House of Commons
CANADA

Standing Committee on Natural Resources

RNNR • NUMBER 035 • 2nd SESSION • 40th PARLIAMENT

EVIDENCE

Monday, October 26, 2009

Chair

Mr. Leon Benoit

Standing Committee on Natural Resources

Monday, October 26, 2009

● (1530)

[*English*]

The Chair (Mr. Leon Benoit (Vegreville—Wainwright, CPC)): Good afternoon, everyone.

We're here today to continue our review of the state of the nuclear industry in Canada and abroad. This review leads up to our study of Bill C-20.

We have six groups represented here today. We will allow them to give their presentations in the order laid out in the agenda.

However, first I want to mention that we have to pass a budget to cover the expenses of people who have expenses that qualify. We'll do that at the end of the meeting. It shouldn't take long, but we want to leave a few minutes in case there is any discussion. We have it scheduled at 5:15; if you think we can do it in less time, we can go a little bit later.

Go ahead, Mr. Regan.

Hon. Geoff Regan (Halifax West, Lib.): Mr. Chairman, are we going to ask them to speak before we tell them whether we're going to cover their costs?

The Chair: Yes.

Hon. Geoff Regan: I'd move it right now, if you want.

The Chair: I don't know how the Liberal vice-chair handled meetings last time, but that's not the way we're going to do it now. I don't want....

Okay, could we get down to business, then? We'll go directly to witnesses, because there are a lot of them. I hope you will keep to the time that was given to you.

We'll start with Shawn-Patrick Stensil, an energy and climate campaigner with Greenpeace Canada.

Go ahead, please. You have up to seven minutes.

Mr. Shawn-Patrick Stensil (Energy and Climate Campaigner, Greenpeace Canada): Thank you very much.

[*Translation*]

I will give my presentation in English, but I will be pleased to answer your questions and comments in French.

[*English*]

Thank you very much for the invitation to speak to you today. You're dealing with a very important topic. It's one that Greenpeace doesn't believe has had enough public scrutiny.

To start my presentation I'd like to begin with three reality checks that I think the committee and the government are struggling with right now in its debates around the privatization of AECL. From the point of view of Greenpeace, there are three things we need to keep in mind while we do this.

First, despite proclamations of a nuclear revival, there is little or no market for reactors internationally, in particular for CANDU reactors. This is mostly because international vendors such as AECL, but also AREVA, have failed to design a new generation of reactors that are low cost and competitive with other sources of energy. What's more, the industry hasn't learned its past lessons, which it originally promised in the early 2000s, that the cost overruns and delays of the past would be a thing of the past.

Secondly, based on this, we need to admit that CANDU technology is at a dead end. AECL has been unable to successfully innovate, design, and sell any new reactor designs since the CANDU 6 in the late 1960s, early 1970s. In regard to its next-generation reactor, the advanced CANDU, AECL has failed to meet its objectives for market readiness for the design as well as for price points. Members of the Canadian industry, in fact, have started to admit publicly that it is too late for the advanced CANDU.

Finally, while the federal government has stated its intent with AECL restructuring is “to maximize Canadian taxpayers’ return on their investment”, we must admit that such payback will be trivial. Total cumulative subsidies to AECL are well over $20 billion. Meanwhile, media reports indicate that the market value for selling AECL would be about $300 million. This is a bitter pill to swallow, but necessary medicine if we are going to stop the bleeding connected with ongoing AECL subsidies and support of the CANDU line.

In this way, Greenpeace believes that the privatization of AECL and the government's initiative could make a positive contribution to Canada meeting its international commitments to transitioning towards a more sustainable economy by shifting nuclear power's high cost from the taxpayer to the nuclear industry, where it belongs. We would support such a scenario if undertaken by the government. However, there has been an ongoing lack of transparency and scrutiny regarding the proposed restructuring and privatization of AECL. This is not the fault of the present government. Without increased public scrutiny and consultation, Greenpeace is concerned the restructuring and privatization will neglect public interest issues such as sustainability and taxpayer protection.

My written brief to you today, which you won't get because I didn't have time to have it translated—my apologies—is in fact a petition to the federal Environment Commissioner in which Greenpeace requests the federal government to make a number of commitments.

One, come clean on the liabilities taxpayers have been exposed to in order to prop up current CANDU life extensions, such as the one taking place at Point Lepreau, and Bruce, in Ontario.

Second, we make a request that the government raise the bar on transparency and accountability for all future AECL contracts. Before future contracts are signed, the federal taxpayer should have the right to know what liabilities AECL's contractual performance guarantees may expose them to.

Finally, the petition, I hope, will provide the committee with valuable background information on AECL's recent performance.

We don't make this request lightly. In 2009 the federal taxpayer was forced to pay $100 million to cover "off-balanced liabilities" for cost overruns at the Bruce A, Point Lepreau, and South Korean refurbishment projects. According to AECL's annual reports, it currently holds $500 million in these "off-balanced book liabilities", due to contractual performance guarantees for reactor construction projects. It is unclear what accountability mechanisms or caps the federal government has placed on AECL for the accumulation of such liabilities under this government and former governments.

● (1535)

Greenpeace's petition requests clarity on the financial liabilities for the contracts that have already been signed. Greenpeace is deeply concerned that the federal government is increasingly exposing the federal taxpayer to these financial risks for life extension projects.

It has been said that AECL's ability—to change topics—to keep going, or its ability to sell the advanced CANDU reactor to Ontario, will be "a destiny issue" for the organization. It should be noted that the federal taxpayer has already subsidized the design of the advanced CANDU for $433 million, well above initial estimates. This is just for the design. We haven't sold one yet.

Ontario is now asking the federal government to subsidize the construction of the ACR by potentially billions of dollars while the federal government is also asked to assume significant risk transfer.

As you can see, this endeavour has already become, as you would say in English, "in for a penny, in for a pound". That's what we're in for with AECL and the advanced CANDU. However, this does not make good public policy.

It should be noted that AECL has been unable to successfully innovate and design any new reactor since the CANDU 6 in the 1960s was first developed, despite billions in subsidies. Some in the Canadian nuclear industry have already given up on the ACR, despite the hundreds of millions we've spent, and are calling for a return to the antiquated CANDU 6. Such desperation should not motivate or cloud our thinking on moving forward and protecting the taxpayer and protecting the environment.

To conclude, I hope this committee will use our petition and pose some questions to both the government and AECL and members of the CANDU industry. And I hope we can raise the bar on public transparency for the liabilities the Canadian taxpayer has been forced to assume for propping up CANDU in the recent past and also over the past 50 years.

Thank you very much.

● (1540)

The Chair: Thank you for your presentation.

Apparently the clerk had notified you that you could have up to 10 minutes for your presentations. I appreciate you being well within that timeframe.

We will go now to our second presenter, from the Mouvement Vert Mauricie Inc., Michel Fugère, representative for energy matters. Go ahead, please, for up to 10 minutes.

[*Translation*]

Mr. Michel Fugère (Representative, Energy matters, Mouvement Vert Mauricie Inc.): Thank you for giving us this opportunity to appear for the first time before the Standing Committee on Natural Resources.

When I received the committee's invitation, the topic was indicated as the state of the nuclear industry in Canada and abroad, in the context of this particular bill that you are studying. For the committee's benefit, therefore, I decided that it might be useful, before going ahead and supporting the Canadian nuclear industry, to take the trouble to have a vision that is a little more comprehensive of the international situation, and to understand the origins of this nuclear industry that people have been keeping on artificial respiration for so many years.

Before getting into that, I thought it would be helpful to focus on countries that have the best track records in order to gain a better understanding of the industry's importance, weaknesses and aspirations. I picked France as my example, since it is, as you know, a major user of nuclear energy. Of course, I also thought about the United States, which has over 100 nuclear reactors. We know that France and the United States together produce nearly half of the total electricity from nuclear sources in the world. Canada is also a player.

Curiously, the history of how these industries developed shows that they have a great deal in common. I have provided some background documents to the committee. They include a research study carried out by Mariah Blake entitled *Bad Reactors, Rethinking your opposition to nuclear power? Rethink again.* This is an in-depth analysis of what is happening in the nuclear industry in the United States. What the study provides is really more or less the history of the nuclear industry around the world.

Where Canada is concerned, I provided the committee with the document that was prepared a few years ago by Ralph Torrie and Richard Parfett, who are Canadian energy experts. They carried out an assessment of the nuclear industry in Canada, including the history, the current situation, future prospects and possible alternatives that could move us in a harmonious way away from nuclear production in Canada. Those documents are available to everyone because I have provided them to the committee.

I have also submitted a document entitled *Status and Trends of the World Nuclear Industries* by Mycle Schneider from the Carnegie Endowment for International Peace. It contains well-documented and up-to-date charts that provide an accurate and multi-faceted picture of the nuclear industry around the world.

We often hear about a nuclear renaissance in the world. That notion implies that the nuclear industry has been stalled for decades and that its survival has been under threat as a result. Why has the nuclear industry been stalled and unable to move forward for decades?

Everyone knows the reasons. There are the risks associated with the technology not being fully controlled. There have been incidents such as Three Mile Island and many others here in Canada. We can come back to this during the question period after my presentation.

● (1545)

There is the poor management of construction projects that has compromised the reliability of nuclear sites. The Finnish Olkiluoto project is a very good example of that. There is the poor financial planning of projects, which has led to huge cost overruns. There again, the Olkiluoto project is a very good illustration. There are the delays in getting projects up and running. The same things happen time and again.

There is the lack of skilled workers, which is something we see in Canada. There is clear documented evidence that this is a major crisis in the United States. Leaders in the nuclear industry themselves acknowledge the problem. There is the reduction in the quality and quantity of services available and the dwindling number of service providers. These are recognized facts. Projects are often delayed because the required parts are not available and services cannot be readily provided.

There is also the fact that the financial burden associated with nuclear infrastructure is so heavy that the industry cannot bear it alone. So it must assumed by taxpayers. In the United States, proposed nuclear projects have been the subject of fierce opposition, just recently, by major financial agencies and other groups, especially on Wall Street, to the point that they are threatening to discount companies that get involved.

