HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Natural Resources

RNNR • NUMBER 015 • 1st SESSION • 42nd PARLIAMENT

EVIDENCE

Monday, June 6, 2016

Chair

Mr. James Maloney

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● (1530)

[*English*]

The Chair (Mr. James Maloney (Etobicoke—Lakeshore, Lib.)): Good afternoon, everybody.

We have two hours today. In the first hour, we're going to have Mr. Alan Yu, who is the founder and chairman of Fort St. John for LNG.

Mr. Yu, I'm going to turn the floor over to you for 10 minutes, and then I'm going to open the floor up to questions from committee members.

Mr. Alan Yu (Founder and Chairman, Fort St. John for LNG): Thank you, sir.

As the honourable chairman said, my name is Alan Yu, and I am the founder and chairman of FSJ for LNG.

I am a new immigrant to Canada. I've been here only two years. I love my new country. I love my new hometown, Fort St. John. That is why I am fighting for its economy and for the job market in Fort St. John.

I moved to Fort St. John about a year ago. The job market then was so good that Statistics Canada would not even publish the unemployment rate.

When I got there—I had submitted my resumé the day before—I was called for an interview the following day, and I was hired in the afternoon. Such was the job market in Fort St. John. Anyone who wanted to work could easily find work. My family moved to Fort St. John in July last year. My then 13-year-old son found a job. It was summer, so he was working 37 hours per work. He was earning $12 per hour, because if you offered minimum wage in Fort St. John, you would not have any employees. Such was the job market.

However, everything drastically changed after nine months. Last February the unemployment rate was at 10%. The figure could have been even higher, because there are a lot of independent contractors who are not part of the statistics. Last January 27, I lost my job as a two-way radio programmer for the natural gas field. I've been unemployed since. That is why I started Fort St. John for LNG, so that we could have additional markets for our natural gas.

Fort St. John is a resource town. We rely on our natural resources, specifically natural gas. We are the Fort McMurray of natural gas.

I started Fort St. John for LNG as an ordinary association for social licence for LNG. We started with simple petitions, asking for responses and comments regarding the CEAA's draft environmental assessment report. I also started a petition for approval of spending for all the LNG plants, to create an LNG industry here in Canada.

We got bigger. We got bolder. We participated in a synchronized truck rally in support of LNG, including Terrace, Fort St. John, and Fort Nelson. That was when I found out that Fort St. John was really down. The show of support came from 580 work trucks. We started at around 11:15. Two hours later, trucks were still leaving our point of origin. There were that many unemployed work trucks in Fort St. John.

We also got bolder with people's support, a people's rally. We created such a reputation for ourselves that our premier, Christy Clark, was there.

After that, there was nothing more I could do in Fort St. John. We set our sights on Ottawa. We embarked on an “LNG or bust” bus ride. We travelled 4,500 kilometres in eight days. We passed through several resource towns, spreading the word that we were in dire need of support from the Canadian government.

We arrived here last Tuesday, about a week ago, to deliver the message that we need help in Fort St. John. We need an LNG plant so that we can generate jobs in Fort St. John. We have been lobbying for an LNG industry here in Canada so that the workers of Fort St. John can go to work.

● (1535)

If we do not have an LNG plant, our production of natural gas will drop. We have been exporting our natural gas to the U.S., but the U.S. will soon be self-sufficient, so every year from now on we will see drops in our production. That is why we need an LNG plant for the economy of Fort St. John, as well as for the Canadian economy.

The study of this committee is the future of Canada's oil and gas, mining, and nuclear sectors: innovation, sustainable solutions, and economic opportunities. Let me start with my humble opinion on the future of oil and gas.

If we do not do anything now, the future of oil and gas will not be good. The demand for our natural gas will drop because, as I said, the U.S. will be self-sufficient soon. They are even supplying the eastern part of Canada with natural gas.

We hear of well-funded movements trying to keep our oil and gas in the ground. If they succeed, the world's demand and Canada's demand for hydrocarbons or fossil fuels will not stop. The demand will be there. However, we will miss a huge opportunity to export oil and gas. We will not have domestic production, but we will import. We are already doing this, but it will happen on a much larger scale. We are importing oil at around $32 million a day, or about $13 billion, when we have the third biggest reserves of oil.

To see a bright future for oil and gas, we need to bring them to market. We will need more LNG plants, aside from the pending Pacific NorthWest LNG. We need the Trans Mountain pipeline to meet demand and take advantage of our capacity to produce. We need the energy east pipeline, so the rest of Canada, especially the east, can use Canadian oil and not import oil. To save Canada's oil and gas industry, we need to bring oil and gas to market in a safe and effective way, and this means LNG and pipelines.

To save Canada's oil and gas industry, we need to counter the well-funded environmentalists: how to drive Canada's economy into the ground. We need to expose their funding and their interest, whatever that may be. This is the next step for FSJ for LNG. We have done Fort St. John. We have been to Ottawa. My next mission, in my unemployed life, would be to counter the environmentalists who are spreading so many things about the oil industry.

I see tremendous economic opportunity for Canada. Not only can we supply the world with the cleanest fossil fuel, which is B.C. natural gas, but we can also be the leader in supplying technology for natural gas power generation. Aside from exporting our natural gas, the Canadian industry could also be the leader in promoting, even supplying, natural gas power plants. We have the capacity and opportunity to clean up the world's air, reduce greenhouse gases from coal by 50% by switching to natural gas; we all know that. We have the capacity to further reduce it to 75% if we can export our carbon capture technology.

We can also help the world in switching to natural gas by working with the World Bank in financing global warming reducing natural gas power plants. I am from the Philippines, and we always have funding problems, but the World Bank has been there to support us. If we can enter into a partnership with the World Bank, maybe we can encourage other countries to adopt natural gas.

● (1540)

We need to export LNG from both coasts, not only from the west but also from the east. We need to support Bear Head LNG in Halifax.

As for oil, we need to bring our oil to market through pipelines and end the dangerous practice of transporting oil via trains.

We need to consume domestic production when it comes to oil and stop importing Saudi Arabian or other sources of oil. I find it sad to hear that Canada, with the third largest oil reserves in the world, imports almost half its oil requirement.

We need the energy east pipeline to enable Canadians to consume Canadian oil. We need to be able to expand and upgrade existing pipelines without going through tremendous delays and tremendous costs that ultimately are passed on to consumers in terms of higher oil prices.

For oil and gas, we need to review the effectiveness of carbon taxation. Carbon tax makes our oil and gas products uncompetitive globally and domestically against U.S. oil and gas. We currently import natural gas for use in the eastern part of Canada from the U.S. One of the advantages of importing U.S. natural gas is that it does not have carbon taxation, rendering it cheaper.

In terms of innovation, we in northeast B.C. are trying to use LNG for hydraulic fracturing. Instead of using water and fracking solutions, we are about to try to inject natural gas to break the shale rocks. As we all know, liquefied natural gas expands 600%. We are trying to inject LNG and when it expands, break the shale rocks. That is quite ingenious, considering you'll be using natural gas to create a well that's natural gas.

Please allow me to express my humble opinion to this committee about what I want to see in the oil and gas sector.

Number one, as mentioned, I would like to see our Canadian natural resources get to market. Three proposals would help in this regard, the Pacific Northwest LNG, the energy east pipeline, and the Trans Mountain Kinder Morgan pipeline expansion.

Number two, I want the Government of Canada to help defend these projects and make this happen for the sake of Canadian jobs and the national economy. Anything less will take away jobs from Canadians and reduce our national economy.

Number three, I want the government to review the Paris agreement, taking into consideration a recent government-funded study made by the Canadian Centre for Policy Alternatives along with the Parkland Institute and the corporate mapping project. The study says that short of an economic collapse, it is difficult to see how Canada can realistically meet its Paris commitment in the 14 years remaining without rethinking its plan for oil and gas development. It also says if Ottawa approves only one large LNG terminal in B.C. and if Alberta sticks to its plan of capping provincial emissions at 100 megatons a year, emissions from the rest of Canada will have to be cut by 47%.

● (1545)

This is a recent study funded by the government and made by people who are climate change supporters.

Number four, the government should also acknowledge that, so far, economic progress and the use of fossil fuel go hand in hand. History has taught us this. We have missed on, and have withdrawn from, the Kyoto protocol, and this current study says we cannot meet the Paris accord as well, unless the economy takes a drastic leap. One project the size of Pacific NorthWest LNG or even LNG Canada in shipping B.C. natural gas into Asia for power generation will displace coal-fired power and greenhouse gas emissions, offsetting all of B.C.'s annual greenhouse gas emissions, plus about 10% more from Canada.

