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Thursday, February 3, 2011

Chair

Mr. Leon Benoit

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● (1535)

[*English*]

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

We're here today to continue our study on energy security in Canada, and we're continuing on the topic of shale gas.

We have two panels of an hour each. We have on the first panel, from the Canadian Gas Association, Timothy Egan, president and chief executive officer; from the Association Québécoise de lutte contre la pollution atmosphérique, Patrick Bonin, campaigner, climate-energy; and from Nature Québec, Thomas Welt, co-lead, energy committee.

Welcome to all of you here today.

We will take your presentations of up to seven minutes in the order listed on the agenda. We will start with Mr. Timothy Egan, president and chief executive officer of the Canadian Gas Association, for up to seven minutes.

Go ahead, please, with your presentation.

Mr. Timothy Egan (President and Chief Executive Officer, Canadian Gas Association): Thank you, Mr. Chairman, and thank you, honourable members.

It's a privilege to be here before you today. I appreciate the rescheduling. I was originally intended to appear before you in the fall.

A key focus of your deliberations is environmental issues surrounding shale gas extraction. As agreed with the clerk in advance, I'm not speaking to the substance of the environmental issues around shale gas extraction. There are many qualified experts to do that, and extraction of natural gas is not the primary focus of the member companies in my association. Our focus is on the delivery of natural gas and related energy services, which we thought would still be useful to you as you consider the big picture around natural gas. Committee staff assured us this would still be of interest, so that's how I intend to use my time today.

First, who are we? A presentation should have been handed out to you to give you a bit of an overview. One of the first pages in it is a map of Canada showing our member companies. We are a range of companies involved in the natural gas delivery system, such as manufacturers and transmitters, and at the heart of our membership are distribution companies delivering gas to approximately 6.2 million customers.

The map shows the companies and their franchise areas across the country. What it doesn't give a sense of is the fact that those 6.2 million customers translate to well over 20 million Canadians, people whose energy service needs we meet every day in homes, businesses, and industry. A meter isn't a person; a meter is the end point of delivery of the gas, but it represents people in a variety of walks of life. We believe it's an extraordinary reach and one that makes us think about the Canadian energy consumer every day in everything we do.

Note that I said “energy service needs”. The member companies of CGA are focused on this, with the emphasis on “service”. Canadians have come to expect a lot when it comes to their energy. They want it to be clean, reliably and safely delivered, affordable, and abundant. Canadian natural gas has met all of these demands for over a century. That's why we consider natural gas to be the foundation fuel of Canada's energy system. In fact, we meet approximately 30% of the end use needs of Canadians, and we think that justifies the title.

We also call natural gas “smart energy” because of all those attributes, and one other: its flexibility. Natural gas offers flexibility in a way few other energy sources can. When you want renewables like solar or wind, you also need an energy source to ensure their reliability, and natural gas can provide that. When you want to maximize efficiency at the end use of energy, natural gas comes right to your door and offers remarkable efficiency for heating and cooking needs. Our efficiency in its end use has only increased over time regularly year over year. When you need a source of energy that can work in tandem with a district heating or cooling system as part of a distributed generation system or for mainstream power generation, natural gas is available. When you want to think about adding a new fuel to the transportation energy mix for use by Canadians, natural gas is there and natural gas distribution companies are helping to drive the agenda.

The remarkable ever-expanding networks of natural gas infrastructure in Canada and the unique attributes of the fuel itself are key reasons for its flexibility, and we want to make sure that people appreciate it.

The second image you have before you speaks to some of the many uses of natural gas that justify this description. Canadians use energy in three ways: for mobility, for electricity, and for heating and cooling. It is roughly 30%, 20%, and 50% in terms of an overall split. Natural gas can play a role in all three.

Right now its overwhelming use is for heating. Increasingly, natural gas is used as a fuel for power generation to meet electric needs, and we're seeing the beginning of an interest in it as a transportation fuel, with growing interest in applications for heavy- and medium-duty trucks. I draw your attention to the recent NRCan report on natural gas use, the transportation road map, which speaks to these opportunities.

All these opportunities for new uses are significant, and we want to encourage them for the economic and environmental benefits they promise.

What does the future hold? For natural gas and the companies that are involved in its delivery, we believe the future holds opportunity, as long as we stay attuned to the needs of Canadians.

I described our member companies as energy service companies. By that I mean they are intent on ensuring that the Canadians who are their customers are getting the energy services they want and need.

Let me take my remaining time to highlight two initiatives we have that are intended to help meet those service needs going into the future. They speak to two major priorities for Canadians on energy issues. First is its efficient use, and second is a desire for new and more innovative applications.

● (1540)

The first of these is QUEST. There's a slide on QUEST in the package. QUEST stands for “Quality Urban Energy Systems of Tomorrow”, and I think most of the members of this committee are familiar with the project and have been briefed on it.

Let me just point out that the idea behind it—integrated community energy systems—offers a real means to make Canadians much more efficient in their energy use. That translates to less energy consumed, fewer environmental impacts from that energy consumed, and, ultimately, lower costs to the energy consumer.

Now, how is this good for the gas industry? Well, we believe that gas is the logical foundation fuel for integrated community energy systems. It ensures maximum flexibility and reliability, assuring Canadians the level of service and satisfaction they want and have come to expect from their energy providers.

The second initiative I want to highlight is a newly created one. We're in the process of coming up with a name, but right now we're calling it the applied energy technology and innovation initiative. This has been agreed to by my board of directors only in the last few months. It's a new project and is focused on the deployment and commercialization of new technologies aimed at the more efficient use of natural gas in a host of applications.

One example is micro-CHP, or combined heat and power. Some of you may be familiar with that as an industrial application. Micro-CHP would involve the application in small units in the home that could generate both heat and electricity. The technology is well advanced, with numerous applications around the world, including some interesting emerging work being done right here in Canada. In fact, there's a small company outside of Ottawa working on this.

It offers a means to ensure a much more efficient use of energy while lessening the pressure on our electricity grid, with the consumer having a significant say over their own energy. This is the kind of technology we would like to see more of. Through the association, my member companies are defining cooperative means to pool their financial resources to drive new opportunities like micro-CHP for Canadians to be leaders in innovation and productivity in energy use.

I mention that as one example. There are others: water heaters, renewable natural gas, more efficient technologies for transportation, etc.

To wrap up, this means keeping Canadians on the cutting edge of energy innovation and productivity and a continuous effort over time to transform our system into a more efficient and effective one. Natural gas is a remarkable natural resource and Canada happens to be blessed with an abundant supply. My member companies are dedicated to delivering that resource to Canadians in the most efficient and environmentally sound way possible. We look forward to many opportunities to work with those in elected office in this effort.

Thank you, Mr. Chairman.

The Chair: Thank you, Mr. Egan.

For the next group, we actually have two presenters. Please make sure that your presentation is around seven minutes between the two of you.

We'll start with Mr. Bonin, coordinator, climate energy. Go ahead, please.

[*Translation*]

Mr. Patrick Bonin (Campaigner climate-energy, Association Québécoise de lutte contre la pollution atmosphérique): Thank you, Mr. Chair.

Good afternoon. I want to thank the members for having us here today. I am joined by Thomas Welt, from Nature Québec. I represent the Association québécoise de lutte contre la pollution atmosphérique (AQLPA). Nature Québec and the AQLPA are two of Quebec's oldest environmental groups. Both were founded in the early 1980s.

I would like to begin by giving you an overview of the shale gas situation in Quebec, a very real issue right now. It involves a natural gas development between Montreal and Quebec City, between the St. Lawrence and Highway 20, in an area that spans about 10,000 km^2 and that happens to make up the heart of Quebec, both from a population and an agricultural standpoint. The potential for gas production is quite significant, estimated at 40 quintillion cubic feet. Naturally, there are some doubts about the accuracy of that figure. Sometimes it is estimated at more than 15 quintillion cubic feet, which is equivalent to approximately 200 years of use, based on Quebec's current rate of consumption.

Twenty-nine wells have already been drilled in Quebec. There is talk of drilling a possible 10,000, 15,000 or 20,000 wells in order to make the industry in Quebec fully operational, with approximately 250 to 500 wells being drilled a year. That would mean 3 to 6 wells per square kilometre, putting a huge number of wells in a very populated area over a very short period of time. Right now, about 11% of Quebec's energy comes from natural gas. Quebec does not have any natural gas-based power generation. Clearly, one the reasons for that has to do with the large presence of hydroelectricity.

Now let's look at this from an international perspective. Shale gas use, production, exploration and development raise a number of environmental concerns, primarily with respect to greenhouse gases and air and water quality. Approximately 10% of Quebec's greenhouse gas emissions come from the use of gas. And Quebec's planned exploration and development activities will only increase those emissions. We are still lacking a multitude of data, figures and analyses on the possible emissions resulting from the gas exploration and development. Nevertheless, Quebec's greenhouse gas emissions are estimated to increase by approximately 5% to 10%, based on the anticipated rate of shale gas exploration and development. Keep in mind Quebec's target of a 20% reduction in greenhouse gas emissions below 1990 levels by 2020, and Canada's target of a 17% reduction below 2005 levels by 2020.

Even Quebec's environment minister does not have any studies on the entire gas life cycle related to shale gas exploration. So there is a clear lack of information. We do know, however, that the United States Environmental Protection Agency released a report in November stating that greenhouse gas emissions resulting from oil and gas production were going to double. In the U.S., most of the increase in emissions is due to gas production. The increase in greenhouse gas emissions entered in the U.S. inventory is equivalent to all of Quebec's emissions in one year. Just by changing the factors used to calculate these emissions, the U.S. added to its inventory an increase equivalent to all of Quebec's emissions, simply because it is now understood that there are more leaks, that they involve methane and that production generates even more emissions.

