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Chair

Mr. James Maloney

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● (0850)

[*English*]

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

We have three witnesses scheduled this morning. From Mosaic, we have Sarah Fedorchuk, who's going to be joining us by video conference. Unfortunately, the bridge is having some challenges at the moment, so I think we'll start with the other two witnesses and hopefully she can join us in due course.

We're pleased to be joined also by Brian St. Louis, who is the manager of government affairs from Avalon Advanced Materials Inc.; and by members of the Department of Natural Resources, Mr. Habib, Ms. Rostas, Ms. Zinck, and Mr. Chevalier. Thank you very much for attending today.

We're going to give each group up to 10 minutes to present.

In the case of the department, Mr. Habib, you look as though you're the one poised to do the talking. Assuming that's the case, why don't we get started, and perhaps it makes sense to start with you, sir.

Dr. Magdi Habib (Director General, CanmetMINING, Minerals and Metals Sector, Department of Natural Resources): Thank you very much.

[*Translation*]

Thank you, Mr. Chair and members of the committee.

In June, the assistant deputy minister of Natural Resources Canada's minerals and metals division spoke to the committee about the Canadian minerals and metals sector, specifically, about some of the challenges and the innovation imperative. Today, I would like to focus on CanmetMINING's role in mining innovation.

[*English*]

CanmetMINING is a branch of Natural Resources Canada's minerals and metals sector. It's over 100 years old and has a history of being valued for its technical expertise. This expertise is broad and multidisciplinary, covering all aspects of the mining cycle, from mining extraction to mineral processing to environmental management.

CanmetMINING's mandate is to develop and implement green mining technologies to improve the environmental performance and the economic competitiveness of the mining industry, and to improve the health, safety, and productivity of miners and mine operations.

We de-risk green mining technologies to accelerate their deployment and commercialization in the mining sector. De-risking refers to lowering the risk to mining companies to implement new and innovative technologies in their operations.

[*Translation*]

Science and technology innovation in the mining sector enables Canada to expand its mineral resource potential. This happens through unlocking the benefits from the discovery and extraction of new deposits, extending the life of existing mines, and turning previously uneconomical sites into viable opportunities.

Government plays a key role in enabling innovation and supporting industry needs. CanmetMINING focuses on developing technologies and solutions to address key mining industry issues. We develop these technologies and solutions with two intertwined objectives: to reduce the environmental impacts of mining and to improve Canada's competitiveness. Strong environmental performance is closely linked to the long-term economic growth of Canada's mining industry and is essential for maintaining public trust in Canada's development of its mineral resources.

The green mining initiative is the brand that CanmetMINING uses to communicate the objectives and results of its work. The green mining initiative is a pan-Canadian initiative led by Natural Resources Canada that was launched in 2009 and endorsed by federal, provincial, and territorial ministers responsible for mines.

Building on efforts such as the national orphaned and abandoned mines initiative, the green mining initiative was designed to develop collaborative approaches and share relevant scientific knowledge in key research areas across the mining sector.

The long-term vision of the green mining initiative is for mining to leave behind only clean water, rehabilitated landscapes, and healthy ecosystems.

[*English*]

We are headquartered in Ottawa, with regional facilities located in Sudbury and Val-d'Or, which allows us to connect closely with mining stakeholders.

To give you a better sense of the results of our work, I would like to present to you three examples of recent CanmetMINING achievements.

We have developed a technology that uses mine waste as an alternative to Portland cement. In addition to reducing greenhouse gas emissions and decreasing the quantity of mine waste, the implementation of this technology would provide economic benefits to the mining industry. It's estimated that mines using the technology would save 50% on backfill binder costs. It has a potential to reduce greenhouse gas emissions at particular mine sites by 90%.

We've also demonstrated and verified an automated ventilation system for underground mines. Ventilation accounts for 40% of the energy expended in the mining extraction process, and costs about $10 million for the average-sized underground mine. The research at CanmetMINING has shown that automated ventilation could help reduce this energy consumption by anywhere from 20% to 50%.

