House of Commons
CANADA

Standing Committee on Industry, Natural Resources, Science and Technology

INDU • NUMBER 031 • 1st SESSION • 38th PARLIAMENT

EVIDENCE

Monday, April 18, 2005

Chair

Mr. Brent St. Denis

Standing Committee on Industry, Natural Resources, Science and Technology

Monday, April 18, 2005

● (1530)

[*English*]

The Chair (Mr. Brent St. Denis (Algoma—Manitoulin—Kapuskasing, Lib.)): Good afternoon, everybody. *Bonjour, tout le monde.*

I'm pleased to call to order this Monday, April 18, meeting of the Standing Committee on Industry, Natural Resources, Science and Technology. Today we are continuing our study on Canada's industrial strategy.

We are fortunate to have with us today representatives of the Canadian Nuclear Association, the Energy Council of Canada, the Canadian Clean Power Coalition, and the Coal Association of Canada. I will shortly be asking our witnesses to make their presentations. We'll use the order that you're presented in on the agenda.

Thank you very much for being here. Some of you have travelled in from outside of Ottawa, and we appreciate the trouble you've taken in doing that.

This study is an important one, in our view. Canada's plans for the future when it comes to industry have great implications. Your thoughts and comments today will help us wrap something together to recommend to government.

With that, we'll start with the Canadian Nuclear Association and, I believe, Mr. Elston. You understand that it will be for maybe five to seven minutes, and then we'll have lots of time for questions.

Thank you.

Mr. Murray Elston (President and Chief Executive Officer, Canadian Nuclear Association): Thanks.

I'm pleased to be with you, Mr. Chair and members of the committee. This is a very important undertaking with respect to industrial strategy and regulatory and foreign investment. I note that we haven't had one document that's put all of this in one place, so it will be interesting to see the work this committee does to put some framework around that.

Obviously I'd like to talk most specifically about nuclear energy. I'll probably go on a little bit more about the electricity side of our world, although you probably all know that we're involved not only in generating electricity but also in dealing with the production of both diagnostics and treatments for medical purposes as well.

Of course, energy is extremely critical to any kind of strategy you're going to be dealing with from an industrial point of view. Energy's at the base of a whole series of discussions that I'm sure you'll all have to have with various parts of our economy. Demand for electricity continues to grow at about 1.3% per year. That is the projection. Some people would tell you that this is a modest projection, and some people would say that if in fact we're to have a robust economy, we'll grow much more quickly than that. For the purposes of our discussions, though, we'll use 1.3%.

I'd like to make four key points: first, we need a mix of energy sources to meet future demand; second, Canada's energy infrastructure requires rebuilding, extensive investment, and reinvestment, I might add; third, nuclear power is essential to meet energy needs and Canada's Kyoto commitment; and fourth, nuclear power is a vital technology for Canada's future.

On the mix of energy sources, the industry believes we need a mix of electricity generation options to meet present near-term and long-term electricity demand. We believe, obviously, nuclear energy must be an essential part of the electricity mix to meet the security of energy supply and to maintain affordable electricity prices.

Natural gas prices are increasing due to dwindling North American supplies and the cost of bringing new supplies to market. New uses for natural gas, other than space heating, continue to draw down reserves. Renewables such as wind power are extremely expensive, require large land areas, and cannot replace baseload electricity like large hydro functions, coal, or nuclear.

There's broad agreement that nuclear is cost competitive with coal and can be produced for costs of about 5¢ to 6¢ a kilowatt hour, or lower. In the U.S., efficiencies have resulted in operating costs as low at 1.7¢ per kilowatt hour for existing nuclear plants.

You might note that Canada has a very rich and vast domestic supply of uranium, the basic fuel for nuclear reactors, and as a result of that we see it as a secure supply for all of us.

Canada's energy infrastructure requires extensive rebuilding and investment.

By the way, we have provided copies of a more fulsome document that has a lot more details in it. I'm just giving you highlights for your purposes here. There are some graphs included in it as well, to help you see the world as it is.

Today nuclear provides about 16% of Canada's electricity, and over 50% of Ontario's as of 2004. In Ontario one reactor has been refurbished, and another is 80% completed. Four more reactors—two in Ontario, one in Quebec, and one in New Brunswick—are being considered for refurbishment. If all 22 Canadian reactors were refurbished, nuclear would provide about 20% of Canada's electricity, which would be in the same ballpark as in the United States. I might say, however, that the United States under President Bush has just announced that they are going to be putting a tremendous amount of activity behind expanding their nuclear fleet and in fact have undertaken the preliminary work to siting of new nuclear units in the United States, with funding from the Department of Energy of about $280 million.

In Ontario, 80% of all electricity-generating plants will need to be refurbished or replaced in the next 15 to 20 years, due to aging. This infrastructure investment has been estimated by the Minister of Energy there, Dwight Duncan, to be a cost of between $25 billion and $40 billion. Large hydro is fully developed in Ontario, and coal is being removed, so without nuclear refurbishment or new construction, there will be supply shortfalls for electricity in that province.

Canadian manufacturers and exporters identify the reliable supply of cost-competitive energy as one of their top ten challenges. As 60% of electricity consumption in Ontario is commercial, you can see that this is particularly important for all of us.

● (1535)

Decisions to support the industry for the long term must be made now, since nuclear construction requires a long lead time—a minimum of eight years when the EA process is factored in. One CANDU construction project will result in approximately 27,000 person-years of employment, meaning more Canadian jobs.

The nuclear industry is supportive of the government's initiatives around smart regulation, but have some concerns over the impact of the proposal to consolidate the process under the CEAA. The Canadian Nuclear Safety Commission, or CNSC, our regulator, has a mandate for the protection of the environment under the Nuclear Safety Control Act and currently carries out EAs under the CEAA.

Given that the commission is a quasi-judicial body with a licensing process and an environmental protection mandate, we feel the inclusion of the CNSC in the proposed consolidation would create duplication, and would be counterproductive to the objectives of efficiency and effectiveness that are behind smart regulation. We recommend, therefore, that CEAA continue to delegate its responsibility for conducting EAs to the CNSC.

Now to move on to nuclear power, nuclear power is essential to meet Canada's energy needs and Kyoto commitments. Canada's current Kyoto targets are calculated on the premise that all 22 nuclear reactors are operating in the future. Failure to refurbish will obviously change the impact of the CO_2 emissions we all take account of.

These materials were developed just prior to the public pronouncements made by the government with respect to its plan; since we haven't yet consumed all of the Kyoto plan, I would ask a little bit of grace with respect to questions. I do want to note here, just for the record, that I'm a bit concerned that our preliminary review has not shown the word "nuclear" to appear at all in that plan. We think that would be a great omission, with respect to the ability of this country to meet its Kyoto targets.

To meet the existing and future electricity demand, all 20 reactors in Ontario must be refurbished or replaced, and that is more urgent as Ontario attempts to remove the 7,500 megawatts of coal-based electrical generation over the next several years.

On average, each nuclear power reactor avoids about 5 million tonnes of carbon dioxide emissions annually. If Canada does not retain its nuclear power plants, Canada will have to find additional ways to reduce emissions, currently standing at approximately 85 million tonnes annually avoided by Canada's nuclear fleet. For example, if Point Lepreau is not refurbished and is replaced by a coal plant, carbon dioxide emissions would increase by about 3.7 megatonnes. At the same time, if units 1 and 2 at Bruce A were refurbished, the resulting decrease in coal generation would result in a reduction of 7.5 megatons of CO_2.

Finally, just to finish the fourth point, nuclear power is a vital technology for Canada's future. The Government of Canada has taken some very useful and encouraging steps for the future of nuclear power. These include the support of academic infrastructure, such as the Saskatoon Light Source; participation with 11 other countries in developing the next generation, the fourth, of nuclear technology, for deployment around 2030; and providing funding for long-term management of legacy wastes.

The nuclear industry has taken steps with the funding of academic programs, such as the University Network of Excellence in Nuclear Engineering, or UNENE, and the University of Ontario Institute of Technology. The industry needs strong commitment from the Government of Canada and timely decisions to continue to be a world leader in R and D, operate existing and new reactors in the long term, and attract private sector partnerships and investment for nuclear infrastructure development.

The industry, along with the aerospace industry, remains one of only two net exporters in Canada. The nuclear industry is an advanced-technology industry with spinoffs in medicine, manufacturing, research, and agriculture and is the bridging technology to the hydrogen economy as we move on.

I'll leave it at that. I've got a few other points, but as I said, the material's in both the English and French versions of the larger paper.

● (1540)

The Chair: Thank you, Mr. Elston.

During the question and answer period, you could certainly make any of the points you weren't able to make here in the first round.

Mr. Murray Elston: I did it quickly; I got through most of them.

The Chair: Very good.

We'll go to Murray Stewart, Energy Council of Canada.

Dr. Murray Stewart (President, Energy Council of Canada): Thank you very much. It's certainly a pleasure being here today to speak to you for the Energy Council of Canada. Although I have personally been in some of these committees for a number of years, I believe this is the first time the Energy Council of Canada has appeared before a Commons committee.

Let me just give you a little introduction because of that.

The World Energy Council was formed in 1923 as the sole global body looking at energy in its totality. Its mission is to promote the wise and sustainable supply and use of energy for the greatest benefit of all mankind. It covers all energy sources and uses, together with energy efficiency and best practices, and conducts extensive research and development and analysis, typically with a longer-term perspective.

The Energy Council of Canada, a founding member of the World Energy Council, is one of 98 national member committees of the World Energy Council. It is made up of representatives from across the full spectrum of Canada's energy sector, both industry and governments.

Sustainable energy development supports industrial growth and social development. At the 2002 Johannesburg Summit, access to secure, economical, and reliable supplies of energy was seen as fundamental to achieving global sustainable development.

Canada is a leader in energy systems, and this has greatly contributed to our sustained economic prosperity, which I believe is part of the mandate of this committee.

You have in front of you two documents: one is *Delivering Sustainability: Challenges and Opportunities for the Energy Industry*; and the second one is *World Energy Council 2004 Studies*. I'm not going to go into the detail of these, but I just want to refer you to those. The second one lists the number of studies we have done over the past three years that were released late last year. There is a stack of them, and I'm going to leave full copies with your clerk, but I just want to highlight some of the issues on these studies that I hope might be of use to you in your work.

Sustainable energy systems are achievable, but the challenges are many and need to be tackled urgently if sustainability is really to be achieved in this century. That's the principal conclusion reached at our Sydney World Energy Congress just over six months ago. We endorse these conclusions, but I think we have to act a little more rapidly, then, over the next several decades.