One of the AQLPA's biggest concerns is obviously air quality. Very few studies have been done on the topic. The Institut national de santé publique du Québec recently released a preliminary report identifying huge shortcomings with respect to the impact on air quality. From the little research that is available, including air quality modelling done by the U.S. in the Haynesville region, one thing is very clear: air quality is significantly affected, as it relates to ozone, which is made up of nitrogen oxides (NOx) and volatile organic compounds. Air quality is significantly affected, not only in the region under shale gas exploration and development, but also in surrounding regions, given the movement of particles, as you may have gathered.

Water quality is another major concern. Well fracturing alone requires millions of litres of water, which are mixed with tons of chemicals. Approximately 50% of the water remains underground and 50% is removed. There is a risk of aquifer contamination as a result of these mixtures and the flow of water between strata. We filed a brief on this topic with the Bureau d'audiences publiques sur l'environnement. The document was prepared by Mr. Durand, a retired UQAM professor and geologist, who is concerned about these risks.

● (1545)

There are other risks associated with transportation, spills and obviously wastewater treatment, given that 50% of the water used and removed from the ground must be treated after the fracturing process. Most of the plants that will be treating this water and these chemicals do not have the necessary facilities to do so.

It should also be noted that the list of chemicals is not necessarily known, that some of the effects of these chemicals combining and interacting in this toxic soup are not known.

On that note, I will hand the floor over to Mr. Welt, who will discuss the economic and social effects of shale gas exploration.

[*English*]

The Chair: Go ahead, please, Mr. Welt.

[*Translation*]

Mr. Thomas Welt (Co-lead Energy Committee, Nature Québec, Association Québécoise de lutte contre la pollution atmosphérique): Good afternoon, Mr. Chair.

I will begin with the economic impact, which is always presented as being the most essential, when in fact, it is not.

In order for the industry to make money on this, the selling price must be $6 per 1,000 cubic feet. It is currently at $4 per cubic foot. So it is not at all profitable to develop shale gas. Nor is it beneficial as far as the people of Quebec are concerned, even at $6 per 1,000 cubic feet. And in terms of improving the trade balance, the impact is insignificant. It represents a small fraction of 1% of all Quebec imports. So, in our view, this endeavour is not economically beneficial for the industry or Quebec society, as we speak.

In terms of obtaining social acceptability, one of the most important considerations, the fact that the shale gas is located in agricultural and populated areas in Quebec is a major, if not insurmountable, obstacle.

There is already huge opposition to the 30 wells that exist today. Just imagine the reaction when there are 5,000 or 10,000 such wells in a very small area in the heart of Quebec. That is the area where Quebec took shape over four centuries of colonization. So gaining society's acceptance of these activities will be extremely difficult.

Ever-growing numbers of wells in a very limited area, together with the constant comings and goings of trucks and numerous gas pipelines—thousands of small gas pipelines will also be necessary to connect all the wells—will make the public concerned increasingly hostile to this type of development.

Now, I would like to share with you our findings on all this. There are no clear economic benefits for the industry, or more importantly, Quebec society as a whole. Social acceptance of this development is lacking, and that will probably always be the case. The risks to people's health and quality of life, the threat to drinking water and the other possible risks of damage are too great to allow drilling and fracturing activities to continue, even on a small scale.

There is no urgent need to proceed, none at all. Quebec has all the energy it needs right now. Nor is there an urgent need economically speaking, because the price of gas has to go up first, and that will take some time. It may hit $6 or even $10 in 20 or 30 years, but certainly not in the foreseeable future. So there is no urgent need to proceed.

Consequently, a moratorium is necessary. We should not rush into anything. We need to conduct a very careful analysis of the entire impact of this new energy industry, which seeks to establish itself in the St. Lawrence Valley, the cradle and jewel of Quebec. It is important to understand that this heavy industrial polluter wants to call the jewel and heart of Quebec home.

This region of Quebec, between Montreal and Quebec City, should be protected for the present and future generations. Authorities at every level, including the federal government, should support and promote this common-sense approach, a moratorium proposed on the basis of a rare consensus in Quebec society.

Thank you, Mr. Chair and honourable members.

● (1550)

[*English*]

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

We'll go directly to questioning, starting with Mr. Tonks for up to seven minutes.

Mr. Alan Tonks (York South—Weston, Lib.): Thank you, Mr. Chair.

I'll just echo the chair's appreciation to the witnesses for being here.

I'm rather caught in an unusual situation. We heard yesterday that the Province of New Brunswick is looking very seriously at establishing a regime that would benefit New Brunswick. They cited the added value in the development of shale gas. The minister also indicated that they were establishing an environmental assessment regime that would look into the issue of balancing the community's concerns against the economic advantages.

In your presentation, Mr. Bonin, you referred to Quebec's Sustainable Development Act. If there is a moratorium, what approach would an environmental assessment take? What kinds of concerns would you be looking at balancing out, given the premise that this committee is charged with energy security for Canada, and Quebec has a huge role to play in that? In the environmental assessment in Quebec's Sustainable Development Act, what would you be looking at assessing from a Quebec perspective? To extrapolate that a little more, how do you see the development of shale gas and Quebec's hydro contributing to the national higher interest, if you will?

● (1555)

The Chair: Go ahead, Mr. Bonin.

[*Translation*]

Mr. Patrick Bonin: First of all, it is important to keep in mind that Quebec's reality in terms of electricity production is not the same as New Brunswick's. There is a major difference. New Brunswick uses coal to produce electricity, whereas Quebec does not use fossil fuels, be they coal or natural gas, to generate electricity.

In terms of an environmental assessment, a number of questions about shale gas have yet to be answered. Something interesting is happening in Quebec right now. The Bureau d'audiences publiques sur l'environnement (BAPE) was given a mandate to study the issue of shale gas. But this commission of inquiry did not receive any environmental impact assessments prior to the project. That means that the BAPE is currently examining the matter when the developers were not required to submit any environmental impact assessments. It must start from scratch. The BAPE has just four months to examine the whole issue, in its entirety. Most of the analysts and former BAPE commissioners made it clear that the mandate was too limited and that the lack of prior environmental impact assessments was problematic. They also said that the mandate was much too short to deal with the shale gas issue in its entirety.

That being said, the Environmental Protection Agency in the U.S. is in the midst of a comprehensive study on the environmental impact of shale gas exploration and development. The results of that study will be released in March 2012. The U.S. has invested millions of dollars in this study. The province of Quebec does not necessarily have those kinds of resources, and I doubt that the other provinces, whether it be New Brunswick or someplace else, have the resources to undertake such an in-depth study of the matter, either.

Consequently, given the little bit of information we do have right now, we are concerned on a number of levels. I believe you mentioned Quebec's Sustainable Development Act. It sets out a number of principles, one of which being the precaution principle. Under that principle, when a threat exists and full scientific certainty does not, a project should not be allowed to proceed. And yet, the exact opposite is happening in the case of shale gas right now. There are indeed threats to water and air quality.

You also mentioned hydroelectric power generation in Quebec. We see what is happening around the world right now. Just last week, the International Energy Agency's chief economist gave a speech in England in which he said that countries would not be able to meet the commitments made at the climate change conference in Cancun—they had agreed to limit the increase in the world's temperature to 2°C—citing two reasons. The first reason was that key emitting countries were not serious about reducing their emissions, and the second had to do with the emergence of shale gas around the world.

Why is the emergence of shale gas problematic? Given the quintillion cubic metres on the market today and the sharp decline in gas prices, shale gas is threatening renewable energy development worldwide, not just in Quebec and Canada. In the U.S., investment in renewable energy has dropped by 50% from last year. According to the International Energy Agency's chief economist, that is directly related to the discovery and development of shale gas.

Clearly, Quebec produces hydroelectricity and exports it to the U. S., and it could export even more if only it could save energy and develop its wind energy potential. Today, we cannot even pursue that kind of development because the cost of producing electricity has dropped tremendously with the emergence and marketing of billions of cubic metres of gas. And in that respect, Quebec is hurting itself in terms of developing its own renewable energies and energy known as biogas, or biological methane. Quebec has invested in capturing methane emissions at landfills, in order to use what is known as biogas. Biogas is currently competing with other types of gas. Biogas derived from landfills is a source of renewable energy. It is important to remember that.

● (1600)

Thank you.

[*English*]

Mr. Alan Tonks: That was a very comprehensive answer, and I'm sure the committee appreciates that.

The Chair: Thank you, Mr. Tonks.

Madame Brunelle, you have up to seven minutes.

[*Translation*]

Ms. Paule Brunelle (Trois-Rivières, BQ): Good morning, gentlemen. Thank you for being here.

To begin, I would like to congratulate the Association québécoise de lutte contre la pollution atmosphérique and Nature Québec for presenting this document, which seems to me to be particularly informative. In it you take the same position as my party, the Bloc Québécois, and you confirm what we understand about this situation in Quebec.

I would like to go back to the question Mr. Tonks asked. I heard the presentation by the New Brunswick Minister of Natural Resources on Tuesday, and I would like my colleagues to think back to that too. We have to realize that the situations are very different from one province to another, if only because of the places where these activities take place.

Mr. Welt, you talked about the places where this exploration is being done, near the St. Lawrence, in our beautiful and most densely populated agricultural areas. The problem is not the same as elsewhere, in western Canada, where material is extracted in places where there is no population and the risks and consequences are not the same.

Mr. Bonin, by making the connection between sustainable development and the precautionary principle, you get right to the heart of the matter. That is really what drives this committee: perhaps some day shale gas will be developed, but not at any price, not at the price of the environment, and not just any way.