Number five, I want the government to publicly acknowledge the fact that even though global warming affects us, we are not the only cause of global warming in Canada. Pollutants from Asia reach our shores. More than 98% of the greenhouse gases are emitted outside of Canada, and that affects the climate in Canada.

For sustainable solutions, with the safety measures put in place by the regulators in Canada and with the oil and gas reserves that will outlive all of us and the next generations, it is my humble opinion that with whatever we have right now, even if we export our oil and gas, we will have enough to sustain us until such time that a more renewable energy is discovered and implemented.

Thank you.

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

I'm now going to open the floor up to questions. By the way, we're going to have to be done right at 4:30 to get on with the next section.

Mr. Tan, it's over to you.

Mr. Geng Tan (Don Valley North, Lib.): Thank you, Chair.

Thank you, Mr. Yu, for your presentation.

I guess the Fort St. John group is a grassroots organization, and you are here to speak on behalf of the organization for building one LNG plant in your local area to boost your local economy and create more jobs. I guess that's probably your main reason.

As you mentioned, you are new to this country. You have been in Canada just two years. What is the main source of the information you gathered and used in your presentation to justify your argument?

● (1550)

Mr. Alan Yu: Sir, since I was laid off last January 27, and even prior to going to Fort St. John, I've studied working in natural gas. I studied at Vancouver Community College in preparation for moving to Fort St. John. I familiarized myself with the processes of natural gas and LNG, and since I've been unemployed, I've had a lot of time to study and do research.

Mr. Geng Tan: You accumulated all that information and understanding within this two-year time frame.

Mr. Alan Yu: Not even two years, sir, approximately 14 months.

Mr. Geng Tan: Okay. Suppose there is a plan to build an LNG facility in your area. What is the biggest challenge you're going to face in developing this plant: the labour, the funds, or the local infrastructure? What's the biggest challenge?

Mr. Alan Yu: Just to clarify, sir, the LNG plant would not be in our area. It would be in the northwest of B.C., around 1,200 kilometres away from us. We are on the supply side, supplying natural gas to the LNG plant. Everything has been laid out. The community of Prince Rupert already knows how many people would be hired. They have been preparing for this. They even put out an ad hoping the approval was going to happen last March 22, sir, before it was delayed.

Progress Energy, the biggest upstream industry in northern B.C., was also prepared. They had a budget of $5 billion over the next three years. Since there was a delay, and also because of the low price of natural gas, they scrapped it. That $5 billion could have been used to finance exploration and job creation. They merely replaced it with $500 million over two years. That $500 million is just enough to sustain a few operations they have, but not enough to create jobs.

Thank you, sir.

Mr. Geng Tan: Since we don't have the infrastructure to process LNG in Canada, because we don't have enough capacity, I would say most of our LNG will be exported overseas. In your opinion, where is the biggest market?

Mr. Alan Yu: Okay. We already have an LNG plant in Canada. It is located in Delta.

Mr. Geng Tang: We have a few.

Mr. Alan Yu: I am only familiar with one, sir.

We have the capacity to even produce LNG in a moveable plant, but we have one in Delta. Within the last three weeks, there was a press release that they will be selling to Hawaii. They will be supplying LNG to Hawaii, through Fortis Inc. in Hawaii. By using natural gas to generate electricity in Hawaii, the same article said the savings in greenhouse gases is equivalent to taking out 80% of their vehicles.

There is a market.

With the wood fibre—this is a proposed LNG plant in Squamish—they have a memorandum of agreement to sell LNG to China by 2020.

Those are the only two things I could think of to answer your question.

Thank you.

● (1555)

Mr. Geng Tan: Okay.

For your information, we have LNG plants in Alberta, B.C., and Quebec, and there is one more LNG plant that is set to come online in northern B.C.

Mr. Alan Yu: Thank you very much, sir.

Mr. Geng Tan: I'm fine.

The Chair: Okay. You have a bit of time left if anybody else wants to use it.

Mr. Geng Tan: How much more?

The Chair: You have another minute.

Mr. Geng Tan: Okay, let me finish.

You mentioned the market in China. Is there one you're thinking of, or is it just that you can see a demand? Do you believe there is a huge market in Asia?

Mr. Alan Yu: I believe there is a market. I know there is because of the wood fibre agreement, and that they will be selling to China.

Mr. Geng Tan: They cannot get natural gas from everywhere in the world—

Mr. Alan Yu: Yes, sir, particularly from Russia.

Mr. Geng Tan: —but not necessarily from Canada.

Mr. Alan Yu: Particularly from Russia, but...

Mr. Geng Tan: Okay.

Mr. Alan Yu: Russia, Canada: political stability; we all know the answer to that.

Thank you, sir.

The Chair: Mr. Barlow, over to you.

Mr. John Barlow (Foothills, CPC): Thank you, Mr. Chair.

Mr. Tan, I appreciate your comments. They could get natural gas from anywhere, but wouldn't you rather they get it from Canada and have that market? It's a country that's politically stable. That's why they look at Canada as a potential market. We have that political stability. We have clean environmental stewardship, and a regulatory regime that no other country has. I think that's why Canada should be part of this market, and not just say they can get this somewhere else. I just wanted to put that on the record.

Mr. Yu, I want to thank you for doing this on such short notice. I applaud you and the efforts of you and your team for being proactive about what this means to blue-collar Canadians who are making their living from this industry.

I have a question which you touched on a bit. I think this is an argument, and I know some of my colleagues are talking about this as well, which is great. It's about the impact of exporting Canadian LNG to Asia, specifically China. We're replacing coal-fired power plants in China with LNG. You talked about the impact that would have on B.C.'s greenhouse gas emissions, or how it would displace that.

Have you done any work on this? Do you have data in terms of what the GHG reductions would be if you took one coal plant off line in China, or two? China has 28% of global GHG emissions, and Canada 1.6%. I think it would have a much greater impact on global GHG emissions if we started exporting LNG to the Asian market. Has your group done any work on that?

Mr. Alan Yu: Yes, sir. I just can't recall the particular plant in China, but by simply displacing two power plants, two coal-fired power plants, in China, we can easily offset the entire greenhouse gas emissions of B.C., just B.C. alone.

Mr. John Barlow: Plus, you would have a bit—

Mr. Alan Yu: Yes. We would have 10% that we could pass on to other provinces.

Mr. John Barlow: B.C. could sell it to another province on carbon credits, maybe.

Mr. Alan Yu: Yes, sir. I am from the Philippines. I'm sure we are a market for natural gas because, as I have observed, sir, you can see the air in the Philippines. It's not as bad as in China, but you can smell it and you can see it. I am sure that the population of the Philippines would benefit from using natural gas. We have experienced that already. We have a small natural gas...and 500 kilometres of pipeline. We only use it to feed one natural gas electric generating plant, and we see that the area, that particular area, is a lot cleaner than metro Manila, sir.

Mr. John Barlow: With the Horn River basin shale play and Montney basin shale play, I've read that there are 21 potential LNG projects waiting for approval. Over the next few years, if some of these LNG projects were approved, it could mean 65,000 jobs across Canada, 48,000 of those in B.C. alone. I thought those numbers were interesting.

● (1600)

Mr. Alan Yu: Yes, sir.

Mr. John Barlow: The royalty regime and tax revenue would mean over $3 billion annually for Canada, and another $3 billion a year for B.C. on its own. Are those in jeopardy if we don't get the pipelines approved? What impact would that have on Fort St. John? There really aren't any other employment opportunities in that community.

Mr. Alan Yu: Yes, sir. Unfortunately, Fort St. John is a resource town, heavily reliant upon natural gas. If there is no LNG plant approved, I may have to move my family out because there will not be that much employment in Fort St. John.

I am familiar with the study, sir. You were citing the Conference Board of Canada study called, “A Changing Tide: British Columbia’s Emerging Liquefied Natural Gas Industry”. This also warns that if we do not construct LNG plants in Canada, every year....

It started last February, sir. An LNG plant was put online in Louisiana, and there will be one more every year. Instead of that market going to Canada, it will simply go to the U.S.

Mr. John Barlow: Or Australia.

Mr. Alan Yu: Or Australia or Qatar.

Mr. John Barlow: Yes. Just to clarify, could you maybe explain to me a little bit about the the impact on communities like Fort St. John and Fort Nelson?

I just want to clarify that these communities are the source of the natural gas. When you're talking about building an LNG plant like Pacific NorthWest LNG on the coast, these communities are where the product is extracted and piped to those LNG plants, right?