For energy development to be fully sustainable, there are several key issues that must be addressed and included: first of all, keep all energy options open; ensure the needed investment in energy infrastructure takes place; adopt a pragmatic approach to market reform; place priority on measures needed to ensure reliability of supply; promote regional integration of energy supply systems; exploit the win-win opportunities of emerging climate change responses; ensure technical innovation; and finally, win and sustain public understanding and trust.

No single player in the energy system can act alone. Government policies, regulatory stability and clarity, industry investment, society, and finally, consumers of energy all play their respective roles.

Let me briefly talk about some of these issues, and then we can go to more detail in the discussion.

All energy supply options must be kept open, including cleaner fossil fuel systems, nuclear, hydro, and of course, new renewable energy systems. Each option is subject to significant uncertainties, but we cannot afford to jettison any one of them. Moreover, the different sources are often complementary, and the best mix to meet expanding needs will depend in part on technological advances and is even location specific.

A couple of the studies we have here—*Sustainable Global Energy Development: The Case for Coal Study*and the *Handbook of Renewal Energy Projects Study*—illustrate some of the work you can do on those particular technologies.

On the demand side, increased energy efficiency is imperative and a potential win-win option. Again, one of the studies, *Energy Efficiency Policies*, basically a worldwide best practices review of 63 different countries, confirms that cost-reflective pricing, the incorporation of external environmental costs into pricing, and international collaboration and coordination all promote energy efficiency.

Delivering sustainable energy requires increased investment in energy infrastructure to replace the capacity being retired, to expand supply where needed, and to cover the cost of cleaner energy systems.

● (1545)

One of the other studies here, the *Survey of Energy Resources*, shows that we do not have a lack of energy resources. The key is that sharply increased investment will be required to replace infrastructure and also to look at cleaner energy sources.

While increased investment in expanding supply is vital, another key conclusion of one of our other studies is that the performance of existing generation plants is key. Our study shows that upwards of $80 billion, on a global base of investment, could be saved annually just with the refurbishment and increasing efficiency of existing kit that's out there producing electricity and other energy sources.

While cost-reflective prices must be a guiding principle of energy market design, it is now widely recognized that market interventions are also needed to achieve some of these essential goals. This is to some extent where you folks come in. The *Comparison of Energy Systems Using Life Cycle Assessment*—another one of the studies—identifies all the environmental impacts from cradle to grave of all primary energy sources. Once identified, such impacts should be incorporated into the cost of energy delivered through policy intervention.

A further dimension is the growing recognition that market design must be adapted to each unique situation, and a step-by-step approach used. Again, there's one here on electricity market reform, which is basically a best practices from around the world of what's worked and what hasn't worked—the good, the bad, and the ugly, you might say, in terms of market reform of electricity.

Supply disruptions, whether in developing or industrialized countries, carry a heavy price. Measures to improve reliability of supply are an important priority. Energy source diversity, keeping all energy options open, is a bedrock to a robust energy supply system.

Regional integration of energy supply systems can boost access to energy supply security and means that demand is met by the nearest available supply option, thus supporting improved access at the lowest possible price. Regional collaboration and harmonization of regulatory framework is all part of this, required for that regional integration.

I'm just going to skip over a couple of the items in my brief and talk about technology and innovation. Basically, it's urgent that research and development be strongly and consistently supported by governments as well as industry. This is a precondition for innovation and is the most appealing way to bridge the gap between global energy needs and sustainability. Ideally, technological advances can reduce environmental impact while also improving cost performance.

For this reason, it is just as vital to improve existing energy sources as it is to provide new breakthrough options. One of the studies here is *Energy End-Use Technologies for the 21st Century*. It basically goes through all the energy sectors, be it pulp and paper, steel, petro-chemical, looking at what technologies can happen with proper policy over the next decade or half century. The study shows that we could reduce our energy demands by upwards of 50% over the next 20 or 30 years.

I'll just close by talking about public understanding. It's vital that we have public trust and understanding to avoid in many ways political pressures to divert from where we really have to go in order to end up with a truly sustainable energy option and sustainable energy policy in the future.

A greater public understanding of energy relies on really promoting energy efficiency. Historically, the price indicator has been the driver for energy efficiency, and the true cost of energy must be shown in price if we're going to carry on with energy efficiency and demand-side management.

In conclusion, the challenge here is really to have sufficiency in energy on an equitable and secure basis, while at the same time ensuring a sustainable energy future.

Thank you.

● (1550)

The Chair: Thank you, Mr. Stewart.

We'll move to the Canadian Clean Power Coalition, Bob Stobbs.

Mr. Bob Stobbs (Executive Director, Canadian Clean Power Coalition): Thank you, Mr. Chair and members of the committee.

I want to take this opportunity to talk about clean coal technology and the work the Canadian Clean Power Coalition, CCPC, has been doing. We are a group that was formed in 2000, an association of Canadian coal and coal-fired power producers from across Canada, at that time representing 90% of Canada's coal-fired generation. The reason we got together was to secure a future for coal. We felt it was a price-stable fuel and wanted to make sure it could be maintained, to be used into the future.

The objective was to demonstrate that coal-fired electricity could effectively address all environmental concerns moving into the future, including those about $C0_2$. Our objective was, and still is, to construct and operate a full-scale demonstration plant, removing greenhouse gases and all other emissions, such as sulphur dioxide, nitrogen oxides, mercury, and particulates, from a coal-fired power plant by 2012. Our studies have looked at all solid fuel that was used in Canada: three types of coal—bituminous, sub-bituminous, and lignites—as well as the potential for blending in some petroleum coke. We want to accomplish this at a competitive cost of power.

Our phase one studies focused on three technologies: integrated gasification combined cycle $C0_2$ removal, which can also be described as a pre-combustion $C0_2$ removal; and aiming and scrubbing, and oxyfuel combustion, both of which can be characterized as being post-combustion $C0_2$ removal.

The results from phase one show that the capital costs of building the plant and the operating costs, or the cost of electricity, are directly related to the coal quality. The better the quality of coal, basically, the lower the price. Gasification of coal with low-ranked fuels was found to be a problem.

Also, we looked at the fact that the impact of $C0_2$ capture on plant capacity and efficiency is very significant. There's about a 25% to 30% derate from gross capacity to get you down to the net capacity of a power plant, compared to 5% for a conventional power plant.

Also, we found in phase one that the cost of electricity with $C0_2$ capture was about 50% higher than the conventional cost of electricity from a typical coal-fired plant today. Bear in mind that this is producing a very clean power, exceeding all regulations that exist.

The study also looked at the question, if we captured the $C0_2$, where could we put it? We looked at four main areas: enhanced oil recovery, enhanced coal-bed methane, depleted oil and gas reservoirs, and deep aquifers. We found that all those are commercial technologies today except for the enhanced coal-bed methane.

As for capacity limits for EOR and depleted reservoirs, there's probably some capacity limit there, depending which province you're in. But for coal-bed methane and deep saline aquifers, the storage capacity, especially in the western Canada sedimentary basin, is probably almost limitless.

We also developed some costs for $C0_2$ storage. Based on a price of oil at $20 a barrel at that time, the enhanced oil recovery person could afford to pay $38 per tonne for the $C0_2$, the coal-bed methane person could pay $10 a tonne, and in the case of the depleted oil and gas reservoirs, because there's no revenue the generator of $C0_2$ would have to pay $4 a tonne to store it in the ground.

We formed the CCPC plan in 2000. Phase one was done in 2001 to 2003. We're now in the midst of phase two, which is looking at the technology gaps we found out of phase one. By mid-2006 we will have completed that, moved into site selection, and lined up the partners for the demonstration project. We can construct the plant from 2007 to 2011 and have it online by 2012. A plant of this size would capture between 2.5 million and 3 million tonnes of $C0_2$ per year.

The issues we found were which technology to select, and that's being looked at right now in phase two; the risk-sharing arrangements—the capital costs of such a plant are about 50% higher than a business-as-usual coal-fired plant. In the past, there's been confusion on who is the lead federal contact. We welcome any suggestions you may have in that area. The other problem or issue we have so far is the lack of certainty around the $C0_2$ rules and the cost versus credit of the $C0_2$. Which way does one go?

There's an opportunity coming up, in that many of the coal-fired plants will retire in the next 10 years to 15 years. These plants are typically 30-year to 40-year life investment decisions, so there's an opportunity now to get the right technology in place that'll be there for a long time.

● (1555)

In conclusion, we found that production of clean power with 90% CO_2 capture is technically feasible. The technologies currently rank gasification first, amine scrubbing second, oxyfuel third. We've found that there's little worldwide experience in gasification of low-rank coals. There's lots of gasification out there, but most of it's on higher-rank fuels.

And the cost of electricity depends very much on the quality of the coal and the cost of the coal. We feel that the cost of clean power can be reduced by looking at better gasification technologies for low-rank coals, and that work is currently under way; the improvements from new gas turbines; better integration of coal beneficiation with the integrated gasification combined cycle plant; and also looking at a polygeneration concept where we produce more than just electricity. Can we produce hydrogen and steam for other uses?

There are unique opportunities in western Canada for polygeneration based on the needs for hydrogen and heat in the oil sands, CO_2 for enhanced oil recovery, and syngas for chemical production.

Phase two will evaluate and optimize these technologies and come up with some specific sites. The CCPC has also had some international collaboration with the Electric Power Research Institute and the Lignite Energy Council, both from the U.S.A., which are members of our group. And as a final note, the CCPC is also integrated with the Energy Innovation Network, which was just launched a month ago.

Thank you.

The Chair: Thank you, Mr. Stobbs.

And we go nowto the Coal Association of Canada, Allen Wright.

Mr. Allen Wright (Executive Director, Coal Association of Canada): Thank you, Mr. Chair, and committee members.

Like the Energy Council, I think this is the first opportunity the Coal Association has had to appear before this committee. I'm here representing not only the coal association or coal producers, but what is really important to us is the whole coal chain. That's from the time you mine until, if you're exporting, you get to the coast, or you get to combustion stage. Most of the companies involved are in exploration, development, transportation, and consumption.

Because this is a an initial opportunity, I thought what I might do is to provide a little background and then offer some views on some areas. I think four seems to be the number here. I'm going to address four items: regulation, fiscal infrastructure, R and D, and skills development, which is becoming a huge issue. We believe our suggestions will help the coal industry remain an integral and competitive part of the Canadian economy.

I apologize for not getting this to you in time for translation, but I also provided some slides that will give some history and some background. It will give you a little bit of an idea about how we operate and so on.

Canada's coal industry is proud of its contribution to the competitiveness and economic development of our country. Today, our industry contributes an estimated $2 billion in direct benefit, and we employ about 14,000 men and women coast to coast directly and indirectly. Our industry's future is underpinned by affordable, accessible, secure supplies of hydrocarbons. Coal makes up 66% of Canada's proven hydrocarbon reserves. Other forms of fossil fuel resources such as bitumen represent 24%, with conventional oil and natural gas making up the remainder. According to the National Energy Board estimates, we have enough coal for about 234 years at current rates of consumption. That's coal, or reserves, that you can book from an economic point of view. People have estimates of up to 800 years for coal.