We want to eliminate our dependancy on oil, but we have to pay attention to how we get there. To us in the Bloc Québécois, it should be done as part of a truly green economy and with other resources, as you talked about a little, Mr. Bonin.

On Tuesday, Anthony R. Ingraffea of Cornell University in the United States told us that the technology does not seem to be advanced enough to guarantee that drilling for this resource, shale gas, can be done in a way that respects the environment. So that is the heart of the problem and what is worrying us.

I'm going to ask you three questions. Do you agree with us that exploration and exploitation are under sole provincial jurisdiction? So this debate has to be happening and the decisions have to be made in Quebec. We think the role of the Canadian government must be clear. It must pass on the information it has in its possession, but it is not up to it to impose standards or make uniform standards across Canada. We believe the federal government has to collaborate by investing massively in new technologies to develop greener energies.

[*English*]

The Chair: Go ahead, Mr. Welt.

[*Translation*]

Mr. Thomas Welt: I would however like to stress something important that is not talked about enough in the industry.

At the moment, there is no economic reason to exploit shale gas, because we are going to be exploiting it at a loss. It will be exploited when there are enormous government subsidies; without that, it isn't possible. So that is a fundamental aspect.

There is a second aspect that is just as fundamental: intergenerational equity. In Quebec, in Canada and elsewhere there is this potential energy. If we exploit it immediately, if we exploit it at a loss, we take away future generations' ability to exploit it under much better conditions.

The price of gas is going to rise inexorably because the resource is going to be exhausted at one point or another, maybe in 20 years, maybe in 50 years, maybe in 100 years. That resource, if we exploit it not now, but later, will have far greater value and future generations will be able to use it much better than us, who still have conventional gas at a good price. And there is no economic reason. Forget for a moment all the environmental reasons. In economic terms, I don't see how we can exploit the gas at $4 per 1,000 cubic feet when, and the industry itself gave us these figures, it has to be at least $6 per 1,000 cubic feet to be profitable.

There is also another problem: knowing what has to be done. How should it be exploited, at what rate and at what time? All those studies would have to be done during the moratorium.

Your last argument is that the government has to promote renewable energies like wind power. In fact there was a federal windmill program, but it has been eliminated. It is absolutely desirable that the federal government subsidize renewable energies, emerging energies, like solar energy and especially windmills. Quebec is extremely rich in wind power. It has the largest potential in the world. Wind power is inexhaustible. If all the forms gas have been exhausted, in 100 or 200 or 300 years, wind power will be here for billions of years, as long as the Earth exists. So we have to put all our energy not into outdated energies, but into new energies. That is what our common objective should be.

● (1605)

Mr. Patrick Bonin: To add to that, I will perhaps say that...

[*English*]

The Chair: You have about 30 seconds left. Go ahead.

[*Translation*]

Mr. Patrick Bonin: With respect to energy development, it is essentially under provincial jurisdiction. The federal government may have roles to play, however, when it comes to water, fish habitat and the Action Plan on Climate Change.

[*English*]

That was my 30 seconds.

Thank you.

The Chair: Thank you, Mr. Bonin.

Mr. Egan, you wanted to give a short response?

Mr. Timothy Egan: Yes. Perhaps I could just make one or two comments.

[*Translation*]

I apologize, Ms. Brunelle, but I will have to speak in English because my French is not very good.

[*English*]

Do we need to drill for shale gas in Quebec? That's a question for Quebeckers to decide. I know they have a fierce patriot in Mr. Bouchard, who has added his voice to the debate. I think that will help make it a more fulsome debate in the province of Quebec. Obviously there will be differences of opinion on that.

We also know that a report is expected imminently from the Quebec government, and that will also shed more light, I think, on the situation. Each province should determine where and whether and how it wants to proceed, and we trust that Quebeckers will take a balanced approach, addressing the need for responsible and environmental management and economic development.

Let me just raise one possible scenario. Yes, if it's not economic to develop, odds are that the market will not develop it. The opportunity will not be pursued if there isn't a perceived return on the market opportunity. That's a point that I think needs to be emphasized. Related to that, if I could just make a point about Quebec's energy mix, just think about this scenario. Quebec has extraordinary hydroelectric wealth: 40% of your energy generation is hydroelectric. You also have 10% of your energy needs met by natural gas. Envision a scenario where you export more hydro and you use natural gas for more domestic uses. You generate more revenue on the hydro you export. You generate tax revenue on the natural gas that you develop. That gives the province a bigger resource base with which to develop many of those renewables that we're all interested in seeing more of.

I think there's just a danger if we talk about an absolute shutdown of any one technology. Canada's energy wealth, the province of Quebec's energy wealth, is in its diversity. Yes, we need to be prudent in our development of those resources, but we should be pursuing the development of as many of them as possible.

● (1610)

The Chair: We'll go to Mr. Cullen for up to seven minutes.

Mr. Nathan Cullen (Skeena—Bulkley Valley, NDP): Let me just follow up on that. Mr. Egan, I think you're making the case that natural gas is a good backstop to renewable energy, to wind or solar energy that's put into the grid. Is that essentially what you're saying?

Mr. Timothy Egan: We prefer to call it not a backstop but a foundation fuel, because we think it's a logical partner for wind and solar and a host of others. So, yes.

Mr. Nathan Cullen: This is no knock against natural gas, but I've not heard that other than from the natural gas associations. Hydro power, around the world, is considered the best backstop accompaniment to any source of what we can see as non-traditional or renewable sources of energy.

You also mentioned that if the market doesn't see a profit to be made, they simply won't exploit it. While generally true, is it not specifically the case that if a government is interested in having a resource exploited, then it can alter the market conditions? They can change the tax code. They can deregulate certain environmental restrictions.

Obviously there's a role government plays, whether one energy source is exposed or another. There is no pure market in the energy field. We all know that the so-called level playing field doesn't exist anywhere in Canada, if not in the world.

Mr. Timothy Egan: I would agree with you. My point wasn't that there would be no public intervention.

Mr. Nathan Cullen: There's obviously public intervention.

Mr. Timothy Egan: I would make the point that there's public intervention with almost every energy source, and there has been over the course of Canadian history. Hydro-Québec assets were not developed without public intervention. Hydro assets across the country were not developed without public intervention. Renewables now are not being developed without public intervention.

As many of you will know, we have a proposal before the Government of Canada requesting a certain kind of public intervention to help natural gas vehicles get over a hurdle we perceive in the transportation market. We think those interventions have to be carefully constructed. They should be time limited and well designed.

So I'm not saying that it doesn't happen.

Mr. Nathan Cullen: I think we're in agreement.

I have a question about confirmation of supply and access to ports.

You're familiar with the so-called Head Harbour controversy. There was an LNG plant proposed in the U.S. The Canadian government had our ambassador intervene, or the federal government intervene. Are you at all familiar with that LNG project?

Mr. Timothy Egan: I'm afraid I'm not, no. I'd be happy to follow up.

Mr. Nathan Cullen: I wouldn't mind, because there's an uncertainty of market conditions, if you're talking about the role of government. The government on the east coast rejected an American project for an LNG plant because it was unsafe. That's according to the ministers involved. But then on the other coast, they said it's fine.

We're trying to understand, from the natural gas point of view, where LNG is going to be applied and if it's going to be applied consistently. That's the point.

Mr. Timothy Egan: Could I just make two points in response to that?

First, I'll take that to my upstream colleagues, who would be able to address it.

Second is that of course there are regulatory issues involved in this at the provincial level as well as at the federal level. There are various conditions affecting it.

[*Translation*]

Mr. Nathan Cullen: Mr. Bonin, I'm going to try to address you in French. I apologize in advance for my mistakes.

The Minister, Mr. Paradis, has said that if we imposed a moratorium too quickly, it would be difficult to go back later. He is against a moratorium and thinks the idea of imposing a moratorium is dangerous.

You have asked for a moratorium to be ordered. I don't know the general feeling in Quebec at this time on that issue.

Should the Government of Canada play a role in protecting air and water or preventing the production of greenhouse gases, or is this something that is under the exclusive jurisdiction of the Government of Quebec and Mr. Charest?

Mr. Patrick Bonin: I would like to point out that AQLPA and Nature Québec are calling for a moratorium, and there is a consensus on this subject in Quebec. The Fédération québécoise des municipalités is calling for a moratorium, as is the Union of Quebec Municipalities and the cities primarily affected. So it is not just the environmental groups doing this. The trade unions are calling for it as well.

The call for a moratorium is widespread, and it is not necessarily because people are against drilling, it is because they don't have the information or the answers to the questions being asked.

● (1615)

Mr. Nathan Cullen: You are talking about risks to water and air.

Mr. Patrick Bonin: Certainly, the federal government has a certain role to play, if only in terms of tax policy. As you said, the market does not necessarily regulate everything on its own. Subsidies for oil and gas companies, in fact every kind of subsidy or tax relief can have an impact.

The federal government can also take action on air quality standards. A Canada-wide initiative to harmonize standards for air quality has been adopted by the Canadian Council of Ministers of the Environment. The first thing the Canadian Council of Ministers of the Environment will do will be to strengthen standards for fine particles and ozone precursors. By 2015, we want to adopt new Canada-wide standards in order to harmonize and to facilitate monitoring, to better target problem spots and to make sure that the provinces have action plans and are offering mutual assistance to achieve that objective.

At present, ozone exceedences have already been observed. We already have air quality problems, days when the air quality is poor or marginal. We now want to strengthen the standards and make them more stringent. If we keep the same level, we would have more poor air quality days.

