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# Standing Committee on Natural Resources

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**EVIDENCE**

## Thursday, November 25, 2010

## Chair

**Mr. Leon Benoit**

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● (1105)

[*English*]

**The Chair (Mr. Leon Benoit (Vegreville—Wainwright, CPC)):** I call the meeting to order. Good morning, everyone.

We originally had scheduled for 11 o'clock to maybe 11:15 for Mr. Cullen to bring his motion, but he isn't here, and apparently he won't be here for a while, so we are going to change the agenda and get right to our witnesses. I know we all want to spend as much time as we can with them.

We have three witnesses on the first panel, and then three on the second panel as well.

We have with us on the first panel from Suncor Energy Inc., Gordon Lambert, vice-president, Sustainable Development; from Petrobank Energy and Resources Ltd., John D. Wright, president and chief executive officer; and from the Canadian Association of Petroleum Producers, David Collyer, president.

Thank you all very much, gentlemen, for being here today. I know you're very busy and I do appreciate your taking the time to come.

We will start with presentations in the order that you are listed on the agenda. Presentations are between five to seven minutes each.

We will start with from Suncor Energy, Gordon Lambert, vice-president, Sustainable Development. Go ahead, please, with your presentation.

**Mr. Gordon Lambert (Vice-President, Sustainable Development, Suncor Energy Inc.):** Thank you very much, Mr. Chair.

Thank you to the committee for providing this opportunity for Suncor Energy to share some thoughts on this very important topic of energy security. Of course I am very pleased to be here, as well, with Dave Collyer and John Wright this morning. We are going to discuss, during the course of my comments, the important challenges and the contribution that the oil sands make to Canada.

I've come here this morning to talk about the oil sands in the context of energy security. I'll share some brief introductory remarks on some major themes relevant to your study, including the economic benefits of oil sands to Canada; the need for continuously improving our environmental performance; increased global demand for energy; and the need for energy strategies and new technologies, which we believe are necessary to ensure the responsible development of oil sands as a secure energy supply for Canada and for markets outside our borders.

Let me start with a simple statement: development of the oil sands is all about science and technology. It always has been. In the first 40 years of development of the resource, the research was directed toward the challenge of achieving commercial viability, and the perseverance and the magnitude of the innovation effort that occurred during that timeframe should be a source of pride and courage for all Canadians as we pursue our future energy challenges.

While improving the economics of the business is still a major priority, this is increasingly being achieved through an enhanced focus on technology to reduce the resource intensity and the associated environmental footprint of the industry. Let me be clear that these two goals are compatible. If we use less water, energy, and land, the environmental impacts are reduced and costs are lowered.

What it really comes down to is that we need to develop this Canadian resource in a way that harnesses both Canadian and global intellectual capital and is consistent with Canadian values, with benefits to all Canadians. It is about Canada, not just Alberta. To name just some of the benefits to Canadians, the industry is Canada's largest private sector investor, with $1.7 trillion in GDP impact expected over the next 25 years and nearly half a trillion in new government revenues over the same period, mostly federal. It is the livelihood of half a million Canadians, with about half from outside Alberta. Lastly I'd point out that Suncor has spent more than $1 billion on aboriginal business contracts in the past decade, a point that we are particularly proud of.

That said, I think we could do a better job of explaining our importance to the Canadian economy and our progress to Canadians on the environmental front and with regard to new technology. Let me give you examples of improvements related to air, land, and water.

Suncor has reduced our greenhouse gas emission intensity by 53% since 1990. The industry has cut greenhouse gas emissions by 40% on an intensity basis during that same timeframe. This puts this industry at the forefront of all Canadian industry in terms of intensity reduction.

Current research shows $CO_2$ emissions from an oil sands barrel are now about the same as, maybe less than, some crudes from places like Nigeria and Venezuela or California.

Total water use at Suncor's oil sands operations has been cut by about a third since 2004, and that's in absolute terms. At our Edmonton refining operations, we're using high-tech filter systems to allow us to use municipal grey water.

On land impacts, Suncor recently celebrated the surface reclamation of pond 1. It becomes the first oil sands tailings pond to have been reclaimed in the oil sands, and there will be many more to come.

Getting to these kinds of improvements doesn't usually happen in a single technological leap. It's mostly been a journey with a lot of small steps. It's not especially sexy, and it's probably why it doesn't have much profile. But it's practical, and it is delivering real results.

We also have a few game changers. Suncor is moving on one major leap right now. Recently we rolled out our new tailings technology, which will reduce the need for ponds to store tailings in the future. And the pace of reclamation to natural habitat will be reduced from 30 years to approximately 10 years.

The fine clays in the tailings take very many decades to settle. This new technology can dewater tails in a matter of weeks versus decades. We plan to spend more than $1.2 billion on implementation of this technology over the next two years. We expect that investment to pay both environmental and financial dividends over the long term. We have made progress and we know there is much more to do.

For now, let me take these two themes, the major economic impact of oil sands development and continuous improvement in environmental performance through technology, and add a third.

The world will continue to need oil for the foreseeable future. Demand is expected to grow from 85 million barrels per day to more than 100 million barrels per day over the next 20 years. That's largely driven by India and China, but Canada will have a piece of that demand with our growing population.

Together these three themes say to me that we are better off if our needs are met by Canadian oil, oil that is produced in a democratic society in a strong and transparent regulatory regime, with a focus on improved technology that broadly benefits Canadians. Few, if any, of these attributes are found where 80% of the world's oil reserves are.

I really want to underline this point. The development of the oil sands and the work under way to continuously improve its environmental performance is the product of two key freedoms.

First is the political freedom of citizens and stakeholders to engage with governments and industries to drive toward solutions, because directly or indirectly we are all accountable to the Canadian people.

The second freedom, equally important, is regulated but free markets. It's no coincidence that the major technology advances that have shaped our world have sprung from free market economies. Innovation and entrepreneurial instincts are the critical drivers to achieving practical solutions to our challenges.

Frankly, Canadian oil should be differentiated on these positive qualities in the international arena. Our choice is not oil sands, yes or no; it's where do we want the oil to come from, and what it means to Canada and the rest of the world.

I focused on the oil sands because that's Suncor's main business today, but we should recognize that most oil companies are actually energy companies.

Suncor is one of Canada's biggest players in biofuels and we are also one of the biggest investors in wind power. We got into these businesses in part because we know we need to take a broader look at energy. As a company, we want to help create a constructive dialogue in this country on energy.

That includes the role of Canada's oil sands in our energy mix as both a secure source of supply to our economy and a bridge and an enabling resource to the new energy technologies for the future.

We think it's important to get Canadians engaged in a realistic, fact-based dialogue about our collective energy future.

We think the time has come for a dialogue on a national sustainable energy strategy, one that respects provincial jurisdiction but allows for a broad, integrative perspective on energy, the environment, and the economy.

A sustainable energy strategy must go well beyond the issue of basic energy production. We need to look at how we use energy, including the cars we make, how we plan and build cities, the role of mass transit, and a stronger conservation ethic from businesses and consumers.

We need to assess our likely energy requirements 10, 20, and even 50 years down the road. We need to determine the mix of proven and potential energy sources that can best meet those needs on an economically and socially sustainable basis. We must find ways to build the required infrastructure to deliver energy where it's needed and when it's needed.

We need to understand that the future is about increasing energy choice, not restricting it, and that targets for reducing greenhouse gas emissions must be part of our vision.

Governments will need to promote investment in technology. This includes direct funding as well as economic cooperation to stimulate a higher level of capital investment in new technologies.

For its part, industry needs to build more research and development into their business models, and the level of investment and deployment of new technologies should be a key measure of our success.

● (1110)

As a leader in Canadian energy, we are more than willing to contribute to this dialogue that enables a secure and prosperous energy future for all Canadians.

Thank you.

**The Chair:** Thank you very much for your presentation.

We now go to John Wright, president and chief executive officer, Petrobank Energy and Resources Ltd.

Go ahead, please, for up to seven minutes.

**Mr. John D. Wright (President and Chief Executive Officer, Petrobank Energy and Resources Ltd.):** Thank you very much, Mr. Chair.

Ladies and gentlemen, it is a pleasure to be here today representing our industry as well as Petrobank Energy and Resources and all our shareholders.

I've provided a brief slide deck for you to step through this with me.

Petrobank is a Canadian-born and -bred company. We are a pure upstream player, which means we have no interest in pipelines, refineries, or end-use marketing. Over the past ten years, we've grown into a group of three companies currently operating in the oil sands area through our Whitesands division, internationally primarily in Latin America through Petrominerales, and in the Canadian conventional oil and gas business through Petrobakken.

I would emphasize that while we'll talk about oil sands and technology here today, we would be happy to answer any questions regarding either the international outlook on the oil and gas industry or the use of multi-stage horizontal fracturing in developing Canada's resource plays in western Canada, which Petrobakken is the leader in.

Moving on to slide number four, which is a brief outline of the oil sands assets and opportunities in western Canada, we talk in big numbers in our industry. We talk about trillions, billions, and millions of barrels. To put things in perspective, 1.7 trillion barrels of heavy oil and bitumen resources have been identified in Canada. That's out of a potential worldwide total of nine trillion barrels that have been identified to date.

A surprising thing is that current technologies available to our industry can recover approximately 10% of this. But even a 10% recovery factor on Alberta's oil sands and heavy oil assets makes Canada the second-largest reserve holder in the world. This is a huge part of Canada's wealth. But the potential to increase that recovery factor, even by another 10%, would have a significant impact on the long-term worth of the Canadian economy and the long-term benefits that would be available to all Canadians.

Petrobank is an applied technology company and we're looking to implement technologies that will be the next step, or the disruptive step, to take those recovery levels to a new level.

If I can draw your attention to slide five, we outline there the THAI technology. The whole concept of Petrobank as an applied technology company is to take existing resources and find new and better ways to extract more value out of them. As one example, Petrobank is the owner and the developer of this made-in-Canada technology, but increasing the resource recovery on the substantial resource accumulations in Alberta and Saskatchewan has a significant impact on the wealth of our nation. With the ability to achieve higher recovery rates and potentially double existing technologies' recovery rates, we have the ability to create a large, sustainable, long-term growth opportunity in our industry.