Annual production of about 66 million tonnes is split between about 40% metallurgical coal, which is used in steel making, and about 60% thermal. Most of the coal is mined in the three western provinces, with Alberta and Saskatchewan producing mostly thermal coal, which is consumed domestically, and B.C. producing mostly metallurgical coal for export. Metallurgical coal is in fact Canada's largest export to Japan.

Thermal is also used in every cement plant in Canada, including those in Quebec. It accounts for 19%, according to the 2003 numbers, of Canada's electricity production based in five provinces. Canadian metallurgical coal is obviously a valuable input to both Canadian and global steel producers.

A number of factors point to a bright future for our industry. Coal is a commodity, and therefore prices are cyclical. Metallurgical coal prices are at record highs at this stage. International seaborne thermal coal prices have increased significantly in the past two years and now rest at about double their historical lows.

Significant demand, particularly for metallurgical coal, from developing countries like China and India is evident. We also see thermal coal opportunities at home. According to the Canadian Electricity Association, Canada's electricity infrastructure requires $150 billion in investment over the next two decades, or $7.5 million per year, to ensure a reliable electricity system. Like the nuclear association, Canada's economy is based on electricity, even if you find ways to become more efficient, so we're going to need it all. We're going to need every supply we can get our hands on.

New technological developments virtually eliminate harmful emissions from coal plants, and higher-efficiency technologies are demonstrating that GHG emissions can be significantly reduced as well. This helps ensure that coal will remain affordable and compliant with environmental regulations.

To take advantage of these opportunities, the coal industry would like to suggest the following improvements to regulations, fiscal infrastructure, research, and skills development.

On regulation, any streamlining of regulations governing the coal industry needs to address the entire coal chain, from mining to transportation, both land and water, to combustion. It also needs to provide certainty to encourage investors. Cumbersome and overlapping regulations, especially between federal departments like the Department of the Environment and the Department of Fisheries, as well as between federal and provincial jurisdictions, deter investors from participating in expanding extraction operations or new generating plants.

● (1600)

This regulatory streamlining should also address Canada's ports policy and the Canada Marine Act. If regulations aren't streamlined, we can't expand our mining and transportation operations quickly enough to take advantage of the growing worldwide demand for coal, nor will much-needed new coal-fired electricity generation be constructed to help industries and businesses across Canada compete in world markets. We and other industry sectors in Canada have been working to this end.

The process to set clear objectives and timelines is under way through the Council of Energy Ministers, and we're part of the Energy Dialogue Group, who, I believe, appeared before you a short while ago. However, we need to fast-track this initiative without compromising the process. We also need to explore more innovative approaches such as the equivalency agreements, which have been talked about, whereby the federal regulatory requirements could be suspended when equivalent provincial regulations exist.

Canada also needs a policy on climate change—we've seen the policy, but there are a lot of questions coming out of that—that is reflective of the country's energy framework and that sets clear, realistic steps to reduce greenhouse gas emissions. Canada's compliance with the Kyoto Protocol should not hamstring our competitiveness and translate into substantially higher energy prices for our consumers.

On the fiscal side, historically the coal industry has helped fund major improvements to Canada's railways and ports. Today we are still an important player, with coal representing about 20% of what CP carries and about 8% of all exports. If we want to take advantage of the new market opportunities, in particular the growing markets in China and India—and I get calls literally every day from people from those countries looking for coal—Canada's coal industry needs fiscal policies that support infrastructure investments along the entire coal chain. In general terms, the industry needs tax rates that are equivalent to those for other sectors and equivalent to what our competitors are paying.

In the transportation area, our industry is at a disadvantage relative to a competitor like Australia, where they enjoy a shorter distance from mine to tidewater. Also, railway companies in Canada are subject to a lower capital cost allowance than are other sectors, and this discourages investment in rolling stock. Lower capital cost allowances and accelerated depreciation rates would help to lower transportation costs. In the end, we end up paying for any of the additional costs; it all flows back to our industry. We encourage expansion of our railway system.

As previous speakers have noted, Canada has the most energy-intensive economy in the G-7 and NAFTA. We, like our partners in the Energy Dialogue Group, believe Canada should have an energy framework to ensure we have investments in meeting our critical energy needs. This national energy framework should clearly include and endorse coal-fired electricity generation as part of the energy mix going forward. Like the United States, Germany, China, and India, Canada needs to recognize the importance of coal to its energy supply and develop policies and incentives that facilitate the role becoming a reality.

On the R and D side, in general terms Canada's coal industry would benefit from tax treatment for research and development that encourages innovation. There have been some initiatives recently, and we thank you for those. For example, a focus on sustained research and development investments will ensure that coal-fired generation meets and exceeds ever-tightening environmental regulations. Governments in Canada need to continue to support the Canadian Clean Power Coalition—in which we are actually involved—the Institute for Sustainable Energy, Environment, and Economy; and the Alberta Energy Research Institute to ensure Canada's role in the development of the next generation of coal technologies.

Besides improving our energy efficiency, we have new opportunities to share this expertise around the world, as Canadian utility companies have done in the past. In this respect, we applaud the government's recognition of this critical R and D need in the recent budget. Implementation of Bill C-43—or whatever the new bill is when they break it out—would go a long way towards this.

The last area I want to talk about is skill development. It's a huge issue for us, and I think it's the same thing for most industries. As the workforce ages, we need to attract young people to work in our industry; however, we see a reluctance to pursue these opportunities, in large part driven by inaccurate and negative public perceptions of coal being a sunset fuel source. Ontario's decision to shut down its coal-fired plants is an example of this misconception at its worst.

The Coal Association has made public communications a priority. We are focusing our messages on the importance of the industry to Canada, the environmental progress that has been achieved, and the exciting technological innovations that are on the horizon. Without current skills, training, and recruitment initiatives that tell our young people there are viable, exciting opportunities in the coal industry, we won't address this growing shortage. Support from governments for this outreach would go a long way in helping.

● (1605)

In closing, let me say Canada's ability to remain competitive in the world means new investments in our infrastructure to take advantage of growing export and domestic markets, energy supply, energy efficiency, new technologies, and human skills. To get there, we need sound government policy and regulation and supportive mechanisms for fiscal infrastructure, R and D, and skills training. Canada's coal industry remains committed to working with you and others to help resolve the challenging issues we share.

On behalf of the CAC, my thanks to the committee for the opportunity to present our views on these important matters.

I welcome questions.

The Chair: Thank you, Mr. Wright.

Before we start questions, I'll just point out, colleagues, that in your pile of papers there's a budget for Bill C-37. A little later in the afternoon, when we have a moment, I'll ask you to endorse that, if you would.

We'll start questions first with Werner Schmidt, please.

Mr. Werner Schmidt (Kelowna—Lake Country, CPC): Thank you very much, Mr. Chairman, and thank you, gentlemen, for appearing.

I think this has probably been one of the widest-ranging cross-sections of energy representatives we've had before the committee, all the way from nuclear energy to coal, down in the ground there.

The thing that really intrigued me in the representations we've had is that there doesn't seem to be competition among you. You all have your special niche to help us reach the energy supply that has to be developed in this country, though there seems to be confusion politically as to which one should be preferred over the others. The answer that seems to be coming out from all of you is, look, don't prefer one over the other, but make sure there's a balanced approach to this business of energy supply for Canada.

It's in connection with this that I really was impressed with the Coal Association's presentation on regulations, but I'd like to ask the other three gentlemen to comment as well. What is the problem with the regulations that exist at the present time? How do they stand in the way of your developing a sustainable energy supply for Canada, first of all, and also making more efficient the actual production of energy? Each one of you approaches this from a different perspective, I'm sure, but I really would like to know. There seems to be a common element with respect to the regulatory framework.

Mr. Murray Elston: Maybe I'll start.

Nuclear has of course a very particular regulatory regime we are required to go through. Not only do our mining people have to have due regard for the provincial labour and mining regulations, but we also have to adhere to the regulations put in play by the commission. The Canadian Nuclear Safety Commission, we believe, has been moving aggressively to improve the coordination of processes inside their stream.

We think it speaks pretty well of what is needed in all areas of regulation, and that is to make sure you are not only effective but also efficient at it, and that you move, when you can, concurrently with other regulators to make sure there isn't a loss of time. Rather, you make sure there aren't multiple portals such that you end up having new entrants into the discussion of projects or problems that have been decided at one time or another.

In my view, the attempts to make it an efficient and effective regime at the Canadian Nuclear Safety Commission has been a very good step forward, and the movement has been fairly aggressive. It particularly has been aggressive as they've looked at the things they can do to ensure the environmental assessment requirements are made efficient. That's really where I think you need to focus your attention: the efficiencies and the effectiveness.

● (1610)

Mr. Werner Schmidt: A more specific question has to do with the reference to the provincial regulatory department, because you do mine in the provinces. Is there a problem there?

Mr. Murray Elston: It's gradually being worked on. Probably my members on the mining side would say we need to make more improvements as we go forward. I think that goes without saying in terms of all mining, but I'll stick with uranium.

Really, the problem in the regulatory world for us is more about the people there are to do the work than about what there is to do. Often we get stopped and started because somebody retires, gets promoted, or gets moved, and before long you're right back to the very beginning. While there has been a very aggressive stab taken at ensuring we don't have too many people doing public service work—which is always an appropriate exercise—we have become very fragile with respect to the number of people who have expertise in very critical areas of understanding in our area, and I suspect it probably also goes to other areas. If you have one person who has been doing something for 20 years and has been doing it successfully and if all of a sudden that person is either retired or promoted or moves or ceases employment, you have a terrible gap to fill in. That means delay, it mean retraining, and it also means reopening the files.

Mr. Werner Schmidt: I think that's good.

When it comes to CNSC, I'm going to refer to my colleague here—he has a special interest in that area—but I'd like to ask the other two gentlemen if they could talk a little bit about that regulatory thing. We know about the staff requirement. We heard about that over and over again.

Mr. Bob Stobbs: On the coal-fired electricity producers, what we need on the regulatory front is long-term certainty. We're building a facility that's going to last 30 or 40 years. We can design and build it today to meet the existing regulations. That's not a problem. Our problem is, if those regulations change over time, are we expected to go back into that facility and upgrade it to meet regulations in the future? It costs a lot more to do retrofits than it does to build it in at the front end. What we need is long-term certainty that we can meet the regulations and be compatible with the regulations over a long timeframe.

Mr. Werner Schmidt: That's very good.

My question really is this. Is the regulatory framework efficient enough for you, or would you like to see some changes so that, if it was going to be there for 25 or 30 years, in fact it would better than what you have now?