Given all this, what has prompted the nuclear renaissance? Is it that the control problems have been resolved, that construction projects are being better managed, that financial planning has been improved, that deadlines are being met, that there are more skilled workers and a better supply of services, and that the industry is assuming the financial burden of its operations? No. There are daily indications to the contrary. Anyone who can read can find out about them.

So why is it that we are being bombarded with this notion of a nuclear renaissance from every side, as if it were genuine? This nuclear renaissance is due not to technological advances but to a good public relations campaign and effective government lobbying.

In particular, those pushing the nuclear option took advantage of the fact that our societies were in shock owing to the serious climate change crisis. It was the need to reduce greenhouse gas emissions that mobilized those trying to sell this industry. That is the angle they used. They invested all their effort in promoting their cause and led us to believe that the nuclear industry was undergoing a renaissance.

The concept actually had its origins in France. The flagship project that breathed life into the idea was Olkiluoto in Finland. In 2005, France managed to find a place to build its new generation reactor, the pride and joy of the nuclear industry, which is the EPR. Finland was given guarantees that there would be no cost overruns, that the technology would work flawlessly, that construction would be completed without a hitch and that greenhouse gas emissions would be reduced within the required timeframes as a result.

● (1550)

Today everyone is disillusioned because the Olkiluoto project is a failure across the board. This includes Finland, whose economic position has been hard hit by the delays in the project.

So the French embodiment of this renaissance is the Olkiluoto project. In the United States, it was the adoption of the Energy Policy Act. Because of the international context, American nuclear leaders finally managed to mobilize political support and create the conditions necessary for the nuclear industry to rise from the ashes in the United States. Since France and the United States have been able to kickstart the nuclear industry once again, what is the situation right now?

We have seen the failure of the Kyoto Protocol. In the United States, the financial sector has clearly rejected the idea. The concept has not been validated from a technological, financial or environmental standpoint. If the industry is not able to deliver the goods, it cannot reduce greenhouse gas emissions as promised. Enormous costs have been incurred, meaning that this money cannot be invested in alternative energies. From a societal perspective, it is taxpayers who will have to pay the bills for this industry that was supposed to be so dynamic.

Thank you. I will be pleased to answer your questions.

The Chair: Thank you, Mr. Fugère.

[*English*]

We go now to our third presenter, from the Organization of CANDU Industries, Mr. Neil Alexander, president.

Go ahead, please, for up to 10 minutes.

Dr. Neil Alexander (President, Organization of CANDU Industries): Good afternoon. Thank you very much.

I'd like to paint a broader picture of the context of nuclear power around the world, particularly in Canada, and talk a little bit about the opportunities that it presents the nation.

OCI represents about 160 companies, all of which have an active involvement in the Canadian nuclear supply chain. Power producers, such as OPG and Bruce Power, are not members, nor are the reactor vendors, such as AECL, AREVA, and Westinghouse. That allows us to focus very clearly on issues surrounding the manufacturers and the other suppliers of goods and services that make up our supply chain.

The CANDU supply chain has benefited from the consistent, ongoing work that's been taking place within the industry, both in building new stations and maintaining and refurbishing the existing CANDU fleet. This has led to the creation in Canada of a modern, tight, well-organized, and highly qualified supply chain that is actually the envy of many of the other reactor vendors.

It's interesting to think that some of the problems that have previously been discussed arose as a result of new supply chains being formed, and compare and contrast those with the solid supply chain we have here in Canada.

With the renaissance in the industry, the other reactor supply chains are severely challenged, which creates a massive opportunity for Canada and its companies to benefit by supplying components both to the CANDU plants and other plants around the world. In fact, I'd say one of AECL's greatest strengths that's often forgotten is the supply chain that stands behind it, which really creates a formidable force within the industry.

However, the situation at the moment is quite challenging. Uncertainties surrounding AECL's future and the fact that we presently have no demonstration site for the advanced CANDU reactor are dragging our industry down at a time when we should be building it and creating jobs. The failed Ontario RFP process and the isotope crisis have added to these problems—and, again, by association, these have lowered some of our opportunities. As a result, we are talking about the need for urgent action within the nation.

In these comments, I hope to make a case for saving the industry and to re-emphasize the urgency of identifying some of the things that we need to do to put things right.

The nuclear industry is an anchor industry within Canada. It's one of the few remaining anchor industries in the nation. We've always been a leader in the production of civil nuclear power: we were the second country to sustain a nuclear reaction; one of the first to develop a civil power reactor design; and we were one of the earlier adopters of nuclear power as a form of producing electricity. Today, we are the seventh largest producer of nuclear power in the world. We also hold a large portion of the world's uranium reserves, and we are a leading provider of uranium processing, mining, and exploration, as well as of our iconic CANDU brand of reactors. In fact, 10% of the world's power reactors are of Canadian design, and we are now one of an elite group of countries that do actually have a design for a generation III-plus reactor.

From the creation of an anchor industry, there are more than the direct benefits you will hear about in terms of the statistics of the value of a sale of a CANDU. There are also benefits to our industries. As a result of being in the nuclear industry, we now have established companies that specialize in nuclear engineering, construction, component manufacture, equipment supply, and service provision. They work on the Canadian-designed plants. We are also a large supplier of equipment to the other reactor vendors. L-3 MAPPS, one of our companies, is now the world-leading supplier of simulators, not just for the CANDU designs but also for all other nuclear reactors around the world. Indeed, they are now the leading supplier of simulators for all other thermal electricity-producing plants. All of that was a result of our investment in the industry. Similar stories can be told of The Babcock & Wilcox Company, and of SNC-Lavalin, which have benefited from being associated with this successful industry.

It's also created spinoff opportunities, which we're becoming very aware of nowadays, such as medical isotope production. Other areas that people may not know so much about are Canada's role in the supply of other sealed sources and in food irradiation. In all of these things, Canada is now a world leader.

Finally, as a result of our involvement in this as an anchor industry, we've invested in research and development, thereby creating commercially important intellectual property that remains within the country and from which we continue to benefit. It's also substantially helped in our development of human capital that allows us to compete on the world stage.

● (1555)

CANDU has a strong reputation around the world. It's something that I think sometimes in Canada we forget. Our CANDU plants are routinely in the top 10 in terms of the world's best reactor performers. Our record for on-time and on-cost delivery in our foreign export projects is exemplary. Our standing as a nation and our standing in terms of our manufacturers have very much developed and improved as a result of our involvement in this industry. As trade relations with India begin to improve, it is nuclear that is at the top of their list that they want to discuss with us.

I'd like to talk a little bit about nuclear renaissance, which is undoubtedly taking place. In order to understand why it's a renaissance, it is important to understand a little bit about the history of the industry. Nuclear power developed very rapidly. We only developed a consciousness that it was possible in the 1940s, and by the 1960s we had mastered the technology and built and operated power-producing reactors. By the 1980s, we were connecting a new reactor to the grid every 17 days. There are now 430 reactors producing power around the world at this moment, and many more reactors in submarines, icebreakers, and other forms of shipping.

Ironically, if the anti-nuclear groups had been successful in their attempts to do good and had managed to hold that program up earlier, then the world would have many more coal-fired power stations than it does at the moment. The environmental challenges that we face from smog, acid rain, marine acidification, and mercury contamination would be far worse. But worse still, global warming would have hit earlier and with much greater force than it presently does. It would also have been at a time when we would not have been technologically capable of responding. So our nuclear fleet around the world has made a dramatic improvement to our current environmental situation.

The rapid development, though, did have its problems. We accept that. Combined with the fact that fossil fuels were much more prevalent than we thought they were, that did cause a slowdown in the industry. That, in many ways, has been good news for Canada because some of the less strong reactor designs have fallen away from the market. Designs like the Magnox and AGR out of the U.K. are now no longer available, leaving Canada as one of the very few nations that has a reactor design appropriate for the developing modern market.

The world nuclear renaissance is clearly taking place. It's not as fast as some of us would have hoped, but it is solid, it's robust, and it is essential to the national strategies of both developed and developing nations alike. The World Nuclear Association records that there are presently 49 reactors under construction, and each one of these reactors is a project worth billions of dollars. That's in 13 different countries. There are 136 presently in the planning stages and 283 more in the proposed stages. If we take global warming seriously, there is an expectation that 650 reactors will be built in the foreseeable future. We were hearing today that the IEA, the International Energy Agency, is saying that it could be something more like 1,200, if we are to take some of the coal-fired production out of production, in order, again, to bring down our CO_2 emissions. Countries that previously turned their backs on nuclear power, like Sweden and Italy, are returning to the fold, recognizing that there is no other way of producing the electricity they need to maintain their standards of living.

Every reactor, no matter what its design, is an opportunity for people in the Canadian nuclear supply chain, and this opportunity is dramatically increased when we sell the CANDUs because over 80% of the value of the fabricated components come from Canada. It's a tremendous economic benefit to the nation when we are successful in selling those plants.

What we are trying to get people to understand is that this renaissance is happening now and other countries are making their decisions about their reactor technologies at this present time. So if we want to be part of this renaissance, it is important that we sort out some of our own issues internally so that we can move forward, demonstrate our capabilities, and become an active part of that renaissance. We do have a relatively short period of time to do that, and these issues are urgent.

● (1600)

Quickly on the issues, the Canadian nuclear industry is presently very busy. Throughout the recession it has been one of the beacons of light and hope for people, particularly in the trades in Ontario. No one in the nuclear industry, so far as I am aware, has requested or received anything of the style of a bailout package. However, our future export success does depend on us demonstrating the readiness of our technology, and also in developing a successful approach to selling our existing technologies—the CANDU 6s.

Presently, we have no confirmed site for the ACR demonstration, and this is being interpreted by the rest of the world as a lack of confidence in our own technology. We have no reason to lack that confidence. If a site were to be available, it would appear we would need to make further investments in order to successfully commercialize the ACR. Investment is a good thing. Investment creates a return.