The technology we're applying, which we hope will be the next step for the world to apply, invokes lower capital cost, it involves much lower operating costs, and it generates a much higher net back on every barrel. It does this through a process that I'll explain through a little diagram here. It's important to understand this technology uses no water, it consumes no natural gas, and it has a very small surface footprint, so it also has a very minimal impact on the surface.

The other aspects of it on the environmental front also allow us to reduce the overall carbon footprint of a barrel of oil, because an upgraded barrel requires less processing at the refining end. We already have reduced our greenhouse gas emissions by about 50% compared to other technologies. And in the event there's a viable $CO_2$ carbon capture technology in place, we are carbon capture ready.

I'll draw your attention to the diagram of the THAI process and quickly explain how this works. More importantly, I want the committee to understand that we already have two demonstration plants of this technology in action today, one in Alberta and one in Saskatchewan. Our first commercial operation is under construction in Saskatchewan as we speak. And we have two more operations awaiting regulatory approval.

The process itself is quite simple. As diagrammed here, it involves drilling horizontal wells to the base of a heavy oil reservoir. Instead of injecting steam and generating steam on the surface, we inject air into the reservoir. The air creates a combustion reaction. The combustion reaction is not unlike the reaction you would have with a charcoal briquette in your barbecue—the harder you blow on it, the hotter it glows, and the more heat it generates.

● (1115)

This heat is high enough to melt the oil in place. It actually cracks some of the lighter hydrocarbons in the oil, leaves behind some of the heavier hydrocarbon as coke deposited in the reservoir, and the production that comes up to the surface is partially upgraded.

The next slide gives you an idea of what a commercial operation would look like. This is our Kerrobert facility in Saskatchewan. I draw your attention to the fact that there are no huge steam generators. There are no tailings ponds. There is no water use of any significance in this process. Obviously, it's an operation we can integrate with the existing farming operations in place on the land there today.

Finally, on our slide that shows the international potential for heavy oil, it's important to note that heavy oil is a global resource. Outside of Canada few of these resources can match us from a regulatory, environmental protection, political transparency, human rights, or democratic freedom perspective.

It's very important for Canada to be a leader in the development of heavy oil technology, both for application at home across our vast resource, but also as a leader in showing the world how best to accomplish efficient resource extraction and wealth creation.

In conclusion, while resource development is typically a provincial responsibility, there are three initiatives at the federal level that we would strongly encourage.

First, we would hope you could provide a streamlined, transparent, and practical regulatory environment to allow our industry to grow and prosper, for all Canadians.

Secondly, it would be our deepest hope that you will protect Canadian intellectual property, both at home and abroad, and to promote the application of Canadian technology on a global basis.

Finally, it's our deepest hope that you can project an image of the Canadian energy industry, both in Canada and around the world, as the best-regulated, safest, most ethical, most transparent, democratic, and environmentally respectful industry in the world.

Thank you very much.

● (1120)

**The Chair:** Thank you very much for your presentation.

We will now go to David Collyer, the president of the Canadian Association of Petroleum Producers.

Go ahead, please, with your presentation, for up to seven minutes.

**Mr. David Collyer (President, Canadian Association of Petroleum Producers):** Good morning, Mr. Chairman, and members of the committee. Thank you for the opportunity to present the views of the Canadian Association of Petroleum Producers on what I think is a very important and timely study you're doing on energy security in Canada.

I believe you have a copy of our submission, so I'm just going to try to hit the highlights. I'll try not to repeat points that have already been made by the other witnesses.

I think any discussion of Canada's future energy system, including the role of oil sands, has to be put in a global context, and it has to be grounded in a few realities.

First, as Mr. Lambert has suggested, global energy demand is growing at a rapid pace. Many forecasts suggest an increase of up to 50% by 2030 to 2035.

Second, our view, very strongly, is that we're going to need all forms of energy, developed responsibly, to meet that growth in energy demand. I think it is clear that renewables will play an increasing role in the energy supply mix. I think it's also abundantly clear that fossil fuels, including oil and gas, are going to play a dominant role in the energy supply picture for some time to come.

Third, as conventional sources of oil and gas decline, unconventional sources, including oil sands and shale gas, are clearly going to play a more important role in meeting that growing energy demand globally.

In that broader context, taking those points, I think Canada is uniquely positioned to develop very abundant natural resources, as Mr. Wright has pointed out to you, including crude oil and natural gas, in a manner that provides economic growth and jobs, contributes to global energy security and reliability, and delivers what we consider to be responsible environmental and social outcomes.

I know that the focus of this discussion this morning is on oil sands, but I just want to make three very quick points about natural gas.

First, we are very confident that shale gas is a game changer and that we're looking at a very different supply outlook, a much more robust and abundant supply outlook, going forward.

Second, we firmly believe that the environmental concerns associated with shale gas can and will be addressed.

Third, we believe that there are opportunities to broaden the use of natural gas, specifically in transportation, and, importantly, in power generation across North America. If you put those together, we firmly believe that natural gas should be a foundational element of a cleaner energy future for North America going forward.

Let me turn now to oil sands. In terms of energy security, there is no question about the resource potential from oil sands. The current reported reserves are based on current technology and economics. As Mr. Wright has said, there is considerable potential for upside in those numbers. Over 80% of Canada's oil sands reserves are amenable to in situ recovery, versus mining. Both will be important for some time to come, but in situ will become increasingly important.

I think a very important point is that Canada has approximately half the global crude reserves that are accessible to private sector investment. That is, they are fully available to the private sector. That's a very important point, and I think it highlights the importance of Canada's role in meeting the future of global energy demand requirements. It also highlights why there is so much interest globally in oil sands in terms of investment.

Second, in terms of economic growth, I think there is also no question that the development and operation of oil sands is critically important to Canada. It benefits shareholders. It benefits investors. It benefits companies across the country. Most importantly, it impacts and benefits people who are directly or indirectly employed across the country, not just in Alberta, in oil sands activities.

Finally, our industry, I firmly believe, clearly understands that we need to maintain our social licence to operate. That is dependent on our environmental performance and our social performance and how we communicate about both. It is critically important that we deliver in both areas. I believe we are doing so. We'll continue to do so. That is not to say that there is not an opportunity for improvement. We recognize that, and I think there is an ongoing focus on that area.

We have a very good track record of significantly improving performance across a broad spectrum of measures, such as operational performance, environmental performance, and social performance. We clearly have an expectation around continuous improvement. We believe this is what Canadians expect of our industry. Our polling suggests that about 74% of Canadians support oil sands development if there are measures to improve environmental and social performance. That doesn't vary a great deal by jurisdiction, and frankly, from our polling results at least, it doesn't vary a great deal by political affiliation.

I think it is also important to note that Canadians don't expect a silver bullet in terms of environmental and social performance. What they do expect is a commitment by industry and by government to continuous improvement.

● (1125)

I think it's incumbent on us as industry to continue to improve performance. It's incumbent also, I think, on governments in Canada to ensure that we have a policy environment that enables responsible development.

Let me just make a few points in both respects, and then I'll wrap up.

From industry's perspective, we need to continue to invest aggressively in technology development, because that is the key lever to improvement in both cost and environmental performance.

We need to collaborate more effectively among ourselves, with governments, and with academia in terms of technology development. We need to work with governments to make sure we have state-of-the-art measurement and reporting systems.

I think we need to be as transparent as we can possibly be with respect to our performance around oil sands, and make sure that our reporting systems are open to credible new sources of information. I think we have a role, as Mr. Lambert said, to contribute constructively to the discussion around energy strategy in Canada going forward.

Governments, I think, also have a role to play in realizing the future oil sands opportunity. Some key elements that I would highlight for you include the following.

I think we need policy that is right for Canada, recognizing our particular energy circumstances.

We need policy that concurrently advances economic interests, environmental performance, and energy security and reliability. This is a three-dimensional challenge, which is in part what makes it so difficult.

We need policy that maintains open borders to trade and market access, both with the United States and potentially offshore.

We need policy that stimulates investments and the use of technology and innovation. As I said, I believe that is key to improving performance.

We need policy that's founded on ensuring that we have a competitive regulatory and policy environment in Canada, to attract investment and intellectual capital.

I think we need policies in energy that look across the energy system. We need solutions that impact both the upstream and the transmission system in Canada and, most importantly, the downstream consumption.

I would say we need policy that's founded on honest conversation, if I can characterize it this way, about energy and the environment. We need to be transparent about impacts, both costs and benefits, and how various energy choices impact throughout the energy system in Canada.

Finally, I'd say that a balanced approach to policy is only effective if we have a world-class regulatory system in Canada—and I believe in most respects we do in fact have that.

Mr. Chairman, members of the committee, thank you for your time. I look forward to your questions.

**The Chair:** Thank you very much, all of you, for your presentations.

This is just fascinating. I grew up with the oil and gas industry around me in the late sixties and early seventies, and I want to say that there have been remarkable changes in terms of the technology used and the environmental considerations. Thanks for bringing a little bit of that to us today.

From the official opposition, let's start with Monsieur Coderre, for up to seven minutes, please.

● (1130)

[*Translation*]

**Hon. Denis Coderre (Bourassa, Lib.):** Thank you, Mr. Chairman.

Good day, gentlemen.

Just to be sure we are not strictly talking about perception, I would add that for my part, I had the pleasure of meeting with members from a number of your organizations several weeks ago in Alberta. I also had an opportunity to visit the Suncor facilities. We had extremely frank and honest discussions with CAPP representatives. We also met environmentalists and first nations leaders.

Mr. Lambert, there is one thing I find quite interesting about your approach.

[*English*]

We need, frankly, a well-framed dialogue. If we believe, and rightly so, that the oil sands are a strategic resource, this shouldn't also be at the cost of our quality of life and our environment. I think we need a balanced approach, which is what I felt from what you said.