Mr. Bob Stobbs: My view on that is that right now there are both federal and provincial governments making rules and regulations, and having clarity as to what the rules are and having one contact point—one-stop shopping—would be useful.

Mr. Werner Schmidt: Okay. That's a pretty significant observation.

How about you, Mr. Stewart?

Dr. Murray Stewart: Yes, I tend to agree with the previous statements. There is just one other aspect, though, and it's the need for a broader certainty of process. You obviously can't predict the outcome, but one of the keys is certainty of process, so that when you look at large projects you know the process and the timeframe in which it's going to happen.

To illustrate this, it would maybe come out more when you look at a lot of the North American integrated projects. If you look at the pipelines, some of the electricity, there's no question Canada and the U.S., and to a lesser extent Mexico, have probably the most integrated energy network anywhere in the world—certainly when you look at our gas exports and our oil exports to the U.S. Certainly Canada, as an industrial development, is counting on exporting gas—gas from the Mackenzie, gas via Canada on the Alaska pipeline, oil from the oil sands into the U.S. This is where the certainty of process comes in, because certainly if you look at the Mackenzie pipeline versus the Alaska pipeline, from a purely Canadian point of view, we obviously want the Mackenzie pipeline to happen first, so we want to make sure we have certainty of process and regulation to have that happen. If we don't—

● (1615)

The Chair: We need to wrap up.

Mr. Werner Schmidt: Do we put in a process with regulation?

Dr. Murray Stewart: It's part and parcel. For instance, I think you've probably all heard presentations on the Mackenzie Valley pipeline. There are 23 different entry points for approvals and process, so the developer or the proponent has to get through all of those. Meanwhile, you have international and domestic commitments for that natural gas.

Mr. Werner Schmidt: Okay.

Thank you, Mr. Chairman.

The Chair: Thank you, Werner.

Lynn, then Brian. We're going to come back to Serge on the next round.

Mr. Lynn Myers (Kitchener—Conestoga, Lib.): Thank you very much, Mr. Chairman.

First of all, I want to thank the witnesses. I think the testimony you gave was very good.

I want to address my first question to Mr. Elston.

You may recall, Murray, that in my previous life, when I was mayor of the municipality, I also chaired Kitchener-Wilmot Hydro. That hydro commission was, and even more so is, a huge player when it comes to Ontario. The vast majority of the power that we got and purchased in those days, and continue to do, is as a result of nuclear. So I have to be up front and say I've a bit of a bias because I was always part of that. I thought it was—

Mr. Werner Schmidt: You've never been biased before, Lynn.

Mr. Lynn Myers: I've never been biased before, Werner, so why start now, right?

You said something very interesting when you said you didn't see the words “nuclear energy” in any of the Kyoto documents. That resonated with me. I wondered if you could expand on that and explain what you mean. And, more to the point, what should be done?

Mr. Murray Elston: Well, since it's new, I haven't had a chance to go to every small corner of it, but the quick review of it didn't have nuclear showing anyplace. I think it really is interesting for me that a country that is supplying uranium not only for domestic but also for international use and has signed on to an accord that speaks to the release of carbon dioxide doesn't mention one of its chief technologies for helping to curtail it. We think the Government of Canada ought to be very aggressive in underscoring the advantages of the use of nuclear fuel in that way. We think it also should be pretty aggressive in underscoring the development of the technology that improves the operation of the plants, the existing ones and the ones that are newly being designed.

I think if you're looking at an overarching policy like the one that was announced last week, as all of us are as we consider the sources of energy and their availability, you should look at all of the sources for helping to meet targets associated with international commitments.

I'm not saying the policy is the last word as announced. But I would ask that as people go forward they include us in the discussions and in the completion of the detail of that policy, because we have some major advantages in that we believe both the refurbishment and then the building of new plants can provide a very serious ability for us to have flexibility on our other industries. That, I think, at the end of the day helps us to get to the target that the policy's designed to meet. That's my concern.

As I've said, if I've missed the word “nuclear” someplace in that document, I apologize. But I haven't been able to see it. As we go through it over the next few days, I'll let you know if I find it.

Mr. Lynn Myers: Mr. Stewart, did you want to add to that?

Dr. Murray Stewart: Just maybe to expand a little bit. Certainly one of the things the World Energy Council mentioned, one of the ways we talk about keeping all energy options, is that you don't want to idolize or demonize any energy source. One of the issues on nuclear was that in the current Kyoto agreement it was excluded from the so-called clean development mechanism. For the World Energy Council, as we look forward, which we're now doing, to the post-Kyoto, the 2012 and beyond, certainly one of our challenges on a global basis is to have nuclear included, as all energy sources should be included. If that's going to be a country's choice that they make freely, they should get credit for it from a CO_2 point of view or from a clean development mechanism point of view.

● (1620)

Mr. Lynn Myers: Mr. Chairman, I hope the government takes note of this, because I think what's being said here is very important.

Speaking of government, I wanted to ask a question—and anyone can answer these questions.

There are three areas I'm interested in with respect to how you would evaluate and rate the government: first, in R and D programs and the energy field; second, with respect to assistance programs in the energy field; and third, with respect to the tax system as it pertains to the energy field—whether or not we're doing a good job, a reasonable job, a poor job. How would you rate and evaluate it?

I'm throwing it open to anyone.

Mr. Allen Wright: I'll comment a little on the tax side of things, but mainly from the mining side. I'll leave the power generation side to Bob, because he also works for SaskPower.

I know the government has reduced corporate taxes, as an example, but to get down to being equivalent to other sectors in the economy here, it's going to be 2007. What we have to do, particularly on the export side, is compete with places like Australia. I don't have the latest numbers, but certainly in the numbers that go back two or three years we were not competitive with them. We have some other disadvantages. Most of the coal mines are 1,100 kilometres from tidewater. Most of the Aussies' are about a couple of hundred of kilometres at most.

So it all comes down to keeping your costs down, and we would certainly love to see that reduction to 19% a little faster than 2007.

I can talk a little bit about the railways, because we're obviously very dependent on them. The capital costs right off, I think, are 10% on track and 15% on rolling stock. That doesn't even come close to what the U.S. has, as an example, and we do compete with them as well. On the fuel tax, it's 4¢ a litre. The Americans, I think, were 2¢, and they've eliminated that.

These are things that will make us competitive. We're in a good position right now because the price of met coal in particular has skyrocketed. But we're a cyclical industry. When I started three years ago it was a little under $40 a tonne; now it's about $120. That will come back at some point, when it comes back into balance.

So keeping our costs down is really important. Those are specific areas that could be worked on.

Mr. Bob Stobbs: I have a comment on these R and D programs, and assistance. There's a lot of R and D being done, but a lot of it's not called R and D. Research was sort of a bad word in a corporate organization chart. Anything that was labelled research was cut out. So a lot of research is still being done; it's just under other names.

On assistance programs, when the CCPC was talking to the federal government about trying to get some money for its phase one and phase two work, we ran into a very confusing environment trying to figure out which pot of money to would apply for. There's also finger-pointing, where they say, “They've got the money over there, go see them”. You'd go to see them, and they'd ship you back to where you came from.

So it's very confusing. There are too many points of entry. It takes a lot of effort to try to figure out who has the money and can actually help you qualify, so the program will fit what we're trying to do. We've found it very confusing.

The Chair: Mr. Stewart.

Dr. Murray Stewart: I have a very brief comment. I think statistics would say that Canada overall is not well ranked in R and D. I think we're 15th in the OECD, which puts us below all the other G-7 countries. That being said, I think the assistance programs we have are generally good, as far as they go.

Our senior policy adviser, Ken McCready, is working with the federal government and a number of the provinces to try to develop a strategy for science and technology from an energy point of view. Probably the biggest nut to crack in this is getting the technology from the lab to commercialization. That's really where the challenge comes in, the so-called valley of death, as you move from the laboratory. We've got a good technology, but how do you commercialize it?

As for one of the things I recommend you have a look at, I think Allen mentioned the Energy INet, which is a new thing out of Alberta. It has been embraced by Natural Resources Canada right across Canada as possibly a model for getting good technology out of the laboratory into commercialization. For your industry strategy, the R and D has to get to commercialization.

● (1625)

The Chair: Thank you.

Brian is next, and then Michael.

Mr. Brian Masse (Windsor West, NDP): Thank you, Mr. Chair.

I've asked this question every time we've had energy suppliers come before this committee, or people vested in the sector. We know it is a huge issue environmentally as well as economically in terms of sustainability, especially when non-renewable sources are being used today and we're continually seeking them out. Something that disturbs me is that non-democratic governments are purchasing Canadian natural resources. I would like to know your professional opinion on whether that should be allowed.

We know that the state government of China has recently purchased part of the oil reserves in Alberta. I want to know, in your professional opinion, how you feel about it. We're not talking about foreign investment from the United States, the United Kingdom, or somewhere else, but non-democratic governments owning Canadian natural resources.

The Chair: Are there any takers?

Mr. Brian Masse: They affect your industry directly, so....

The Chair: You can plead the fifth, if you want.

Dr. Murray Stewart: I can maybe address this from a very broad World Energy Council point of view. From their point of view—and I think it's my personal view as well—it's a global world and Canada's a trading nation. We invest heavily in China as well. We're doing a lot of things in China, and vice-versa.

Mr. Brian Masse: I guess what's different, though, is that our nation state doesn't invest in natural resources in China. We don't buy their oil, coal, water, or any of those things. Our government doesn't do that. Maybe private industry in Canada does, but here we have a non-democratic government owning Canadian natural resources. Is that not different, in your opinion, from that of a private company?

Dr. Murray Stewart: This is a little bit of an academic question. I guess I'm having difficulty seeing it being different from a Chinese company owning a marshmallow factory. You're still using Canadian resources. You're still generating wealth in Canada.

Mr. Brian Masse: Are there any other takers? I'd like to know. These are your natural resources, and if it's not an issue....

Mr. Murray Elston: I'd like to say one thing. It's quite clear from my slow uptake of the question that it is not one of the issues that we have discussed inside our organization very much.

To the extent that a country like China is developing an economy and trying to encouraging its benefits to a huge population, many of whom are under-served by the distribution of economic well-being, and since energy is such a big part of it, I can understand their strategy. I guess I have no educated comment to make or ones that would take any time; this is one of those things I'd like to do over coffee, and get myself filled in about it.

The problem for China is how to make their society more modern and competitive and, in some ways, how to make sure that all of its citizens participate more broadly. Just from what I've read, not from what I know, I think they believe that energy is so critical to their development that they have taken those steps.

So how do I react to it? At one level, if it helps people in the globe be better served, then there is another issue you have to play in the discussion when you view the deck of cards. So if it helps people in that country be better served, I think it's a step forward.