As well, and this is clearly established in the Haynesville study you cited in the brief, researchers have done modelling on Haynesville based on a similar development in Quebec. In that study, we clearly see a significant increase in ozone, 16 parts per billion, when the Canadian standard is 65 parts per billion. If we add 16 parts per billion in some places, we will have more poor air quality days. It is inevitable, because we are adding pollution.

In Quebec alone, the health costs associated with poor air quality are estimated at $2 billion. In fact, studies vary, because some talk about $2 to $9 billion. So this is a significant impact. Obviously, in terms of greenhouse gas emissions, it is the federal government that represents us at the international level. It is the official voice.

That being said, in the Cancún Agreement, Canada, like other countries, set targets to limit global warming to 2°C, to avert catastrophic climate change. Based on current targets of the developed countries, the increase in global warming would be 3.5°C. That clearly means that all of the developed countries will have to revise their targets and adopt more ambitious ones to avert catastrophic climate change. I'm not the one talking about catastrophic climate change, it's the IPCC. So it is very serious.

We can see on the Environment Canada site that the current Canadian target has not been met. With what is on the table for Canada, we are a long way from meeting that target. Since we aren't going to meet that target, we have to go a lot further. To go further, we will have to start making a U-turn and investments will have to be made in this. In my opinion, the federal government has a major role to play in this regard.

[*English*]

The Chair: Mr. Cullen, your time is up.

Mr. Egan does want to give a short intervention.

Mr. Timothy Egan: I just want to respond, Mr. Cullen, to your point on the relationship between gas renewables versus hydro and renewables.

Could I just give you a hypothetical about system efficiency? I don't have the graph with me, but there was a graph from the Independent Electricity System Operator of Ontario that showed 4 p. m. one day and 4 p.m. two days later. There was a 1,000 megawatt difference in the available power from wind because of its intermittency at the same time of day two days later. That's fine, wind is an intermittent power source, and there are ways to deal with that. But what you need to do, if you're using it as part of a reliable power system, is have firm backup readily available. So if it's hydro, which is the most logical partner—you're right, in my view—that means you have to set aside 1,000 megawatts of hydro as spinning reserve, ready to go immediately, to be available. That's 1,000 megawatts of hydro you're not using in the market.

It's better to be using hydro as electricity, sending it into the electricity system, and generating revenues in export markets or other provincial markets than holding it in reserve like that.

With natural gas it's a different scenario, because you tend to hold natural gas in power generation in facilities that are designed precisely for that sort of immediate backup opportunity. It's not as efficient to use natural gas for electricity in the long term for exports the way it is for hydro, so you want to be thinking about system efficiencies on these things at all times instead of having absolutes about what is all good and what is all bad.

● (1620)

The Chair: Thank you very much, Mr. Egan and Mr. Cullen.

Finally, for this panel, we'll go to Mr. Anderson for up to seven minutes.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): Thank you.

Mr. Egan, I was actually going to ask you about using natural gas as a foundation fuel. I don't know if you want to say anything more about that. I think you covered it fairly well.

I did want to give you an opportunity to talk a little bit more about new technologies. You talked a bit about the applied energy technology and innovation initiative that you find in some of the new technologies revolving around natural gas. I would like to hear a little bit more about that.

I may cut the witnesses off if the answers get too long, just because we have short time here.

Mr. Timothy Egan: Sure.

I'll talk about a couple. First of all, I'll talk about renewable natural gas, which is biomethane. That's the opportunity to recover natural gas from waste facilities, from biowaste. There are significant quantities of this available across the country.

Our industry, right now, is looking at setting uniform standards in order to be able to bring this into the system easily and cleanly. Part of this new initiative will actually look at renewable natural gas and the applications there.

We think this could account for a good percentage of the natural gas needs of Canadians right now. It's also available right across the country. So renewable natural gas is one area.

A second area is water heaters. If you look at the per capita use of natural gas, the demand curve is actually going down. Arguably, that's not in our interest as a gas industry. But we are, as I mentioned, energy service providers, and we want to meet the energy service needs of Canadians, and they want their energy needs to be more efficient all the time.

Water heaters are becoming more efficient all the time. We're looking at making sure that new technology for water heaters can be brought into the market in a straightforward and clear way and that there are the support mechanisms in place for that market, to meet the needs of Canadians. So water heaters is a second area.

A third area is vehicles. Our focus right now is on heavy- and medium-duty trucks. We're looking at opportunities to bring natural gas into the truck market.

If one in ten heavy- and medium-duty trucks in use in Canada right now were using natural gas, we would meet our 17% reduction target for the transportation sector for heavy- and medium-duty trucks. We think there's a significant delivery opportunity there. We want to make sure there's all the support necessary for that.

The fourth one is the one I mentioned before, which is combined heat and power. There are various industrial applications of combined heat and power across the country. Right now, micro combined heat and power is the real innovation. And the opportunity there, as I mentioned, is for a unit that could be as small as something for your household.

Right now, it's not affordable for most households. We're looking at what would need to be done to bring the price down. But imagine a unit about the size of the furnace in your home, which would bring 15% more natural gas into your home than you currently need but then supply all of your gas and all of your electricity needs. That's what micro CHP can do. It's a revolutionary technology. It's extraordinarily efficient at end use.

That's a significant opportunity but not necessarily one you would pursue everywhere in the country. You're going to look at the resource base that's available province by province. That resource base does differ province by province.

But again, I think we want to emphasize the point that you want to be maximizing the efficiency of the energy system. You want to be ensuring that all of the resources available to Canadians are being used in the most environmentally sound way, delivering the best economic return for Canadians for domestic needs as well as for export markets that want to use our products.

Mr. David Anderson: A comment was made a little bit earlier that gas is driving down the cost of electricity. That may not be good for your industry, but that is good for consumers, isn't it?

Mr. Timothy Egan: I'm on the distribution end of the spectrum, so I'll speak with two voices.

As a distributor, if my customers are happy with low-priced gas, then I'm happy. For the gas industry, if the prices of gas are low, people scratch their heads and ask if we're going to develop more gas or not. However, gas is an open market. If the price is really low, people will stop developing gas.

That may well be what happens in the province of Quebec. Maybe some of those projects won't go forward because they don't prove to be economic. So people stop drilling for gas for a while, and they work on other aspects of the energy mix. Demand goes up; prices change, and—boom—it suddenly becomes economic to develop gas again. It's a supply-and-demand relationship, which is active in the gas market and beyond the gas market, in the energy market.

If I can just take a minute to talk about this, we're the gas distribution industry, but it's not as though we see electricity as our opponent in any way. The fact is integration in the energy industry in Canada is happening more and more because that helps deliver efficiency.

If you look, for instance, in the province of British Columbia, my member is a company called Terasen, which is about to take the name Fortis. Fortis is a well-known Newfoundland company. It owns Terasen in the province of British Columbia, and it will become one of the most integrated distribution companies—gas and electric—in the country.

I can go across the country and show you the working relationship between gas and electric industries, which is a good thing for Canadians because it's helping to deliver a better energy product—a more environmentally sound energy product—at the end of the day.

● (1625)

Mr. David Anderson: Okay.

Mr. Welt, you made a comment earlier that you'd like to see this left in the ground for future generations. I'm from Saskatchewan, and one of our failed politicians actually used that same expression about 60 or 70 years ago in our province. The provincial government at that time chose to leave one of our natural resources in the ground, and by the time we were done, we were 50 years behind our neighbour in terms of economic development. I'm just wondering if you're prepared to do that.

Mr. Cullen knows who I'm talking about.

Mr. Nathan Cullen: Seventeen balanced budgets are too much for you, I guess, eh?

Voices: Oh, oh!

Mr. David Anderson: Well, it's funny; Mr. Cullen actually can laugh about this because he comes from British Columbia. The reality is very real, and that is that Saskatchewan—

Mr. Nathan Cullen: We wish for your Saskatchewan politics sometimes.

Mr. David Anderson: —was left far behind Alberta because of the choices. The primary choice was made by a premier who chose to leave the resource in the ground while those folks around us were developing.

I think Mr. Hoback would back that up.

The other thing I noticed—

Mr. Thomas Welt: Would you like to have an answer?

Mr. David Anderson: In a minute.

The other thing I would just like to mention....

Mr. Nathan Cullen: You said you wanted them to be short, and you're taking 20 minutes of their time.

The Chair: Mr. Cullen, order, please.

Go ahead, Mr. Anderson.

Mr. David Anderson: I'm just.... My region has benefited from oil and gas development, and I keep saying it in here because we do have oil and gas development in rural areas, with rural people farming the lands, working on the land. We have gas pipelines across our land.

One of the things we have...or there are several things we have. We have jobs, and our young people are staying in the area because of them. We have a service industry that provides jobs for many people. We have local manufacturing that's taking advantage of this as well.

It's interesting to me that in none of your material here do I see you talking about any of those possible advantages. I do see you talking about the cost of wages going out of the area, dividends going out of the area, the cost of equipment coming in, and those kinds of things.

In your figures here, where you talk about $230 million coming to the Quebec government per year, likely, out of this, I see no benefits included there. I'm just wondering, are you aware of those benefits? If so, why aren't they mentioned?

The Chair: Go ahead, please, Mr. Welt.

Mr. Thomas Welt: I heard two questions there. The first was in terms of keeping this for future generations. It is not only for future generations, but it's a general rule that if you think you can get much more later, why would you sell it at a loss? I don't really understand this.

Actually, if you sell it today, you will lose money. Normally you keep it for a time when the price is going up. It is a totally normal commercial approach.

Mr. David Anderson: That's the same argument we heard, yes.