You have a famous name in Alberta, that being Dr. Schindler. He is coming out with some figures and some numbers, including on toxicity rates and all of that. You spoke about political freedom. I understand also that there might be some problem between the federal government and the Alberta government, because you don't have the feeling...who's doing what; there seems to be a problem there.

My first question—I would ask it of all three of our witnesses—is about our need for transparency if we want to make sure that everything will be okay. Transparency means having scientific figures. We have issues with the water; we have issues with the toxicity of the air; we have issues with the tailing ponds. I understand that we now have new technology.

What would be in the best interests of the Canadian people? I'm thinking of a monitoring process that would be acceptable and that would really show two things: first, that you're for real, and second, that we're addressing.... I'm talking about perception here. That would provide, probably from coast to coast to coast, a better perspective, or would address some of the perceptions that people might have against the oil sands.

Maybe, Gordon, you could start.

**The Chair:** Mr. Lambert, do you want to start, please?

**Mr. Gordon Lambert:** Certainly. Thanks.

I will say at the outset that the protection of the Athabasca River and the assurance of the quality of that Athabasca River basin is a common interest across all participants in the dialogue—the federal government, Alberta government, and industry.

I do think it's important that we get a fact-based discussion under way on that topic. I think the creation of this panel that the Government of Alberta has sponsored, which will have Dr. Schindler sitting down with fellow scientists to really determine what the data tells them, is an important first step.

I also believe that the dialogue under way on establishing a world-class monitoring program for the Athabasca River is a worthwhile discussion as well. Because this is a world-scale resource, we need to set the bar very high on the approaches we take to the integrity of the science and the assurance for the public that environmental protection is occurring at a proper level.

I think the actions under way are appropriate. We are hopeful, though, that at the end of the day the two panels, the Alberta panel and the federal panel, could come to some agreement on common findings. That's something we're encouraging strongly. We don't want to have battling views on the science going forward, that's for certain.

Thank you.

**The Chair:** That's fair enough.

Mr. Collyer.

**Mr. David Collyer:** Thank you. There are a couple of comments I would make.

First, industry does believe it has a robust monitoring system in place. Having said that, we must be open to, and we should be open to, improvement in that. What we've said very clearly is that with the third-party review process that is under way—we would have preferred that it be one review rather than two, but we have the two different panels in operation—if they advise us and highlight that there are opportunities to improve that, then clearly industry needs to take that on board.

I think we do need to be open and transparent about data. There's no question about that. I think the whole notion of third-party review and validation by independent scientists makes a lot of sense, in any monitoring program. We should not be debating the basic data. We should have confidence, I think collectively, that we have good data that gives us confidence we are in fact measuring the right things, measuring them consistently and appropriately, and that we're very transparent about the results.

● (1135)

**Hon. Denis Coderre:** One of the questions we had concerns the relationships with first nations. Of course we're talking about the fact that you're providing a lot of jobs. You can provide some figures saying you're hiring. But it seems that in their minds, because it came from them, the leadership feels they are not part of it. It's not inclusive. It's one thing to be hired by the companies, but it's another to have a piece of it.

What would you tell them? What kind of relationship...or in what kind of deal—let's put it this way—in an inclusive way could you put first nations with the industry?

**The Chair:** Mr. Collyer, go ahead, please.

**Mr. David Collyer:** There are a few comments I would make.

First of all, industry does go to some lengths to try to ensure there is effective consultation and engagement with aboriginal groups.

I personally believe, having worked at Shell for a long time and having been engaged with the Fort McKay First Nation, that the engagement with that group goes well beyond simply jobs. There's been a lot of work put into capacity-building, helping the Fort McKay First Nation develop businesses where they have an equity interest and they are more directly involved in the business of oil sands.

Having said that, there is only so far that industry can go. There are other issues pertaining to the relationship with governments and so on that are also relevant to that discussion. The capacity of industry to deal with that breadth of issues is obviously, and I think should be, limited.

We need to work with some of the other first nations in the Fort McMurray area, I think, to build the same kinds of relationships we have with Fort McKay, which I look at as a model of how this should work. We also have to be realistic—Mr. Lambert might have a comment on this—about the timeframe in which that can happen. Fort McKay has been involved in oil sands for a long period of time, and both the capacity and capability in the Fort McKay First Nation have evolved over an extensive period of time. So we have to be realistic, I think, about how quickly that can happen with some of the other first nations in the Fort McMurray region.

**Hon. Denis Coderre:** Mr. Lambert, perhaps I can add and highlight some comments.

You spoke a lot about political freedom, and I think the federal government has a role to play. There is, of course, a convention where it's up to the province to take care of the resource. Would it be a role of the federal government regarding that issue of first nations? We spoke about monitoring. What should be the role of the federal government?

**Mr. Gordon Lambert:** Certainly a key role of the federal government relates to the education system for first nations communities and the importance, at that fundamental level, of encouraging a higher graduation rate of students from schools in those communities. That's a more difficult place to intervene, but it is at the foundational level for what's needed to take advantage of the opportunities within the sector.

Fort MacKay was used as an example by Dave Collyer. It was an intervention at the school level, initially, that helped to get them to where they are today.

We have an important pilot program under way currently, in the community of Janvier, that is directed at students. It's involving collaboration between the federal government, the provincial government, and industry to help encourage that graduation rate from elementary right through to the secondary level.

It could be replicated elsewhere. Early signs are encouraging. But the communities also need to have an inherent desire to receive this assistance, too. It's a partnership in the true sense of the term.

**The Chair:** Thank you, Monsieur Coderre.

We will go now to Madame Brunelle, for up to seven minutes.

[*Translation*]

**Ms. Paule Brunelle (Trois-Rivières, BQ):** Good day, gentlemen.

In September 2009, G20 leaders acknowledged the following: Inefficient fossil fuel subsidies encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources, and undermine efforts to deal with the threat of climate change.

Following that, Canada committed to completely eliminating tax deductions for oil sands projects. Three hundred million dollars per year was the figure that was quoted. Apparently, according to research by the International Institute for Sustainable Development in Geneva, these tax deductions amounted to $1.3 billion per year, in fact. You are therefore aware that Canada should further commit to reducing these deductions.

On this point, Mr. Wright, you referred to the new THAI technology, saying that your operating costs are lower. Is this good news in that you could do without these tax benefits from the Government of Canada?

● (1140)

[*English*]

**Mr. John D. Wright:** Well, to begin, I'm unfamiliar with what tax advantage the Canadian oil industry has over other industries. Certainly I think there are different deductible rates for investments that we make in our industry versus the life expectancy of assets and so forth. Beyond that, quite frankly I can't tell you what advantage our industry might see.

I can tell you from working internationally that the tax regime in Canada is very similar to what we experience in Latin America, for example. I can go further than that and say that I think the single biggest reward that the Canadian government can get for any type of encouragement in investment is a long-term flow of taxable income. Obviously that's the goal of any public company, because that in fact is the ability for us to deliver returns to our shareholders, but also, my hope is that our technology will generate substantial tax revenues for the government.

[*Translation*]

**Ms. Paule Brunelle:** Some measures were designated, including 100% tax deductions for operating costs or 30% for development costs. There is also some mention of flow-through shares and amortization rates. So there are hosts of measures, but we cannot lose sight of the fact that in responding to G20 pressures, the Canadian government will have to...

When we are looking at $1.3 billion per year in deductions to encourage companies while we are in the process of signing economic agreements with Europe, I think it is a matter of fairness, we will have to address these issues.

Mr. Collyer, would you like to respond?

[*English*]

**The Chair:** Go ahead, Mr. Collyer.

**Mr. David Collyer:** Thanks for the opportunity to comment on that point.

We're familiar with the study that's been put out. Our observation of that study is that it has been written from a particular perspective that does not represent a balanced view. There are some very fundamental errors in the study, frankly, in terms of highlighting tax deductions that are represented as being unique to the oil and gas industry but that are, in fact, applicable to other industries. The deduction of things like operating expenses is standard tax practice that applies to any industry.

So we fundamentally disagree with the conclusion of that study. I would refer you to some of the more recent work by the IEA on behalf of the G-20 that I think takes, frankly, a much more balanced view of the question and represents the oil sands in a light quite different from that of the IISD study.

[*Translation*]

**Ms. Paule Brunelle:** Very well.

Mr. Wright, you are saying that the government now needs a streamlined regulatory environment.

What do you mean by that?

[*English*]

**The Chair:** Go ahead on a point of order, Mr. Allen.

**Mr. Mike Allen (Tobique—Mactaquac, CPC):** Mr. Collyer was pointing out the IEA study. Could the clerk get us a copy of that study? I think it would be very helpful for our report.

**The Chair:** Thank you very much, Mr. Allen. We will do that. I think everybody should have a copy of that study.

Carry on please, Madame Brunelle.

[*Translation*]

**Ms. Paule Brunelle:** Mr. Wright said in his presentation that the government should ensure a streamlined regulatory environment. I would like to know what he means by that.

[*English*]

**Mr. John D. Wright:** Thank you.

I think it's important to recognize that the regulatory system we have in Canada is the best in the world. The application of that regulatory system and the approval system in order to get projects over the goal line and into production is a very important part of how business makes a decision to operate in a particular jurisdiction.

Our hope would be that at the federal and provincial levels there would be a common mindset toward making sure regulations are followed and making sure approvals are reached in an acceptable manner, but with no duplication of paper, with no duplication of authority, and with a very simple end goal of making sure that we are approving the best-engineered and best-thought-out projects and making sure that they meet all the requirements of all levels of government in a very simple manner.

● (1145)

[*Translation*]

**Ms. Paule Brunelle:** With respect to duplication, we are obviously in agreement with you. That is a provincial area of jurisdiction and the federal government should stay out of these matters as much as possible.

Environmental questions are of great concern to us. As you know, there is a lot of pressure on your industry. You have really focused on carbon capture and storage projects, but according to some, this technology has not been proven.

What you have to say about this? Would this really be the solution to pollution problems generated, unfortunately, by your industry's activities?

[*English*]

**The Chair:** Who would like to start?

Would you like to add, Mr. Lambert?