Mr. Alan Yu: Yes. The Liard basin is one of the biggest in the world. It's located above Fort Nelson. It is logical to have the LNG plant in the northwest because that is where it is closest to tidewater or the Pacific Ocean, sir.

Mr. John Barlow: Right.

Mr. Alan Yu: I would like this committee to know also that right above Kitimat and Prince Rupert, where two LNG plants are proposed, there is the U.S. Kenai LNG plant in Alaska. They have been exporting LNG to Japan exclusively since 1969.

Mr. John Barlow: Right. Again, it shows there's a market.

There is a last question I wanted to get in before my time is up, Mr. Yu.

There's the fact that on the ground, this is employment for Canadians, but these projects are usually in very remote communities. What is the impact? It sounds as though we have a lot of new Canadians going to work there, but it's also on the aboriginal side, the first nations side. We go up to northern Alberta and we see that a great deal, almost the vast majority, of service companies that operate in those areas are owned and operated by aboriginals.

Is that a similar case with the LNG?

Mr. Alan Yu: Yes, sir.

Mr. John Barlow: If they lose these opportunities, those jobs will go with them, and there's nothing to replace them, right?

Mr. Alan Yu: Unfortunately, that is true, sir.

In Fort Nelson, the Fort Nelson First Nation is very much in support. Seventy-five per cent of their population, or the tribe, signed our petition to the CEAA. Also, in Fort St. John there are a lot of aboriginal companies. Two of the “LNG or bust” teams are from first nations. Ramona McDonald is aboriginal, and she has her own company.

Out in the northwest, where the Pacific LNG plant will be, around 90% of the first nations support this project already. One is very vocal, and that is Ellis Ross of the Haisla Nation. They see the LNG plant as a means for employment, which they lost when they lost forestry in the area, so they are really hoping and praying that the LNG plants can generate jobs for the first nations in the northwest.

Mr. John Barlow: Thank you, Mr. Yu. I appreciate that.

Mr. Alan Yu: Thank you, sir. You're welcome.

The Chair: Mr. Cannings, over to you.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thank you, Mr. Yu, for coming all this way.

You talked about how one of your group's reasons for being is to create a social licence for LNG. You also mentioned climate change, and that Canada really should abandon its commitments to Paris over climate change. I wonder how that might help you get the social licence needed for these projects.

● (1605)

Mr. Alan Yu: The only reason I mentioned that, and it's my personal opinion, is that by meeting our commitment to Paris, and considering this study that said that we have to cut emissions from the rest, maybe motorists and other industries in Canada, by 47%, I cannot see this happening without our economy suffering, sir.

In terms of our social licence, I'm at a loss for words.

Mr. Richard Cannings: I'm wondering how you create social licence by simply concentrating on the economic benefits of this project to Fort St. John or those areas, and not—

Mr. Alan Yu: We also see this project as cleaning up elsewhere. That's why one of the things I'm asking of the Canadian government is to consider climate change and the global greenhouse gases not just in Canada, but also with the savings overseas.

Mr. Richard Cannings: When you were studying up on LNG, did you come across a study from the National Energy Technical Laboratory in the United States on the comparison between burning coal in China and exporting LNG from Canada or the United States to China and then burning it there? Are you aware of that study?

Mr. Alan Yu: Not that particular study, sir, but we know for a fact that by generating the same amount of electricity using coal and generating the same amount of electricity using natural gas, the greenhouse gas emission is more than 50%.

Mr. Richard Cannings: The only problem with this is that natural gas, of course, is largely methane, which is the most potent greenhouse gas we know and there's a lot of leakage of methane in that whole export process. There's especially a lot of methane leakage when you're using unconventional methods, fracking, to extract the natural gas.

When you take all of that into account, this study shows there's a good possibility that the greenhouse gas impact on an LNG export business from Canada to China will actually make things worse.

Mr. Alan Yu: Not really, sir, because we are burning methane. We are not releasing it into the ground. There will be some leakage, but you are leaking profits; you are leaking products that you are going to sell, and it is in the interest of any business to limit that.

Mr. Richard Cannings: I'm just quoting from this study from—

Mr. Alan Yu: Yes, sir. I agree with that, but we should also agree with business that if you are selling Coke you do not spill it, sir.

Mr. Richard Cannings: No, I fully...and we've heard testimony on how companies are trying to do things better, but there's a lot that you just can't help but do.

Mr. Alan Yu: Yes, sir. There will be leakage, but it should be managed.

Mr. Richard Cannings: I just have to ask you about your quote about well-funded environmentalists.

Mr. Alan Yu: Yes.

Mr. Richard Cannings: I don't call myself an environmentalist; I'm an ecologist, but I know people in that movement and most of them are anything but well funded.

I would ask you back how well funded Progress Energy, or Petronas, or Pacific NorthWest are and where their funds are coming from.

Mr. Alan Yu: We are speaking about our groups, which are pro-hydrocarbon groups, and the groups that are against hydrocarbons and how out-financed we are.

Mr. Richard Cannings: They see themselves up against a Goliath as well.

Mr. Alan Yu: Yes, sir.

Thank you, sir.

Mr. Richard Cannings: Okay.

You mentioned the first nations. The Progress Energy project would be situated on Lelu Island.

Mr. Alan Yu: Yes, sir.

Mr. Richard Cannings: I was just wondered how the Lax Kw'alaams feel about that project.

● (1610)

Mr. Alan Yu: The Lax Kw'alaams have sent a letter of support to CEAA, and I think on June 2, sir, there was a nation-to-nation conference participated in by first nations and Christy Clark. In that conference they said publicly that 90% of the first nations in the area are in support of LNG.

The particular tribes, the particular first nations, that you mentioned have sent a letter to the CEAA, which is floating around, sir.

Mr. Richard Cannings: It's not what I've heard.

Mr. Alan Yu: There are some of them, but the official release of the tribe is that they are in support, sir.

They are even trying to evict the few who are in Lelu Island and these are their fellow tribes people who are evicting them, sir. It's not the local government; it's not the Government of Canada, but their fellow tribes people who are trying to get them out of the area, sir.

Mr. Richard Cannings: There's a recent CBC article and the headline reads, “First Nations appeal to UN to help stop Petronas project”.

Mr. Alan Yu: If we need to, sir, we will also go to the United Nations. I don't know how we will finance that, because with our GoFundMe campaign, I still don't have the money to go back.

Mr. Richard Cannings: I'm sure you might find some funding help.

Mr. Alan Yu: If you're suggesting New York, I can always go down to New York, sir.

Mr. Richard Cannings: Okay.

The Chair: Thank you.

Mr. Harvey.

Mr. T.J. Harvey (Tobique—Mactaquac, Lib.): First of all, Mr. Yu, when I was 22, in the fall of the year, I found myself to be unemployed. I found work in northern Alberta and I spent two winters out there working.

An hon. member: What happened?

Mr. T.J. Harvey: Well, I decided to pursue other things.

I want to say something right off the bat that I know everybody here is thinking. We certainly feel for you and the loss of your employment. We wish you all the best, regardless of whether this project goes ahead or not. We appreciate your passion on this subject, the passion for your community, and the passion for your family. I think that's very important to get that out at the start.

I want to ask you a couple of quick questions.

First of all, I want to touch on what Mr. Barlow said. When we look at the total environmental impact of natural resource development, if we're talking about LNG, it's important that we recognize the total global footprint when we're talking about any natural resource project. That's something with which we haven't done a good job.

We oftentimes talk about what we can do as Canadians within our own economy and within our own country. It's important when we talk about greenhouse gas emissions that we look at the global footprint, how industry impacts on the entire globe, how to find that balance, and what's best, whether it's coal-fired from China or exporting LNG to China.

I'm not an expert in any of those areas at all. Could you speak a bit more to the environmental balance and how you see the total global GHG emissions, how LNG would either positively impact or adversely affect those GHG emissions?

Mr. Alan Yu: Yes, certainly.

As I said, I would like the Canadian government to consider greenhouse gases in their global totality, not just in B.C. Any LNG that we export, if it is used as natural gas in the country of destination, and used to displace coal in producing electricity, it will cut global greenhouse gases.

China produces 23% to 24% of the global greenhouse gases and most of that is due to their power generation, electricity to support their industries. If we can reduce their global greenhouse gas emissions by 13%, this would render our 1.7% greenhouse gases here in Canada neutral, meaning the 1.7% of what we produce, we save in China. Effectively, we would be carbon neutral by simply reducing their greenhouse gases by 13%.