AECL is presently poorly equipped to compete on the world stage. It has neither the financial resources nor the marketing presence to be successful. As a result, the government has decided that there should be a restructuring. We fully support that concept, to bring the appropriate resources into AECL and to allow Canada to be successful.

In previous sales of reactor vendors, such as the sale of Westinghouse to Toshiba, considerable premium was paid—in the order of billions of dollars—for the promise of the reactor technology that they were developing. With no identified demonstration site for the ACR, it will be difficult for this nation to realize such a premium on the restructuring of AECL. We consider that to be a significant threat to the ACR program, and consequently to the ongoing position of Canada as a world leader in this technology. As other countries are making their reactor choices now, we think we need to move swiftly to deal with identifying a site for demonstrating the advanced CANDU reactor and also for promptly restructuring AECL.

In restructuring AECL, we think the focus should not necessarily only be on how much income we can bring in, but we have to keep an eye on what it's going to do for the supply chain in Canada and maintaining the development, engineering, construction, and planning staff here in Canada. We'd be looking for people who want to commercialize the ACR and are prepared to make the investments, and we'd separately be looking for people who want to promote the existing CANDU technology, which has some very distinct niche market benefits.

As AECL is restructured, it substantially changes the landscape for the supply chain in Canada. We'd like to draw attention to that because we then believe that as we move forward, the supply chain needs to be treated like many of the other industries in the nation, such as the automotive industry and, say, pharmaceuticals, so that we would separately set up capabilities to sell the capabilities of our supply chain, such as trade missions, diplomatic support, and developing marketing campaigns focused around our supply chain and not only around our reactors.

We do say that we've passed a fork in the road. Every day we are walking involuntarily down a path toward decline. With some immediate action we can turn that around. We can capitalize on the position of a strong supply chain and create jobs for Canadians in Canada.

Thank you very much. I apologize for going a bit over my time, but I do feel it's an important message.

● (1605)

The Chair: Thank you, Mr. Alexander, president of the Organization of CANDU Industries.

We'll hear now from Don MacKinnon, president of the Power Workers' Union. Go ahead, please, for up to 10 minutes.

Mr. Don MacKinnon (President, Power Workers' Union) Good afternoon, Chair Benoit and members of the committee. Thank you for inviting the Power Workers' Union to present our views on the state of the nuclear industry in Canada and abroad.

For over 63 years, the Power Workers' Union has been representing the interests of more than 15,000 women and men who help operate Ontario's generation, transmission, distribution, system control, and telecommunications facilities. Our goal is to ensure that Ontarians receive clean, affordable, reliable, environmentally responsible, and secure electricity. We believe that securing Canada's role as a nuclear technology leader is one of the best ways to achieve this goal for all Canadians.

My remarks are going to touch on three issues. First I'll talk about the significant economic and environmental benefits Canada's nuclear industry creates for all Canadians and about the incredible potential for additional benefits in the future. Second, I'll outline why building CANDU 6 reactor units in Ontario is critical right now and is a necessary first step to help secure these benefits for future generations. Finally, I'll outline other actions the power workers believe are necessary to ensure Canada's continued nuclear technology leadership and the move towards generation III and generation IV technology, such as the ACR-1000.

With regard to the benefits of Canada's nuclear industry, all Canadians should be proud of what Canada has accomplished. It's one of only five countries to have pioneered a reactor technology. Our technology has successfully secured about 10% of the global marketplace. The numerous and significant economic and environmental benefits achieved by this relatively small crown corporation are listed on a Natural Resources Canada website, so I won't repeat those. However, there are benefits not mentioned on the NRCan site that deserve the attention of this committee.

Most of the tens of thousands of jobs created by Canada's nuclear industry are high-skilled, high-paying jobs. According to the Canadian Nuclear Association, nuclear supplies and services in the aerospace sector are the only advanced technologies for which Canada is a net exporter. Keeping a manufacturing sector in which we have a competitive advantage is particularly important at a time when Canada is losing manufacturing jobs to low-wage jurisdictions. We need to build on our industrial and technological successes.

Global concerns about climate change and the United States' reliance on coal-fuelled generation present a concern that we all share. But it's an opportunity for Canada. Exporting clean, nuclear-generated electricity to the United States reduces its reliance on coal generation, which means that we can all breathe a little easier. These exports also mean additional revenues and a better bottom line for Canadian generators.

Energy security is another benefit arising from Canada's nuclear prowess. Both Canada's vast uranium supplies and made-at-home nuclear technology provide enhanced energy security. In a world that is becoming increasingly dependent on finite fossil fuel supplies from unstable political jurisdictions, Canada's nuclear independence is important to Canadians.

Industry leaders and the media talk about a nuclear renaissance, driven by the need for reliable baseload generation, to help tackle greenhouse gas emissions. The World Nuclear Association projects a fivefold increase in today's global nuclear capacity by 2100.

Currently, 53 reactor projects are under construction. Another 133 are planned, and another 282 are in the proposal stage, as you heard from the previous presenter. Even in Sweden, a world leader in the development of renewable energy, they're considering new nuclear capacity.

As you know, four provinces—Ontario, New Brunswick, Alberta, and Saskatchewan—are considering new nuclear reactors. Ontario's integrated power system plan projects $27 billion of investment in the province's nuclear fleet between 2008 and 2027. New nuclear build decisions by New Brunswick, Alberta, and Saskatchewan would be another $30 billion investment.

Canadian and global electricity needs for clean, reliable electricity present an extraordinary economic opportunity for Canada's CANDU technology. Building either enhanced CANDU 6 reactors or the new twin ACR-1000 means hundreds of thousands of jobs and billions of dollars in economic benefits. For example, recent economic modelling by the Conference Board of Canada estimates that building four new twin ACR-1000 reactors in Canada and eight twin reactors internationally would create 500,000 person-years of employment and add $80 billion to Canada's gross domestic product. It also means lots of affordable, reliable, greenhouse-gas-emission-free electricity to run Canada’s industries, businesses, and homes.

● (1610)

On building CANDU 6 reactors in Ontario now, earlier this year Ontario deferred its decision to build new reactors using the latest technology designs. Although Atomic Energy of Canada Limited’s ACR-1000 design was the preferred technology, Ontario cited concerns about costs and the uncertainty surrounding the future of AECL. While we understand Ontario's unwillingness to commit to the next generation of the ACR-1000, we think Ontario must move forward with AECL's enhanced CANDU 6 immediately.

The current recession and the related temporary decline in electricity consumption presents Ontario with an ideal opportunity to move forward with CANDU 6. The failure to act means exposing Ontario consumers to unnecessary reliability risks. Ontario's temporary generation surplus will quickly disappear as Canada's economy rebounds, the population of Ontario continues to grow, and the electrification of the economy expands with the introduction of new technologies like electric vehicles.

Without new nuclear units, Ontario will not have enough supply to meet future electricity needs. Wind and solar generation only provide electricity intermittently and not necessarily when needed. The people of Ontario are already facing higher electricity prices even though the province's temporary generation surplus should be driving prices down. These price increases are driven by the government's long-term contracts with high-price incentives for new wind and new solar installations. Ontario's new feed-in tariff will pay even more. The reliability problems and higher costs of renewables should come as no surprise to us.

As other jurisdictions are discovering, wind and solar power generate more media hype than electricity to meet baseload demand. This year, three reports from Spain, Denmark, and Germany demonstrate that wind and solar generation come with very high costs, compromise reliability, and do not deliver the anticipated environmental and job creation benefits.

On the other hand, nuclear power provides clean, low-cost, reliable electricity 24 hours a day, 7 days a week, year in, year out, while creating real economic benefits. CANDU 6s have an enhanced design and a proven track record. In the last decade, AECL has been a leader in the construction of new reactors, building more than any competitor in export markets and leading the industry in on-time and on-budget construction. Examples include reactors in Romania, South Korea, and China.

About 75% of Ontario's electricity comes from nuclear and hydroelectric generation, giving the province one of the lowest-cost and lowest-carbon power systems in the world. By building CANDU 6s now in Ontario, we'd be assured of clean electricity for the future. As well, in an era when Canada's manufacturing sector is in decline and the old Canadian stalwarts are being picked apart, Canada's manufacturing sector would get a much-needed boost.

A decision by Ontario to build CANDU 6s would provide additional time for AECL to finalize the ACR-1000 reactor and for the federal government to complete its restructuring of AECL. It would also support similar decisions in New Brunswick, Alberta, and Saskatchewan. The current review of AECL's corporate structure should not be used as an excuse for inaction.

A national vision for Canada's nuclear industry is needed. We should be building on our proven expertise and successes as global nuclear technology leaders. Don't let what happened to Nortel be the precedent for AECL. We need a Canadian approach that involves the governments of Canada, Ontario, New Brunswick, Quebec, Alberta, and Saskatchewan; the domestic utilities operating CANDU plants; the manufacturers and service providers; universities and research institutes; the regulators; and labour.

● (1615)

The substantial economic and environmental benefits provided by Canada’s nuclear industry are evident. However, securing these benefits for future generations means that Canada's nuclear vision must focus on developing innovative federal-provincial-private sector financing mechanisms to address project investment needs, including how to address cost overruns; determining how to put our nuclear industry on a more competitive footing in the international marketplace; creating programs that will ensure we have a skilled workforce in place to design, build, and operate new domestic nuclear reactors and support international sales; allocating appropriate resources to research and development to keep our industry on the leading edge; and communicating with Canadians to increase their awareness about our nuclear industry and the benefits it generates.

CANDU reactors produce clean, reliable, safe, low-cost baseload electricity without smog-causing or greenhouse gas emissions. Critics are quick to say that nuclear power plants are capital intensive, too complex, and subject to cost overruns. Some of this is due to long timelines for approvals in construction, necessary stringent regulations and standards, and the unwavering commitment to worker and public safety. However, CANDU's track record shows that the benefits, both economic and environmental, far outweigh such costs.