Go ahead, Mr. Collyer.

**Mr. David Collyer:** Maybe I could start, and Mr. Lambert and Mr. Wright can add.

I believe there are three opportunities to reduce greenhouse emissions from the oil sands. Mr. Lambert already referred to the 40% reduction in greenhouse gas emissions per barrel since 1990. That's significant. Frankly, it's far greater than what's been achieved on the downstream use over that same period of time.

Looking forward, I think carbon capture and sequestration will play a role. I think we'd all acknowledge that there is a gap in terms of the economic viability of those projects at this point in time, but I think they will have application.

A project in Weyburn that's operational today is recovering incremental crude oil from recovery and transport of carbon dioxide to that field. That is an opportunity, but I think it's fair to say it will have focused applications.

The second one is improving the efficiency of our service operations. That's where a lot of the benefits have come from up to this point.

Third, and I think probably most importantly, in terms of the mix of future production from oil sands and the increasing importance of in situ, I think there are tremendous opportunities to, in effect, improve the efficiency of the extraction process. Mr. Wright talked about one of those; many others are being looked at. I think we understate the potential improvement opportunity from the in situ part of the oil sands business that will come from more efficient extraction. Whether that comes from use of solvents, lower temperatures, steam, or innovative recovery processes such as Petrobank is applying, I think there is tremendous opportunity there, and we should not understate its potential going forward.

**The Chair:** Mr. Lambert, could you give a very short response? We're over time here a little bit for Madame Brunelle.

Go ahead, please.

**Mr. Gordon Lambert:** I certainly agree with the notion that there aren't any silver bullets here, but carbon capture and storage does represent an important option. It's at an early stage of technology development, so it's costly today, but I would highlight the creation of an entity known as Carbon Management Canada. It's housed at the University of Calgary, but is federally funded through the centres of excellence program. It is bringing 22 universities and those researchers together to try to drive the costs of CCS down, plus put more options on the table.

In addition to that, there's innovation under way, as Mr. Collyer suggests, that has some promise as well. One field test we'll be doing next summer is on an oxygen-fired SAGD boiler. It uses oxygen instead of atmospheric air as the combustion air for natural gas. It produces a relatively pure carbon dioxide stream and eliminates any NOx emissions as well.

So we have many irons in the fire. More options are better.

Thank you.

**The Chair:** Thank you.

*Merci, madame Brunelle.*

I want to say, Mr. Cullen, it was much easier dealing with your motion with you not here.

**Mr. Nathan Cullen (Skeena—Bulkley Valley, NDP):** I'm sure it was.

**Voices:** Oh, oh!

**The Chair:** Go ahead please, Mr. Cullen.

● (1150)

**Mr. Nathan Cullen:** He's a tricky chair, this one.

Thanks, gentlemen, for presenting.

Mr. Lambert, I don't know how popular Suncor has been around the energy producers for its comments on the need for some sort of national dialogue, but I take note, again, that you folks repeat that a dialogue on a sustainable energy strategy is required in this country.

Elements of that, I think, are what are most important to this committee's study of energy security, trying to understand if there is a national energy security strategy or a national sustainable.... I mean, we could use some words interchangeably; I use energy security and sustainable energy that way.

Would elements that include dealing with foreign ownership, for example, be of some question—elements of exportation of raw materials? I'm trying to understand....

It's very hard to define energy security, actually. We know this. But in that dialogue, would those be some of the elements of conversation that you folks at Suncor would imagine?

**The Chair:** Mr. Lambert, go ahead.

**Mr. Gordon Lambert:** For absolute certain, the outcomes a strategy should encompass should take into account economic outcomes, environmental outcomes, and social outcomes that are important to Canadians. There's a need for a broad view because of how energy touches so many parts of our economy and our society.

**Mr. Nathan Cullen:** If those are the three pillars or elements that you see—I couldn't disagree with those ones—the notion of environmental liabilities is a question that comes up with the tar sands all the time. If there's a long recovery process or a cost that's going to be deferred to the public in general, that's of concern to the public. I'm sure your company understands that. Is that fair?

**Mr. Gordon Lambert:** Yes.

**Mr. Nathan Cullen:** Okay.

On the question around reclamation specifically, you noted today that Suncor has made some investments. Should there be an industry standard?

What is the industry standard right now for reclamation of a tailings pond? When does it have to be returned to its natural state under the law right now in Canada?

**Mr. Gordon Lambert:** It's a provincially regulated activity. We file reclamation plans that are part of the approvals of oil sands projects. Those reclamation plans assign timelines and milestones that are used for assessing our progress.

**Mr. Nathan Cullen:** I know they're in the plans, but do they tend to have an average? You're talking about 30 years down to 10 years; is it 40 years? Is there an industry average? Is there something that you internally set? Does the Province of Alberta ask you to set some target on average, or is it always specific to the project itself?

**Mr. Gordon Lambert:** It has historically been specific to the project itself, based on the type of mine planning and the nature of the operations of any given project. However, I would alert the committee that the ERCB and Alberta Environment have recently tabled further clarity on tailings treatment and reclamation that is providing additional framework elements to how we conduct mining and tailings management operations.

**Mr. Nathan Cullen:** First nations relations were raised earlier. The terms accommodation and consultation are often used. Those are the legal terms as defined by the Supreme Court, yet there is no working definition from the federal government of what it is for a company to accommodate and consult. It also seems to be project specific, first nations specific.

Would it be helpful if there was a working definition, if the Government of Canada said, “To tick this box, you must go through the following steps”, just as you folks do with other requirements of your projects?

Mr. Collyer, to your members, would that be helpful?

**Mr. David Collyer:** There are consultation guidelines in place today, as I think you are aware—

**Mr. Nathan Cullen:** Yes. I'm sorry, I'll be specific with my question. What I mean is for you to legally be able to stand in court or go to your shareholders, the companies that you represent, and say, “We have done accommodation and consultation. It looked like this. That's what the feds asked us to do, and that's what we did.”

**Mr. David Collyer:** I think there are two aspects of that.

One is that we would certainly agree that clarity on consultation requirements would be helpful.

Second, accommodation is a more complex issue, as I'm sure you understand, that involves both the role of industry and the role of governments. I think the clarity we're seeking there is what is the role of industry vis-à-vis that of government.

**Mr. Nathan Cullen:** Right. That's a fair point.

Mr. Wright, I was confused by your comment about there being no special tax allocations to oil and gas, particularly because in part of the budget submissions this year, there's further tax alleviation being sought by the industry. But the Canadian exploration expense, the Canadian development expense, the Canadian oil and gas property expense, the capital cost and accelerated capital cost allowance expense—these are all in place to alleviate the tax burden on energy companies, oil companies, as well as some other industries.

My question is this. There was a budget memo leaked in May of this year that, from the finance department side...they said if Canada has made this commitment at the G-20, which my colleague read out earlier, in terms of removing subsidies to the oil and gas sector because they're harmful to the economy and they're harmful to the environment. If they don't exist, why are internal memos in the finance department asking the government to consider removing them?

How can they remove something that doesn't exist, in your view?

● (1155)

**Mr. John D. Wright:** I think you're asking me a question about the inner workings of government, which would be far beyond me. But I can say this: deduction of operating expenses is a common deduction in any tax regime I've ever done business with in the world.

On the oil and gas front, what's called the Canadian exploration expense is typically either seismic drilling or exploratory drilling in wildcat areas or dry holes, dry and abandoned wells, which are typically written off as a total loss to the company at a 100% rate, again in almost every jurisdiction on earth that I'm aware of.

As well, in terms of the rate of deductibility of all other expenses, you talked about Canadian development expenses, which are deducted at a 30% declining balance rate, and capital cost allowance, which is typically a 25% declining balance rate. Those are very standard depreciation rates recognized across a number of tax regimes.

There are variations on how taxes are paid. As an example, if you drill a well in the North Sea in Norway, you'll actually receive a cash payment from the government equivalent to 80% of the cost that you incurred on that well as a return on your tax payment. That's something the Canadian government doesn't do.

**Mr. Nathan Cullen:** Let's not worry ourselves as much with Norway in the sense that—

**The Chair:** Mr. Cullen, I'm sorry, your time is up.

We'll go now to Ms. Gallant, for up to seven minutes.

**Mrs. Cheryl Gallant (Renfrew—Nipissing—Pembroke, CPC):** Thank you, Mr. Chairman.

I'd like to start off by bringing this down to the human level. The average everyday Canadian mostly cares about what it costs to fill up the tanks in their vehicles. The increase in inflation last month over this month was mostly attributed to increased fuel costs.

Can you tell me how production in the oil sands impacts the cost of gasoline, and how it will in the future impact on the individual filling up their tank, if we do versus don't develop the oil sands, or if we go at a slower pace versus a faster pace?

**Mr. David Collyer:** I can take a crack at that one.

**The Chair:** Go ahead, Mr. Collyer.

**Mr. David Collyer:** Thank you.

I think the first important point is that the price of oil is clearly not set in Canada. This is part of a global market, and the price of oil is determined by global factors.

I would submit the view that the more supply that is available to consumers, the more choices that are available, the more likely it is that prices will stay at a more affordable level. I think if you look at the natural gas market, just to take another example right now, we've moved from a period when natural gas was priced in excess of $10 per MCF. With the abundance of shale gas in the North American market, we're now looking at a price.... Don't hold me to a future price forecast, but people are now talking about $5, $6, $7 per MCF as a stable, long-term natural gas price.

I think you could take that same analogy to oil sands and say that the more robust and abundant the supply is, the more choices there are for consumers and the more likely that will keep prices in a more affordable range. But I'd also reinforce the point that the price of oil is established in global markets, not in the Canadian market.

**Mrs. Cheryl Gallant:** Right.

I was rather surprised by something at a mining association meeting the other day. There was somebody from the oil sands, and we were talking about future costs of fuel. He said it wasn't in the best interests of the oil sands to see the price per barrel continue to increase exponentially, that there's a point of diminishing returns.

Could you explain in economic terms why there would be a point for the oil sands companies at which they wouldn't want the price per barrel to increase that steeply?