Mr. Brian Masse: Well, yes, there are examples of.... This is why I'm asking. In the coal industry, for example, we had 4,000 coal miners in China die last year, and they're setting a record number this year.

The issue is also that if they take those resources off the Canadian market by actually purchasing raw resources here and exporting them back without having any entry into the market, it is going to affect our ability to use non-renewable resources.

If I could move on, I would like to ask about our regulatory vulnerability compared with the United States, similar to the Ontario blackout, where we had a problem in the U.S. affecting our system over here. What in your opinion has been done since that time, if anything, to fix that situation or to improve upon it, so that we're not as vulnerable to what happened in the past?

● (1630)

Mr. Murray Elston: If I can answer that one, the electricity sector in Ontario has really taken some steps, many of them not as extensive as some in the United States have had to be, because a lot of the processes by which their system was operating and now has to operate were ones that we were pretty close to.

I think the biggest improvement for us in Ontario is the fact that we won't be importing the 4,000 megawatts that we were during that August day. The bringing back or restarting of units 3 and 4 at Bruce A and the bringing on of the refurbished unit at Pickering provide us with a little better cushion for our electrical supply.

So in that sense, it's certainly an improvement, and I do know that transmission planning in Ontario is also moving forward. The attempt to be a more robust system itself will probably help us, but the difficulty is that when you're interconnected, as we are, to the northeastern United States, you are at risk when somebody else isn't performing as well.

Having said that, I think there is an issue that you must confront here: the interesting importance of electricity to the economy of the entire country and the fact that the commodity itself is really a child of provincial coverage more than it is federal. I know this created a bit of a disruption when the discussions were being held with the folks at FERC in the United States, when we were trying to come to grips with what could be done with respect to this interconnected transmission grid.

So I think we have to be prepared to make our own systems more robust, but we also have to be prepared nationally to be very clear and certain about which level of government plays what role and where. I appreciate that this very, very difficult question is much easier to set up than answer, but I think it's important for us as well. But I think, technically, pretty good steps have been taken.

Mr. Brian Masse: And if we—

The Chair: You'll have to wrap it up, Brian, with your next question.

Mr. Brian Masse: Thanks. I'll be really quick, Mr. Chair.

Looking at all of your presentations, quite clearly you're asking for regulations, as well as tax and other incentives, to allow greater access of your products to the market. If that is going to be done or borne by the Canadian public, is it in their interest to request...? On the U.S. side, in terms of energy coming from Ontario, have they fixed the problems over there? Or should we be looking at that in terms of greater sustainability in any projects that we do to protect ourselves over here, so that in cases of emergency we have provision for our own facilities in power generation? At the end of the day, one way or another, you're really asking that some of these things be changed here to allow for your progression.

Mr. Murray Elston: If I can start, I'll try to be short.

We're not all asking for something to be done specifically. I think better regulation is a pursuit of every government at every level, whether it be municipal, provincial, or national. The issue for me is that we need to take decisions in a timely manner. Our organization doesn't ask to throw out all regulation because it's inconvenient. You saw my comments about regulation inside the text of four different areas for a very good reason: it is part of our business. We require a very robust regulator; we respect a robust regulator. We fight with them because it's the tension you need to get good results. It isn't personal. It isn't anything other than being improving.

The one thing we do need is timeliness of decisions being permitted to take place, because organizations like mine, the Canadian Nuclear Association, can't build a plant overnight. We are probably at eight years, so if you want a plant—as they might in Ontario—by 2012, 2004 was last year. If you want it in four years, it's going to be hard for us to do it. The only thing people do, when they put projects on a hurry-up footing, is make mistakes. For our technology, it is just the wrong strategy moving forward.

So we're not asking always for something financial or otherwise, but we're asking for good, timely, and—I like Bob's words—a predictable environment to move on.

● (1635)

The Chair: Thank you very much.

We're going to go to Michael, then Andy, then Marc.

Michael is next.

Mr. Michael Chong (Wellington—Halton Hills, CPC): Thank you, Mr. Chair.

As someone who lived through the infamous blackout of August 2003, I'm very aware of how important energy is, especially to people in Ontario. One of the concerns I have as a citizen living in the province is the impending shortage of supply we may have in the next couple of years. I know Canadian manufacturers and exporters have also, in their surveys of their members, highlighted this issue as one of the top concerns of manufacturers and of the business community in the province.

One of the things I was interested to hear you say was that governments need to be clear on their regulations, clear about their strategy, because you, as an industry, need to make decisions because of the long timeframes and lead times to build these plants. Could you tell this committee a little bit about what exactly is going on between the regulator and Atomic Energy of Canada Limited? The reason is that over the last number of months, I've read newspaper and media reports about spats between these two organizations. There seems to be a lot of confusion out there, at least to me, about what exactly is going on. I don't get the sense that they're working together, as two government agencies and regulators, to move forward.

Mr. Murray Elston: I think that might be for me.

First, Mr. Chong, they are two government organizations, but they're not supposed to be together, so to speak. They are together federally separately, if I can put it that way. The role of the commission is quite clearly to make sure they monitor and take a look at all the practices at play by AECL. If weaknesses are spotted from time to time, they will raise them. The issue of transparency with respect to our industry means that all things of concern to the commission ought to be concerns to the public. As a result, I think you have seen that they're raising some issues, and then the response from AECL.

There isn't any question that the commission has its role to play; likewise, AECL has a role. Their role goes much beyond that. They in fact are providing technical support for existing units; they are making designs for new units; they will play a role for the Government of Canada's commitment to generation four. In an operational sense they are the nuclear world, but in the regulatory sense it is the commission.

We anticipate there will be those tensions from time to time. It's not always pleasant, but I think it is good from a public point of view, because while those are uncomfortable for all of us, it does mean the commission is on the ground and doing what they ought, and it means the commission, when it raises these issues, demands and rightly gets replies not only from AECL, in this case, but also from others in the nuclear world.

Mr. Michael Chong: In your report, you talked about what we need to do in the future, and the fact that over the next couple of decades we're facing projected capital upgrades in the range of $25 billion to $40 billion for electricity generation in the province. Do you see this generation being built with private capital, with government capital, or with a mix of both?

Mr. Murray Elston: The short answer would be yes, because I think different capital sources are going to be required. Already we have proposals for refurbishment, for instance, which will be done with private capital out of the Bruce Power development at the Bruce nuclear site, along the shores of Lake Huron, Bruce County—close to Kincardine or Port Elgin, for anybody who has member representation up there.

My view is that while that will be seen as just renewing old capital, it will also be done in a such a way that we will get new generation capacity out of it. So we will be building, in that case, I suspect, a new capacity with private capital. However, in this case of the work done by Ontario Power Generation, we have public funds that will be used to do the same thing.

So my answer of yes meant that we'd get it from both sides. In fact, I think other capacity will come from other areas in terms of partnerships, for instance, between the two.

● (1640)

Mr. Michael Chong: There's a price cap in Ontario for electricity. How much of an impact is this having on the private sector being willing to put money forward to build additional generation?

Mr. Murray Elston: It's dangerous asking an association person to answer that. I can tell you that the issue around regulatory reform, for instance, which provides certainty, is also the one that will be, for the case of private capital going into public projects that are for the public benefit, the determining factor.

As you know, units 1 and 2 at Bruce A are now the subject matter of some discussions. There is, I think, something pending before the Ontario cabinet. This would suggest to me that the private capital available there was going to have the type of predictability they needed to ensure that it was worthwhile doing. I think that means there is an arrangement in Ontario that permits that to occur.

The issue for me, in a sense, is the long-term nature of the electricity predictability. We have come out of in Ontario, in the last few years, a tremendous number of disruptions where we were going to market and then were pulled back. We had a frozen price. Then we had one that went through a slight thaw, and that is now going into a partly regulated, partly market-type style. I suspect that the government will be trying to take some steps that will provide us with the predictability.

As to how that's to be done, I don't know, but the success of our plants is possible with the type of technology we have available for the refurbishment. We believe we will be competitive in Ontario and in other markets in Canada if there's a bit of predictability around the contracts.

The Chair: Michael, Mr. Stewart wants to jump in here. Do you mind?

Mr. Michael Chong: Go ahead.

Dr. Murray Stewart: I have just two comments, really.

First, you probably should get someone from Ontario to answer the question more explicitly, but certainly on the last point in the curve, their 2,500 megawatts of new generation, they got upwards of 9,000 megawatts of proposals. We saw the announcement last week. They're starting to release some of those proposals, under purchase power agreements, under the current pricing regime.

Again, I'm not speaking for Ontario, I'm just giving you what's happening.

The other point, if I may, Mr. Chair, just picks up on a point from the preamble. It's my view, and I think a lot of people have the view, that in terms of reliability and security of supply, the larger the area in which you can in some form integrate and tie in, the better off you're going to be for reliability and security of supply. This has been a little bit shanghaied from, as you say, August 2003. But I think the studies that have occurred since then, the joint Canada-U.S. studies, clearly put the blame on that in terms of just bad management by one U.S. utility. They literally didn't cut down their trees on their rights-of-way. The cause is known, but to me, if we look at cross-Canada electricity grids and this sort of thing, that would enhance reliability, not replace north-south integration. So Canadian integration is to enhance, not to replace.

The Chair: Michael, I'll get you to wrap up very quickly.

Mr. Michael Chong: Sure.

My final question is for Mr. Elston as well. I'm a big supporter of nuclear power, but one of the questions I constantly get from those who don't fully support nuclear power is about the waste management, the management of the waste that the reactors produce.

Over the last number of years there have been ideas floated around about having a central facility in the country to store the waste. What are your thoughts on a central facility versus the way we currently do it, which is to have it stored at the various sites?

● (1645)

Mr. Murray Elston: One comment about a central site is that it's technically feasible. We've known that for a long time. The issue coming out of Seaborn, which was the immediate predecessor of the current nuclear waste management organization's mandate, was an observation that technically it was good but that social acceptability was a question mark. My view is that being able to do it technically, following the lead of many jurisdictions in Europe, permits us to do that.

First, let me make one other statement. I think we need to get on with being able to plan those technical facilities. It provides us with another sense of predictability for our environment.

That said, we are, under the auspices of the Canadian Nuclear Safety Commission again, very secure in managing the waste that has been generated. As you know, most of it, or all of it, I guess, from an electrical point of view, is stored now at the sites. In Quebec, they have some in dry storage as well as wet, and I think in Lepreau as well that's the case. In Ontario, they're starting to move into dry storage at Bruce. They have all the generated material in wet storage yet, from the length of time we've been using it.

So, one, there's a relatively small amount of waste for the electricity that has been generated; and two, not only do we know where all the waste is that has come from the uses of the plants, but we know where those fuel bundles were generated, where the fuel came from that went into them, when they were in the reactor and how long they were there, when they came out, and how long they've been out. In fact, we're more thorough in knowledge about our waste than any other of our generating colleagues. So we're secure that we can manage that and that our sites are secure against any security breaches.