We've also conducted research to improve the understanding of the transfer of selenium from water into the food chain. This allows us to inform regulations that are practical, achievable, and based on scientific evidence.

We had a study conducted in 2015 by a third party to examine the socioeconomic and environmental impacts of our work. The study examined a sample of our technologies and services, and found excellent returns on our investment and the contribution of our stakeholders.

An example of the technology included in the study of both the environmental and economic impact is the CanmetMINING enhanced leaching process that we developed to reduce the amount of environmentally harmful cyanide required in gold and silver extraction. This proprietary technology has shown tremendous cost-saving promise for silver extraction in a laboratory setting. At one mine site, the annual estimated saving consisted of $16 million and it was submitted that there will be an additional capital-expenditure saving.

● (0855)

Another example is our green mines, green energy project which use organic wastes, such as municipal composts and forestry biosolids to reclaim mining lands and grow energy crops. Some estimates suggest that oilseed production on mine tailings would generate approximately 3,600 litres per hectare, and CanmetMINING research estimated a profit of approximately $900 per hectare per year could be achieved

[*Translation*]

Stakeholder collaboration is fundamental to the way we work at CanmetMINING. Through the engagement and involvement of stakeholders in our projects, we accelerate the uptake of the green mining technologies that we develop, leveraging expertise and reducing duplication within the innovation ecosystem.

Our green mining initiative intergovernmental working group is currently co-chaired by the Province of Ontario and consists of federal, provincial, and territorial members. In recent years, this committee has carried out a number of studies on innovation and barriers to green mining, and provided recommendations to federal, provincial, and territorial ministers responsible for mining to advance innovation and address barriers.

Our green initiative advisory committee is co-chaired by the Mining Association of Canada and includes membership from mining companies, associations, suppliers, academia, government organizations, research centres, and not-for-profit organizations. It is the main mechanism by which we ensure that our research and development is well-aligned with the mining industry and other stakeholders.

[*English*]

] At the Green Mining Initiative Advisory Committee workshop in late 2014, we proposed a new innovation adoption model to determine if we could accelerate the uptake of green mining technologies by bringing together key stakeholders along the innovation value chain and removing common barriers to innovation such as project funding and intellectual property issues. Workshop participants identified energy savings and water management as two key issues. CanmetMINING committed to providing funding for the project, sharing any intellectual property arriving from the project, and leveraging expertise and resources from others.

The water project was co-led by the Mining Association of Canada and focused on an evaluation of advanced water treatment technologies to reduce the potential impacts of mine effluents on the receiving environment, including acid mine drainage. The energy project was co-led by the Canada Mining Innovation Council. Its object was to accelerate the uptake of a modelling tool that identified recoverable waste energy in the grinding circuit by bringing together key stakeholders such as mining companies, academia, manufacturers, and grinding mills.

● (0900)

CanmetMINING's research plan for the next five years builds on the success of these two pilot projects with the goal of eliminating barriers to innovation and accelerating the development and implementation of solutions. The research plan identifies four priorities based on our engagement and consultation with stakeholders. The four priorities are energy efficiency, enhanced productivity, waste management, and water management; and work in these areas includes involvement of stakeholders.

Under our energy efficiency priority, our goal is to develop technologies to reduce energy consumption in mining and milling to improve energy efficiency in mining and mitigate climate change, and to replace diesel in underground mines with alternative energy sources. Under our enhanced productivity priority, we are developing novel and innovative new mining technologies to increase productivity and decrease the risk of adoption of technologies.

Under our rare earth element and chromite research and development program announced in budget 2015, we are working with stakeholders to address the complex technological challenges that are related to the production, separation, and processing of critical metals needed to develop and grow new businesses and highly qualified personnel in Canada.

Under our waste management priority, we are developing best practices for waste management seeking to reduce liability and cost with respect to tailings and generate new revenue streams for mining companies.