**Mr. David Collyer:** I can't comment on that specific point, because I don't know the context in which he was talking about it.

Like any product, I think it's important that there be a balance between what's attractive to the consumer and what's attractive to the producer. We have to try to find that price level that works for both in the market.

● (1200)

**Mrs. Cheryl Gallant:** Energy security is very much the topic at our NATO parliamentarian association meetings. When we talk about energy and our abundance in the oil sands, our colleagues across the pond refer to the oil from oil sands as “dirty oil”. When I ask them what they mean by dirty oil, they say, well, it burns dirty—more dirty than the oil from the Middle East or anywhere else.

Is there an independent study we can refer to that would show a how clean the oil sands products burn compared to production in other parts of the world?

**The Chair:** Mr. Lambert, then Mr. Collyer.

**Mr. Gordon Lambert:** First of all, I'd just highlight that the fuel burned in Canada in our gasoline use is as clean as any fuel in North America or in the world. We have sulphur removed from that fuel. That was through regulation. So the fuel quality exiting the refineries is equivalent to the best anywhere.

On life cycle greenhouse gas emissions, a lot of work is under way to benchmark Canada and Canadian oil sands versus those other crude sources. It appears the more data that comes available in that front is showing more close to equivalency that the oil sands are achieving relative to those other sources.

Quite simply put, we don't view the term “dirty oil” as appropriate at all.

**Mrs. Cheryl Gallant:** So the emissions are the same or lower than production in other parts of the world.

**Mr. Gordon Lambert:** It's close to equivalent in terms of the life cycle view of that, yes.

**Mrs. Cheryl Gallant:** Our colleagues aren't really sure why they hear this “dirty oil”. They just know they hear it over and over again. This is often the mantra of environmental groups.

These groups always demand independent studies, and guffaw at any studies that are funded, even in part, by the oil industry. But they don't reveal how they themselves are funded or how the studies they conduct are funded.

You know your competition best. Is it possible that competitors, or governments from other countries, are funding groups to depict our oil sands industry in a lesser light?

**The Chair:** Mr. Collyer, go ahead.

**Mr. David Collyer:** I have two comments.

Referring to your earlier question, there is what I think is a very good study done by Cambridge Energy just recently that we'd be happy to provide to the committee. It was done independently by a very well-respected independent consulting firm. I think it gets at your questions around greenhouse gas emissions.

I would not know, and wouldn't comment on it specifically, whether governments are funding some of the opposition. I know that other governments are clearly injecting themselves into the dialogue in Canada with respect to how we should approach the oil sands and our energy system more broadly. I do know that much of the opposition to oil sands that we see in Canada is being funded by either environmental groups or foundations from outside this country, who I would argue do not have the best interests of Canadians at heart when they wake up in the morning.

So clearly there is a fair bit of opposition coming from interests outside Canada, some of it I think founded on their particular views around the appropriate balance of energy development and climate policy, and some of it, I would argue, very much representing their own interests with respect to some of these issues.

**Mrs. Cheryl Gallant:** We read in the newspaper that water samples taken downriver from a bitumen extraction point have a higher bitumen content than water samples taken upriver. Aside from the obvious, which would appear to be tailings or some result of the bitumen mining process, could you offer any other explanation as to the higher content of bitumen downriver than upriver?

**The Chair:** Mr. Lambert.

**Mr. Gordon Lambert:** This panel that the Alberta government has put in place is to try to reconcile these different views of this data. Dr. Schindler will be sitting down with other scientists to assess this.

It's important to note as well that the Athabasca River has hydrocarbon that outcrops on the bank of that river as part of its normal course. This means you have hydrocarbon bitumen entering the Athabasca River just through that outcropping of the oil sands resource itself. Separating out the background levels of substances that arise from those natural sources of oil, versus the oil sands, is one of the real challenges.

● (1205)

**The Chair:** Ms. Gallant, we're out of time.

Thank you, Mr. Collyer, Mr. Wright, and Mr. Lambert, for being here.

Do you have a point of order, Mr. Allen?

**Mr. Mike Allen:** No, the clerk looked at me anxiously when Mr. Collyer brought up the other study he's prepared to give the committee. I know that the clerk is going to jump on that one too.

**The Chair:** Yes. We have noted that. Thank you very much, Mr. Allen.

Do you have a point of order, Mrs. Gallant?

**Mrs. Cheryl Gallant:** On a point of order, we just heard that there's bitumen along the actual shoreline, on the banks of the Athabasca River. I would like either our witnesses or our analysts to get a photograph of that. Just in case we do a report on this, I would like to see what they're talking about.

**The Chair:** That's not a point of order, but we will....

Mr. Collyer has volunteered to provide that.

Thank you very much, Mr. Collyer.

Again, thank you all for coming.

We will suspend for a couple of minutes and then have the other witnesses come to the table.

● _____ (Pause) _____

●

● (1210)

**The Chair:** We will resume our meeting, with our second panel of witnesses.

We have by video conference, from the University of Calgary, Professor David Keith, Institute of Sustainable Energy, Environment and the Economy. Also with us, from the Pembina Institute, is Simon Dyer, policy director. From the Canadian Association of Energy and Pipeline Landowner Association, we have David Core, chairman and chief executive officer, as well as John Goudy, policy adviser.

Welcome to all of you.

We will have the presentations first, and we will start with Professor Keith.

Go ahead, please.

**Dr. David Keith (Professor, Institute for Sustainable Energy, Environment and Economy, University of Calgary):** Thank you very much for having me today.

I'll start by saying a few words about energy security and the extent to which this topic really is an energy security topic, and then talk a little bit about strategy and tactics around the climate and environmental concerns of the oil sands.

First, on energy security, there are very serious and real energy security concerns in this world. These range from the concentration of the remaining easy oil in the Middle East and the security concerns that come from that to the loose nuclear weapons around the world to the European dependence on natural gas from the Soviet Union. But I think in a Canadian context there really aren't that many energy security concerns that are interesting.

I think the ultimate reason we're having this hearing today, and the reason for the focus on oil sands, has very little to do with energy security. The oil sands and related things like the oil sands, which in some ways you would say includes coal to liquids, are things that produce in principle essentially unlimited supplies of hydrocarbon fuels for the transportation sector at relatively low operating costs but very high capital costs. And those are things that are very important for being able to provide hydrocarbon fuels in the long run but have little to do with energy security, because they can't swing their supply quantities very quickly.

I'll say a few words about strategy and tactics that I hope will help to separate out some of the conflicting claims that you hear about the oil sands or that you heard in the last session.

One frequently hears the industry state that the oil sands aren't particularly worse than conventional oil. Gord Lambert in the last session said that studies were increasingly showing that they were about the same as conventional oil, for example, on life-cycle greenhouse gas and for a variety of other topics. You hear very strong concerns on the other side from the environmental community.

I want to speak to what I think is going on underneath that. I think some of the things the industry says are quite correct. The oil sands are not the greatest environmental disaster on the planet. By many measures, they're only a little bit worse than conventional oil. On greenhouse gas emissions, they're clearly worse.

Just for the record, I have set up, from expertise at Carnegie Mellon University and elsewhere, one of the most serious academic efforts, working closely with industry, to examine the oil sands life-cycle emissions.

I do not believe the claim that they are about the same as conventional is a fair or correct claim, or supported by evidence. It is true, however, that they're not ten times worse. On a well-to-wheels basis, they're maybe 20% worse or something like that, and on a point-of-production basis, they are worse by a factor of maybe two or more.

I think it's also fair to say that some of the concerns—for example, about water contamination—are overstated. There may be some water contamination problems, but at this moment they don't appear to be all that serious.

The climate problems, though, are very serious. The reason that large environmental groups, including large environmental groups from outside the country, are targeting the oil sands has a strategic core that is completely sensible and justified, and, contrary to the comments we heard last, in my view is completely in the interests of Canadians.

In tapping into the oil sands, we are tapping into one of the world's largest carbon stocks. Tapping into it commits us technologically to enormous future carbon emissions. The principal carbon problem is not the carbon emissions from production, it's the carbon emissions from use, and those carbon emissions are very serious.

I'll give you one sense of it. Some of you have probably heard too much about climate models and may be doubtful, but climate models are not the only reason. Although they're a reason that goes back, actually, 100 years, that gives us a lot of confidence about the kind of climate problems we face, and the scientific basis for concern, but they're not the only basis.

Fifty-five million years ago we had a natural release of carbon at the Paleocene–Eocene thermal maximum of about, in round numbers, 1,000 gigatonnes of carbon, similar to what humanity may release this century. The results were dramatic. It was one of the largest mass extinctions in the fossil record. The climate changes were simply stunning. We didn't have an advanced civilization at that point. We didn't have cities on the coastline. We didn't have an agricultural system acutely attuned up to the current climate. But if we had, I think it's fair to say that the results would have been pretty damaging.

The amount of carbon in the oil sands alone is a quarter of what it takes to do that, roughly. There is something like 250 gigatonnes of carbon. So it is completely sensible and legitimate and strategic for the large environmental groups to want to stop access to that resource.

● (1215)

In my view, their strategic concern is not to clean up local production, because that's not the underlying fundamental concern—although, in the tactical sense, that's what they say. There will be lawsuits about their ducks, which I don't think is really a very serious problem. Ducks are a serious problem, but the ducks dying in tailing ponds are much less important than the actual impact on wildlife from land use changes or the ultimate impact from climate change.

But the large-scale climate changes that are entailed in accessing that carbon resource are large. The strategic view of the large environmental groups—and I've worked with some of the larger groups in the U.S. and in the world—is that it makes sense not to access that resource. That means to shut them down, and that means that the real focus of those groups is not to clean up but to end. I think it's important to have that clearly in one's mind.

Now, we in Canada and we in Alberta have separate interests, and we have to think about balancing these interests. I'm perfectly aware that my salary comes ultimately from the oil wealth in this province, and I don't advocate an immediate shutdown. But we do have to be clear-eyed about the fact that we cannot keep producing this carbon forever and expect to have a stable climate.