● (1615)

Mr. T.J. Harvey: You spoke briefly about LNG and how the actual upgrading of the gas to liquefied natural gas would occur in Prince Rupert.

Mr. Alan Yu: Yes, sir.

Mr. T.J. Harvey: You also spoke to the injection of liquefied natural gas into the wells, the expansion potential that would have within the wells, and how that could be used for fracturing. Would natural gas be shipped to Prince Rupert via pipeline and then liquefied natural gas to fracture the wells would be transported back via transport?

Mr. Alan Yu: No. As I said earlier, very briefly though, and I'm sure it's easily missed, we can produce LNG from two containers. We can have the process of converting natural gas within a remote site. As the gentleman said, we are producing LNG in Alberta; we are producing LNG in northern B.C., which I believe is in Dawson Creek.

Mr. T.J. Harvey: This is just to wrap my head around it. You're saying that the majority of the natural gas would be shipped to Prince Rupert, but a small portion would be retained within the geographic area where the well sites are—

Mr. Alan Yu: Yes, sir.

Mr. T.J. Harvey: —to be further refined to fracture more wells.

Mr. Alan Yu: Well, not from the wells, but once it is done somewhere in the midstream and we can extract clean natural gas, we can liquefy that, load it into trucks, and even transport LNG via trucks to a well site that needs to be fracked.

Mr. T.J. Harvey: What exactly has been the most controversial stumbling block for the Prince Rupert site in relation to the refinery set up there? I'm assuming that all Fort St. John's natural gas would go to Prince Rupert to be refined there, to be shipped offshore.

Mr. Alan Yu: Not all, sir. These ones—

Mr. T.J. Harvey: But what you're talking about would be. What I'm saying is that within that process, the pipeline, the physical site where the refinery would be and the port access there in the sound, what has been the biggest stumbling block—

Mr. Alan Yu: I get what you mean, sir.

Mr. T.J. Harvey: —in the process of trying to get that approved?

Mr. Alan Yu: Salmon.

Mr. T.J. Harvey: Salmon?

Mr. Alan Yu: Yes, salmon, the fish.

Mr. T.J. Harvey: Okay.

Mr. Alan Yu: I have met with the office of Catherine McKenna—

Mr. T.J. Harvey: All the good salmon are in Atlantic Canada.

Voices: Oh, oh!

Mr. Alan Yu: The office of Catherine McKenna and the others I talked cited the salmon. The biggest thing now is the 24/7 daylight. For the construction of the LNG plant, Petronas wants 24/7 daylight because they will be working 24 hours a day, and this would interfere with the spawning of the salmon. Other things have been addressed. There will not be dredging under.... The natural gas from the mainland going.... It's just the salmon.

Mr. T.J. Harvey: I'm cognizant of the commitments we've made for our GHG emissions and our long-term climate goals. I recognize, as the NEB pointed out last week, going forward, our natural gas production as well as our oil production is still going to rise over the coming years regardless of what the long-term outcome is. I'm very cognizant of our long-term commitments to honour those goals. If these natural gas projects go forward, is there a way to find a balance that could help us honour our commitment goals for greenhouse gas emissions?

● (1620)

The Chair: You have to answer that very quickly, Mr. Yu.

Mr. Alan Yu: Yes, sir.

Production of LNG will increase our greenhouse gases, undoubtedly. Everyone knows that. I am hoping that the Canadian government will look at greenhouse gases on a global scale and not just in Canada. We can easily offset whatever increase in greenhouse gases. Here in Canada, I would say we're going to have a difficult time meeting our commitment unless we factor in the greenhouse gases that we will save overseas wherever our natural gas, our LNG, will be used.

Mr. T.J. Harvey: Thank you for your time.

The Chair: Ms. Stubbs.

Mrs. Shannon Stubbs (Lakeland, CPC): Thank you, Mr. Chair.

I want to echo the comments of my colleagues, and thank you for being here. I found your testimony to be quite moving and inspiring. You're the kind of person who makes me proud to be Canadian, and I probably speak for all the people around the table on that front.

I also want to congratulate you on your grassroots initiative to make Canadians and politicians aware of how these important resource projects will impact your local community and B.C. and how they can benefit all of Canada. There are many similarities between Fort St. John and the experiences of the people in the riding that I represent, Lakeland, which is in northern Alberta.

The northern part of my riding is just 200 kilometres south of Fort McMurray, so the vast majority of the people in my constituency work in the oil sands or in heavy oil or in conventional oil and gas right across my riding. They're struggling with the same experience where barely over a year and a half ago you couldn't find enough people to fill the jobs that were available and now many of the people in many of the communities are struggling in serious ways they've never struggled before. Thank you for being a voice on these issues that are important to the whole country.

I want to ask you your view on what the federal government's role may be in championing our resource development in Canada, particularly when it comes to the approval process. I think people in all parties and all levels of government, just like Canadians, absolutely want to see a balance in environmental stewardship, with economic growth and industrial development, given all the incredible benefits in jobs that responsible natural resource development provides.

I was in B.C. in mid-March and some LNG proponents, as well as some other natural resources developers, were talking about, for example, the Pacific NorthWest LNG project, which has been in the approval process for more than three years, and has been delayed by the government yet again. You might be familiar with the interim measures the federal government has announced, which include measures that are already done and have been for years in the approval of energy projects like public and community and first nations consultation, which you've alluded to.

I was a little surprised to learn both through testimony from proponents and also from the regulator that this will be an add-on process at the end of the already independent, expert-based, and scientifically thorough assessment and including all that consultation, which will already be done by the NEB before it then goes into this political decision-making process.

I wonder if you have any comments on the impact of these kinds of projects on communities and on people when these sorts of delays are caused by government.

Mr. Alan Yu: Unfortunately, these delays have human costs for people like me losing jobs in Fort St. John, losing their businesses, losing homes and their vehicles, being separated from their family because they have to go elsewhere to look for a job while their family is in Fort St. John.

The approval process here in Canada is getting longer and longer. If we compare that with the approval process in the U.S., the Louisiana LNG plant only took a little over a year to get approval, whereas they said the Pacific LNG plant would only take a year, and it has taken more than three years. It was supposed to have been decided on last March 22, but again it was delayed.

As I said, these delays have human costs on the citizens and on the economy of Canada.

● (1625)

Mrs. Shannon Stubbs: Thank you.

I want to refer to your points about Canada's role in the world and that the global demand for energy will continue to grow and that the reduction of greenhouse gas emissions is a global challenge, not just a Canadian challenge, nor is it just Canadian caused. I wonder if you have any comments on the way in which LNG projects can contribute to Canada's carbon competitiveness as well as making a global contribution to the reduction of greenhouse gas emissions. I wonder whether or not you feel as if the federal government stands up for Canada and for Canada's resource development, and for all the good work and the benefits to people the resource sector provides to the whole country and to the world.

The Chair: Very quickly.

Mr. Alan Yu: Well, first of all, I feel that the Canadian government is doing its best to preserve natural resources and make them contribute to the economy. However, more could be done. I feel that the approval process should be hastened. It's costing economically. It is also costing Canada in its overall economy.

The Chair: Thank you.

We're back over to this side.

Mr. McLeod.

Mr. Michael McLeod (Northwest Territories, Lib.): Thank you.

Thank you to Mr. Yu for his presentation.

The Chair: I'm sorry. Before you continue, I'll let you know that we have to wrap this up in about three minutes, because we have to start the next one at 4:30.

Mr. Michael McLeod: Okay, thank you.

I listened with interest as you talked about the environmental concerns raised, and about the well-funded environmentalist as something you're going to have to deal with, but in fact, the process has been delayed because the information has not been provided. That's a little different and it's a little bit not correct for you to say that it's a long drawn-out process, that we shouldn't have it. If a project is going to move forward, then all the information should be brought forward. It should be analyzed and then approved. In this case, there has been additional information requested, with a three-month extension added on because they need more detail on a suspension bridge and a pier. It concerns me that you want to give the impression that you want to rush headlong without really studying the impact it would have on salmon and on the environment.

I want to ask a couple of questions, though. I want to know who is financing your organization. Is that something for which you raise money personally? Do you have companies behind you? Are you registered anywhere? Are you registered, in fact, as a lobbyist here?

Mr. Alan Yu: In terms of how our organization is funded, sir, we use GoFundMe on the Internet. We are basically growing from that. It's very public. It's all there. We are not lobbying. We are just notifying the federal government of the job market in our area, sir.

In terms of the approval process, I was just surprised, because in February the CEAA said there was no significant impact on the salmon. That's what they said. Then suddenly it was the salmon again.