Under our water management priority, we are developing technologies with the aim of reducing the demand for freshwater resources, reducing discharge to the environment, and informing policies, guidelines, and regulations regarding any potential impacts on aquatic environments.

Our collaborators are too numerous to include, but we work with a variety of organizations and companies to address barriers to innovation and to the adoption of new technologies in the mining industry.

[*Translation*]

CanmetMINING will continue to engage and collaborate with stakeholders along the innovation ecosystem in support of mining, to ensure they meet the highest environmental standards, adopt new innovative and clean technologies, and realize important economic benefits through cost savings, and efficiency and productivity gains.

[*English*]

The Chair: Thank you very much, Dr. Habib.

Mr. St. Louis, over to you.

[*Translation*]

Mr. Brian St. Louis (Manager, Governement affairs, Avalon Advanced Materials Inc.): Thank you, Mr. Chair.

Good morning committee members.

[*English*]

Good morning, Chair, honourable members, committee staff, and fellow witnesses.

I would first like to thank the committee for the invitation to appear before you and to speak on some of the innovative and sustainable solutions offered by Canada's mining industry, both now and into the future.

Today I will be speaking on how Canada can leverage its expertise in natural resources to build new clean energy production and storage supply chains that can help drive northern and indigenous economic development and also make Canada's resource sector more sustainable.

Avalon Advanced Materials, formerly Avalon Rare Metals, is a mineral development company headquartered in Toronto that specializes in niche-market commodities with growing demand in new technology. The company has three advanced-stage projects in Canada focused on lithium, tin, and indium, as well as rare earth elements, tantalum, niobium, and zirconium. Avalon's efforts are currently focused on its Separation Rapids lithium project near Kenora, Ontario, and the East Kemptville tin-indium project in Yarmouth, Nova Scotia.

Avalon is recognized as a leader in corporate social responsibility in the junior resource sector and has received recognition as one of Corporate Knights' 2016 Future 40 Responsible Corporate Leaders in Canada for the second straight year.

Avalon is also one of the very few junior resource companies to produce an annual sustainability report compliant with the Global Reporting Initiative.

Avalon recently reached a major milestone on its Separation Rapids lithium project with the release of a positive preliminary economic assessment, or PEA. The PEA demonstrates that the production of high-purity lithium battery material, called lithium hydroxide, along with various byproducts from the deposit, is economically viable. The project development model consists of facilities located at two separate sites: the mine site and the concentrator, located approximately 75 kilometres north of Kenora; and a hydrometallurgical plant located at an industrial site near the city of Kenora.

Production of lithium hydroxide from lithium minerals, like those present at Separation Rapids, is an emerging business requiring innovative new process technology. Separation Rapids has the ability to supply the rapidly growing global demand for lithium in the lithium ion rechargeable battery market. Lithium ion battery technology has evolved and continues to evolve to become the energy storage solution for electric vehicles and other emerging applications such as home and grid energy storage as the world transitions to a low-carbon economy.

Avalon is one of only two active advanced lithium development projects in Canada with a realistic chance of bringing new supply to the market in less than five years. We continue to work with our partners in government, the energy storage and battery materials sector, and the local communities to advance this project to the demonstration plant stage.

Moving forward, I would first like to briefly reiterate some of the statements from previous witnesses, which Avalon also believes are of great importance to the future of the mining industry.

As the Prospectors and Developers Association of Canada noted, the mineral exploration and development industry is at times misunderstood by the general public and unfairly characterized as purely mining. Actually, it is an industry in itself that has a very light environmental footprint. The exploration sector is a major economic driver for Canada, particularly in northern communities.