I think the security concern, the economic security concern, comes from the risks we bear in committing ourselves substantially to an economy tied too tightly and too solely to oil sands extraction. At some point, whether Albertans like it or not, there will be serious regulation, and when that happens, people in my town of Calgary will be walking away from their homes unless we have done serious work to diversify beforehand.

I think we face both a climate threat, which is real, and an economic threat, which comes from an overly intense concentration of industrial wealth on this topic. We need to think hard about how to manage those twin threats.

Thank you.

**The Chair:** Thank you very much, Professor.

We'll go now to the Pembina Institute and Simon Dyer, policy director.

Go ahead, please, for up to seven minutes.

**Mr. Simon Dyer (Policy Director, Pembina Institute):** Good afternoon, Mr. Chair, and good afternoon, committee.

My name is Simon Dyer. I'm the policy director for the Pembina Institute in Calgary. The Pembina Institute is a sustainable energy think tank, and my policy research focus is on oil sands development.

The topic of today's hearing is energy security as it relates to the oil sands. The term “energy security” is thrown around with increasing frequency, especially with regard to the oil sands. But it's rare for those using it to actually define what energy security means. It implies, I think, the idea of energy availability, but this is a superficial and inaccurate interpretation of energy security.

I draw your attention to the International Energy Agency, which defines energy security as the “uninterrupted physical availability” of energy “at a price which is affordable, while respecting environment concerns”. Clearly, then, we need to consider economic costs versus benefits of energy and we need to consider environmental impacts of its production and consumption in any definition of energy security.

With regard to the oil sands, then, of course they hold a very large amount of oil, so physical availability is not a problem, but there are both environmental and economic impacts that undermine the extent to which we can say the oil sands contribute to Canada's, North America's, or the world's energy security.

Given Canada's abundant energy resources and relatively small population, when we're talking about energy security I think we're thinking about not so much domestic supply as our security as a supplier of energy. So how do we supply energy in a way that meets global obligations to reduce greenhouse gas emissions and at the same time protect Canadians from the environmental impacts at home?

The world is aggressively seeking cleaner sources of energy, and we should not take it for granted that our historic position as a supplier of fossil fuels will continue in the future, especially as it's increasingly evident that Canada is not doing its fair share to reduce greenhouse gas pollution and is failing to adequately enforce the law around oil sands development.

I'd like to draw the committee's attention to yesterday's editorial in this week's issue of the journal *Nature*, considered one of the most prestigious scientific publications in the world. It concerns the oil sands. I'll quote from it: It would be unrealistic to expect that we could harvest fossil fuels or minerals without an effect on the environment. No form of mining is clean. But the fast development of the tar sands, combined with weak regulation and a lack of effective watchdogs, have made them an environmentalist's nightmare.

This is not environmentalists saying this; this is the journal *Nature*. Canada's reputation as a responsible supplier of energy as related to oil sands is being damaged. It's being damaged not because the oil sands have a public relations problem; it's being damaged because development is not proceeding responsibly.

If Canada and Alberta continue to focus on public relations and neglect their responsibilities to enforce existing laws and regulations, the federal government will be exposed to continued legal challenges, the industry will be vulnerable to tougher environmental restrictions in the marketplace, and Canadians will be exposed to economic uncertainty and competitive challenges resulting from tying the value of our dollar to the price of oil.

In October, the Pembina Institute, along with the environmental organizations Environmental Defence and Équiterre, released *Duty Calls: Federal responsibility in Canada's oil sands*. I want to highlight some of the key findings of that report.

A key finding of the report is that government's math on carbon emissions in the oil sands simply doesn't add up. If expansion of the oil sands proceeds as planned, the oil sands industry will outspend its proportional share of Canada's carbon budget under the government's current target by a factor of 3.5 times by 2020 and by a factor of 40 times by 2050. That's even assuming a very optimist application of carbon capture and storage technology. The oil sands sector must do its fair share to reduce greenhouse gas emissions along with the federal government's commitments.

Our study also showed that we need to acknowledge and minimize negative economic impacts of oil sands development and address petro-currency impacts on Canada's manufacturing sector. We need to protect water quality by setting and enforcing environmental limits to meet the requirements of the Fisheries Act. We need to protect wildlife by enforcing the Species at Risk Act for woodland caribou and working with Alberta and Saskatchewan to create a regional network of protected areas. And we need to set binding caps on air pollution according to the Canadian Environmental Protection Act.

Until Canada acts in these areas, we cannot fulfill our role as a responsible, secure supplier of energy, and this will hinder Canada's ability to develop and market our resources. The governments of Alberta and Canada are over-promising and under-delivering environmental management in the oil sands.

I also want to talk a little bit about some of the predictions of how much oil the world needs. When discussing oil sands, Natural Resources Canada makes a habit of placing development of the oil sands in the context of future global energy demand as assessed by the International Energy Agency. We heard similar comments this morning from both Suncor and CAPP.

● (1220)

The department consistently misuses the IEA's analysis, including the recent testimony of Mr. Mark Corey before this committee. Mr. Corey noted that the IEA projected that global energy needs "will increase at about 1.5% per year until 2030, which would be an overall increase of about 40%". But both NRCan and Mr. Corey based this premise on the "reference scenario" of the IEA's *World Energy Outlook*, which the IEA actually notes on its website is most definitely not a forecast of what will happen but a baseline picture of how global energy markets would evolve if governments made no changes to their existing policies and measures.

Furthermore, the IEA notes that the reference scenario is actually based on a scenario that takes us to greenhouse gases in the atmosphere of a concentration of 1,000 parts per million and a temperature rise of six degrees. This would almost certainly lead to massive climate change and irreparable damage to the planet. In other words, it seems that NRCan is hedging on a bleak, unlivable world that fails to deal with climate change as a place where we maximize bitumen production.

Not only is NRCan describing the reference scenario as a projection that somehow supports the case for oil sands development, but they also fail to acknowledge that the reference scenario is in direct contradiction to Canada's commitments under the Copenhagen accord, which Canada has endorsed, and which would set the objective of limiting the increase in global temperature to 2° C.

So I think it's fair to say we need to start being honest about the inconsistency between projected oil sands expansion and Canada's commitments to reduce greenhouse gases. As I've stated before, the math does not add up, and ignoring this fact does not address the looming problem. In a world where we need deep reductions in greenhouse gas pollution, there is no energy security without climate security.

I would say, though, that now I need to agree with Suncor: there's a growing consensus that there's a need for a national discussion on energy and the environment. The stakes are simply too high around oil sands development, both economically and environmentally, for development to proceed as it is in the current piecemeal fashion without a coherent vision and a plan that demonstrates how oil sands development can fit into a clean energy transition.

A U.S. journalist said to me last week—referring to the disconnect between Canada's Copenhagen target and its increasing oil sands emissions and the continued downplaying of evidence of pollution from the oil sands—that it seems like the oil sands are defying gravity up there in Fort McMurray.

I think that sums up what we need to do in terms of addressing the issues coherently.

Thanks very much for the opportunity to present today, and I look forward to your results. Thank you.

● (1225)

**The Chair:** Thank you very much, Mr. Dyer.

We go now to the Canadian Association of Energy and Pipeline Landowner Associations.

Who will make the presentation today?

Okay, Mr. Core, go ahead for up to seven minutes, please.

**Mr. David Core (Chairman and Chief Executive Officer, Canadian Association of Energy and Pipeline Landowner Associations):** Thank you, Mr. Chairman.

We'd like to thank the members of the committee for the opportunity to speak with each of you today. We are appearing on behalf of CAEPLA, the Canadian Association of Energy and Pipeline Landowner Associations.

My name is Dave Core, and I am CAEPLA's CEO. I am accompanied by John Goudy. John lives and works on his family's farm in southwestern Ontario. He is a practising lawyer and a member of CAEPLA's board of policy advisers.

Let me begin by saying that CAEPLA is a pro-development organization. We have several dozen regional and provincial affiliated associations, including four provincial pipeline landowner associations, which, to the best of our knowledge, are the only provincial pipeline landowner associations in Canada.

The individuals who gave birth to CAEPLA are landowners who'd come to understand that the NEB is not a public interest regulator in the sense that any normal person would understand a public interest regulator to be. For all practical purposes, the NEB has three mandates—as an energy industry facilitator, as a regulatory watchdog, and as a quasi-judicial body and sometimes ombudsman that is seemingly obligated to represent the interests of the people its policies affect.

As an industry facilitator, it is a success. As a regulatory watchdog, it is passive and theoretical. As a sometimes ombudsman giving due regard to the legitimate interests of landowners, it is a failure.

For many years, growing landowner resentment toward the NEB has bubbled beneath the surface. It didn't spill into the public arena because few landowners had been subject to its regulatory provisions. Alberta regulates about 400,000 kilometres of pipeline. By way of contrast, up until recently the NEB's pipeline portfolio was about one-tenth that size. Due to oil sands and other production factors, this is, and will be, dramatically changing.

The first significant public expression of landowner resentment toward the NEB and its policies spilled into the public arena some years ago when two farm couples from southwestern Ontario mortgaged their farms to launch a court action. Frustrated by all that was occurring at the time, these landowners believed it would be easier to address the issues by engaging in a legal action against the pipeline company that operated within the provisions of the NEB regulations rather than against the federal government as represented by the NEB.

The court battle addressed soil degradation and diminished property values. It resulted in a legal victory for landowners, but it didn't change NEB policy.

Since that court case, without consulting landowners the NEB amended its policies to shift financial and legal liability for abandoned pipelines from the pipeline companies to landowners. It established provisions, again apart from landowner consultation, that awarded jurisdictional control, of what today amounts to one million acres of land, to the pipeline companies that the NEB openly and unabashedly was calling its partners.

The NEB then established provisions, again apart from landowner consultation, that resulted in landowners holding liability every time they drove their farm equipment across a buried pipeline on their farms without first obtaining permission from either the NEB or the pipeline company.