Mr. Michael McLeod: You're saying it's not true?

Mr. Alan Yu: No, no. I got curious. It was only on my trip here that it was clarified, sir, that the issue was the salmon again.

I am very thankful I came here, because my friends were asking what was happening, and I was able to clarify that for them. I'm glad that, according to the CEAA, science will prevail, which we agree upon 100%—not politics, sir, but science.

Mr. Michael McLeod: Thank you. I'm glad you clarified that. I think we're all agreed that there's a real need to stimulate the economy.

Mr. Alan Yu: Thank you, sir.

Mr. Michael McLeod: This is one way to do it, but at the same time, it really makes me nervous when somebody almost pushes the environmental concerns to the side.

What has been the reaction to your group's work from other governments? I heard you mention Premier Clark. B.C. has an LNG strategy. Have you been in contact with them? Are you working with them? Are you part of the process? I don't see your group in their website anywhere.

● (1630)

Mr. Alan Yu: No, sir. The only time our paths crossed with the provincial government was when Christy Clark came to us. She joined our people's rally when we were showing support publicly for LNG. She took notice of our organization for that event and she flew in. That was the only time, and I have not been in contact with her. I was hoping she would give a shout-out on our efforts, when we travelled 4,500 kilometres over eight days, but it never did happen, sir.

Mr. Michael McLeod: You mentioned that you had 90% support from the aboriginal governments in the area. I've heard that some bands are in favour and some are not. What do you use as a measuring stick to measure that 90%? Do you have band council resolutions that you can point to?

Mr. Alan Yu: It's the very recent Nation2Nation in the news, sir. It came out, I think, today or yesterday. This is from a meeting that happened June 2, a two-day event in Kitimat. Premier Christy Clark was there, along with several first nations. I'm getting that from the news, sir.

Mr. Michael McLeod: You got an indication from the aboriginal governments that were at the meeting. Everybody was there; was everybody represented?

Mr. Alan Yu: I'm not privy to that information, sir, but when I said 90%, I got that from the news. It's a press release, sir, I think just today. I think I just read it today, sir. It's called Nation2Nation.

Mr. Michael McLeod: Okay.

I have one final question.

The Chair: That's all you have time for.

Mr. Michael McLeod: Do you deal directly with any of the first nations? Do you yourself or your organization talk specifically with any of the first nations?

Mr. Alan Yu: Just with the Haisla Nation and Chief Ellis Ross.

Mr. Michael McLeod: Thank you.

Mr. Alan Yu: Thank you very much, sir.

The Chair: Thank you, Mr. Yu, for coming today. We appreciate the time, especially coming all the way to Ottawa to advance your case. We appreciate it.

I'll suspend the meeting for three minutes while we set up for the second session.

● (1630)

(Pause)

● (1635)

The Chair: Good afternoon.

We're going to get moving on the second hour. We have less than an hour to cover a lot of ground.

I want to thank you all for coming. I was going to make a long introduction, but in the interests of time—we're down to about 50 minutes—I'm going to save the individual introductions, if that's okay with our guests today. I'll just say thank you very much for coming. There's a number of your colleagues who are behind you who are here to answer questions afterwards, and we're very grateful.

I'll turn it over to you. You can have the floor for 10 minutes, in any format or sequence you would like, then I will open the floor to questions.

Mrs. Marian Campbell Jarvis (Assistant Deputy Minister, Minerals and Metals Sector, Department of Natural Resources): Thank you very much, Mr. Chair.

[*Translation*]

I greatly appreciate the chance to be here. Thank you for allowing me to speak to you.

I will give you a bit of background on the Canadian minerals and metals sector, on some of its challenges, and on the innovation imperative, as I understand the committee's study will focus on innovation in the natural resources sector.

[*English*]

With regard to a bit of context, I'd like to say that mining is a long-term and risk-filled business. From 1,000 exploration projects, it is quite likely that only one discovery will go on to be a constructed and operating mine. The work to get there can take decades and requires significant investments, often in the billions of dollars before any revenue or profit is generated.

If you'd like to turn to slide 2, " Minerals matter for Canada", mining is essential for day-to-day living. Minerals and metals are used in everything from toothpaste and face cream, to iPhones and wind turbines, to aerospace and housing. Indeed, beyond the essential day to day, what we are also seeing is that mining's inputs are becoming ever more critical for advanced manufacturing, high technology, and innovation.

Mining has a direct impact on the economy. In 2015, mineral exploration and production generated $60.3 billion for the Canadian economy. That's equivalent to 3.2% of Canada's GDP, and 19.1% of Canadian exports.

In 2014, there were nearly 1,700 exploration and mining companies headquartered in Canada. With global mining assets totalling nearly $260 billion, beyond production, beyond the actual mine site, the ripple effect of mining is considerable. It's significant, from supplies and equipment to services like insurance and finance. For example, in 2015, $15 billion was expended for new capital and equipment. It is said that for every $1 billion of output in the minerals and metal sector, the direct demand for goods and services in Canada increases by $615 million.

More than rocks, mining's impact on communities and jobs, particularly those in rural and remote parts of the country, is considerable. Nearly 380,000 Canadians are employed in the sector, and that includes 10,000 indigenous Canadians, who account for about 8% of the mining industry labour force, more than double the all-industry average representation of 3.4%.

Canada is known globally for its expertise and presence in mining. In 2014, Canadian companies were operating in 105 countries around the world. To put that in context, the United Nations recognizes that there are 193 nations, though Canadian companies have a presence in 105 of those 193.

● (1640)

[*Translation*]

On slide three, we can see there is most likely activity related to mining in almost every riding and constituency across Canada, in rural and remote areas, but also in urban areas through financing, insurance, and research and development activities.

Now let's look at slide four. It's important to see that mineral development encompasses everything from the geologist with boots on the ground, surveys by helicopter, advanced chemical surveys, and financial and economic analysis, to construction, mining itself, operations, processing, smelting and fabrication, and closure and remediation.

Canada is active across this whole value and supply chain, with individuals and companies providing services, conducting operations, and providing equipment and supplies at each stage.

[*English*]

I would like to touch on some of the challenges facing Canada's minerals and metals sector. The challenges are twofold. The first is the economic competitiveness of Canadian operations and maintaining an attractive investment climate, and the second is one of social acceptance, environmental performance, community involvement, and a sense of shared benefit and risk.

Looking a bit more at the economic competitiveness, I think everyone appreciates that it's a cyclical industry, and right now we're in a low cycle. Since 2011, the price of copper has dropped by 25%, iron ore by 35%, and gold by 11%. Looking more into the future, one of the larger concerns is that of declining ore grade. What this means is that many of the easily accessible reserves have been utilized. For example, over the last three decades, known zinc reserves have fallen by 86%, and known nickel reserves by 63%. Nickel is a key ingredient in stainless steel. Now mining companies need to go deeper, operate more remotely, or mine at lower grades. In other words, they need to compensate for a lower percentage of a valuable commodity by mining a greater tonnage of rock.

All of that increases the costs to operate. In Australia, there was a study on multi-factor mining productivity, and it showed that 40% more input was required to produce the same output as a decade ago. Other countries' mining sectors are maturing, and some competitor countries, for example, Australia again, have lower shipping costs to the closer, fastest-growing economies of China and India.

We can see the impact on mines. Since 2015, 14 mines were suspended or closed in Canada, while five opened. For the long term, in terms of the future pipeline of mines, the grassroots exploration sector has been the hardest hit. Investment declined from a high of $2.8 billion in 2011, at the peak of the super cycle, to an expected $683 million this year, 2016. The number of exploration companies has dropped from a high of 911 companies in 2012, and it's now projected that 431 project operators will have merged, become dormant, or ceased to exist by 2016.

Innovation is critical to the future. Lowering costs, increasing productivity, and strengthening environmental performance are critical to address these challenges. While some see mining as old-fashioned—after all it has been done for the last 3,000 years—and as a bucket and shovel dirt industry, this view misses the continuously evolving high technology nature of the sector. For example, robotics, engineering, and genomics are all under way in mining, but there are challenges, and there are issues.

Over the last decade, most innovation has centred on site-specific challenges, such as processing efficiency, and is undertaken mine project by mine project, rather than as a transformative endeavour across the whole industry. The cyclical nature of mining, the long time frames, and high capital costs—some mines have capital investment of upwards of $5 billion—make the industry risk-averse to adopt unproven technologies or processes. It is often said that in mining you want to be the first to be second.