Mr. Thomas Welt: Actually, first, Quebec does not need it. Quebec has all the power that is needed. The price is low and the risks are high. The benefits for Quebec in terms of just money are very little, and practically none if you take everything in consideration. It's only a small fraction of 1%; that's the best guess.

Mr. David Anderson: But in your presentation you talk about $230 million coming to the treasury and $600 million coming off the trade deficit. That's substantial. And that's from your own presentation.

Mr. Thomas Welt: Yes—

The Chair: Mr. Anderson, your time is up. We have to end the panel.

Give a very short response if you'd like, Mr. Welt, very short, because the time is up.

Mr. Thomas Welt: Your second question was that we have not mentioned also the benefits. This was your question, yes? But I just answered the question of what the Quebec community would get: very little.

At $6 per thousand cubic feet, they will get maybe $200 million per year. But if you subtract all of the costs of what the Quebec community must provide, in terms of roads, contamination, and so forth, and the slew of actions that Quebec must take in order to obtain this small amount, in my view it is negative. In my view, nothing will go to the Quebec treasury.

● (1630)

The Chair: Thank you.

Mr. Welt, Mr. Bonin, and Mr. Egan, thank you for being here before our committee, giving your presentations, and answering questions.

We will now suspend the meeting for a couple of minutes as we change panels.

● _____ (Pause) _____ ●

The Chair: Could I have the witnesses and the members take their places?

For our second panel, we have with us Will Koop, coordinator, British Columbia Tap Water Alliance. From Apache Canada, we have Timothy Wall, president, and Natalie Poole-Moffatt, manager, public and government affairs.

Welcome to all of you today. I'm looking very much forward to your presentations.

We'll take the presentations in the order on the agenda. We have first, from the British Columbia Tap Water Alliance, Will Koop, coordinator.

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

Mr. Will Koop (Coordinator, British Columbia Tap Water Alliance): *Merci beaucoup*.

Bonjour. Thank you for the opportunity to appear before this committee.

My name is Will Koop. I'm a researcher and author of numerous reports and a book concerning the protection of public drinking water sources in British Columbia.

A year ago I created a website called “Stop Fracking British Columbia” when I began to investigate energy corporations in northeast B.C. mining enormous volumes of fresh water to hydraulically fracture or “frack” deep shale gas deposits. Although water is a fundamental component of fracking, it's only one of numerous other environmental and social concerns.

B.C. shale developments are far removed from where I live. An 18-hour vehicle journey from Vancouver just to get to the outer edge of the vast energy zones leads to the international energy companies. I visited the area twice, in May and September 2010.

As a result, I produced three reports that touch on some of the dynamics of these issues. The titles are: “The World's Biggest Experimental Frack Job!”, which is about Apache Canada; “24/7 Less Peace in the Peace”, which is about Talisman Energy; and “Encana's Cabin Not So Homey”, which is about the issue of cumulative effects. In addition, I produced two YouTube videos called “My Very First Frack” and “The Komie Commotion”.

Quebeckers concerned about deep shale gas developments have translated my cumulative effects report and the videos into French on their website blogs.

Our provincial regulator, the B.C. oil and gas commissioner, stated to this committee on December 14 that the environmental and social consequences from deep shale gas developments in northeast B.C. are “responsible” and in order. I am here to tell you that they are not.

For instance, in my report “Encana's Cabin Not So Homey”, I described how the rush to develop B.C.'s non-renewable deep shale gas is occurring without cumulative environmental effect studies: “Northeast British Columbia's shale gas race will undoubtedly become and remain one of the most significant environmental and public planning issues facing First Nations, the Province, Regional Districts, regulators, communities, and residents alike”. Given the backdrop of ever more lax and non-existent legislation regulations, these developments can be understood as distinct social and political failures.

I included a quote from a 1986 Ministry of Environment report that aptly summarizes what the B.C. government has failed to undertake: “strategic planning precedes the sale of petroleum rights”. This ensures that all parties involved are aware of the concerns and constraints associated with development in an area before development is proposed.

In 1991 the Ministry of Environment released a report urging the government to implement cumulative effect studies in the energy zone, which it failed to undertake. The concerns by ministry staff about the absence of cumulative effects studies continued with the creation of the BC Oil and Gas Commission of 1997. In 2003, the commission finally published a lengthy two-volume report on how to possibly implement cumulative effects studies in northeast B.C. However, the matter was ignored.

Since 2003 the government has leased thousands upon thousands of hectares of public lands to energy companies without conditions to conduct cumulative effect studies and without consulting the public. On November 23, when Canada's representative, Richard Dunn, was asked by this committee to comment on the state of cumulative effects studies in British Columbia, Mr. Dunn stated, “It would not make sense to do a cumulative effects assessment”.

Mr. Dunn's response is not only an affirmation that cumulative effect studies have been ignored, but also a disturbing statement about the energy corporation's attitude and philosophy, including Mr. Dunn's comments about Canada being on “the forefront of environmental and economic stewardship”. Encana has significant leased areas and corporate partnerships throughout northeast B.C. and elsewhere.

There is only one long-term cumulative environmental effect study in western Canada. It was conducted by Ernst Environmental Services on Pioneer Natural Resources Canada Inc.'s oil and gas operations in the Chinchaga area of B.C. and Alberta. Unfortunately, that ten-year study was terminated after the company was acquired in November 2007 by TAQA North, a Saudi Arabia company owned by the Abu Dhabi National Energy Company, with deep shale gas leases in northeast B.C.

In 2005 Jessica Ernst of Ernst Environmental Services had her well water in Rosebud, Alberta, contaminated with methane, ethane, and other hydrocarbons after Encana fractured there for coal bed methane gas.

As Monsieur Parfitt testified before this committee on December 2, the cumulative effects issue is further complicated by the fact that the B.C. Oil and Gas Commission has provided little accurate or comprehensive data on public resource issues by energy companies, such as the water withdrawals list he referred to.

● (1635)

This long list released by the B.C. Oil and Gas Commission regarding companies operating in the Horn River basin failed to provide accurate information, incorrectly suggesting that little water was needed for the fracking operations from 2009 to 2010.

I wrote in my last report that Encana had apparently conducted the world's largest fracking operation on multi-well pad 63-K , in the Horn River basin, next to Two Island Lake, doubling the resource figure that Apache Canada had given earlier, when it announced the world's largest fracking operation a few kilometres away.

I estimated that Encana used about 1.8 million cubic metres of fresh water, which is equal to 700 Olympic swimming pools, about 78,000 tonnes of specially mined frack sand, which would be about 800 rail cars, and about 35,000 cubic metres of toxins. And I said that this operation might be a template or an indication of many more operations in the future.

The B.C. government does not mandate energy companies to publish this and related data, but it ought to. Encana's public relations officer in its Calgary headquarters later said to me in a telephone conversation that Encana was concerned about the information in my report. I responded that I was only too happy to change the information if Encana would provide me with its own final figures from pad 63-K. I then e-mailed a number of questions to Encana, which I have attached to this report and can release to you later. But I have not received a response. As I read from this committee's transcripts, Encana promised to provide this committee with the water and frack sand data on pad 63-K but has yet to do so.

The absence of long-term, integrated, strategic cumulative effects planning, the lack of accurate resource-use data by the Oil and Gas Commission, and little governmental oversight or monitoring of the energy developments in northeast B.C. are not the only concerns. Many landowners who are directly affected by the energy developments have told me of their concern that they seem to have few rights and stakeholder privileges. They state, for instance, that high-pressure toxic gas facilities should not be established so close to residences. Air quality standards are deficient. There are few or no air-monitoring systems. Water tables used for residents and agriculture are changing. B.C.'s mining legislation gives priority to developers to access and develop private property.

Dave Core, of the Canadian Association of Energy and Pipeline Landowner Associations, provided this committee with some of the concerns on November 25.

The concerns I have raised to this committee about legislative and regulatory deficiencies and monitoring oversight in British Columbia are not isolated. In our submission to the National Energy Board in June 2006 regarding Kinder Morgan's Anchor Loop project, I reported that the Alberta government failed to act on the recommendations of a special committee appointed by Alberta's executive cabinet in 1972. That committee recommended that the tar sands might be developed over a 750-year period, not over a 50-year period.

The Alberta government suppressed the report until it was leaked three years later to Mel Hurtig, who then released the study. The special governmental committee, headed by the Alberta Ministry of the Environment, understood the magnitude of the environmental consequences of energy companies proposing to mine the tar sands at that time. In that same report, the committee made strong statements of concern about multinational energy corporations and strong statements about Canada's energy security as it related both to protecting the environment and to providing long-term energy supplies found in Canada for the long-term use of Canadians.

Thank you.

● (1640)

The Chair: Thank you, Mr. Koop, for your presentation.

We will go now to Mr. Wall. I don't know if you're going to split your presentation, Mr. Wall. You have up to seven minutes.

Mr. Timothy Wall (President, Apache Canada Ltd): My name is Tim Wall. I am the president of Apache Canada. I've been with Apache for about 20 years, and I'm a petroleum engineer by background, so an engineer in my base.

I've been in Canada for about a year and a half, and many of the things Mr. Koop talked about are in our area of operations. The Encana things that he mentioned, we are a fifty-fifty partner in those things. We are big in British Columbia. We're a big gas producer there in the Horn River and several areas in British Columbia. We just purchased the assets of BP petroleum in Alberta. So we're in Alberta, British Columbia, and Saskatchewan. Those are our big producing assets. We're doing exploration work in shale over in the New Brunswick area.

Apache is a bit different. We go into the communities. We did this in New Brunswick and tried to get many groups together to talk about what we do and how we do it. We work with the communities as well as we can. This really originated in the Fort Nelson area with the Horn River producer group and the first nations groups there. We worked with those guys and brought the producers together with the first nations and the community to try to get everybody to be on the same page and to understand what we do there.