Canada's global reputation as an energy powerhouse is built on the willingness of both government and the private sector to make major investments in groundbreaking technology. Harnessing the Niagara River in Ontario, James Bay in Quebec, the oil sands in Alberta, and nuclear power in Ontario and New Brunswick are examples of these successes. “Made in Canada” nuclear technology should continue to be a part of that story.

We have a huge energy-hungry economic power south of our border and emerging economies around the world that are looking for clean and reliable electric power. CANDU technology offers the answer.

AECL's recent global success stories, while competing with stiff competition from global giants, demonstrates that our “made in Canada” technology can succeed. Now is the time for all players in Canada's nuclear industry to come together, row in the same direction, and make CANDU technology an even greater success story.

Those are my comments.

The Chair: Thank you very much, Mr. MacKinnon.

From Université Laval we have Michel Duguay, professor, from the department of electrical and computer engineering.

Go ahead, please, for up to 10 minutes.

● (1620)

Professor Michel Duguay (Professor, Department of Electrical and Computer Engineering, Université Laval): Thank you.

I studied physics at the University of Montreal. Then I went to Yale University to get a Ph.D. in nuclear physics. Afterwards I joined AT&T Bell Labs in New Jersey, where I worked for a total of 21 years, including a three-year stay at Sandia National Laboratories in Albuquerque, New Mexico, where I worked on a solar tower project and a laser-driven nuclear fusion project. My boss there was a nuclear engineer.

For a very long time I was a promoter of nuclear energy, and I used to follow it on a weekly basis, especially when I was at Sandia labs. One day my boss said that if we could make the solar business work, it would be so much better than nuclear reactors.

Afterwards I spent about 10 years as a member of the IEEE-USA Energy Policy Committee, which met in Washington about three or four times a year, and also in New York City. We had several nuclear engineers on our committee. I said to one of them one day, “I hear that the CANDU reactor in Canada is supposed to be very good.” He said, “Well, the problem with the CANDU reactor is that it has hundreds of tubes that are constantly bombarded by neutrons. They become fragile and can burst out.” That's what this American engineer thought.

I'd like you to look at the second page of my handout. Does everybody have it? It's important.

The Chair: Everyone has a copy. Go ahead, please, Mr. Duguay.

Prof. Michel Duguay: What is striking about the CANDU reactor design is that there are so many tubes. In the CANDU 6 reactor, you have 380 horizontal tubes that carry the fuel, the energy producer, and the problem with having tubes in a nuclear reactor is that neutrons are constantly bombarding every material. Neutrons can transmute elements, so the composition of the tubes is changing with time. All kinds of mechanisms occur on the atomic scale, leading to an unpredictable behaviour for these tubes, as is recognized by the nuclear industry and in particular is well-documented by the Canadian Nuclear Safety Commission, the CNSC.

These are two major weaknesses in the CANDU design. The fact that it has a positive void coefficient of nuclear reactivity—I assume that some of you have been reading Ontario newspapers where this has been discussed quite a bit over the last year—simply means that if a pipe breaks and water is missing, the reactor design is such that nuclear reactions are accelerated. So at the time when you're missing water to take away the heat produced by the nuclear reactions, the neutrons go dancing a little faster.

You can have a power pulse that goes up a factor of ten over its normal output in one second, and then the computer that's in control of the reactor will drive down these neutron-absorbing rods. But it will take another second for these rods to come down. So you have a power pulse that lasts for about two seconds. According to the CNSC—I highly recommend that those interested read this document, INFO-0790, published in June of this year by the CNSC, where everything I'm saying is detailed. In that two-second power pulse, enough energy can be deposited in the core to melt the uranium as well as the tubes holding it. The molten metal can enter the moderator, which is heavy water, and cause a steam explosion.

The CNSC advises us that physical containment, the one metre of reinforced concrete, will probably hold in the explosion. Good! I'm very willing to believe that. But as an investor, do I want a multi-billion dollar investment to depend on the bursting of a single tube out of 380 tubes? There are six kilometres of high-pressure tubing in CANDU reactors. The pressure is not small. It is 100 atmospheres, a pressure you find at a depth of one kilometre. Very few submarines can stand that depth of one kilometre in the ocean. Those tubes have to stand it every day, at a very high temperature besides.

This positive void coefficient of nuclear reactivity is not the only trouble, although it is the major trouble of the CANDU reactor, and it is well-recognized by the industry. I'll have you notice that my colleagues on my left promoting the nuclear power industry have failed to mention the problem of the positive void.

The top guy in the French nuclear establishment, Bernard Bigot, was interviewed recently in a French film that came out only about two weeks ago. He talked about public distrust of nuclear power, and he said that our whole business has to be based on trust. The top guy, Bernard Bigot, said that. I agree with him 100%. If you consult your dictionaries or history books, or any linguist, trust has to be based on transparency.

People who have the knowledge, like you people sitting on the left here, have to tell things the way they are. There was no mention on your part of this power pulse problem, a major problem, and it was published in a June 29 article in the *Globe and Mail*.

The second major weakness of these pressure tubes, as I mentioned before, is the constant neutron bombardment and the flow-assisted corrosion that thins out the tubes, making them weaker, and it can lead to bursting.

Have a look at my third slide. You have to have sympathy for the designers and operators of the CANDU nuclear reactors, because nuclear power is a very, very ticklish business. This whole thing is driven by a neutron cloud. There is nothing more complex in the world, as far as I know, than the neutron cloud in a nuclear reactor, and in particular in the CANDU reactor. It's still the object of much uncertainty, as is well-documented by the CNSC in this June 2009 document. These neutrons are moving around, and there are power excursions. The reactor is controlled by a computer program.

● (1625)

The Canadian nuclear industry only realized in 2000 that the old nuclear models were not accurate enough. New models were introduced, but not all companies are fully up-to-date with the new modelling of nuclear reactors, as is documented here. The point is that when you have something that complicated, it's very hard to control. The CNSC admits it's very hard to predict exactly what would happen if a pipe burst, except a lot of trouble.

The next slide shows some beautiful engineering, and I recognize it, but the trouble is with the thermal hydraulics—I happen to also work in the thermal sector; I work in several areas of physics and engineering. The trouble is that uranium generates a whole lot of power out of these 17 reactors in Ontario that power half the province. A hell of a lot of power is produced here, and it's carried away by water. If the temperature goes up and you start getting a fuel element meltdown, how is the water going to take away the heat, especially if there has been a pipe break? It's a very difficult problem. When you read the papers on that you realize the authors complain about the complexity of the problem.

A fundamentally vulnerable aspect of CANDU reactors stems from the possibility of a pressure tube rupture. It happened with the Pickering 2 reactor in August 1983. The tubes operate at high pressure, 100 atmospheres, 300 degrees Celsius, and, as I mentioned before, under intense neutron bombardment. The metals change and their behaviour becomes unpredictable.

The second point is the positive nuclear reactivity coefficient, about which Greenpeace has talked a lot. I talk here about the two-second power pulses I mentioned earlier. We'll skip to the next slide.

On significant events in Canada in 2008-09 regarding nuclear reactors designed by AECL, I find it interesting that I list about five significant events here and none of my colleagues on the left mentioned even one of them.

In April 2008, the CNSC did not approve the integrated safety review proposed by Ontario Power Generation, which has a lot of nuclear engineers who were found not to be up-to-date with the latest modelling of nuclear reactors. The weaknesses notably concerned the positive void coefficient.

In May 2008, AECL announced its abandonment of the MAPLE reactor development. What's even more serious is that it reveals to this very committee its inability to explain the unexpected behaviour of the coefficient of nuclear reactivity.

This positive coefficient of nuclear reactivity has been well known to AECL. They talked about it in their 2002 and 2003 annual reports. They proposed then that you could have a new uranium fuel with dysprosium that would take away this power pulse problem. Bruce Power of Kincardine believed that. They worked for years trying it out, but they announced to the CNSC in the spring of this year that they're discarding this avenue as non-functional. Instead they're going to have to try to lower the rods a little faster instead of taking a whole second.

In June 2009, the CNSC published this document that I highly recommend to you, especially appendix F. It's only four pages. In these four pages you will learn more about the core business of AECL reactors than if you heard a whole day of talks such as the ones you just gave. You give PR talks. You don't tell the truth.

● (1630)

The Chair: Mr. Duguay, make your comments to the committee through the chair, please, and not directly to other witnesses.

Your time is up. You're at 12 minutes. If you could wrap up quickly, I'd appreciate it.

Thank you.

Prof. Michel Duguay: It turns out that many provinces—Ontario, Quebec, and the Maritimes—are surrounded by water, over which good winds flow. We have several times the power output of Saudi Arabia on all these water surfaces, and I highly recommend that you have a look into that.

Thank you.

The Chair: Thank you, Mr. Duguay.

We go now to our last presenter. From SNC-Lavalin Nuclear Incorporated, we have Patrick Lamarre, president and chief executive officer.

[*Translation*]

Mr. Patrick Lamarre (President and Chief Executive Officer, SNC-Lavalin Nuclear Inc.): Good afternoon.

Thank you for this opportunity to present SNC-Lavalin's views on the nuclear industry in Canada.

[*English*]

First, I will give a brief introduction of SNC-Lavalin; second, I will talk about the ongoing SNC-Lavalin involvement with AECL and the other nuclear projects; and third, I will outline the need for urgent and immediate action to determine the future of AECL and the whole Canadian nuclear industry.

SNC-Lavalin has its headquarters in Canada, with annual revenues of over $7 billion and a staff of over 22,000 full-time employees. Half our revenues come from our international operations; however, more than 65% of the employees are based here in Canada. We make high-value products and export them. In this way, we generate more revenues, which means more benefits for Canadian employees. This added value helps the growth of each of our offices in the different provinces of Canada.

We are one of the leading groups of engineering construction companies in the world. We are also a global leader in the ownership and management of infrastructure. Currently, we're managing about 10,000 projects, with a capital value of over $50 billion internationally. This makes us a clear leader in the management of megaprojects. SNC-Lavalin provides engineering, procurement, construction, project management, and project services in the four major sectors—power, oil and gas, mining, and infrastructure. We have projects in 100 countries and permanent offices in 35.