Research efforts in Canada are currently diffuse and collaboration is not fully mature. The Canadian Chamber of Commerce has estimated there are 4,000 R and D programs and 40 different mining innovation research organizations in Canada that are not necessarily connected. Peer countries are investing more in innovation and in mining innovation. For example, the favourite comparator, Australia, has a centralized funding model leveraging 47% of its $86-million annual program. Australia has invested more than four times as much in research and development than Canadian firms, which has led to a growing gap in research competitiveness and technology uptake over the last decade.

● (1645)

We'll turn to slide 7, “Emerging technologies can have a significant impact”. Energy, water, and waste are the areas of greatest challenge and opportunity to increase competitiveness and to reduce environmental impacts and improve performance. Many mines operate off grid, and renewables and energy efficient technology offer the potential for cost savings, reducing emissions, and improving productivity.

In many cases, the technology exists already. The challenge is in demonstration, verification, and the cost of capital, particularly retrofitting, to support commercialization and adoption.

Mining innovation will not come from developing technology alone but from a broader industry-level systems model and process approach that builds platforms and integrates technology, data, and information—the so-called Internet of things—and has the greatest potential for transforming the mining industry.

● (1650)

[*Translation*]

Lastly, successful innovation is built on collaboration and partnership. Getting from a project-by-project approach to more of an industry-wide transformative approach and de-risking and accelerating innovation will require governments, universities, and industry—in other words companies, suppliers, associations, and certainly other sectors—to partner and leverage efforts.

Our department, Natural Resources Canada, through our green mining initiative and CanmetMINING laboratory, works in partnership to improve the environmental performance and productivity of mineral development in Canada.

Thank you.

[*English*]

I look forward to your questions, Mr. Chair.

The Chair: Thank you very much for your presentation.

I'll turn the floor over to Mr. Serré.

Mr. Marc Serré (Nickel Belt, Lib.): Thank you, Mr. Chair.

Thank you so much for the presentation. It was very insightful and very condensed and to the point. I really appreciate the work you and your staff have done in the mining industry over the last few years, and actually decades.

My first question is more of a comment—you alluded to it earlier—about Australia. We've spent about $500 million in Canada on research and innovation, which is down in the last few years from about $800 million. Australia spends about $2.8 billion, as you mentioned, which is about four times more. You mentioned that already, so I'm going to change my question.

Have you done a report, a matrix? If we were to match Australia's model of investment in innovation and research, what jobs would that produce? What type of industry would change here in Canada if we were to invest as Australia has? Do you have something on that? If you don't, is it something you could produce? That's my first question.

Mrs. Marian Campbell Jarvis: Thank you very much for the question, Mr. Chair.

To respond to that, it has proven to be very complicated to compare apples to apples with Australia. We have not undertaken or been able to do what you're asking, although it's a good question.

The Canada Mining Innovation Council may be a good source of information for that kind of work.

Mr. Marc Serré: We could follow up to see if we can get those numbers.

Also, the Ontario government commissioned a report from KPMG that was released to the Ontario government in January 2016. The research study was on innovation and research and how you can build support for the mining industry specifically in Ontario. The Government of Ontario hasn't responded to that report yet.

First, do you have a copy of that report or that study? Is there a way to build upon that study to look at a Canada-Ontario agreement for best practices in innovation and research, so that we could look at sharing collaboration and best practices for all provinces? Moving forward, is there a possibility of taking that report and seeing if we can have a Canada-Ontario agreement on innovation and research in mining?

Mrs. Marian Campbell Jarvis: Mr. Chair, I'm not sure that I have a copy of the report the member is referring to, although I am aware of a study by the Ontario Mining Association. The Government of Ontario is looking at that.

What may be of interest is some work that we do federally and provincially through the intergovernmental working group on mining. We have a subcommittee that works on green mining innovation. This committee has done considerable work in looking at regulatory barriers. We have verified a green mining technology. We've exchanged best practices of efforts under way.

All of that work is actually publicly available on the website that supports the energy and mines ministers meetings through what I believe is called CICS, through that secretariat. There is a website. I'd be happy to provide that link to the committee, if it's of interest.

● (1655)

Mr. Marc Serré: It would be great, Mr. Chair, if we could get that link. Thank you very much for that.

The Ontario government, the Ministry of Northern Development and Mines and the Ministry of Aboriginal Affairs, recently funded a study with MIRARCO, $5 million for two years, with first nations communities and the provincial government looking at first nations and mining. Do we have any funding proposals or projects that link our two federal departments, NRCan and Indigenous and Northern Affairs, to look at also funding opportunities for those two federal departments to then help or complement what the Ontario government is doing, related to first nations?

Mrs. Marian Campbell Jarvis: There's an initiative in which we've partnered with Indigenous and Northern Affairs that is supporting the adoption and development of green mining technologies among first nations communities. That effort is really looking at wanting to support indigenous communities in monitoring the environment, developing baseline data, and doing some of the tracking thereafter with technology. That's the program I know of that's under way with the Department of Indigenous and Northern Affairs in partnership with CanmetMining at NRCan.

Mr. Marc Serré: Thank you.

You talked about clusters in your presentation, so that's great. Moving forward, when I look at innovation and research in clusters, Professor Potter from Harvard University has talked at great length, especially about the mining and the clusters and having the R and D innovation clusters close to the actual private sector developments, and actually relocating some of those jobs that are in major cities.

When we look at geology jobs and when we look at the jobs in Toronto and in Ottawa on geology, and when we look at the future of clusters and having the clusters close to mining centres, and I'll use the example of my hometown of Sudbury, Ontario, would it make more sense to look at those geology jobs that are in Toronto and Ottawa being closer to the private sector when you look at the clusters and the R and D and the research that is linked to getting the product to market and the private sector and how many jobs that represents?

Mrs. Marian Campbell Jarvis: Mr. Chair, in terms of the question about clusters, the committee may be interested to hear that at CanmetMining, our labs are located in two of the most mining innovation clusters in the country, the first being Sudbury, which has been likened to being the Silicon Valley of mining, and our CanmetMining lab has one location there and is able to partner with MIRARCO and CEMI and Laurentian University.

We also have a lab in Val-d'Or which is known as really the logistic staging ground for mining in Quebec. Also, our Canmet materials lab was recently relocated in the last few years down in Hamilton to be part of that innovation hub anchoring McMaster University, kind of in the steel-making heart of the country. We have been wanting to be part of those clusters and we're very much an established presence there.

On the question about the number of jobs, I would have to access a little more precision and come back to you on that.

Mr. Marc Serré: I would appreciate that. Thank you.

The Chair: Thank you. That's your time.

Mr. Trost, over to you.

Mr. Brad Trost (Saskatoon—University, CPC): Thank you, Mr. Chair. It's good to be back on a committee on which I've sat for 10 years over my time in the House of Commons.

I'm curious about a couple of things you didn't mention, so I'll go there. MPMO, the major projects management office, has been a major initiative of Natural Resources Canada and has an absolutely critical role in working with natural resource mining projects at a certain level. I was curious to know if you can give any updates as to any evaluations of the office program and any new initiatives that have been coming out of the MPMO.

● (1700)

Mrs. Marian Campbell Jarvis: The major projects management office is a big part of mining development in Canada. Sometimes as much as 80% of the projects going through the Canadian environmental assessment process are mining projects.

In terms of the question on reviews, that's not my direct area of expertise. I'd like to take that back, Mr. Chair, to the department and come back with that information for you.

Mr. Brad Trost: Fair enough.

I'm going to ask about GEM. Is someone able to answer if I ask a question about the latest initiatives with the GEM program? What's the latest on that program?

Funding is continuing to go ahead. We're into phase two. Again, most recent evaluations of results, programming, any updates that you can give would be useful as it's also another major initiative.

Mrs. Marian Campbell Jarvis: I am familiar with the GEM program because it is foundational for mining and energy development in Canada. In terms of the latest updates and evaluations, Mr. Chair, I will need to go back to my colleague to bring that forward. The past evaluations of GEM have shown a leveraging factor of 1:5 in terms of public sector investments stimulating investment by the private sector, as it reduces the risk to exploration.

Mr. Brad Trost: I have another question.

Flow-through shares were extended for one year in the federal budget. One of the issues I've been hearing about from the industry is that one-year extensions make it a bit hard to plan for future exploration years. I know the finance minister is the better person to answer this question, but is there any thinking as to how this could be more closely worked with, with the industry, to get rid of uncertainty, and what other things can be done to encourage junior exploration?

Mrs. Marian Campbell Jarvis: In the 2016 budget there was an announcement of a review of some of the tax measures. That may very well be done there. As the committee will know, that work is all under the purview of the Minister of Finance, so he would be best positioned to respond to that.

