial projects in the last few years—mostly in the United States, actually, but you're going to see these in Canada as well.

Ms. Elizabeth McDonald: On the electricity side as well you're going to see again that it's very scalable. If you look in Ontario at the microFIT program, the feed-in tariff program for homes, the uptake has been incredible. It has been double and triple the expectations that anyone had. I was at the Ontario Power Authority's open house last week. There were 500 people at it who were serious about adopting solar electricity and serious about the feed-in tariff.

What that does will of course drive down the price, making it more affordable, which is a concern you have. You're going to see that; you're going to see the use of building-integrated photovoltaics on large buildings in downtown Ottawa, downtown Toronto, and right across the country, using the electricity rather than just having glass for no use.

When you look at large energy companies, what you're seeing is that they're diversifying. We have members such as BP, and Enbridge is a major member of CanSIA, very active and really excited about what they're doing. So it's about the energy business and about people seeing the dynamic. Most energy businesses are going into solar because they see, as was said in our remarks, that it's very scalable. It has a lot of technological applications, both community and large scale.

Mr. David Anderson: You were talking about a really broad range of applications there. In your opinion, then, where should the government be focusing its support? On biofuels we put most of our support at the production end so that we don't have to be involved, for example, in capital investment. We also put money in R and D. Where should the government be focusing its support? You've covered such a broad spectrum, and obviously you can't cover everything, so where should it go?

Dr. Phil Whiting: I think the biggest barrier to all renewable energies—and it's no different for us—is that you have an upfront investment for a long-term payoff. The length of the term of that payoff is gradually shrinking as the technology gets better and costs come down. And as the cost of conventional energy goes up, that payoff goes down. Without a doubt, it's very clear from studies all over the world that incentives provided by governments to help with that upfront cost produce the long-term payoff. So that's one place.

Second, there are a lot of regulatory challenges in the whole solar space. We're putting things on the roofs of buildings, and all the regulations and building codes and stuff you have to go through are complicated and mind-boggling. They're a serious barrier to the adoption of the technology.

There is a third area where government could help as well, I think. Large-scale systems in particular will be self-financeable. In other words, we can produce energy at less than the cost of grid energy today, but there's a capital cost that needs to be spent upfront in order to get those savings. There's enough of a gap to be able to produce a 10% to 14% return on investment, but the financing mechanisms to drive that are not in place at the moment. The financial institutions like banks don't know how to do that. If there were a way for governments to be able to help stabilize the financing of large projects, I think you'd see very large projects without really having to spend dollars. It could be a way to incentivize the industry.

Mr. David Anderson: I guess in the case of just about every project in every area, if somebody else pays the capital cost, people should be able to make it operate properly. I'm not arguing against that. I'm just saying everybody could come with that request.

Dr. Phil Whiting: I'm not suggesting the government should finance it. The problem is in principle it's easy to do calculations to show that it should be able to be financeable, but it's complicated. Because you have federal regulations and provincial regulations and municipal regulations and sometimes utility incentives, trying to package all of that together, even though the numbers make sense, is complicated. There isn't an industry right now in Canada that can do that. In the U.S. it's happening quite regularly, but not so much here.

• (1055)

Mr. David Anderson: Will you be participating actively, then, in the regulatory review initiatives?

Ms. Elizabeth McDonald: Yes, we will be.

Mr. David Anderson: Okay, good.

I think I probably have a couple of minutes, but I'm wondering—

The Vice-Chair (Mr. Alan Tonks): You have half a minute.

Mr. David Anderson: Can you talk a bit about the different technologies in the different regions and the different seasons? We probably don't have enough time for that, but I'm interested in how you see different applications of your technology in different areas of this country. We heard a little about diesel and diesel hybrids and that kind of thing.

Dr. Phil Whiting: Yes. Canada has lots of sunshine, and we've sold systems as far north as Alaska and Nunavut, and of course as far south as you can go.

There's a lot more sunshine available in Canada than you might imagine. So sunshine availability is not the limiting factor for us at the moment.

The Vice-Chair (Mr. Alan Tonks): I think sunshine is probably a good note to finish on, Mr. Anderson.

We do have a vote coming up, so I'm going to try to get the committee out.

Thank you very much to our witnesses for being here.

Mr. Cullen, you raised an issue with respect to the overall investment on renewables. I'd ask the researchers if they could just take it up with Mr. Anderson and see if those figures can be made available.

Thank you very much.

Thank you to our witnesses again. The meeting is adjourned.

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