My second point is SNC-Lavalin's involvement with the nuclear industry and AECL. We have been involved in the nuclear industry for the past 42 years. During all of these years we have had a relationship with AECL. Together we have been involved in the entire span of CANDU projects in Canada and overseas. Working closely in support of AECL on 14 CANDU units, and more recently in support of Team CANDU, SNC-Lavalin has been responsible for the balance of nuclear steam plants, conventional turbine generators, and auxiliary plants. Together, over the past 13 years, we have delivered seven new nuclear plants on schedule and on budget. These are key numbers that you can compare with those of our biggest competitors, the biggest nuclear technology providers in the world. No other company has delivered seven new nuclear reactors in the past 13 years. All this has been done with AECL, Team CANDU, the OCI, and the Canadian industry.

Recently, we completed the balance of a nuclear steam plant in the successful Qinshan Project, which is one of the best-performing reactors in the world. You have a third party that reviews the up-time of a nuclear reactor and the percentage of it that's performing. Qinshan, with the CANDU technology, is the leading reactor in the world. It is rated higher than all other technologies, all other reactors. Various magazines compile the rankings. It is not a Canadian opinion; it is an international opinion based on actual performance. This was done with the OCI, together with the Canadian nuclear industry.

The ongoing involvement in the CANDU reactor system has led to a partnership with AECL in the design and development of reactors. We worked together on the CANDU-3, the CANDU-9, and on the advanced CANDU reactors. As I mentioned, the CANDU reactor designed by AECL in China is one of the best-performing reactors in the world.

SNC-Lavalin has over 30 offices in 35 countries, and we're actively marketing the CANDU technology throughout the world. It brings us our presence, and we provide support and alignment for Canadian technology internationally.

Third, I want to talk about the future of AECL and the Canadian nuclear industry. AECL, with Team CANDU, was the only conforming bid on the international competition for two new reactors at Darlington. OPG had an RFP. They were selected internationally. They were the biggest technology providers, and at the end of the day, Team CANDU, with AECL, was the only conforming bid for a generation III project.

The bidding process, however, has now been suspended by Infrastructure Ontario, pending clarification from the federal government regarding AECL's future. The federal government is the owner of AECL, and it must make a decision about the future of AECL. It has come out openly that they were supposed to review and decide on the future ownership, structure, and potential of it. This was done a few months ago.

● (1635)

Based on this new ownership, SNC-Lavalin—and I am only speaking for SNC-Lavalin, not for the rest of the OCI—needs to make a decision on how we are going to keep bidding jointly with AECL and other Team CANDUs internationally. Each bid we put forward to develop and support a new nuclear reactor involves an enormous amount of money. These are big bids. They are big packages. They involve a lot of time, effort, energy, and support internationally.

Depending on the future of AECL, we will need to make decisions on how best to support it and how best to go forward. The typical cell cycle for a nuclear plant can fluctuate from 5 to 15 years. We have been working with many clients, in many countries, over all those years, and we believe we're close to having an agreement with some of them.

To clarify, and so we all understand, CANDU is the technology and AECL is the owner of that technology. However, when a CANDU plant is built, AECL's actual scope of work, which is part of the design of the overall plant, is only one small component. The vast majority of the project is executed by other Canadian companies and partners. Therefore, when we make a decision on AECL, unfortunately—or fortunately—it has a direct effect on the full line of products and companies that will be supporting it, executing it, employing Canadian employees, and that will also be paying taxes and looking for growth and opportunity in world markets to support it.

I'll repeat that point: a decision on AECL is a decision on the CANDU. A CANDU plant has an array of groups executing the project, and AECL has only one small part.

With regard to the privatization of AECL, when we meet potential international clients we are asked why they would purchase CANDU nuclear technology if the owner of AECL plans to sell to unknown buyers. Another way to understand the question is through the client's perspective. When we propose the CANDU plant, they ask why they would choose CANDU technology over other technologies if after the change of ownership they end up with a technology provider that they had previously rejected.

I'll also make the point in French.

● (1640)

[*Translation*]

When we meet clients, they ask us why they would choose CANDU technology rather than that of some other suppliers, if that other supplier might end up owning AECL. Clients have no way of knowing what will happen. As I explained earlier, the sale cycle is very long, and if a client is ready to sign an agreement now, there must not be any delays. All the efforts by Team CANDU, SNC-Lavalin, AECL and the industry may be thwarted if the needed transparency is not ensured now.

[*English*]

International clients understand that the process to privatize a company like AECL can easily take two or more years. This is a big company. It has a lot of different projects, some liabilities, and it has processes. If you go to tender, first, one needs to find a group that will do the privatization; second, you need to prepare a big document; third, you need to go to the market to find out who will bid, and afterwards there is the due diligence on the final process.

We've been working on projects for many years, and there is an opportunity for new ownership, but we have to make sure the decision on ownership can be done in a short period of time to prevent a process that could drag out for a year or two. If not, our potential clients, who are ready now, could say they will wait to see who the new owner is.

In conclusion, because of global concern with greenhouse gases, a nuclear renaissance is happening worldwide. Canada must be part of it. We've seen it in Italy; we've seen it in Germany. All those countries that stopped it before want to be part of the new renaissance.

We are at a crossroads for the future of the nuclear industry for Canadian companies. The federal government must urgently take steps to convince the world that AECL is still in business. Only in this way can it ensure the development of a powerful nuclear economic sector in Canada, creating high-quality jobs for national and international projects. This will allow companies like SNC-Lavalin and other companies like the OCI to grow their Canadian base and export products internationally, just as we've been doing for the past 42 years.

We must all remember that a decision on AECL's future ownership will be a decision that will impact all of the Canadian companies, 30,000 people, and over 150 companies working jointly on the CANDU technology and exporting services from Canada internationally.

We need clear and decisive decisions as soon as possible, if not now.

Thank you.

The Chair: Thank you, Monsieur Lamarre, president and chief executive officer of SNC-Lavalin Nuclear Incorporated.

We'll go directly to questioning now, starting with the official opposition.

A point of order.

Mr. Nathan Cullen (Skeena—Bulkley Valley, NDP): A point of order, Mr. Chair.

Excuse me, sorry to interrupt, Mr. Regan. I'll be quick.

In terms of the way the committee structures this, it is difficult with six witnesses and now 45 minutes of time. It's difficult for committee members, particularly on a topic that's this complex, with a diversity of opinions, to be able to accomplish this. I'd just offer that so that when we're organizing these meetings....

When I saw the list yesterday, I thought, this is going to be very difficult, and it turns out it will be difficult for committee members to be able to actually get the fulsome debate that we need on this issue. Traditionally we only have four witnesses to a maximum, sometimes five, but six really pushes the clock quite far. Some committee members won't be able to ask questions at all, I would suspect, given our normal course of things. I just point out that we should try to limit the number of witnesses we get on a given day.

The Chair: Mr. Anderson, on the point of order.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): Mr. Chair, we passed a motion at the committee here in terms of what we wanted to do and how many meetings we wanted to put into this. We are trying to accommodate all the witnesses who were put forward by the various parties. I think we're going to be able to do that in terms of everyone who's willing to come, and we're trying to take them when they can come. So the reality is we have a number of witnesses. The witness lists that were put forward were fairly large, and we're trying to accommodate that.

No one is being denied, but obviously we're getting more witnesses at the table than we'd typically have. We're trying to accommodate the witness lists.

● (1645)

The Chair: I will just add that from the chair's point of view I believe the clerk approached all the witnesses who were recommended by committee members on both sides. Some could come on certain days, some on others. The witnesses who are here today could come today. So the choice would be to not have them come at all, and I don't think that would be an acceptable position for me as chair to take, certainly.

Mr. Regan, you will get to the questioning soon, I would think. Go ahead.

Hon. Geoff Regan: Thank you, Mr. Chairman.

I was going to raise the same thing, even though I wasn't going to raise a point of order. It does concern me that we have very little time left for questions. Let's remember that the reason we have such a short period of time for these meetings is that a motion was passed when there was a tie, and as we know, the rules provide that the chair, in casting the chair's vote in the case of a tie, does so to maintain the status quo, which you did not do in that case, as you recall, and therefore you sided with the government, your party, and created the situation we're now in.

Frankly, I think it is good to have a range of different views on these matters, as we've had today. That is a very positive thing, I think. To have conflicting views is fine, but I think it's clear that six witnesses are too much.

The Chair: On a point of order, Mr. Anderson.

Mr. David Anderson: Mr. Chair, on a point of order, I'm not sure why Mr. Regan feels that he should be discussing issues that were discussed in camera in public here. I don't know if he's paying attention to that or not, but that is a point. If we think we're going to go outside with a discussion that was in camera, it's going to limit what we can say in camera.

Secondly, the other option for us was to ask the members of each of the parties to limit the numbers of witnesses they put forward. We chose not to do that because we wanted to give a decent hearing to people, so we're doing that.

The Chair: Yes, Mr. Regan, please do be cautious on the in camera issue. I'm sure it was accidental.

Hon. Geoff Regan: Mr. Chairman, I'll follow the rules if you will, sir.

The Chair: Do I hear a carefully veiled criticism of the chair?

Hon. Geoff Regan: Perhaps.

The Chair: Could we get right to the questioning, Mr. Regan, so that we can have as many questions as possible for these witnesses, who have given very good presentations?

Hon. Geoff Regan: Thank you, Mr. Chairman. There are many questions to raise and unfortunately very little time.

Mr. Alexander, how do you respond to the concern about the power pulse issue that Dr. Duguay has raised?

Dr. Neil Alexander: I was intrigued. We were asked to come here and present on the state of the industry, and that's what we did. If you had wished us to come to talk about the power pulse issue, we would have been pleased to send somebody who understood that in detail to answer those questions.

Hon. Geoff Regan: Actually, one of the concerns is that I think it would be valuable, when we have a physicist, if there are other points of view among physicists—and there may or may not be—to have other physicists and nuclear engineers to discuss that.

The Chair: Yes.