Mr. Brad Trost: Fair enough on that one.

I have a broader question, then. When we look at this industry, a lot of people see it as merely a bunch of rocks on the ground; you dig them up, and you go sell those rocks. If you haven't worked in the industry, that's where it is. There is an immense human capital that goes into this in Canada and Australia. Essentially, the frontier of the British Empire tends to be at the lead of this.

Has Natural Resources Canada been involved or done any sort of look—and, again, this would overlap with other departments—as far as the needs for the industry going forward with human capital, a skilled labour force are concerned? Some of these skills are very transferable, but some, like geologists, geophysicists, specific mining skills, are not.

Is Natural Resources Canada working on or involved in that in any way, shape, or form, as far as looking forward to our industry is concerned?

Mrs. Marian Campbell Jarvis: In terms of developing the human capital, Natural Resources Canada has recognized that it has a responsibility to support some of that development, whether it's hiring summer students, geology students, or post-docs in a number of its science programs.

One concrete example is the CanmetMining lab. Budget 2015 announced a research and development project on rare earth and chromite. Through that program, a concerted area that we wanted to support was the development of that human capital through the employment of post-docs, who would then take that knowledge back out into industry. More information on that subject can be obtained from the Mining Industry Human Resources Council.

● (1705)

Mr. Brad Trost: Specifically, in that regard—and I asked in the broader industry—someone once told me that the Natural Resources department—and I don't know if this includes the geological survey of Canada or not, but it might—is actually the highest educated, as far as level of education, of all the departments in the government. I don't know if that's true or not.

Your ministry and the geological survey of Canada are also important elements of this. Internally, as far as a government department and the geological survey goes, are you looking at plans to ensure your internal needs are met, as far as this industry going forward is concerned, for human capital needs?

Mrs. Marian Campbell Jarvis: Mr. Chair, in our talent management and recruitment efforts, we always have a view to emerging challenges and how, as a science-based department, we can best support government efforts, whether it's through informing regulations, encouraging industry to adopt, for example, green mining practices, and building the expertise to support that.

Mr. Brad Trost: Am I done?

The Chair: Yes, you're done.

Mr. Cannings, over to you.

Mr. Richard Cannings: Okay, and thank you.

Thank you all for coming here today.

As you pointed out at the start of your presentation, many mining projects are in close proximity to indigenous communities, and in Minister Carr's mandate letter, the Prime Minister states:

> No relationship is more important to me and to Canada than the one with Indigenous Peoples. It is time for a renewed, nation-to-nation relationship with Indigenous Peoples, based on recognition of rights, respect, co-operation, and partnership.

I applaud the Prime Minister on this, and we've been waiting to see examples of this new approach. With that in mind, has the 20-year-old minerals and metal policy been updated by the Government of Canada to reflect this new approach, and if not, when can we expect to have that update completed?

Mrs. Marian Campbell Jarvis: Mr. Chair, I believe the question refers to the minerals and metals policy that was released in Whitehorse.

In terms of indigenous participation, NRCan has undertaken a number of activities. We have an aboriginal mining guide that I'd be happy to share with the committee, if you're interested. We've recently hosted a number of workshops for first nations with first nations communities, one in Sioux Lookout and one in Thunder Bay, which helped inform that readiness for mineral resource development and capacity building. I'm pleased to show the results from that workshop as well.

There are lots of efforts under way at a practical, on-the-ground level as well as some of the broader information tools to support readiness and to learn more about the mining development cycle and the opportunities.

Mr. Richard Cannings: What is Natural Resources Canada doing to ensure adequate consultation with aboriginal communities with regard to developmental projects in the mining sector?

Mrs. Marian Campbell Jarvis: Mr. Chair, one of the interesting things about Natural Resources Canada is that we are the responsible regulator for explosives, and as a regulator for explosives that are used in natural resource extraction and development, we're part of the whole-of-government consultation with the EA process going forward.

That's one of our major ways of working to the duty to consult as a regulator and, more informally, there are the examples that I was alluding to earlier such as the workshop and supporting the participation of aboriginal and indigenous people in mining development in Canada.

Mr. Richard Cannings: Who is responsible for consulting with and accommodating the concerns of indigenous peoples?

Mrs. Marian Campbell Jarvis: In terms of the environmental assessment process, the lead for the Government of Canada is the Canadian Environmental Assessment Agency. They are responsible for moving forward with the duty to consult and framing the accommodation. That work is informed by the technical and scientific expertise of other federal government departments, for example, Environment and Climate Change Canada, the Department of Fisheries and Oceans, and Natural Resources Canada as an explosives regulator. That's how we position the whole-of-government effort.

More broadly, that would be looking to the Department of Justice, and other government departments all have a role to play, but it depends on the entry point.

● (1710)

Mr. Richard Cannings: In terms of innovation, research and development, I'm wondering if you have a couple of examples. Particularly, in British Columbia there's a lot of concern around waste management and tailings ponds. There have been some bad events there in recent years that people are concerned about.

I'm just wondering if there's been some federal government involvement in partnership with mining companies about perhaps developing new and better ways to handle the waste, which would set a lot of people's concerns at ease. Is that one of the priorities of the government?

Mrs. Marian Campbell Jarvis: Mr. Chair, waste management in mining is one of the significant issues. We have done a number of projects out of CanmetMining at Natural Resources Canada. We are also the secretariat to MEND, the mine environment neutral drainage program, which is federal and provincial, with industry effort.

At Natural Resources Canada, we have expertise in acid rock drainage, which is a significant issue related to waste.

Outside of government, I would also reference the Canada Mining Innovation Council. They have been looking at a strategy toward zero waste in mining. This is certainly an industry priority, and government is doing its part at a project level already.

Mr. Richard Cannings: Thank you.

The Chair: Mr. Harvey, it's over to you.

Mr. T.J. Harvey: First of all, I would like to thank you all for coming here today. I know everybody has a busy schedule, not least of all you guys, for sure.

I have a couple of quick questions. In your briefing notes, under challenges, you identify that project-by-project focus impedes identification of R and D goals. You specifically mentioned that you felt we would be better off with an industry-wide approach to innovation.

I am wondering if you could elaborate for us on how you think that would look, taking into context that the mining sector in Canada has been recognized worldwide as one of the most innovative and forward-thinking mining sectors anywhere. I am wondering if you could elaborate on how you think that would look.

Mrs. Marian Campbell Jarvis: A number of companies and industry reports have indicated that, because of all the risks and the high cost, individual companies can't afford to do the technological development, the de-risking, the demonstration, and the verification all on their own. It really needs to have economies of scale and greater partnership. There are certainly examples, when one looks at the forestry sector or oil and gas, COSIA, of coming together, pooling resources, and helping to reduce risk.

I think that would be a partnership model that the Canada Mining Innovation Council, CEMI, and others are looking at. Could there be a platform that would be governments, universities, industry, as well as suppliers and services that would contribute their efforts together to tackle some of the large challenges? You alluded to a couple, waste water and energy, probably being the focus.

Mr. T.J. Harvey: That would further benchmark things that are being done within the industry right now to create best practices that wouldn't have to be built upon on an individual basis. Is that what you are saying?

Mrs. Marian Campbell Jarvis: Mr. Chair, I think what is happening now is that a company, on its own, will look at a challenge it has and then try to invest and tackle that challenge, but that challenge is likely replicated in other mine sites across the country, and rather than piecemeal, ad hoc solutions, could there perhaps be an industry-wide approach that would make more effective use of resources.

● (1715)

Mr. T.J. Harvey: The context of my question is that there is a proposed mining site in my riding. They have spent seven and a half years developing the site, and they have spent $55 million. I met with them last week. They are not complaining about the due process. They recognize that due diligence needs to be done on the environmental side and first nations consultation, but they were saying that what they would like to see come out of their experience is that, if there were other mining operations that had similar time frames, over a period of time something similar to what you are talking about would result from that, that we would find a more innovative way to take the collective data that has been garnered from these individual projects and find a smoother process.

My other question, really quickly, isn't on anything you talked about today. Historically, agriculture and mining have shared one common impediment to marketing their product, and that is rail transportation and access to market by rail. I am wondering if you have any expertise at all, any knowledge as to.... As the mining sector grows, do you see access to rail transportation as a major impediment to the marketability of natural resource based products?

Mrs. Marian Campbell Jarvis: Mr. Chair, I am aware that a number of companies and industry associations identify transportation, rail in particular, as a high cost that impedes their competitiveness.