There are a couple of things I would like to address that Mr. Koop talked about. He talked about water, and we do use water in our fracking operations. These are horizontal wells. It's amazing what's happened over time; as you get in and do these types of operations, how you optimize and get better every day. You're inventing things. One thing Mr. Koop didn't mention was a plant that we built just to produce saline water. There is a saline-producing zone at depth, and we actually produce water from the Debolt. It's salt water. It's non-potable. It has a little H_2S, but we bring it to the surface, we clean it up, and we do our frack operations with it. It's a closed loop. We take the water back, we clean it up again, and pump it in the next frack, as much as we can.

It's an ongoing process. I think that's just an innovative idea. I think there will be lots of innovative ideas as industry gets better at it. The shale operations, as I said, are ongoing in the United States, they're ongoing in Canada, mostly in the Horn River and in Montney and some of those areas. You'll find that we'll get much better at what we do.

The water he talked about in 63-K, some of that was fresh water. I have to go with that. It was as we were commissioning our water plant. Toward the end, and in the frack jobs we're doing now, they're almost all water plant, using the water out of the Debolt water system, which is not fresh water by any stretch of the imagination.

There is a point about regulations. We are regulated in B.C. Natalie can talk a bit about that.

● (1645)

Ms. Natalie Poole-Moffatt (Manager, Public and Goverment Affairs, Apache Canada Ltd): As we all know, British Columbia has some of the toughest regulations when it comes to oil and gas. It started the Oil and Gas Commission in 1998. It's world-renowned. People very much appreciate the hard work they do there. The Oil and Gas Activities Act was strengthened over the last two years and put through government in 2010. It has some of the toughest environmental regulations as well.

B.C. has just created the Ministry of Natural Resource Operations, which is streamlining to make sure all the regulations are going through one arm, so they don't have to worry, cross-government, about catching all the things they're doing. As well, there is the Ministry of Environment. British Columbia has great regulatory regimes and works with the environmentalists as well as the companies to ensure regulatory approval.

Mr. Timothy Wall: In closing, as I pointed out before, I am a petroleum engineer. Designing frack jobs is what we did in college in the 1970s and the 1980s. Everybody wants to treat this as new technology. Pumping fracks have existed.... Thousands and thousands of fracks have been pumped all over North America, all over the world.

In the United States we pump them on a regular basis, especially in tighter rock in the central United States. It's not a new technology by any stretch of the imagination. We would call these "water fracks", high-volume water with sand. The water breaks open the formation, and the sand pops the formation. You create flow channels, and the sand holds the flow channels open. They are limited in extent; because of the energy you pump they tend to be somewhat localized.

On a pad right now, we've limited our footprint. Pad drilling is what we've gone through in Horn River, where one pad can drain 2,000 acres. We drill 16 wells or so on a pad and limit the size of the footprint we have in the areas. You space those wells. Right now, depending on the well pad, they're about 300 or 400 metres apart to get connectivity between wells. It's not as if the fracks go on forever. They're in a small, limited area, and that's how you effectively drain an area.

I have something about the well bores we've talked about before. They are at depth. These wells will be drilled to 3,000 metres at depth and then horizontals are laid out flat at a 90-degree angle into the reservoir. They're cased all the way down and they're pressure-tested. They have integrity. We would ensure that. We would not pump a frack job if they didn't. A lot of things industry does are common practice that we don't go out and tell people we do. It would be imprudent for us to do anything but do the best we can and get these assets developed and try to improve the communities we're in.

That's it.

● (1650)

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

We'll go directly to questions now, starting with Mr. Tonks. You have up to seven minutes.

Mr. Alan Tonks: Thank you, Mr. Chairman.

I got one question in last time. I didn't leave any time for me.

Anyway, thank you for being here. We've heard Mr. Koop, who has looked at what he believes is a deficiency in the cumulative effects with respect to the fracking processing. We had a professor from Cornell University yesterday who outlined the toxicity of not only the flowback, which comes as a result of the process of horizontal fracking or hydraulic fracking, but also 30% of the residue stays in the ground. He indicated he had a serious concern with respect to the water and water table implications and so on.

You have leaned heavily with respect to the rigours of the British Columbia environmental assessment process. Could you outline how that process relates to the cumulative effects? Because I take it that is where residents have a major degree of concern. It's not what they see now; it's what the overall long-term effects will be.

Mr. Timothy Wall: In the Horn River area—I don't know if you've seen pictures—there aren't many people there. It's 60 kilometres away from Fort Nelson to the north, so there's nobody there.

In our little handout.... I don't know if you guys have a copy of the handout on addressing the environment. You can see that people who work for us in the areas.... We're part of the communities we're in. We'll be in the Fort Nelson community for 50 years, probably, developing these assets. We are part of that community, and we have to be able to walk into the community and understand what people's needs are. I think we need to understand the cumulative effects of that. We're doing the best we can and trying to be as prudent as we can to optimize our jobs, to be able to create innovative solutions with the water.

I guess the question was the regulatory effects on it.

Ms. Natalie Poole-Moffatt: Of course all the way through we have to go to the Oil and Gas Commission and get permits, whether for tenure or lease. Throughout that process, we submit to the Oil and Gas Commission.

We've worked with Geoscience B.C., which is doing water impact studies up in northeastern B.C. We've been working closely with them for exactly these reasons. We opened an office in Fort Nelson a year ago. We've employed seven people up there—well, four, and we have three jobs out—because it's really important to us on the ground to ensure responsible ownership of the development we're creating.

The Debolt plant is one perfect example Tim talked of. We've also reduced our environmental footprint with our pad reductions. Each step of the way, we're looking to optimize all our productive abilities. We work with the Oil and Gas Commission continuously, as with the Department of Natural Resources, as we do with the Ministry of Environment.

Mr. Alan Tonks: Okay.

Mr. Koop, you started off by characterizing British Columbia's environmental process as “ever more lax”. You also indicated an historic chronology with respect to how the concepts of cumulative impacts in fact had been avoided, if you will. You're far better acquainted with the environmental assessment practices of British Columbia, then. You've heard the response. I saw that you stayed and listened to the witnesses who we had before. You know that there is a moratorium that has been requested in Quebec. You know that there is a moratorium in Pennsylvania, I think. Obviously, from those moratoriums in other jurisdictions there are concerns.

What would you be looking for with respect to changes in the environmental protection act that exists in the environmental assessment process in British Columbia?

Mr. Will Koop: In British Columbia? The Environmental Assessment Act process and legislation was introduced in 1995. When the B.C. Liberal administration came in, they started to remove things and water it down. There was a tremendous amount of pressure by companies to do so, and they're sympathetic to that, so they started doing that. And they did it across the board. So we have an atmosphere in British Columbia where we've gone back in time. We've gone back to the 1980s with the Social Credit government. We're headed backwards—sorry about that.

What I'm saying is that this has become a problem. And there's a bigger problem. What we also see is we see the tar sands, we see the federal government allowing things to go on to the Fisheries Act, etc. The way I'm looking at it now is that the tar sands have lowered the environmental bars and are creating kind of a ripple across Canada. In British Columbia there's apparently very little that the public thinks it can do with the government to change these things. They're very concerned about what's going on, but they seem very powerless.

I don't know if that really answers your question. I don't know where we're going to be going, but what I'm trying to say is, listen, we see this in the United States, we see this in Quebec here right now. There's a big rush to develop all these things. Let's slow down, let's take a look. I've been up there to see things. I've heard some of the reports by the first nations in their presentation to the National Energy Board about new pipeline corridors, their concerns about what's going to happen to the wildlife. Sure, there are no people who live in this area. As Tim says, there's wildlife, there are fish, there are streams. This is wilderness full of wildlife.

● (1655)

Mr. Alan Tonks: Okay, thank you very much.

Thank you, Mr. Chairman.

The Chair: Thank you, Mr. Tonks. You got two questions in that time; that's progress.

Monsieur Pomerleau, for up to seven minutes.

[*Translation*]

Mr. Roger Pomerleau (Drummond, BQ): Thank you, Mr. Chair.

I would like to thank all three of you for the presentation you have given.

[*English*]

Are you okay?

Voices: No.

Mr. Roger Pomerleau: Push the button.

Mr. Timothy Wall: Okay, there we go.

I didn't understand anything you said.

Mr. Roger Pomerleau: Okay, I'll translate myself.

[*Translation*]

Mr. Roger Pomerleau: My first questions are for you, Mr. Koop. In Quebec, at present, one of the figures that is used most often...

[*English*]

It is okay? Okay.

[*Translation*]

In British Columbia, they say people are raking in billions of dollars from shale gas. Do you share that opinion? What is your answer?

[*English*]

Mr. Will Koop: The government has reported that they've received well over $2 billion in land lease sales. There are figures out on that. The question that we have about this, of course, is the way in which it was done. This was done so quickly, without public input. Even though the Oil and Gas Commission has its report about cumulative effects, when these land sales began in 2003, essentially, and I think Encana was one of the first companies that got prime areas in these leases—

Mr. Timothy Wall: It was Apache, actually.

Mr. Will Koop: Oh, okay.

Mr. Timothy Wall: The partner.

Mr. Will Koop: As these things evolve, sure we've got lots of money, but now we have to deal with the problems that should have been dealt with to begin with, as I pointed out in the quote from 1986 about trying to establish what's going to happen on the land before giving out these lease agreements.

[*Translation*]

Mr. Roger Pomerleau: You can be happy because we have the same problems in Quebec, but we don't have the same money. It's rather odd.