Dr. Neil Alexander: I would just like to say that so far as the state of the industry is concerned, this is a well-understood issue. Our people are still interested in buying CANDUs, understanding the issues, because it has been controlled. The implications that there is some kind of secrecy surrounding it are clearly bizarre, since the gentleman making them was holding public documents and quoted from AECL's public reports in which they made very clear statements about this issue. So it's a curious statement that we're trying to keep it secret.

Hon. Geoff Regan: Professor Duguay, could you tell us how the South Koreans dealt with the question of the positive void coefficient with the HANARO reactor, which is based on the MAPLE design? I presume you've studied other kinds of reactors as well, and you can give us some comparisons, but in particular, do you know how that was dealt with in that case?

Prof. Michel Duguay: I apologize, I have not looked into the South Korean versions of the CANDU reactors. I'm mostly concerned with the Gentilly 2 nuclear reactor that we have in Quebec.

Hon. Geoff Regan: Pardon me, Doctor, I meant the MAPLE, not the CANDU.

Prof. Michel Duguay: Oh, you're talking about the MAPLEs.

Hon. Geoff Regan: The HANARO reactor—pardon me, I'm probably not pronouncing it the way that you or our witnesses pronounce it—was the one they did based upon the MAPLE's design.

Prof. Michel Duguay: The Canadian MAPLE reactors are of a different design that did have a positive reactivity problem, but of a different nature than the one in the CANDU. But it's the same thing.

What is of concern with the MAPLE debacle was reported right here in this committee last June, that AECL cannot explain it. It's worrisome when the manufacturer cannot explain why something doesn't work.

● (1650)

Hon. Geoff Regan: Thank you.

Mr. Lamarre, you talked about the concern that we might end up with the technology owned by another provider if it buys AECL. Could you expand on that a little bit, please?

Mr. Patrick Lamarre: The other major technology providers.... You have AREVA and Westinghouse, which are basically the two biggest ones in the world. You have GE Hitachi. What is forecasted in the situation...and I'll make a parallel to the Inco acquisition. When you have a foreigner coming in and taking new Canadian assets, what happens is that the priority to the company in the future is to always protect the headquarters in its own country.

Right now, Vale Inco in Brazil has been pressured by the government to spend more money in Brazil, to do more for the Brazilian people and more for the Brazilian mines. There's a slowdown in the world economy, and right now all of the Inco sites in Canada are being shut down or they're negotiating tougher conditions for the workers for some of the processes. Everything is slowing down in its Canadian operations.

The parallel I was trying to make is a little bit like what happens to Canadian companies that have been purchased by foreigners, how they become subsidiaries afterwards, and how it is dangerous when there's a slowdown in the world economy, because of what happens to the subsidiaries of any foreign country.

Hon. Geoff Regan: So you're concerned that the government may sell the part of AECL that it's talking about to a foreign-owned company.

Mr. Patrick Lamarre: The preoccupation is what has been happening historically, and it is a concern to us.

Hon. Geoff Regan: We saw the same sort of thing with Nortel, obviously, more recently.

Back to Professor Duguay. You talked, of course, about wind and solar power as alternatives to nuclear, and the concerns we've been hearing are twofold. One relates to the intermittent nature of wind and solar. You referred to cost-effective means of power storage, and I'd like you to talk about that for a moment, because we haven't been hearing about that.

Secondly, there's concern about transmission. As electricity is transmitted, it's depleted, and therefore we hear about smart grids. What's happening there to resolve some of these problems that we see, the concerns about wind and solar?

Prof. Michel Duguay: Let me tackle your last question first, on power transmission. The Europeans are starting a very large project called Desertec, where they will build solar power plants in North Africa and transmit the power to northern Europe over lines as long as 2,000 kilometres, at one million volts DC. The loss is only 3% per 1,000 kilometres of one million volts. So you can go all the way from James Bay to Toronto with only 6% loss. At the moment we have 10% losses between James Bay and Montreal, because we're using AC at 735 kilovolts. But at one million volts DC, your loss from James Bay would be only 3%.

So you should be careful to take good care of James Bay in Ontario.

Hon. Geoff Regan: Did you indicate—and I'm sorry if I missed it—what you felt should happen to AECL in terms of the government's proposals or what it's looking at?

Prof. Michel Duguay: I'd prefer to defer to my colleague, Shawn-Patrick Stensil, on that topic, and also to Michel Fugère. It's too complex for me to decide; I'm just a physicist, you know.

Hon. Geoff Regan: Oh, oh! Very complex for a physicist, obviously.

[*Translation*]

Mr. Lamarre, do you have an opinion regarding the restructuring of AECL?

Mr. Patrick Lamarre: Could you repeat the question?

● (1655)

Hon. Geoff Regan: Regarding the company's structure, what is your preference? What would you suggest the government do about restructuring?

Mr. Patrick Lamarre: Our recommendation, of course, is for every nuclear technology company in the world to receive government support in order to develop its international relations and continue to develop. That is what the federal government is doing at present through the Department of Foreign Affairs and its various agencies.

As far as commercialization goes, we believe that government support and a Canadian interest would enable AECL to maintain its cutting-edge technology jobs. An ongoing Canadian interest in the CANDU industry would also enable the CANDU technology to be developed in Canada and internationally, and guarantee the future by keeping the reactor rehabilitation and repair industry in the hands of Canadians and the organization of CANDU industries.

[*English*]

The Chair: Thank you, Mr. Regan. Your time is up.

We go now to Madame Brunelle, from the Bloc Québécois, for up to seven minutes.

[*Translation*]

Ms. Paule Brunelle (Trois-Rivières, BQ): Good afternoon, gentlemen. Thank you for being here. This is a particularly interesting meeting because your views are very much in opposition.

Mr. Stensil, I will begin with you.

You say that the government has provided $20 billion in subsidies to AECL and that the selling price would be $300 million. I wonder where you got those numbers. I questioned the deputy minister, and I did not get that information. On another point, the Greenpeace Canada representatives seem to be in favour of privatizing AECL and support that idea. Moreover, you did not say anything about the risks associated with nuclear technology.

Those are my questions.

Mr. Shawn-Patrick Stensil: Thank you very much.

Regarding the figures, I was here last week when the minister said that the subsidies amounted to $8 billion. For some reason, every time the federal government prepares estimates on AECL, it does so in dollars of the year. The standard practice is for accountants to calculate in inflation and state amounts in current dollars. So the $20 billion is the equivalent in today's dollars and not in dollars from the 1950s or 1960s. So that is my explanation of the figures.

The $300 million amount comes from various media reports. They appeared last week, but they have been around for three years, so since before the recession. There are rumours circulating as to AECL's market value.

On privatization, it is true that we did not talk about the risks of nuclear technology. I can do so, if you like. It would be an interesting debate. However, your committee study is on restructuring and privatization; our interest is in levelling the playing field.

Canada has sustainability commitments. That means that energy costs must be internalized. If coal is used, coal-fired plants have to internalize the costs. The same is true for the nuclear industry. Privatizing AECL is an opportunity to force the nuclear industry to assume all those risks. For example, when the Pointe Lepreau reactor in New Brunswick was rebuilt, the government took on the risk without setting up any mechanism to ensure accountability and reporting to taxpayers. That is seen as an opportunity.

However, we are concerned about privatizing one piece of AECL. We are afraid that it might lead the government to always take risks with major projects like other overhauls in Ontario, the Gentilly plant and the Pickering plant, or the construction of new reactors. Private companies like SNC-Lavalin Nuclear will make money with those projects, but taxpayers will always be the ones to take the risks.

Ms. Paule Brunelle: You are saying that AECL would be sold piecemeal—the profitable pieces—and the responsibilities would remain with us. At this table, we have not talked at all about the management of nuclear waste. This will no doubt remain a government responsibility.

If I remember correctly, Mr. Duguay had asked what investor would invest billions of dollars in AECL. It would cost that investor billions of dollars to purchase a reactor with apparently outdated technology. I think that AREVA might buy it to dismantle it and gain a competitive advantage. That is my opinion.

Mr. Alexander, you say that you are a leader. Yet, some people say that your technology dates back to the 1960s. What is your position with regard to the privatization of AECL? As far as I understand, you were opposed to that. Have I understood correctly?

[*English*]

The Chair: Mr. Alexander, go head.

Dr. Neil Alexander: I think there were two questions in there.

In terms of the technology, there are two technologies that AECL, broadly speaking, is in command of at the moment. One is the advanced CANDU reactor. That's a generation III-plus reactor. It's a mass market product that would fit into sophisticated grids in the developed world, in markets like the U.K. and the U.S.—if we can get it in there.

Secondly, they have the existing CANDU design, what is now called the enhanced CANDU 6. That has some very substantial niche market benefits for certain countries, and it may also be very valuable, as we go into the future, for burning alternative fuels, and also for waste management issues.

So AECL has two very beneficial technologies that we should be looking to polish up and use for the future.

Our position on the restructuring is that the restructuring should take place, that we need to put more investment into AECL if we're going to be a world player. We think we have every opportunity to be a world player. We think the restructuring will bring that investment into AECL and that it will also create for them the magnitude of marketing capability and worldwide presence that we need to take on some of the other very major companies.

● (1700)

[*Translation*]

Ms. Paule Brunelle: Do you not believe that the French recipe has made it a major world player? I am not telling you anything new. It is 95% a crown corporation, which allows President Sarkozy, among others, to promote its nuclear energy throughout the world.

Is this not a responsibility that our government should undertake? You believe the opposite.

[*English*]

Dr. Neil Alexander: I would love to see a country where we did make a full investment in AECL and geared it up as a crown corporation to go forth and compete with all of the other reactor vendors. It is a very expensive proposition. If you look at what has happened with other reactor vendors around the world, they have formed strategic partnerships to take themselves to a magnitude that allows them to compete. The classic example is an association that now exists between GE and Hitachi, giving the two of them the worldwide presence and magnitude to be successful. That's the kind of scale we're talking about.

So it's a matter of bringing in other partners—and I support Patrick's idea that we have to have a significant presence in this regard—possibly from Canada, but also possibly from other parts of the world, to allow us to have the very substantial presence that will be important to our ongoing success.