Mr. T.J. Harvey: Disregarding cost, do they ever talk about access to the volume that would be required as the mining sector grows?

Mrs. Marian Campbell Jarvis: Mr. Chair, I'm sorry, but I don't have any data that would indicate whether it's going to be a growing cost. I'm only aware, as industry has told us, that it is a significant cost in their operations, but I don't have information on the trend line.

Mr. T.J. Harvey: Thank you.

The Chair: You have two minutes left. I'm going to use it to ask a couple of questions.

Thank you for your presentation.

I see some of the remarks about funding. People I speak to in the industry seem to have a consistent theme, that they were having trouble accessing investment funds, at least on a large scale. They can get seed capital, but before they can get large investments, they need evidence that the projects are going to produce something or advance to further stages.

Do you have any ideas on how industry or government can try to loosen up capital for the mining sector?

Mrs. Marian Campbell Jarvis: The government would have a few different levers to loosen up some of the capital. One is the investments in geoscience, the GEM program that was discussed earlier. When GEM releases information on geoscience, it reduces the risk and that often inspires investment in the mining sector on the basis of the data availability.

Other mechanisms the committee has mentioned, the flow-through shares and the METC, have all supported investment in mining. The METC has generated about $5.5 billion in exploration investments since it was first launched.

The Chair: Thank you.

That's all my time.

Mr. Barlow.

Mr. John Barlow: Do you need more time?

The Chair: I'll be good.

Mr. John Barlow: I have a large coal mine operation in the southern end of my constituency, southern Alberta and southern B. C., and you're talking about some of the issues impacting the mining industry. A lot of the easily accessible reserves are gone. Is access to those reserves also an issue if they're on crown land or provincial land?

There are 100,000 hectares they're trying to access in that area. The federal government said last year or two years ago that they were going to sell it, and then they backed off, but maybe it's the social licence part.

● (1720)

Mrs. Marian Campbell Jarvis: I'm aware that the Prospectors and Developers Association of Canada have done a study, and they consistently identify access to land for exploration as one of their top challenges.

Mr. John Barlow: I know with our climate, weather, terrain, there are lots of those issues, but is it—and I hate using this term—a social licence aspect that's blocking that access or is it our topography or maybe a bit of both?

Mrs. Marian Campbell Jarvis: I don't have the full details on all that, but I am aware that there is not one single factor. There are a range of issues and considerations and complications. However, if the committee is interested, I could certainly send a link so you can find out easily from some of the work that the Prospectors and Developers Association of Canada has undertaken.

Mr. John Barlow: I'm going to pick up on our chair's line of questioning.

This committee is trying to find out what the federal government can do to improve the long-term sustainability of these industries. If we are looking at securing federal funding, whether it's grants or providing seed dollars, we want the private sector to be driving that at all times. We don't want to be a crutch for the private sector. When we look at trying to get away from coal-fired power plants, for example, there's a coal mine near Hanna, Alberta, and those people are quite panicked, but they're just going to have to go somewhere else. How would you look at us directing federal funding? Should it be to certain sectors of the mining industry? How do you think this should be framed?

Mrs. Marian Campbell Jarvis: At Natural Resources Canada, we have a green mining initiative, and there is an industry advisory body. A lot of our science and technology and research and development is aimed at informing regulations, informing EA, but another part of our work is to help the mining industry develop more sustainably, more responsibly.

The project I mentioned on rare earth elements and chromite is industry-driven. CanmetMining worked in partnership with others. We asked industry what the needs were to move forward in this area. It's not just us in our labs thinking what might be useful. We want to find out what will actually make a difference on the ground, in industry, in real time.

Those are two examples.

Mr. John Barlow: We've had some meetings with the oil and gas sector, and you still see some significant dollars invested in innovation and research. I'm assuming the mining companies are doing the same, or have they had to scale back in what they invest on their own?

Mrs. Marian Campbell Jarvis: I don't believe mining companies are on the same scale as the oil and gas sector. From some of the metrics I've seen, oil and gas is about four times that of mining.

Mr. John Barlow: Thank you.

The Chair: Mr. McLeod.

Mr. Michael McLeod: Thank you.

Thank you, Ms. Jarvis, for your presentation. I'd really like to get a copy of your speaking notes, if that's possible.

In my opinion, of all the non-renewable resource development areas, the mining industry has really learned how to deal with aboriginal people, especially in the Northwest Territories. I've worked with regulatory boards and watched as assessments were made on environmental fronts and on the inclusion of aboriginal people. The mining industry, especially the diamond mines, has done an excellent job. They've become experts on how to consult with aboriginal communities. They involve aboriginal people right from the initial exploration stage. They sign impact benefit agreements. In the Northwest Territories, 50% of our boards are aboriginal. There are also community boards, regional boards that have hearings, so there's a lot of opportunity for input.

They've established environmental oversight committees that take frequent visits to the sites. They also bring elders to see first-hand what a mine looks like. For most people, and most aboriginal people, it's an education process that's required. That goes for all other areas, including oil and gas and others, because it's new for us. We have socio-economic agreements with the territorial government, which monitors hiring percentages. There are a number of things they monitor and talk about on a regular basis. They have literacy courses right on-site that help aboriginal people and others. It's not restricted to aboriginal people; it's for people with low literacy.

They do a lot of things right, in my opinion, and I think the opinion of many others who really took a good assessment of it. The end results are showing that we're having really good hiring levels in the communities. There are still huge pockets of unemployment in the north, but in the immediate area of the mines, it's working well. Regarding the courses that are available, the mines hire at least 95% of the people who graduate.

Is there a plan for further investment in the aboriginal population to help them with the ability to work in the mines, in terms of training, in terms of educating them to develop their skills? Right now most of the responsibility falls on the companies, and it is fairly costly, but I think the government has a role to play on that front too.

● (1725)

Mrs. Marian Campbell Jarvis: Mr. Chair, we've done a compilation of good practices in community engagement, and the committee may be interested in some of those success stories and good practices that highlight some of the same examples the member was referring to in terms of success with aboriginal participation and employment in the mineral development industry. From a whole-of-government perspective, although I certainly can't speak for the whole of government as an official with Natural Resources Canada, I am aware of efforts by colleagues in Employment and Social Development Canada to support aboriginal training and development, and some of that is targeted toward mining.

In the Ring of Fire region, there have been a number of programs supported by Indigenous and Northern Affairs Canada and the Federal Economic Development Initiative for Northern Ontario.

At Natural Resources Canada we have focused more on natural resources literacy, so that indigenous people know what to expect when the geologist shows up, what it means and what the opportunities are. We've produced a number of tools and partnered with a number of aboriginal organizations across the country to support that, and that work has been very well received.

Mr. Michael McLeod: Mr. Chairman, I was hoping we would hear more of how we could prepare people to work in the industry, rather than providing literature, most of which already exists.

I'm glad to hear you're looking at best practices, but I don't see it reflected. I see it in the Northwest Territories, where we have 50% of the regulatory boards made up of aboriginal people representing aboriginal government, and it works well.

I don't see that at the national level. I don't see NEB, for example, with any aboriginal—no, in their last presentation I think they said they'd hired one person, or they brought on one person. Are there any plans to be more inclusive when we talk about dealing with aboriginal people, rather than talking toward them, bringing them into the fold, into the process?

● (1730)

Mrs. Marian Campbell Jarvis: I think, at the government level, the Prime Minister has made the commitment on reconciliation. Indigenous engagement is a priority of the minister with not only the duty to consult, but participation, and that is an area of attention and focus.

The Chair: Thank you. We're out of time.

I'll say thank you very much. We appreciate your coming in today on fairly short notice. As you're probably aware, this is the beginning of this segment of our study. I was cautioned repeatedly by a gentleman to my right that we should not start the study if it's going to be continued after the summer recess, but I was overwhelmed by the other members of the committee that we should do this.

Mr. T.J. Harvey: Specifically, John Barlow.

The Chair: I suggest not to rule out the possibility of a further invitation to come back in the fall. I'm just giving you some warning.

Thank you very much. That was an excellent presentation. The answers were helpful, and it'll get us well on our way in this part of the study.

We're back here on Wednesday for committee business. I would suggest that people come armed with lists of witnesses for this study.

Mr. John Barlow: Ours are ready.

The Chair: Yours are ready, so you're armed. Everybody else will do the same. I think I've already got Mr. Cannings'. We can do that. If there is any other committee business, or anybody who wants to talk, please send it my way, and I will add it to the agenda.

Okay. Is there anything else for today?

Thank you very much.

The meeting is adjourned.