The Chair: Thank you.

We'll go to Andy, and then Marc and Brad.

Mr. Andy Savoy (Tobique—Mactaquac, Lib.): Thank you, Mr. Chair, and thank you, gentlemen, for coming here today.

My first question revolves around greenhouse gas emissions, CO_2 specifically. The nuclear industry has been played up as certainly being, in terms of greenhouse gas emissions, very environmentally friendly. Depending on which studies you see—and I'll open this for all four of you—if you look at the life cycle analysis of various power generation methods, there are differing levels of performance. So looking at it on a life cycle analysis basis, which includes the actual mining aspect, the actual cost of disposal—and of course, that's not in all other cases, but with nuclear specifically—could you give us your impressions of how greenhouse gas friendly each of your...?

I guess for the Energy Council that might not be very difficult to do, but in terms of nuclear specifically, if you add life cycle analysis in, can you give us more of an assessment of where you stand in terms of other powers?

Mr. Murray Elston: We're relatively low. I don't have as recent material, perhaps, as my friend Dr. Stewart might have. When we go out to speak, we quote some tables generated by the Japanese institute, which placed nuclear just above hydroelectric in terms of releases, on a life cycle analysis, going all the way up from there to include coal, natural gas, and otherwise. So even with life cycle stuff, we're very low on that scale.

Mr. Andy Savoy: Thank you.

The Chair: Mr. Wright.

Mr. Allen Wright: From a global perspective, if you take a look at all of the greenhouse gases produced in the whole coal cycle, it's about 3% on the mining side, and most of the CO_2 comes from the actual combustion. The key to reducing greenhouse gases from a coal side is efficiency in the plant. I'll give you an example.

Genesee 3, which is south and west of Edmonton, is a new unit that I think is up and running right now using supercritical technology. It will reduce GHCs by about 12%, maybe 15%. As you go to even ultra-supercritical, as they have in Europe, you'll reduce it even more. The key is getting the efficiency rate. A typical power plant is about 35% to 37% efficient. The Genesee 3 is—I can't remember the exact number—going to be in the 40% plus range, and that's the key right there.

When you get into things like combined heat and power, where you start using the waste, you'll become even more efficient and will reduce emissions even further. That is the direction.

You won't build a new plant today unless it meets a minimum of supercritical. My sense is that by the time one of those gets built, and I believe they will get built, it will have even higher standards than you see today. So you can clearly reduce the GHCs from that perspective.

● (1650)

Mr. Murray Elston: Can I add one other thing?

The interesting thing about many of our technologies, as you heard a little about—Bob said some things, and I mentioned the nuclear being used to get to hydrogen as well—is that all of our technologies are going to have future uses that will be helpful, in my view, in dealing with some of our current fixations on some of the greenhouse gases. The issue of having hydrogen available for combination with carbon dioxide, for instance, is a thought that people have.

A concern I have—this has nothing to do with particularly anything that we talked about in the Canadian Nuclear Association—is that I think we have to turn our minds always to any of the issues that confront us to see whether or not this is really a throw-away resource that we're talking about, or maybe there really is another use for it. And in fact nuclear, since it is able to be one of these lugging-power-type technologies, might very well be used to create hydrogen, which might very well be used to combine with one of the gases that we're talking about and end up producing a fuel.

I'm not saying we have that technically done now. But I just want to have people's minds in the right space to think not, as we have been trained before, to throw away so many commodities—and we've done that at least as I was growing up. But I think we have to confront the prospect that we will need some of these resources to do some of the things that we're going to be able to do. We're going to have a hydrogen economy of some shape or form relatively soon. We're going to have hydrogen available reasonably for transportation or other things, but hydrogen then becomes a base for some other work that we might very well undertake. Hydrogen is one of the keys, but it just happens to be one of those things that nuclear power can generate relatively well and in off-peak times.

So don't throw away anything yet.

Dr. Murray Stewart: I'll actually commend you to read the study. It's all in here. Just to give you an example, again, we looked at all the different energy options completely—all the way from coal, nuclear, biomass, and all sorts of different gas options as well as right from the mine cycle, integrated gasification, all of this. When you come to the total life cycle, when you look at all the non-emitting, you might say, they are lower—the hydro versus the coal and the natural gas, this sort of thing. But when you look at nuclear—again, there's a range depending on the specific plant—you're into the same overall CO_2 when you look at the manufacturing and installation, this sort of thing. It's all in the same range as wind or hydro. It's very similar—wind versus nuclear; basically, it's a capital cost project. So really with the CO_2 to produce the hardware, to produce the kit, to produce the electricity...there's a little bit of mining back into the nuclear, but there's a lot of other products into the wind as well. But it's in the same range when you look at the non-emitting sources.

The Chair: Go ahead, Andy.

Mr. Andy Savoy: In terms of our CANDU program and the initiation of the CANDU program back in the seventies, we're looking at refurbishment in a lot of situations now, as I understand it. Obviously, the public-private partnering is a viable option on that front.

Mr. Elston, can you comment on the progress made on that front, and potential situations where we can use this in the future?

● (1655)

Mr. Murray Elston: I can only say so far that the predictability of the returns for the investment of the capital is a critical feature to that. It is in fact the way of the world in the United States, for sure. In fact, in the United States there's more private capital building nuclear plants, or considering doing that thing now, than obviously there is in Canada. We have a limited exposure to that.

As for the issue of predictability of the regulatory environment and the long-term contracts, it's like any other large project. Once you quantify your risk, people will tell you what they're willing to do for the project at hand. Do you know what? We've had really good results in project construction in China, Korea, and Romania, with CANDU technology on time and on budget in a number of the CANDU-6s. That predictability leads us then to get into some of the uncertain areas—regulatory environment, and then long-term return—with respect to the electricity markets that we're going into. To a large extent, I think the electricity markets in each of our provinces now are prepared to provide some kind of security, at least predictability, with respect to the kilowatt price.

The Chair: Thank you, Andy.

Could we have Marc Lemay, please, and then Brad.

[*Translation*]

Mr. Marc Lemay (Abitibi—Témiscamingue, BQ): I listened carefully to these remarks. Your comments are quite interesting. First, I am from Quebec, and that should be obvious. In Quebec, electricity is our priority. Obviously, we are in favour of the Kyoto Protocol implementation. Quebec is the province that tried the hardest to have implementation measures put in place as soon as possible.

I have a hard time putting all together what I have been hearing this afternoon. I will ask my questions all at once.

Minister Dion told us we should replace 70 % of coal-fired power plants by 2020. There is a problem there. How can we manage to do it?

How can we dispose safely of nuclear waste? I will explain what Quebeckers think. Clearly, in Quebec, we are afraid of the nuclear industry, even if we have a nuclear plant in Gentilly. That fear is there all the same. Quebeckers fought against the construction of the Suroît combined cycle plant the Quebec government wanted to build. Quebeckers took to the streets and demonstrated against that.

In Quebec, we rely on hydropower. Our province will also invest more and more in wind-generated electricity. How can we combined the various ways of generating electricity. Do we have clean power and not so clean power? How are we going to reconcile all of that?

On top of that, can we imagine east-west power lines, something this government seems to want to have in the implementation plan it tabled, so that Canada can keep its commitments in the Kyoto Protocol, instead of the north-south lines we have now?

I have asked all my questions one after the other. I will let you answer. I wish good luck to the first one who will try to answer.

● (1700)

[*English*]

The Chair: Mr. Elston.

Mr. Murray Elston: First on the security of the nuclear waste, I have been to G-2 and have toured. I've been to the site; I've looked at the storage; I've looked at the security that is in place to protect the plant and the storage areas from incursions; I have looked at the way it has been stored. And I look at the analysis that is following the depreciation of the radioactivity of the longer-existing used fuels. It is following a pattern that has been predicted.

We know where the units of waste are. We know they are stored in the dry storage, in what is called by AECL MACSTOR vaults, which are good for probably upwards of 100 years and perhaps even more—probably more, but we would say 100 years. Those vaults can be replaced in that time, if we're not then moving to bring it to a central repository. That provides us with a very important sense of security about where it goes—and the fact that they're new units.

If you take a look at the new technology being planned by AECL, it will produce one-third less fuel as well. So not only do we have a small amount from the amount of electricity we've generated; in addition, the next generation and the generations after that will produce less.

Finally, I think it's an interesting role that G-2 plays in Quebec's system. It's about 3% of the Quebec market. Quebec is extremely blessed with a brilliance of availability of hydroelectric power, and that's something to be jealous of. But interestingly enough, the location of G-2 helps the stability of the transmission system. It helps to play a role providing lugging power when there has been a depreciation of the amount of rainfall that has been filling the reservoirs.

That's why I say we can't afford to give up on any. We are clean. We do have the waste issue, but it's an issue we know how to deal with, and we know when to deal with it. If we're permitted through the NWMO process, we'll know whether or not we can have a central repository for long-term storage.

Mr. Bob Stobbs: I have a comment. We feel, especially in western Canada where I come from, that the coal-fired plants are likely to be replaced with coal-fired plants. We don't see a lot of nuclear coming on board out west soon. Part of the reason in Saskatchewan is not that we're against nuclear; it's because the unit size doesn't match our electrical systems. There's a technical problem.

Clean coal will remain in place because, as Quebec is blessed with hydro, Alberta and Saskatchewan are blessed with low-cost coal reserves, and basically we can't afford to let those go.

Transmission lines we are certainly not opposed to, but we've had local problems even trying to get small transmission lines in. In trying to build one across the country, just the siting issues for the environmental impact will likely be a problem.

In the past we've had discussions with our neighbour about transmission lines and supplying some of our power. As somebody said, they're as smart as we are and have priced their product just slightly below what our alternative is. So if our alternative is natural gas, the price of their power is going to be priced a penny below that; they're not going to share all the savings with us. So we need that independence of supply to go forward.

The Chair: Mr. Stewart, and then Mr. Wright.

Dr. Murray Stewart: Just to expand a little, I think on a global basis coal will at least hold its market share over the whole 21st century, even in countries that have serious commitments, as we do, to CO_2 reduction. For the coal plants I agree with my other colleague: in most cases you'll find coal replaced by coal. But it will be much more efficient coal, either through supercritical stations or through much more advancement in carbon sequestration—a capture in various ways so you can get cleaner and cleaner coal.

Just to make one other point, Quebec's in a very nice position in terms of its wind, because you have a very good synergistic relationship between wind energy and large hydro reservoir power stations. That's why you can put in probably another 1,000 megawatts with an extremely high utilization factor on those wind turbines, because you can use your large hydro reservoirs as, in effect, the battery storage system for those wind turbines.