[*English*]

Mr. Timothy Wall: The B.C. government, after the land sales, also makes tax dollars, and things coming off those leases too. So there is additional revenue.

Mr. Roger Pomerleau: Yes. That's what they promised, too, in Quebec.

[*Translation*]

You talked about strategic planning, which had to be more important than oil companies' rights. In Quebec, at present, it seems we are having the same problem you are criticizing in British Columbia. Things are being done in haste, with no strategic development, and we are embarking on absolutely unbelievable things.

I will use an example that Mr. Welt gave me during the break. He told me it was really quite extraordinary. He told me he had worked for the oil companies in Texas, for Texaco. He installed floating roofs in gas tanks in Beaumont, Texas. When he went to install the roofs, he arranged it so his first roof was done to perfection, because then he would sell more. If the others had little problems, it was less important, but the first one had to be perfect. So they drilled 30 wells. That was the first 30, and 20 of them produced, and they are asking us to trust them, they are asking us to believe that when there are 15,000 of them, it will all be fine.

Do you not think that people in Quebec are right to be afraid and to ask serious questions, given these circumstances?

● (1700)

[*English*]

Mr. Will Koop: Absolutely. This is the process that's proceeding in the United States.

Tim from Apache mentioned that fracking is an old thing. Actually, fracking started off in a new kind of way in Alabama in the 1980s as coal bed methane areas, coal beds, were being fracked. This was new technology.

The interesting thing is that as I'm researching this history, I'm finding out what the impacts on the environment were at the time. Of course, these things were proceeding on private property lands owned by U.S. Steel. They had more of a say in what could happen on their lands, but they were polluting the streams and they were actually poisoning people's wells. As this process began in Alabama, the number of wells skyrocketed.

The interest came from the United States. It spread out in the United States in the 1990s. As it was doing so, I think there was a problem that occurred in the United States without enough oversight in terms of regulations and legislation under national acts, such as the Safe Drinking Water Act, and many other things.

These things are coming into play now. Everybody is wrestling with this right now.

[*Translation*]

Mr. Roger Pomerleau: I have one last question for you. I may have a short question for Ms. Poole-Moffatt then.

The Americans are doing a study. In 12 months—not in 20 years—we would have a chance to get hold of a serious study, independent of everything that is going on in Canada and Quebec, and free of charge. Are people crazy to want to wait for that study before going ahead, in Quebec or anywhere else?

[*English*]

The Chair: Mr. Koop.

Mr. Will Koop: Yes, it is problematic because there are companies that have made investments.

The unfortunate thing now is that because they have done this, and the B.C. government has allowed this, as in British Columbia, it's going to become very difficult to say no to these things or to say to wait.

What are we going to do? There is no forum for public debate in British Columbia to solve these issues. This is probably the first time this kind of thing has been discussed in any forum on this issue. I haven't heard anything about this in British Columbia, people talking about these issues in an open manner.

[*Translation*]

Mr. Roger Pomerleau: Ms. Poole-Moffatt, you talked about the fact that the regulations in British Columbia were extremely well done. In Quebec, we are also wondering what we are going to do later, if we should decide to drill for shale gas.

In British Columbia, do you have to give the chemical composition of the chemicals you use for fracking? That doesn't seem to be the case in Quebec, because of trade secrets.

[*English*]

The Chair: Ms. Poole-Moffatt, go ahead.

Ms. Natalie Poole-Moffatt: I'll speak to the first part, and then I'm going to let Tim speak to the second part.

In terms of British Columbia, they just created what was called the Oil and Gas Activities Act. In 2007 they did a B.C. energy plan that reviewed energy needs and security across the province. Then in 2010 they put out the Oil and Gas Activities Act. The act followed up on legislation, and toughened up the environmental standards that were created in the 1990s.

The Oil and Gas Commission was started in 1997, as Mr. Koop said. Of course, as all governments know, your regulations have to grow with the economy that's around them. Now there is a $5 million price tag associated with not working within the regime of the Oil and Gas Commission.

All of these things are very favourable and positive. As far as fracking fluid goes, I'm going to let Tim discuss what Apache does. If you do get an opportunity, you should go on our website to http://www.apachecorp.com/Operations/Canada/NewBrunswick.aspx. I really think what we've done in New Brunswick is a template for good consultation.

● (1705)

The Chair: Go ahead, please, Mr. Wall.

Mr. Timothy Wall: You have to remember, with regard to the fracking fluids.... And I don't know why the gentleman brought up coal bed fracking, because it's quite a bit different from the fracking here. These are water fracks. We called them water fracks 20 years ago, and we still call them water fracks. They're high water volumes—she's right—with some sand, again, to prop open the flow channels. That's what it's there for.

As for the chemicals involved, we actually don't mind giving you the chemicals. Most of the chemicals are what you have in the cleaners in your house. One of the chemicals we use is called a surfactant. A surfactant is basically soap. It reduces friction during pumping. Ninety-nine percent of the job is water, and we pump surfactant for that.

We pump what we call bactericide. Bactericide keeps bacteria from growing while you're pumping water down the hole. That is basically a bleach, with chlorine content.

The chemicals, a lot of times, are the same ones you'd see in your house. Apache doesn't have any problem with issuing them. Where some of the vendors have problems is with giving away their competitive advantage. They don't want to do that. Then they would have competitors jumping up and being able to replicate those since you had given them their chemical content. That's the problem they have.

Having a list of chemicals involved in a 99% water frack is not a problem for us.

The Chair: Thank you. Your time is up.

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

Mr. Nathan Cullen: Thanks, Chair.

Mr. Wall, you expressed some desire, I think, in part of your testimony to have better assessments or to do a better job of cumulative impacts. This is a question that comes up time and again.

The leasing process that you folks go through as an oil and gas company is one at a time. You seek a lease for a play. You say what you're going to do in that part of the area. Then there can be a lease right next door, in the same watershed, within eyesight, but the two leases don't overlap one another. There isn't any kind of a cumulative understanding of what the impacts may be.

That's how the system is designed right now, as we understand it at this committee. Is that right?

Mr. Timothy Wall: That's correct.

Mr. Nathan Cullen: If this committee is going to write a report on this and make recommendations, one of the recommendations we're going to be looking at is better ways to get at understanding—because it's just one watershed in some cases. It doesn't matter whether you've done one well or six wells, if there's this much water taken out and this much water put in and chemicals and what not. That's the impact. That's the net impact on that watershed.

That's a fair anecdotal assessment, right?

Mr. Timothy Wall: But if you're pumping saline, non-potable water, then it's a different situation.

Mr. Nathan Cullen: Sure. Regardless of the techniques, I guess what I'm driving at—

Mr. Timothy Wall: But there is a differentiation, though, because it's not drinkable water. It's not runoff water. It's not water that could be used in a household. It's basically an old ocean deposit that's getting produced, cleaned up, and used as frack fluid that you could never use otherwise.

Mr. Nathan Cullen: I understand the technique used in some cases. That's not the case in all fracking jobs. Sometimes they use water from municipal pits.

Mr. Timothy Wall: No, it's not always the same. This is an innovative way we've used to solve the problem.

Mr. Nathan Cullen: I understand, so let's get out of the specifics and into the general then, because that's what we're trying to drive at here.

With respect to the cumulative impacts of the oil and gas industry, if we're talking about energy security and which path Canada follows for energy security, this is an important thing to understand. It sounds as though Apache would be in favour of moves that would allow the cumulative impact to be better understood during the leasing requirement.

Ms. Poole-Moffatt might have something to add to that.

Ms. Natalie Poole-Moffatt: I would just say that as with all things we do, we will work with government. Of course, that's why we're here. We wanted to be able to present to you.

Mr. Nathan Cullen: In your testimony you referred a lot to the B. C. Oil and Gas Commission. Are you aware of the B.C. Auditor General's report of February 2010 that followed up on an earlier report from 2002 about the B.C. Oil and Gas Commission?

● (1710)

Ms. Natalie Poole-Moffatt: Yes, and my understanding is there was a subsequent report put out after that one in which the British Columbia government was told that it was doing things in the right manner.

Mr. Nathan Cullen: For the benefit of the committee, maybe we could add this report to our study, because often—

Ms. Natalie Poole-Moffatt: And you should also add the one that followed up on it.

Mr. Nathan Cullen: There is no one disclosing that. The one we have from February 2010 from the auditor of the province said that the B.C. Oil and Gas Commission had failed in its oversight of cleanup of contaminated areas, and failed in its promises of public disclosure.

To be fair, in 2002 the auditor had found the same thing and had come back eight years later and said himself that he thought things would have improved.

What's important for the oil and gas industry and for this committee in studying this is that if we're going to have regulators in place, they've got to be good. Right? You would agree with that.

Ms. Natalie Poole-Moffatt: Yes.

Mr. Nathan Cullen: They've got to be good in terms of their work with the public and follow the mandate they're meant to follow. If commissions fail, if the regulators fail, then we're relying more and more on industry to make sure nothing goes wrong. You seem like nice people, but there are some folks out there who are not going to do the right thing.

My question is about the contamination, because water contamination consistently comes up as a concern. Mr. Wall, I think you can appreciate the general public's concern when told about the amounts of water that are injected, particularly with the list of chemicals that are put in. You're not required by law to tell us what is in that suite of chemicals that goes in the fracking fluids. Is your company prepared to disclose those? Are you prepared to encourage governments to make that mandatory?

Mr. Timothy Wall: We've already said we would tell you what's in it. It's not a problem for us. Again, the problem a lot of people have is that they don't want to give away their competitive advantage. We're just an operator. I can tell you what the chemicals are. Again, it's 99% water.