The Chair: Thank you, Madame Brunelle. Your time is up.

Mr. Cullen, for up to seven minutes. Go ahead, please.

Mr. Nathan Cullen: Thank you, Chair.

Thank you to the witnesses. It was a good discussion.

Mr. MacKinnon, I have a question for you. Do the folks you represent have an opinion one way or the other about the privatization of AECL? Are you for or against it? If you are for it, are there any major conditions you've requested the government place on the sale?

Mr. Don MacKinnon: We're certainly for the restructuring. I think for AECL to be successful on a go-forward basis, it has to be able to operate like a commercial entity. I think the partnership model is probably a good one.

One observation, though, would be that if you want to continue with a science industry, you need to ensure that it's protected as part of this. Having things like a research reactor is important to ensuring that we continue to have a science industry in this area as well.

Mr. Nathan Cullen: I'm going to stop you there just for a second. We've been doing some consultations and have been led to understand that in places where this has been broken up—where the research side has been broken up from the commercial and electricity production sides—it has not gone well, and that the whole, or the strength of the "solid supply chain", as Mr. Alexander mentioned, is what is important. The government has talked about breaking off pieces, breaking off the so-called toxic assets at Chalk River, and having just a sale of the component pieces.

Is that a viable option for the eventual success of a nuclear industry in Canada?

Mr. Don MacKinnon: I'm not promoting one method over the other. What I would say, though, is that power reactors are a totally different operation from research reactors; they're two completely different scenarios. There are probably scenarios where they could function independently. I'm not promoting that; I'm just saying that if we're going to do one thing or the other, we have to ensure that we don't throw the baby out with the bathwater, such that if we want to continue to have a science industry in this country, we need to ensure that we have that research capability.

Mr. Nathan Cullen: Thank you.

I have a question, Mr. Alexander. Something I'm confused about is that in your earlier presentation to the committee you presented the CANDU and the AECL scenario as very healthy and positive. Yet with all of the so-called renaissance going on, AECL holds no contracts or bids right now.

You mentioned this chicken-and-egg problem for the government. They've floated the idea publicly of a sale, and Mr. Lamarre commented on this. If potential bidders know that the thing is up for sale but don't know who is going to buy it, it creates a very difficult scenario to actually go out and sell, thereby lowering the price that Canadians can expect to get for the asset into which we've poured some billions, whether it's $20 billion or $15 billion or whatnot.

Why has the government gone about it this way? It seems confusing to me to not have any contracts in hand, which lowers the price, and then announce that you're going to sell it, which then causes more uncertainty—I would assume lowering the price—and no demonstrated ACR, no demonstrated site, which you called for. Is the demonstration site so critical for Canada to get a proper price for what Canadians have invested into this industry?

● (1705)

Dr. Neil Alexander: Yes. I'd go back to...and there were comments previously about the valuations on AECL. First of all, I wouldn't necessarily trust a journalist to do my valuations for me, but you can see the basis for them. It being—

Mr. Nathan Cullen: The government does it all the time.

Dr. Neil Alexander: I'm not sure what I should say to that.

I think what they're doing is a simple business valuation based on existing turnover. There's a credible figure that comes out from that, around the hundreds of millions. What I would draw people's attention to is the promise, because there's also a valuation in companies based on what they think they might achieve with the technology they have.

In the nuclear industry, that can be billions of dollars, and there are precedents for that. In order to liberate that value, we need to have confidence in the ACR and demonstrate it. There is still a lot of value in AECL for its other products, but it's much smaller. If we really want to liberate the value out of the investment we've made, we need to find a site for the ACR.

I think there was probably an expectation that Ontario would be moving forward with its process. The suspension of the Ontario process has been a very substantial problem for our industry.

Mr. Nathan Cullen: This is what seems strange to me, then, because the Ontario bid is now requesting a subsidy from taxpayers in order for that to be accomplished. So the government, in trying to sell an asset, has to go out and subsidize a project to hopefully get a better value for return on the investment. Do you see what I mean? It is very circular.

Dr. Neil Alexander: That's why it's very substantially chicken and egg.

Mr. Nathan Cullen: These are billions we're talking about. It isn't—

Dr. Neil Alexander: Somebody buying into the product would then create the investment that's needed to go forward.

The solution would be that the parties work together to come to a conclusion—the federal government, the provincial government and the potential investor. That way, the investor would be happy, the value would be liberated to the country, and the province would get the reactor it wants. It is completely incomprehensible to me as to why that is not happening.

Mr. Nathan Cullen: One of the reasons might be that the government is broke, that any money forwarded in this way is all deficit spending, and it causes an extra concern.

I have a question for Mr. Stensil about the liabilities. We asked this of AECL when they were here in front of us in terms of the off-book liabilities. This is important. I'm sure that when a company is being valued.... You mentioned the $100 million in 2009 and other off-book liabilities. Can you explain them more? Do they factor into the price that Canadians can expect to receive for their investment at the end of the day?

Mr. Shawn-Patrick Stensil: That's a very good question, and I don't have the answer to it, the final part. That's one of the reasons we asked the question of the Environment Commissioner. The Environment Commissioner can demand that NRCan respond within three months, so we hope this will force them to respond.

In regard to what is referred to in AECL's annual reports, there's an area that I've noticed that is called “off-book liabilities”. What we've seen is the huge growth from $112 million in 2004 to $500 million last year. We don't know the details because they are not released. When you look at when they were signing contracts for Point Lepreau or Bruce A, possibly South Korea as well, that's where we see it going up. This year, this off-book liability became an on-book liability for the Canadian taxpayer.

What we're asking for is some mechanism, one where we could get out on the table what liabilities are there. It will help inform the discussion on privatization, and we need to control these costs. This is effectively a subsidy for provincial nuclear energy operators. Right now, the government would want to support that—Greenpeace wouldn't—but you need to have a policy that rationalizes it, and it's all being improvised right now.

● (1710)

The Chair: Thank you, Mr. Cullen. Your time is up.

We'll now go to the government side, to Mr. Trost for up to seven minutes.

Go ahead, please.

Mr. Brad Trost (Saskatoon—Humboldt, CPC): Thank you, Mr. Chair.

With seven minutes, could you please be succinct in your answers?

Dr. Duguay was pretty clear as to what he thought of the CANDU. It was dangerous, unstable, risky, or whatever you want to state about it.

This is to Mr. Lamarre, in general, and then also to Mr. MacKinnon, slightly differently.

Mr. Lamarre, why would you argue that the CANDU is not dangerous, not risky, that it's stable or practical?

To Mr. MacKinnon afterwards, your members have to work with these things. Do they feel safe working with them or do they feel they're dangerous and risky?

Mr. Patrick Lamarre: In the first case—why do we think it's safe?—look at the history. Look at the CANDUs that have been built in Canada for the past 30-some years and that are operational. You can look at what's been built in Argentina, in Romania, and even the ones in India. The track record is there. There has never been an incident. They've always been operational and they've always worked safely. Every time they're compared to other technologies, they're in the top performing reactors in the world.

I think the issues that have been brought up are just how comfortable and how safe we should feel as citizens being close to nuclear. It's so well micro-managed, it is so well documented, it is so well exposed that every single thing is known in the industry.

Mr. Don MacKinnon: With regard to the operation and maintenance of the plants, as Patrick indicated, these plants have been producing power safely in Ontario now for over 40 years. They produce over 52% of our energy currently. Our members are quite comfortable with the operation.

I think it's important to know that, like any mechanical device, there are multiple safety systems. In areas where there's mechanical wear, are they going to wear out? Do you have to replace them? Absolutely. It's just like the brakes on your car, although when you're dealing with a nuclear station there's a significant magnitude involved.

Nonetheless, we have operated these things safely and efficiently for a good long time. We have the CNSC right on sight. They're the monitors. Do they find things from time to time? Absolutely. That's their job. That's what they're there to do. They point that out and those issues are corrected. We're quite comfortable with the CANDU model.

Mr. Brad Trost: My second question involves the decision by the Ontario government. When it came to what to do on reactors, they chose to punt and neither to pass nor to run. I'm willing to take more than just one answer on this one. I'm very curious as to how people see this affecting the future of the Canadian industry, both AECL in particular and the broader industry. Who would be interested in fielding that one?

Mr. Alexander and Mr. Stensil, so we will have one from each of the two sides.

Dr. Neil Alexander: We come from a circumstance where we understand how Canada works with a federal government and then with very powerful provincial governments that have control over such issues as electricity supply. That's not a model that exists everywhere in the world.

It's fair to say that most of the world does not understand that what is happening in Canada at the moment could actually happen. So they are putting an interpretation on it that says Canada doesn't have confidence in the technology. It's extraordinarily damaging simply because the rest of the world doesn't understand the circumstances that exist.

We've compounded the problem by allowing rumours to circulate with regard to pricing that appear to have no foundation whatsoever. As a result, not just our ability to sell reactors is suffering, but our entire nuclear supply chain has suffered. There's a situation now that we have to recover from, even though we were in good shape before it started.

Mr. Brad Trost: Mr. Stensil.

Mr. Shawn-Patrick Stensil: Thank you. It's a very good question.

Greenpeace has focused quite a bit of work on the development of Ontario's electricity plan. I think if you take two steps back from this debate, the province has the jurisdiction over its developing energy policy. In 2005 it developed a long-term electricity plan that we've heard a lot about. It said we needed to build reactors because at the time they were told, and they assumed, new reactors would cost $6 billion upfront—to build about 2,000 megawatts. Now Moody's and Standard and Poor's estimate that at about $15 billion. Media reports to build a first-of-a-kind advanced CANDU reactor—and these are just reports, of course—have put that at about $26 billion.

If you're a province developing an electricity plant, of course you're going to punt it back up, because what they've also been learning in the interim, since 2005, is that the cost for renewables—

● (1715)

Mr. Brad Trost: What if it did cost that much? Wouldn't they just kill it outright, then? That would be my one thing. To a certain degree, isn't the indecision the problem, not just the yes or the no?