I guess what I'm saying is, what's very good for Quebec isn't necessarily good for somebody else, and vice versa. You take the resources you have and maximize the efficiency and utilization.

● (1705)

The Chair: Next is Mr. Wright.

Mr. Allen Wright: I just want to concur with what the others are saying. With electricity, there are two things: one, it's regulated by the provinces; and two, it's regionally based. In British Columbia it's mostly hydro; in Alberta and Saskatchewan it's mostly coal; in Manitoba it's mostly hydro; in Ontario it's a mix; in Quebec it's mostly hydro; and then it's a mix in the rest of the provinces.

I think what you'll see over the next little while is that because some of the plants are getting older, some of them will be replaced. When they are replaced, I think Bob is right—in the western provinces they will go to coal, but the standards will be set significantly higher.

An example is Genesee 3. It actually produces more electricity with significantly lower greenhouse gases and is using less coal as a result. I think that's what you're going to find, and I'm not sure my coal producers are happy with it, but that's the reality.

It's interesting. A lot of people assume Europeans are cutting back on coal-fired generation. In Germany, for instance, they reduced their coal consumption by 17% between 1990 and 2002, but their production from coal has only been reduced 7%, so they've become more efficient in the way they produce. As a matter of fact, they're building a coal-fired plant as we speak today.

I think what you'll find is that coal will still be used. The question is how to use it smarter—and we've got so much of it. We're not going to see a huge amount of hydro, for instance, in Alberta, other than possibly run-of-river.

The Chair: Thank you, Mr. Wright.

Thank you, Marc.

Before we go to Brad, I'd like to deal with that Bill C-37 budget while we have a quorum, colleagues—the budget for Bill C-37.

I've asked Andy to move the motion.

Mr. Andy Savoy: Yes, I'd like to move the adoption of the budget for Bill C-37. The motion is that the proposed budget for the study of Bill C-37, an act to amend the Telecommunications Act, in the amount of $38,450 for the period of April 18, 2005, to August 31, 2005, be adopted.

The Chair: Thank you.

That's a notional budget drafted by the clerk with an estimate of the number of witnesses we have.

Werner, you have a question.

Mr. Werner Schmidt: I have just a brief factual question. How many witnesses do we expect to see?

The Chair: I think we just made a rough guess of...how many, Louise?

The Clerk of the Committee (Louise M. Thibault): It's about 30.

The Chair: It's about 30, but we may have less or more; it's just a ballpark figure.

Mr. Werner Schmidt: Could we cut it in half?

The Chair: Well, we probably could; this isn't a set limit.

Mr. Werner Schmidt: I don't see a problem with doing that. Compared to some of the other bills for which we've had that number of witnesses, it doesn't seem reasonable to me.

The Chair: Could we adopt it on the basis that if we agree to go fewer, then we go fewer?

Mr. Werner Schmidt: Absolutely.

The Chair: Okay. Is that okay?

All in favour of the motion?

Hon. Jerry Pickard (Chatham-Kent—Essex, Lib.): Mr. Chair, before we get there, I haven't heard of the motion before. Maybe I've made some gaps in my information, but this is going to be to bring witnesses in. How are you structured, and how is the expenditure laid out?

The Chair: For every bill, we have to submit a budget to—

Hon. Jerry Pickard: I realize that, but I was wondering—

The Chair: So all we've done—

● (1710)

Hon. Jerry Pickard: Have you guys got detail on how this is going to be done? I didn't get it. I don't know how I missed it. Was it just passed out today?

The Chair: Yes, it was put out today. It's based—

Hon. Jerry Pickard: May I take a second to read it?

The Chair: Yes. I'll just explain while you're reading it, Jerry, that it's just a normal best guess. With any bill, all you can do is take a guess on the number of witnesses. It's really up to committee members to decide how many witnesses we have altogether. The clerk makes a judgment based on experience. We may overestimate the number of witnesses; maybe we will need fewer than 30. That's what Werner's question was.

It is in order to provide expenses for witnesses coming in. We're not planning any travel. I would say it's an average bill budget.

Hon. Jerry Pickard: Okay. I am just reviewing that detail.

The Chair: I'm going to call the question.

(Motion agreed to)

The Chair: We're going to go back to our witnesses and our study.

Brad, you're up next. After Brad is Serge.

Mr. Bradley Trost (Saskatoon—Humboldt, CPC): I'll only take a few minutes here.

I want to thank you gentlemen all for coming today. We've heard some excellent testimony. We appreciate your time.

I want to make a general comment before I start into my questions.

Having sat on this committee and also having been involved in energy issues otherwise, I continue to hear certain fairly similar refrains coming through: R and D and regulations, regulations, regulations, regulations; and this comes across through all sorts of industries getting worried about a skilled workforce. I can almost predict the testimony before it comes. This is not to say that it's not necessary and I don't need to hear it.

My questions are going to be mostly about the coal industry and the clean coal presentation, etc.

First of all, my first question is going to be general. I know you've covered this, but to restart it again, what regulatory changes, what efficiencies, would help, particularly for coal-fired plants and coal mining exploration in general? What are your one, two, or three things—regulation, etc.—that would be the keys to help the industry move forward? I know you've covered this.

Mr. Allen Wright: Bob might be a better person to answer on power plants, but on mining, from our perspective, it's a permitting process. Where there is duplication, where we're dealing with more than one department—and I think Murray mentioned it too—if we could deal with it all at the same time.... Some of the processes for getting permits to proceed are very lengthy and very costly.

The other side, which is always a difficult one, of course, is that you have the provinces engaged, as well. Sometimes we tend to be the meat in the sandwich on those things when the province and the federal government are not working as closely together. Clearly, the permitting side is an area where we can become more efficient.

I want to emphasize—and I said it in my presentation—we're not asking to diminish the process. We're not saying that at all. We're trying to find ways whereby we can reduce the amount of time to get a full hearing and to avoid the duplication, so we can get on with what we're trying to do.

Mr. Werner Schmidt: Closely related to that, are you concerned, as Mr. Elston was, about timeliness as well?

Mr. Allen Wright: Absolutely. When you're building a mine, you're building it for a certain period of time. It's the same thing with a power plant. You're not looking at four or five years, so you have to have things done in a timely fashion, absolutely.

Mr. Bob Stobbs: I would certainly agree with all the earlier comments about new regulations and the certainty of the process. In Saskatchewan, as you know, all our coal-fired plants are right close to the U.S. border, and once we say "transboundary pollution", now we have the feds and the province going at each other on which rules prevail.

In terms of regulations going forward, I suppose our biggest one right now is the CO_2. If we were to build a new coal-fired plant today, do we built it not capture-ready at all, do we build it capture-ready, or do we built it with capture? Those are three completely different states, and how you would design and build that plant.... The economies to retrofit—we did some looking at that on phase one—are terrible. You can reduce some of that if you can build it in right from the start. So we need to know the game we're in for the next 30 or 40 years for each facility.

Mr. Bradley Trost: To follow up a little bit on that, in regard to the Kyoto plan that we have now, has it provided any more really substantive certainty to the coal industry?

I'd ask either one of you to respond.

● (1715)

Mr. Bob Stobbs: From what I've seen today and heard, the answer is no, we still don't have a set of rules, or certainly any regulations, so that we can go out and build something and know what we're playing with.

Mr. Bradley Trost: After all these years it is still inadequate; the job still hasn't been done. Would you agree with that, Mr. Wright?

Mr. Allen Wright: Yes.

Mr. Bradley Trost: It doesn't affect you as much, with 3% more at that end, as you pointed out.

Mr. Allen Wright: No. We're still talking to the large final emitters group about where we stand on that.

I don't want to get into a situation on this, where I can see you taking me.

A voice: Where would you like to run?

Mr. Allen Wright: Where would I like to hide?

I think one of the things on the positive side is what Mr. Dion said. There were no surprises in that. We'd certainly like a little more detail, and we're obviously going to spend the next little while there. I think the positive nature of clean coal technology that they've talked about has been very helpful, but there's still a huge number of questions that have been unanswered. I think that's one we're going to have to go forward on.

Mr. Murray Elston: Mr. Chair, could I just say one thing very briefly? When people look at the timeliness issue, it's absolutely critical that they understand that the regulator, whether it be ours—the Canadian Nuclear Safety Commission—the Department of Fisheries, or wherever, have adequate and well-trained staff available. One of the things that get in the way of getting highly qualified people, particularly where there are high levels of technical science required for their regulatory work, is the process of being recruited into the federal public system. So you have to make sure your regulatory environment is given enough people, that the environment permits them to be paid as the experts they are, and that there's flexibility against some of the internal program reviews that are going on.

The Chair: Is that okay, Brad?

Mr. Bradley Trost: Can I ask another question?

The Chair: You can, very briefly though, because I'm going to try to divide the rest of the time between Serge and Jerry and Michael.

Mr. Bradley Trost: Okay, I'll take my last shot.

I'm a little bit interested in the technology there. How does it compare to what the rest of the world is doing? The Europeans of course are working on clean coal, and they want it. Denmark is still very dependent on coal. In West Virginia and Kentucky, they have no interest in going out of business. Could you comment on how we're in the race with them for the technology and how it's being utilized throughout the rest of the world?

Mr. Bob Stobbs: Clean coal technology, especially gasification, is very much fuel specific. What will work for a high-rank coal will not necessarily work for a low-rank coal. And that's what we found out in phase one. People were asking us why we didn't just get on the FutureGen coattails from the U.S. Basically, from a border of Saskatchewan viewpoint, that's for the wrong fuel. What they're going to learn down there isn't transferable directly to what we need in western Canada for low-end coals. So we need to do some of that work ourselves. We're aware of what's going on in other parts of the world, but thus far there's been very little work on low-rank fuel gasification.

The Chair: Thank you for answering those questions.

Next we'll have Serge, Jerry, and then Michael. We'll try to keep it to a few minutes each if we can.

[*Translation*]

Mr. Serge Cardin (Sherbrooke, BQ): Thank you, Mr. Chair.

Today, we are dealing more with nuclear energy and coal. The situation seems to be moving more quickly since we have been discussing the Kyoto Protocol and commitments concerning this. In the last few years, we have noticed that many countries in the world seem to move away from nuclear power. But almost overnight, we seem to want to go back to that. The same thing is happening with coal. It has always been thought to be a big emitter of CO_2 and pollution. Today, it is seen as an energy source that is clean, so to speak.

I am getting rather skeptical when I realize that all the sectors that were thought to be big polluters a few years ago are now said to be alright. There is some research in the nuclear industry to find a place to store nuclear waste. If we continue to use nuclear fuel a lot, we will end up not knowing what to do with nuclear waste. I may be mistaken, but we still have not found a place to store nuclear waste. Usually, we have the problem of the "not in my backyard" syndrome.