Mr. Nathan Cullen: And I'm trying to understand the cumulative impact. If I said that some of these chemicals are in the water in those pitchers today, there wouldn't be a lot of people drinking it. They're pretty bad. They're carcinogenic. Some are definitely lethal, in certain quantities, to humans and animals.

Mr. Timothy Wall: Again, a lot of them are cleaning chemicals. A lot of them you'd see in local stuff that you use in your house. Again, it's 99% water. I don't know where you're going with that, because you're pumping it in the formation and you're producing it out of the formation.

Mr. Nathan Cullen: That's my question to you. What's your standard within Apache for recovery of water that goes in and chemicals that go in? Do you have a self-imposed standard? I know there isn't a regulatory standard that says that if you pump in one million litres, you must get 950,000 litres. What's your standard for recovery of the water?

Mr. Timothy Wall: There is not a standard. Reservoirs are different. That's not the way it works.

Mr. Nathan Cullen: So you have no standard.

Mr. Timothy Wall: No, no, I didn't say that. I said that there is not a company standard.

The way reservoirs work in general is that you pump a fluid in, and because of interstitial pressures in places where things cannot come back out, they stay in place. If you pump a job and you have no other water in the reservoir, you'll produce as much water out of that reservoir over a period of time as the reservoir will give up. You don't just say that after so much you stop. That's not the way it works. You produce it back. Over many, many years you might produce that water back. At some point, it might not be produced back and it may stay in the reservoir over time.

Mr. Nathan Cullen: Mr. Koop, on this cumulative impact question, you raised it in your testimony. Why is this so critical to the oversight and proper regulation of the oil and gas industry, particularly with respect to fracking and with respect to this type of technology?

Mr. Will Koop: With the evolution of cumulative effect studies over the last 30 years, for instance, there has been a difficulty for scientists to undertake these things, understandably, because of the repercussions of the conclusions from these studies, which would limit development. There is politics about cumulative effects. It comes into play in British Columbia, and it comes into play in the tar sands.

A voice: Oil sands.

Mr. Will Koop: Oh, sorry, the oil sands. Sorry about that.

Mr. Nathan Cullen: It's the company spin. You need to get it from government once in a while.

Mr. Will Koop: It's even in the United States. With the Bush administration, for instance, a very serious thing occurred. The Bush-Cheney administration allowed the energy companies to enter public lands, public forest lands, forest reserves, and those areas were impacted and undermined. Lots of people rose up to say, “No planning is going on. What's going on? What's going to happen to the wildlife and all the things around these places?”

The whole theme of cumulative effects is politically laced. It's very difficult to get these things done because there isn't an atmosphere to tolerate them.

● (1715)

The Chair: Thank you, Mr. Cullen.

Mr. Anderson is next, for up to seven minutes.

Mr. David Anderson: I'll share my time with Mr. Harris.

Ms. Poole-Moffatt, I don't know if Mr. Cullen is aware that there was a follow-up report. You seem to want to say something about the report you referred to. Is there anything you'd like to put on the record about that? We would like a copy of it for the committee as well.

Ms. Natalie Poole-Moffatt: Yes, the Oil and Gas Commission and the Auditor General did a follow-up. You should probably check with the B.C. government, but I believe the Auditor General's report came out while they were doing the Oil and Gas Activities Act. I'm not disputing that, but they did find out they were doing the Oil and Gas Activities Act, and many other things were addressed through that.

We can certainly help you obtain those documents, if you like.

Mr. David Anderson: Mr. Wall, over the last couple of days we've heard concerns about the number of wells that need to be put in place to access this resource. You talked about multiple wells on one site. That seems to be a good use of a site. Is that accurate?

Mr. Timothy Wall: It's a spectacular use, as opposed to the traditional way, where you put one well in a 360-acre lot, and then you go over 360 acres and drill another well, and you have a pad associated with each one of those wells at the drill location.

On the way we work now on these pads in Horn River, you drill 16 wells off one location. So you have one location, you drill 16 well bores in different directions, and you can drain 2,000 acres, whereas before you might drain a couple hundred acres with a well. Now this pad can drill 2,000 acres, so it's very efficient.

Mr. David Anderson: Good.

I want you to tell me a little bit about community participation and how you fit into the communities. Your company has been involved in my part of the world, southwest Saskatchewan, for a while. Can you talk a little about your role in communities and how important that is to your company?

Mr. Timothy Wall: I'll start with Saskatchewan. We operate the Midale Unit, which is a CO2 enhanced recovery injection unit. It's offset by the Weyburn Unit.

All the people in that area are local people, local guys. We're part of that community. We've been in that community for a long time. We see ourselves as trying to be the most responsible we can be, because we live there. Our people live there. The Apache people are from there.

In the new areas we go into, we understand there are people who don't understand what we do. I have to be honest with you, a lot of people have no idea what we actually do for a living and what we've done for a living for many years. In areas like New Brunswick, we were down there early on. We tried to talk to as many people as we could—environmental groups, community groups—to give them the data to understand what we do and who we are. We let them look us in the eyes and ask us questions, and we try to be a part of that community. We're going to live there for the next many years, and the people who will work for us will be in that community.

In Horn River we were a little bit innovative. I have to be honest with you that it didn't have anything to do with me; I wasn't there yet. I've only been there for a short while. But the guys created the Horn River group of producers. They got together our producers in the Horn River area and talked about issues. They talked to the community, the first nations, and anybody who would talk to them. They tried to explain what they did, how they did it, and what to expect with the activity there.

Mr. David Anderson: Over the last couple of days we've heard a lot of strange accusations about the industry. I don't want to run through them, but the one we heard today is that it's your industry's fault that the globe won't be able to reach its two-degree climate change goal.

I thought you might have a reaction to that.

Mr. Timothy Wall: No, I'll defer that one.

Mr. David Anderson: The other one is about the technology. I'd like to hear a little more about that. Basically, over the last couple of days.... The question is, are you technological idiots?

Mr. Timothy Wall: I don't think so. We've put a lot of money into technology. Being innovative gives you that competitive edge, trying to find out ways to do things differently that benefit not only your stakeholders but the people in the community and around you. We're always trying to improve what we do.

The Chair: You still have three minutes.

Mr. David Anderson: Go ahead.

Mr. Richard Harris (Cariboo—Prince George, CPC): All right, thank you, Mr. Chair, and thank you, guests.

Mr. Koop, actually I would appreciate some very short answers, as I have a number of questions.

Mr. Koop, listening to your testimony, it sounds to me like you don't have any trust at all in this industry, and you would prefer that the guys in the shale gas business would just maybe pack up their rigs and go home. Just a short yes or no. Am I seeing this right?

● (1720)

Mr. Will Koop: The title of the website is quite provocative, and there's a reason behind it, as I outlined in my testimony before you today.

Mr. Richard Harris: A yes or no.

Mr. Will Koop: No, it's not quite how you paint it. What I've said here is that things are proceeding on such a rapid scale in British Columbia, with the handout of these leases so quickly without understanding what the cumulative environmental repercussions are—I'm just repeating myself.

Mr. Richard Harris: How many years do you think it would take in British Columbia to be able to adopt all of the things that you're looking for? Once they got there, would there be any interest in the industry at all from the stakeholders?

Mr. Will Koop: There are two things involved here. Where is this gas going to be going in northeastern British Columbia?

Mr. Richard Harris: We're talking about environmental things. We're not talking about where it's marketed, with all due respect. That's another story. We're talking about taking it out of the ground.

Anyway, I didn't want to get politics into it, but actually you brought it up. You put some blame on the old Social Credit Party—I'm glad you and I are old enough to remember those guys—and also the Liberal Party. I have to ask the question, is there any political organization in B.C. that you would have confidence in that would maybe curtail the activity for however long it takes to bring it up to your standards? Is there an organization there now? You mentioned the Liberals and Social Credit, so I'm just wondering if you've got a favourite one that you like that would do this sort of thing?

Mr. Will Koop: I would say there's been difficulty in having good visionary concepts on land-use development in British Columbia.

Mr. Richard Harris: So the only one left is the NDP, really. Do you have confidence in them?

Mr. Will Koop: If I might, there was a proposal in November 1994 by the commission on resources and environment commissioner, and what he wanted to enact was legislation that allowed the public to get involved with land-use policy, and he said that they had a legislative right to do so.

Mr. Richard Harris: Okay, so—

Mr. Will Koop: That was his way of—

Mr. Richard Harris: I was looking for a succinct answer, but I want to move on.

The Chair: One more very short question, Mr. Harris.

Mr. Richard Harris: Mr. Wall, you talked about recycling the water. I think that's an important thing, because technology is moving at breakneck speed, as I understand, in the oil and gas business. I do know of apparatuses now that can take the drilling mud, for example, and turn it into a solid waste, which is easier to dispose of, recapture the water, and then use it again. Where is the recycling technology? Have you got a long way to go, or do you figure you're just about there?

Mr. Timothy Wall: You have to remember we're pumping this fluid, frack fluids, and we can take some contaminants. We can take high salt content; we don't have to have pure water. So we have the facility set there now that can actually knock out a little bit of the hydrogen sulfide, clean up the water a bit for solids, and it's pumpable water for us. We can use it in our frack fluids.

I think as far as the technology in what we need is concerned, we're there, or pretty close.

Mr. Richard Harris: All right, great. You have a lot of confidence in that technology?

Mr. Timothy Wall: We do.

Mr. Richard Harris: Great. Thank you.

Thanks, Mr. Chair.

The Chair: Thank you, Mr. Harris and Mr. Anderson.

Thank you very much to all three witnesses. It was a very interesting meeting and very helpful to us in our studies. Thank you all for coming.

The meeting is adjourned.

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