Mr. Shawn-Patrick Stensil: It's partly to get a bid out. Also, no other activities have been happening in the province, such as the green energy act. The province also paused its electricity plan review and is revising its targets.

The percentage of nuclear and the timing may in fact change, so that's important to keep in mind. Note that they said AECL was the winning bid, but they didn't knock the other vendors out of the bidding. They've kept that competition up so that maybe they can go back later on to AREVA and Westinghouse, even possibly in 2014 when they know those reactors will work.

Mr. Brad Trost: I'll just squeeze in one last question.

We've talked a lot about reactors and CANDU reactors today. I'm very curious as to whether anyone has any more comments on other elements in the Canadian industry, niche elements or things such as handling recyclable fuels, waste, things like that. Does anyone have any comments on the niche elements, other than purely CANDU reactors and AECL?

The Chair: There are only about 45 seconds left in which to answer.

Mr. Alexander, go ahead.

Dr. Neil Alexander: To answer your question, our industry is much, much broader than just the supply of reactors. As I've said, we have a very substantial uranium mining industry. As a result of our involvement in uranium mining in Canada, some of our Canadian companies own significant mines abroad that bring even more capability and revenue back into Canada.

We also now have a very advanced program for managing used fuel from our stations. Again, it's the Nuclear Waste Management Organization. It's a process that is the envy of the world, and they're gaining a lot of credibility in that, which could put us as a leader in the field in used fuel management as well.

The Chair: We will go to another round of questioning, starting with Mr. Tonks, but it won't be a full five minutes, just one short question.

As chair, I don't ask a question very often, but I do want to ask a question based on an experience I had.

I am chair of the Canadian NATO Parliamentary Association. As a result, I've been to Lithuania, have actually stood on the core of their Soviet-era reactor. As a condition for joining the European Union, they're about 10 years past their deadline for closing that reactor down, but they have to do it. They indicated to me that, really, the reactor they see as a good replacement choice would be the CANDU 6, because then they wouldn't rely on Russia as a fuel source. I've had various people from Lithuania approach me about this. So I'd just like some comments on that in terms of a comment made earlier by one of the presenters on the CANDU 6 being a past reactor, a reactor that's done.

Mr. Alexander, and maybe Mr. Lamarre as well.

Dr. Neil Alexander: Absolutely, you're spot-on. It's a very valuable niche market product for people who don't want enriched fuel. It could also be used to run alongside other reactor designs, because the CANDU can actually produce more energy from the fuel that exists, that comes out of the other reactor designs, giving us more energy per amount of uranium used. So it has tremendous niche market opportunities, and we should keep our eye on those as well as the mass market opportunity from the advanced CANDU.

The Chair: Thank you for your brief answer.

Mr. Lamarre, and then I see Mr. Stensil would like to comment, if he could keep it really short as well.

Mr. Patrick Lamarre: It's a very good point. As part of our international marketing and as part of the prospects we're talking about, if we look at Turkey, Jordan, and other countries such as Poland, they're all very interested exactly for that reason: not to be so dependent on the supply of fuel, which is controlled, basically, by the United States and France.

An additional line of business that the CANDU industry can really work to is the use of thorium as a fuel—instead of uranium—which is much more broadly distributed around the world. It would bring a new source of usage of the fuel.

Another venue that is being discussed is to use some of the spent fuel from other technologies, which would allow the control of waste from the light water reactors, to be used in the fuels of the CANDU technology. So there are other venues to look at in the future; there are other things to be developed. That's why we're standing behind the CANDU technology and process and AECL for the future.

● (1720)

The Chair: Thank you.

Mr. Stensil, for a short reply as well.

Mr. Shawn-Patrick Stensil: I'll raise a different line of questioning that the committee may want to examine, which is the ethics of what sorts of international safety standards we would be applying in selling a generation II reactor. This is a pre-Chernobyl, pre-September 11 reactor.

Notably, in 2005, the industry in Canada also looked at building the CANDU 6 in Ontario. Linda Keen applied international safety standards to it. It seems to have failed, because Ontario abandoned it at that time. She was subsequently fired.

We should be having a very serious discussion about the ethics of exporting such a design overseas.

The Chair: Thank you.

Mr. Tonks, go ahead, please, with the question.

Mr. Alan Tonks: My question is directed to Mr. Lamarre.

Generally speaking, Mr. Lamarre, you've talked about the thousands of projects SNC is undertaking around the world. The paper presented through Mr. Stensil presents the case for the phasing out of nuclear. This suggests to me there's going to be a continuation, with respect to technologies and improvement, of the platform that exists with all the worker expertise and high value-added and so on, but also, during that phasing down, an expansion of sustainable development in renewable energy sources, particularly wind, solar, and so on.

Perhaps you could tell the committee what you think the blend of a strategic approach would be, over the next 25 years, let's say, that would add as much value to the Canadian economy in every particular way, mindful of the safeguards that must always be kept in mind from SNC-Lavalin's perspective of having thousands of projects, some of which must involve other strategic approaches to energy production.

Mr. Patrick Lamarre: This is a nice question.

At SNC-Lavalin, we're involved in pretty much all fields of supply, including coal, wind, hydro, and nuclear. We strongly think it's good to have a balanced mix of energy that includes hydro, nuclear, coal, wind, and solar. Unfortunately, we don't think the percentages for wind and solar can be that high, due to the requirements for redundancy and the requirements to make sure hospitals stay on 24 hours a day, seven days a week. But we think in the years to come the systems will greatly improve. Wind will become more efficient, and so will solar power.

But then if we look at the natural resources in Canada, hydro is a big one. We need to continue developing hydro projects, expanding them, and making them more efficient.

Nuclear is a great mix. Ontario has 52%. It has low-cost electricity as well as a reliable system and a reliable grid.

In terms of coal, I wouldn't even stretch myself to say who's going to capture most of the CO_2 as well as the sulphur components. Clean coal is another source we cannot dismiss in the future, just because we have so much coal in Canada. The price of electricity from coal is affordable; therefore, it has to be part of the mix.

To be a strong country, to be strong provinces, to have a strong economy, all of these sources of energy have to be blended, depending on the province, depending on the location. They provide what engineering companies, construction companies, and suppliers in Canada need to export internationally.

If we reduce one line of the business, if we reduce one scope of supply, we would become dependent on the future. And maybe that's one of the concerns of solar and wind. Their components come from overseas, which means that afterwards, even if we were to buy a lot of wind, if we were to install a lot of solar, we would never become a great exporter of wind or solar technology.

The Chair: Thank you.

Mr. Allen, for the final question for these witnesses.

Mr. Mike Allen (Tobique—Mactaquac, CPC): Thank you very much, Mr. Chair.

I would like a quick clarification from Mr. Fugère on the document on phasing out nuclear power in Canada. I'm interested in a couple of charts here that talk about electricity in Ontario, Quebec, and New Brunswick. They show some pretty significant reductions under a nuclear/coal phase-out by 2020, indicating Ontario's demand for electricity would go down by about 50% and New Brunswick's by about 60%, based on those numbers. Is that how I should read those charts based on that phase-out?

● (1725)

[*Translation*]

Mr. Michel Fugère: Yes, true.

[*English*]

Mr. Mike Allen: Okay. So if that is the case, I guess I.... There's no one here from New Brunswick, so I can't ask that question. But I think that's a pipe dream.

I will ask the question from the Ontario model. What do we believe the power production requirements are going to be in Ontario, even in the next 10 years? It seems to me we're going to need baseload plants to meet the electricity demand, because we have an insatiable appetite for energy that's not going away in the next 10 or 15 years. Can you comment on that?

The Chair: Mr. MacKinnon.

Mr. Don MacKinnon: It's an excellent question. In my career in the industry, which spans 38 years, I've seen this issue of surplus baseload generation come up three times. We've gotten into periods where we've had more than enough generation capacity for the load. It goes up and down. But when it's down, it always comes back. Although we're at a low point right now in Ontario, because of loss of manufacturing, it will recover. It will return. When that happens, you will need large baseload generation.

Today in Ontario the only things that can fill that load requirement are coal and nuclear and a fair bit of water. But we've run out of the river. We can't hold water behind dams in Ontario. Coal is being phased out. The Ontario government has decided that coal generation will be shut down by 2014. That leaves us with very few options, and that's the reason for the urgency surrounding new nuclear. As the existing units come to the end of life, we will need to build new units or refurbish our old ones. The load is going to come back—it always has. And we're going to need to be able to fill that requirement.

The Chair: Thank you.

We are out of time. In fact, when I end the meeting in a few seconds, I will ask the witnesses to leave the table fairly quickly, because we have to go in camera. It takes about two minutes, and we can still get out of here by 5:30 if we deal with the spending motion quickly.

My thanks to all of you for your presentations. They were interesting and very helpful to the committee.

We will suspend for two minutes to go in camera, and then we will come back to deal with the single issue we have to address.

[*Proceedings continue in camera*]

Published under the authority of the Speaker of the House of Commons

SPEAKER'S PERMISSION

Additional copies may be obtained from: Publishing and Depository Services
Public Works and Government Services Canada
Ottawa, Ontario K1A 0S5
Telephone: 613-941-5995 or 1-800-635-7943
Fax: 613-954-5779 or 1-800-565-7757
publications@tpsgc-pwgsc.gc.ca
http://publications.gc.ca

Also available on the Parliament of Canada Web Site at the following address: http://www.parl.gc.ca

Publié en conformité de l'autorité du Président de la Chambre des communes

PERMISSION DU PRÉSIDENT

On peut obtenir des copies supplémentaires en écrivant à : Les Éditions et Services de dépôt
Travaux publics et Services gouvernementaux Canada
Ottawa (Ontario) K1A 0S5
Téléphone : 613-941-5995 ou 1-800-635-7943
Télécopieur : 613-954-5779 ou 1-800-565-7757
publications@tpsgc-pwgsc.gc.ca
http://publications.gc.ca

Aussi disponible sur le site Web du Parlement du Canada à l'adresse suivante : http://www.parl.gc.ca