In Quebec, we have one nuclear plant. If it were for me, we would have none, just to avoid that, one day, Quebec becomes the dumping spot of the 20 nuclear plants in Ontario. If it depended on me, the issue would be settled rather quickly.

Why do we still want to use coal or nuclear energy when they will have a negative impact on the mid to long term? Why not address the problem squarely and invest in resources and research? We are making headway in wind energy, solar power and all kinds of renewable energy. I think these types of energy are quite promising. More and more oil and gas companies are investing in companies that produce renewable energies.

Those are my questions on the future of energy in Canada and Quebec. But I have to say I have my doubt concerning nuclear and coal energy.

● (1720)

[*English*]

The Chair: Merci, Serge.

Mr. Murray Elston: I'm happy to speak to you about nuclear, in particular. As Dr. Stewart has said, in very many places the resources we are given provide us with the way forward to make sure we have competitive electricity. I've been at La Grande. It's a magnificent structure and has great capacity. I've been at the Bruce nuclear power site, and it is also a magnificent structure. It is clean, and it produces electricity in huge amounts. Darlington and Pickering do the same. G-2 has a great record of production, as does Lepreau. The point is that they add to the competitive nature of one of the major inputs for our industry.

As we take a look at the growth in the environments of other countries, China particularly, moving to be competitive with our industries, we must be sure that our energy inputs are as reasonably priced as possible. So that, first of all, is an area nuclear can occupy.

I think people are rightly concerned that they know as much as they can about the full life of nuclear generation. We are coming out of an industry that was not always this transparent because of the nature of its formation, but we are very transparent. People take time now to address local concerns and discuss what is happening at all of our plants. In fact, before the advent of September 11 we actually gave tours to show people what went on inside our limits. We're not permitted to do that now, but we have taken steps to provide the security to deal with the waste.

On the issue of where this will go, technically we've done the work, and we actually undertook the work in Manitoba at Pinawa. We've done deep geological mining there. Interestingly, a side play from that experiment was that some new deep hard-rock mining techniques were discovered by the researchers, and those have been passed on to other places. But we understand how to store. We understand what they're doing in Finland and in Sweden. We will have a repository, but not without all of the public interactions that are required to tell people what is being done, hear their concerns, and then take a look at what we need for that central repository.

As you know, Hydro-Québec is one of the participants in the NWMO group, with OPG and New Brunswick Power. It may be that there will be others, not just one. I don't want to contemplate in advance the report of the NWMO, but we will have a good secure site that will help.

The Chair: Thank you, Serge.

I will give a few minutes to you, Jerry, please, and then a minute or two to Michael.

Hon. Jerry Pickard: Thank you, Mr. Chairman.

I'm listening to an interesting story. We have to remain competitive in Canada through energy and power. Canada's always had low-cost energy, and one of the reasons we've been as competitive as possible is because of the low cost of energy. We have an overabundance of a lot of energy resources in this country. We have coal, oil, and nuclear. We have potential new technologies, such as wind.

The price of energy seems to be escalating extremely dramatically on a world base. Certainly it's going up dramatically in Canada. All you have to do is read your bills to know what's happening in that regard. So we have a great abundance. We have regulations, controls, and things that certainly have to be looked after. Every one of us, looking at our families and future generations, knows the importance of that. But it seems to me that we're still very concerned about the regulations keeping Canada competitive, yet the prices have escalated very dramatically.

Have your costs for regulatory restrictions and all the technologies gone up as rapidly as the cost of energy? Do you see those escalating costs dramatically going up in the future because of new technologies and movements forward, or because of the world price? We talk about the price of a barrel of oil. Everything else goes up in accordance with that. It seems to be a supply and demand issue more than a resource-based and technology-based question.

I'd really like your views on that, because as people who are involved in government, we have to make sure the regulations and the safety factors are there, but at the same time we're always striving to have the best costs involved in that. There's a real conflict, in my view. You're basically saying we have a restricted resource and escalating costs, certainly in the regulatory sector anyway.

● (1725)

Mr. Allen Wright: In the case of coal, the cost of producing thermal coal is fairly consistent within Canada. In other words, we can deliver coal to a power plant quite inexpensively, and I think that's what we've done, even with the coal that goes into Ontario. Only a small amount comes from western Canada, and a lot of that coal comes from the Powder River Basin in Wyoming and costs much less than the international price.

From a coal producer's point of view, we don't set the cost of electricity. That's done differently, but I think the cost of Powder River coal is something like $10 a tonne. We don't ship a huge amount of thermal coal into the international market. It goes for about $53 a tonne, of which a chunk of course goes to transportation.

The actual cost of electricity is determined differently. You factor in a whole range of fuel sources. Natural gas is an example. Natural gas is a terrific commodity, but the price is set internationally, and we've seen what's happened. It becomes less than competitive when you're trying to generate electricity. If you talk to TransAlta or talk to ATCO Power in Ontario, they're not very happy campers because it's just too expensive to produce.

So coal itself is fairly predictable in its price now. The met side is a different story. That's set internationally, and we certainly take advantage of that because the lion's share of what we produce—95% or more, actually—is shipped abroad. So it's an export commodity from which Canada benefits.

The Chair: Dr. Stewart, did you want to jump in?

Dr. Murray Stewart: Yes.

The Chair: I'll get you all to keep it really brief.

Dr. Murray Stewart: Sure, maybe just to challenge a little bit on it, I'm not sure we are restrictive when you look at the oil industry and the tar sands availability and current technology—the tar sands from a resource base with newer technologies—and what's going to come out of that. When you look at the new technologies, especially natural gas ties in with sequestration. We look at coal-bed methane, which is not currently in our reserves right now. That's in a resource base but not as commercially available right now.

I think what's happened is that certainly Canada has grown because of, as you say, reliable, low-cost energy. We are seeing, I believe, that the reliability and security are still there, but that certainly we have moved. I think that's going to happen to global pricing. That's certainly in natural gas. I think that's a given, especially when the marginal natural gas is, in effect, going to become liquefied natural gas, which is a global commodity, as is oil today.

So certainly that's a huge movement. When you look at electricity—and especially at the U.S., where the incremental power generation increase over the last decade has primarily been through natural gas—again you look at where the marginal price is on electricity. In a lot of places it's natural gas, which goes to world price, which again puts electricity at a different price level as well.

It's not unique to North America. This has happened in Europe and elsewhere, but certainly we're getting a changed dynamic in the overall energy. The point is that I don't think Canada should be concerned that we are the only net exporter of energy among the OECD countries, and certainly among the G-7. I think we can do that because we do have the resources.

● (1730)

The Chair: Thank you, Dr. Stewart.

Could we briefly have Mr. Elston and then Mr. Stobbs, please.

Mr. Murray Elston: I have two things to say very quickly.

One, technology, for instance in the design of the ACR as a smaller reactor, is going to help us become slightly more efficient at filling some of our energy needs. It's going to take less fuel and it will produce a large amount of electricity. So the technology itself is not going to be a problem.

Two, one of the things that are difficult for us and that cause a big time delay is the changing regulatory environment. I think it probably applies to all of us. But for us, for instance, if the CEAA were to be taken away from the work of the Canadian Nuclear Safety Commission and then all of a sudden we had to fit ourselves back into a whole brand new structure when we are critically confronted with time issues in relation to environmental assessments and the refurbishing and building, that would be a problem.

Three, just as I had said earlier to Mr. Trost, we have to have the right people for the job in the regulators' roles.

The Chair: Mr. Stobbs, go ahead, please.

Mr. Bob Stobbs: Part of the reason for the increasing price of energy going forward, especially in electricity, is that most of the coal-fired plants in Canada are old, and basically you're getting the benefits now of low-cost electricity from old facilities; but once they wear out, replacing them at today's prices will be like the situation in China, where the price of steel has skyrocketed because of the Chinese demands. It's like going out and buying a new car. It's more costly than the old one was, even though it's fulfilling the same purpose.

The Chair: Thank you, Jerry. Good question.

We'll just leave a minute or two to you, Michael, then we'll go to our business meeting.

Mr. Michael Chong: Thank you, Mr. Chair.

I want to echo some comments made earlier. I was surprised as well that the government's plan on Kyoto made no mention of nuclear power as a way to help us reduce our carbon dioxide emissions. So my question is for Mr. Elston.

In reading and listening to your submission, I noticed you advocate a mix of different types of generation going forward, and I've also noticed in your submission as well that nuclear power has one of the lowest costs of production. Why wouldn't you advocate—or maybe you do—our using nuclear moving forward as a way to both help us lower our carbon dioxide emissions and, as the cheapest way to produce electricity, replace coal-fired and even natural gas? I noticed in your projections that for Ontario there would need to be greater natural gas generation brought online. My question is, instead of bringing additional natural gas generation online, why not just bring greater nuclear generation online?

Mr. Murray Elston: I think that's obviously what we would advocate. The chart you're talking about shows a regime in which there's about 30% activity on the natural gas side. What we did was fill in that graph to demonstrate the type of gap we're really confronting in that particular province.

It's quite clear we are one of the competitive options. I think, as you heard from Mr. Stobbs, we have some interesting historical issues with both coal and nuclear. Also, as Mr. Wright mentioned, our historical world is what is leading people to shy away from being...in leading the discussions and actually saying these are technologies Canada has leading-edge technology in. Nuclear is one of those things where it's a homegrown. As I said earlier, it's one of two export-oriented, innovative areas we actually have some room to grow in.

The answer to the question is that we need to say we're in favour of nuclear. The Government of Canada has signed on to generation four activities. They have commitments internationally that lead us to look at the next generation. We think we just need to have that said, and then we, the nuclear industry, can work very strongly hand in hand with the government to put the right targets in place with respect to Kyoto. I think it can save an awful lot of conniptions in other parts. We need everybody.

● (1735)

The Chair: Michael, very quickly.

Mr. Michael Chong: I just want to make one quick, final comment on all the submissions I've heard regarding energy policy, and it is that no energy source is perfect. On many occasions I've seen in submissions that hydro is a sort of flawless, environmentally perfect technology, and as an avid canoeist who has canoed many rivers in northern Canada—the Missinaibi, the Abitibi, and rivers like that—I can tell you that damming rivers is not without its environmental consequences either. I just wanted to put that on the record.

Thank you.

The Chair: Don't go away, colleagues. We're going to suspend the meeting for about sixty seconds while we clear the room for an in camera business meeting.

I'd like to thank you very much, gentlemen, for spending a couple of hours with us.

[*Proceedings continue in camera*]

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

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

Also available on the Parliamentary Internet Parlementaire at the following address:
Aussi disponible sur le réseau électronique « Parliamentary Internet Parlementaire » à l'adresse suivante :
http://www.parl.gc.ca