The most recent episode of the NEB openly trampling landowner interests occurred in Alberta when it unilaterally stripped thousands of landowners of the legislative and regulatory protections they had enjoyed for decades when it transferred control of 24,000 kilometres of Alberta-regulated pipeline into its own portfolio. It did this even after landowners raised and spent hundreds of thousands of dollars to appear before the NEB with professional witnesses to fully explain the far-reaching implications of such a policy.

● (1230)

Moving to the NEB's current LMCI process—land matters consultation initiative—CAEPLA and other affiliated provincial associations raised several hundred thousand dollars to participate in this undertaking. Our objective was to ensure that we could utilize the expertise of professional witnesses to fully and accurately present the NEB with a clear understanding of the impact its policies had upon landowners.

Let me pause here and parenthetically insert that these are after-tax dollars we must solicit from landowners affected by NEB processes—Canadians who have no financial interest in NEB processes, no financial interest in pipelines, yet whose lives are being imposed upon and whose property values are being diminished.

At the very beginning of the LMCI process, a condition of participation by CAEPLA and our affiliated associations was an assurance that the rules would be amended in such a way that landowners would not hold financial or legal liability for abandoned pipelines. After all, we don't own or hold a financial interest in these pipelines.

We were assured by the NEB that such would be the case. Then, after we appeared at the LMCI, we were told that landowners would have to hold some liability for abandoned pipelines.

The result was that CAEPLA and all our affiliates walked out, knowing we had been misled.

Today we recognize that no single agency of government, no matter how well intended and well funded it may be, can fulfill the mandates as contradictory as those held by the NEB. The NEB cannot be, all at the same time, an energy industry facilitator, a regulatory watchdog, and a type of ombudsman to the people its own policies trample. This is a matter of how you see this.

Regulatory capture at the NEB is very real and very alive. It is our considered opinion that this is not due to an inherent flaw in the character of its managers. Rather, it exists as a natural outworking of the contradictory and competing mandates that the NEB possesses.

Thank you.

**The Chair:** Thank you very much, Mr. Core.

Mr. Cullen, is it still your intention to have your motion dealt with today?

**Mr. Nathan Cullen:** Yes.

**The Chair:** Okay.

We'll have to make this a five-minute round of questions so that we can get to Mr. Cullen's motion.

Mr. Tonks.

**Mr. Alan Tonks (York South—Weston, Lib.):** Thank you, Mr. Chairman. I do appreciate the issue with respect to time.

Thank you to our witnesses.

Professor Keith, I found it a little satirical, if you will. You gave your overview. You talked about whether the oil sands were dirty. You said, well, greenhouse gases are high, but relative to other emissions are probably not—maybe two times as bad as conventional, maybe 20 times as bad. You mused about that to some extent.

With respect to water issues, you talked about how it didn't appear that there was a huge problem. But then you came down to your bottom line: your job is implicated with respect to whether we go along with some of the suggestions to just shut the oil sands down. You said that you thought the sacrifice was too much, and that we then fall back on serious regulation.

I would take it that serious regulation would let you and the people who have their homes in the west...that they wouldn't be following the situation that is in the United States.

I guess my question is about the area of serious regulation. It would be similar to the question I would put to Mr. Dyer, because he comes down to that bottom line too. He talks about water quality, wildlife issues, and about caps on pollution.

So where do we go in terms of matching our ability to produce... but to produce in an environmentally sustainable way? Where are you in terms of that?

● (1235)

**Dr. David Keith:** First of all, let me give you a few numbers, and then let me answer your more strategic questions.

On a well-to-wheels basis—that is, counting both the emissions at the source and at the use phase, when people burn the oil in their tanks—the oil sands carbon emissions are perhaps 20% in round numbers. There's lots of uncertainty in conventional oil. Again, it depends which conventional oil you're talking about.

I think I would answer the strategic question as follows. We cannot keep taking carbon out of the ground and putting it into the atmosphere for this century without really dramatic climate change that will be truly dangerous. We have to have a clear-eyed policy to stop doing that.

There is nothing you can do in the long run about cleaning up the oil sands production that solves that problem, because the product is the problem. Even if there were no emissions at all from the oil sands operations, the main problem is still the product. The main problem is taking the carbon out of the ground and putting it into the atmosphere. So in the long run, if we want a stable climate—and we will, and we do, and our grandkids will—we have to stop, period. There's no technological fix.

But the climate problem gives us some time. It's not a panic. We don't have to do this in five years. This is a half-century problem, but a half-century problem demands, if we're serious about technological change and about doing this with minimum disruption to our way of life, that we start to get serious now about what technologies and what innovations we're going to put in place to allow us to wring the carbon out of the energy system and to deliver more energy services, including delivering energy services to a billion people on this planet who currently have no access to modern energy and who deserve it. They deserve the ability to access it through their own hard work. We need to figure out how to do that with zero carbon emissions, and we need to do that over the space of a bunch of decades—four, five, you name it.

That means we need a serious conversation in Canada that doesn't get locked up on nonsense about dead ducks but focuses on a clear path that agrees on when we are going to peak oil sands emissions and when we are going to tail them off and that thinks hard about how to use all the engineering and managerial talent we have in this town and elsewhere to do things that can supply us with energy in ways that don't put carbon into the atmosphere.

**Mr. Alan Tonks:** Professor Keith, thank you very much for that.

I'm wondering if Mr. Dyer could have an opportunity to address the same question.

**The Chair:** Please be very brief, Mr. Dyer. Unfortunately, we're under really tight time constraints.

**Mr. Simon Dyer:** Absolutely.

I think I'd agree with Dr. Keith that we need to be talking about environmental limits. The discussion around oil sands has been extremely black and white. If you actually want to have responsible oil sands development, you have to be talking about what level of oil sands development achieves the environmental outcomes you need to achieve, and no one in Canada is talking about what level of oil sands development is acceptable.

Going back to the IEA's *World Energy Outlook*, it says, under the "450 scenario"—450 parts per million—the oil sands would only achieve 3.3 million barrels a day. There are 7 million barrels a day of proposed projects on the table currently.

So until we talk about limits and until we actually have the federal government enforcing the law on the ground and enforcing these limits in the oil sands, we're not going to have responsible oil sands development.

**The Chair:** Thank you, Mr. Tonks.

Go ahead, Monsieur Pomerleau, for up to five minutes.

[*Translation*]

**Mr. Roger Pomerleau (Drummond, BQ):** Thank you very much, Mr. Chairman.

Thank you to all of our witnesses for appearing before the committee.

My first question is for you, Mr. Keith. I enjoyed your presentation, and, although I am new to this issue

[*English*]

—I don't know anything about it—

[*Translation*]

I tend to believe that you are the one that is right.

You are urging us to reflect on the situation we see here. On the one hand, I would agree with you that the planet is overheating, and that this will be more than detrimental to us. On the other, we need energy.

How do you perceive the serious and far-reaching debate you are inviting us to engage in, on what basis should we do that? You say we need to be serious about this, on the one hand, but what should be the focus of our studies so as to find a solution bridging these two concerns: the need for energy, and planetary security?

● (1240)

[*English*]

**The Chair:** Go ahead, Professor.

**Dr. David Keith:** We will do this not, I think, by using less energy, and not by consumer choice. We will do this by switching our primary energy supply to supplies that don't use carbon.

It's important to think about the enormous success we've had in the rich world since the Second World War in cleaning up the environment. On mercury, on lead and gasoline, on air pollution, our water—on all those things we made huge, enormous progress. The places we made progress best were when government set clear targets and industry innovated to find ways to meet those targets.

That could be done here too. There are lots of ways that we can produce abundant energy without carbon emissions, from large-scale nuclear power—which is one of the things I think we must take most seriously—to large-scale wind power, or solar in some places. But we have to be clear-eyed about making that transition. And in Canada, we have to be clear-eyed about making investments in innovation, at both a university level and a corporate level, that allow us to win in a carbon-constrained world.

Currently the amount of energy innovation in Canada, the amount of money, is tiny by many measures of global standards. And it's completely unfocused. Money is dribbled across almost every imaginable energy technology, from tidal to whatnot, with no sense of strategy or focus.

I served with Angus Bruneau on the Bruneau commission a couple of years ago, which tried to make this very clear. I think the central challenge we face is to, first of all, be serious about the long-run challenge of reducing carbon emissions, but also to think about how to do that in a way that provides jobs, and high-quality jobs, for Canadians. That means thinking hard about a limited number of strategic choices we make about clean energy.

So for example, government after government has failed to deal with what we're actually going to do with AECL, and I don't see any sense that people understand the actual way the nuclear industry is working and the actual strategic choices we face. The same is true for many other technologies. We have a focus on bringing small amounts of wind power into Canada, but no understanding of the industrial implications of who actually owns and controls the major wind power industry. Some much more clear-headed thinking about the intersection of industrial policy and the need to decarbonize is needed.

[*Translation*]

**Mr. Roger Pomerleau:** Thank you very much.

Do I have time for one other question? Yes, then it would be for Mr. Dyer.

Sir, just like the company we heard from this morning you are urging us to engage in a public debate on a number of issues, to think about the cars we are building, the way in which we build, or plan our cities, etc. That is what this company was telling us we needed to do. You would agree.

If this public debate does not occur immediately, what do you suggest we do in the meantime?

[*English*]

**The Chair:** Mr. Dyer, go ahead.

**Mr. Simon Dyer:** Thank you.

Obviously there is a need for a broad-scale discussion on a national energy and environmental strategy. But in the absence of that, we need to make steps to address the carbon we're putting into the atmosphere. Canada still has no federal greenhouse gas regulations. Despite what you heard from our industry speakers this morning, the oil sands emissions continue to grow. That growth will continue until we have regulations in place that drive the kind of innovation we need to see. It's naive to expect technological innovation without the regulations to drive things.

I would say that greenhouse gases are the international issue of importance. But as an Albertan, I think we shouldn't ignore some of the regional issues around air, land, and water. I take a slightly more pessimistic view than Dr. Keith on that. There are some serious problems on the ground that affect the quality of life and long-term liability for Albertans and Canadians. Clearly, in our report *Duty Calls*, we outline the key areas where we would like to see the federal government involved.

**Mr. Roger Pomerleau:** *Merci.*

● (1245)

**The Chair:** *Merci, monsieur Pomerleau.*

Mr. Cullen, you have up to five minutes. Go ahead, please.

**Mr. Nathan Cullen:** Thank you, Chair.

Thank you to the witnesses.

It's interesting to see the beginning of a “consensus”, if that's the right word, about the need for this discussion at a national level around energy security, which, from your testimony today, includes the ideas of not just production of energy but also the environment and the economy writ large.

The question I have, very specific to you, Mr. Dyer, first, is that we just heard testimony from the energy groups that a 40% increase is expected and we have to expect it as a reality. We're going to need 40% more of this stuff. Then in your testimony today, you said the IEA itself says that scenario leads us to a six-degree rise in temperature globally.

Is that correct? Am I hearing you right?

**Mr. Simon Dyer:** Yes, that's correct. The IEA makes it very clear that their baseline scenario is not considered the desirable scenario and shouldn't be considered a forecast. So it is extremely irresponsible to say that the world needs a 40% increase in energy when, clearly, the IEA says governments can bring many policies in place to not need that.

The difference in numbers between the do-nothing scenario and actually introducing progressive energy policies is 20 million barrels a day. That's the difference in oil consumption for the world.

**Mr. Nathan Cullen:** To Mr. Core just for a second, one of the elements of an energy security discussion is around environmental security as well, and you represent landowners. I believe you sent around to members of this committee your access to information request. Is that right?

**Mr. David Core:** Yes.

**Mr. Nathan Cullen:** So this was a request to the regulator, the National Energy Board, which, when we raised concerns about what I think you called "a conflicting and competing" role they take on, the government tends to get on their hind legs and argue they're a fantastic regulator and they're excellent.

In this ATIP request you have here, I note that there are 343 blank pages.

**Mr. David Core:** That's right.

**Mr. Nathan Cullen:** How is it the public, the landowners whom you represent, are meant to feel confident in a regulator that, when you ask for information, sends you hundreds upon hundreds of pages of nothing?

**Mr. David Core:** I think it made us feel very insecure that the regulator is impartial and transparent. We wanted to know who was in the room when regulations were created and developed that imposed certain aspects of responsibility and liability on us.

**Mr. Nathan Cullen:** So that was your request—just to understand who was involved in the process of passing liability from abandoned pipelines onto landowners. That's the security question you were looking for?

**Mr. David Core:** That's right.

**Mr. Nathan Cullen:** And what you got back was...?

**Mr. David Core:** Three hundred blank pages.

**Mr. Nathan Cullen:** Three hundred blank pages.

Dr. Keith, you talked about climate security. Even though we have some decades, this is always worrisome to those of us trying to affect policy, because it can put off decisions till later. How is Canada doing right now in addressing the question of climate security in terms of government policy and government investment in the non-carbon-emitting sources of energy? How does Canada rate against the others in the OECD, for example?

**The Chair:** Professor.

**Dr. David Keith:** It's doing very well. Overall, I'd say that over the last decade—or more—the Canadian parliaments have pretty much failed to grapple with this issue seriously. Nevertheless, some work has been done.

It's easy to imagine that the Europeans are doing much better, but in fact they're still building coal-fired power plants. In some cases there's more talk than action there as well.

But I think we need to focus on what we should do, and there's no question that we could do enormously more than we're doing, both in terms of strategic investments in clean energy and in terms of transparent regulations.

I'd say one crucial thing. Our job in this generation on this topic is both to begin to make cuts and to begin to do what economists call price discovery, trying to understand what things really cost, because most of the big cuts are going to happen after our generation. To do that, we need transparent policies that as much as possible have governments set a clear price and get out of the way.

We have the opposite of that. We have a myriad of little independent policies that incent wind here, and biomass there, and carbon capture and sequestration here, in a way that is utterly non-transparent.

So if 15 years from now our children look at what happened, they will find it extremely difficult to figure out what the real cost-effectiveness of different measures were. I think if you care about and believe in the power of free market solutions to problems—that doesn't mean the free market runs unfettered, because it doesn't do that in anything in modern democracies—then that means we should do something that looks a lot like a clean carbon tax or a clean cap and trade and get out of the way.

Right now we have a series of policies that make it essentially impossible to understand the fact that putting solar on rooftops in Ontario costs more $1,000 a tonne of carbon, whereas putting wind power in Alberta maybe costs $200, and we have so many complicated incentives we have no way to see that signal through the noise.

● (1250)

**The Chair:** Thank you.

Thank you, Mr. Cullen.

Mr. Anderson, you have up to five minutes.

**Mr. David Anderson (Cypress Hills—Grasslands, CPC):** I would like to build on that last comment.

We did some work here, a couple of years ago, on some of the alternative energy forms. We had someone from Germany on a video conference talking about their feed-in tariff program. I think one of the things we discovered from that is if we want to do something like that, we're going to have to look at a 400% or 500% or 600% increase in utility costs to the average Canadian. I'd say that's pretty much impractical.

Do you have any comments on that? Everywhere we look, these things are possible to do, it's just that the consumer is going to have to pay a massive cost to do them, and most people do not seem to be willing to do that when they're unsure of what they're hearing in terms of the science and those kinds of things.

**The Chair:** Professor Keith.

**Dr. David Keith:** Thanks.

I would take issue with two things there.

It's certainly true that what the Germans did was extraordinarily expensive and produced little obvious benefit. There were literally tens of billions spent developing solar PV technologies in Germany, which had a minuscule impact on actually cutting emissions.

By many measures, that was an extraordinarily ineffective way even to get to cheap solar. Many observers of global energy innovation regard that German program as a real failure. Indeed, of course, Germany and other places are now backing off.

But it is not true to say, simply not remotely true by any kind of estimate from major EPC firms or major energy companies, that you would have to increase the cost to consumers by factors of anything like four.

The costs of decarbonizing the electricity supply, if you did it in a cost-effective and simple way, are...increase the busbar costs by less than a factor of two, and that means increasing the cost to consumers by something more like 20% or 30%. If you do that slowly over 20 or 30 years, that effect is quite small. It's in the order of 1% of GDP, comparable to the kinds of costs we incurred from the U.S. Clean Air Act, which had benefits that enormously exceeded costs.

So if we focused on things that were actually cost-effective in a simple way, it is simply not true that we need to make enormous, unaffordable increases in the cost of energy to solve this problem.

**Mr. David Anderson:** I think I need to take issue with that, because in the testimony we've heard it's been consistent that the consequences of these programs are a massive increase at the consumer level.

Just to reflect on what you said about Germany backing away from what it's been doing, we have tried as a government to avoid some of the mistakes that have been made by other governments. I think that—

**The Chair:** You have a point of order, Madame Brunelle.

[*Translation*]

**Ms. Paule Brunelle:** I am sorry to interrupt this discussion, Mr. Chairman, but we must vote on a motion. The meeting ends at 1:00 p.m. and I must leave as I will be speaking in the House.

If the mover is in agreement, can we postpone the discussion on the amendment to Tuesday?

[*English*]

**The Chair:** Mr. Anderson just has two minutes left in his questioning. We'll get right to the motion. Hopefully we can deal with it without a lot of discussion.

Let's go back to Mr. Anderson.

Just complete your questioning, please.

**Mr. David Anderson:** I just wanted to make the comment that we've tried to avoid some of the mistakes that other countries have made. In our biofuels programs, for example, we've tried to avoid the mistakes that the Americans have made with their two or three different runs at the biofuels industry. It's been very expensive for their treasury.

I guess I'm interested to hear you say that Germany shied away from this, because they were was presenting this as something that was very successful at the time, when we heard about it.

I want to go back to another question. From your content, from what you've presented today, you basically have to express opposition to all carbon-based energy in order to be consistent with what you've said today. Is that your position, that carbon-based energy is the problem? That seems to be what you've said here. It's not just the oil sands; you say it doesn't matter what the technology is, it's not going to help.

Is that your position, Dr. Keith, that we need to be opposed to carbon-based energy in all forms?

**Dr. David Keith:** I don't think it's a matter of position; it's a matter of basic physics and conservation of mass. We cannot put gigatonnes of carbon in the atmosphere and expect a stable climate, period.

You could still use carbon-based fuels if you put the carbon back in the ground, with carbon capture and storage. It's not clear that we have to do this immediately. There are hard value trade-offs about how much we value our grandkids versus ourselves. There's no simple answer about what to do.

But the statement that we can't keep transferring carbon from deep underground, the geosphere, to the biosphere is not a matter of opinion, it's just a matter of fact. It's a fact that's uncomfortable and a lot of us like to avoid, and the industry spends money trying to confuse, but it's a fact nonetheless.

● (1255)

**Mr. David Anderson:** We may agree or disagree on that.

So you're a strong advocate, then, of carbon capture and storage, are you?

**Dr. David Keith:** I don't see myself as an advocate particularly. It's one of the potentially important technologies. It is one of the few technologies that, with coal-fired power, allows you to produce gigawatt-scale, dispatchable electricity—that means it's on when you want it and is not variable—low-carbon electricity.

Both it and nuclear power are quite important, because industrial societies need dispatchable gigawatt-scale power. If you throw both of them out, it gets a lot harder to solve the problem.

But, you know, we can do without any single one of these technologies. What we need is some clear action.

**Mr. David Anderson:** Just quickly then, how do you see nuclear development coming forward? Do you see that in terms of the large-scale reactors we've had in the past, or the smaller units that are put in a number of locations? How do you see nuclear energy developing in the future?

**The Chair:** Make it a very brief answer, please.

**Dr. David Keith:** I think it's going to be dominated by China. China is rapidly standardizing on the Westinghouse AP1000 reactor, and they are focused very seriously.

I think it's time for, say, Canada to wake up and think about what's happening globally and look around a little bit.

**The Chair:** Thank you

Thank you very much, Mr. Anderson.

Thank you to all the witnesses today. We appreciate very much your input into our study.

We still have some business do in camera. We hopefully will deal with it quickly.

[*Proceedings continue in camera*]

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