Mineral exploration is also referred to as the R and D sector of the mining industry, tasked with the high-risk assignment of finding tomorrow's economic mineral deposits. Because we don't know where they will be found, it is critically important that access to land with high mineral potential be maintained. Large-scale land withdrawals for conservation purposes threaten the future viability of the industry. We need a new land-use model that meets the goals of conservation, while not denying future access to important natural resources such as the technology metals. The mineral exploration and development industry has steadily improved its environmental performance. While there are exceptions, and accidents do happen, the reality is that the overwhelming majority of industry participants in Canada are responsible operators interested in working with indigenous people and in minimizing environmental impact.

The industry continues to struggle to raise sufficient financing capital to advance and develop new exploration projects. The successful flow-through share program remains one of the few tools that give early-stage explorers access to risk capital. It must be maintained to ensure a healthy exploration industry going forward.

Capital market regulators need to look at new tools to help make risk capital more available from willing speculative investors. Innovative new models that take advantage of modern communications technology, such as crowdfunding, need to be encouraged to achieve this goal. A national securities regulator would help remove some of the barriers to the free flow of risk capital.

One question posed by the committee is, what unique advantages of the Canadian mining sector should be leveraged?

● (0905)

Canada's leading mineral exploration, development expertise, and natural resource endowment could be leveraged to establish new supply chains of niche market commodities utilized in high-tech and clean-tech applications. Lithium is just one such material. Others include graphite, cobalt, indium, and the rare earth elements.

These commodities are very different from traditional commodities such as precious and base metals in terms of investment risk and opportunity. The risks and challenges are more similar to a new manufacturing venture in that the developer is essentially bringing a new refined chemical product to market and needs to invest in downstream processing infrastructure and to develop relationships with customers.

The upside for Canada in leveraging its natural resource wealth in critical materials is to build out the full supply chain for energy storage and electric vehicles rather than just being an exporter of the unrefined raw materials.

Canada's National Research Council has some initiatives supporting the critical materials in clean technology sectors. Avalon has been working with senior provincial government officials on a strategy to encourage growth in these emerging sectors. Avalon has also worked closely with the federal government, including my fellow witnesses here today, on Canada's rare earth element research initiative.

One key point is that these new supply chains and the government role in them reach across numerous departments of government, including International Trade, Innovation and Economic Development, Indigenous and Northern Affairs, Environment and Climate Change, and, of course, Natural Resources.

Another question posed by the committee was how we can ensure that indigenous people and communities are meaningfully engaged through all stages of mineral development, production and refining, so that their voices are heard and they can participate in identifying potential problems and solutions. This topic is of great importance to Avalon as a company, and, in fact, Avalon's president and CEO, Don Bubar, was one of the founders of PDAC's aboriginal affairs committee in 2004 and is a leader in pursuing the goal of increased indigenous participation in the Canadian mineral industry.

Canada's indigenous people want more economic opportunities for their communities and members. The positive news is that the relationship between these communities and industry, we believe, is changing for the positive, focusing on partnerships and business opportunities that can result in economic empowerment. Many companies and indigenous business leaders are keen to do business, but sadly, the politics around treaty rights and unresolved land claims can often frustrate co-operation on these business opportunities. Early and open consultation and dialogue with indigenous communities is, and will remain, critically important to developing positive relationships. Avalon has 20 years of experience in working with indigenous communities and can offer some thoughts on how to make the process more efficient in the future.

Delegation of the duty to consult by the crown to industry practitioners tends to be inefficient because the parties often have completely different objectives and little experience with the culture of the other party, leading to misunderstandings. Typically, the dialogue in a remote northern community is between a political leader more familiar with negotiating with government on treaty rights and entitlements and a business leader used to negotiating business deals. They often don't speak the same language, and commonly, consultants and advisers retained by the first nations are not always helpful. As first nations become more integrated into the economy, the dialogue should evolve into more of a business-to-business conversation, with government in the background ensuring that the duty to consult has been respected.

Canada needs to focus on new models of partnership between resource companies and indigenous communities that reflect indigenous interests in direct participation in industry and move beyond the traditional impact and benefit agreements, which may have been appropriate 20 years ago, but are no longer the most beneficial path forward today.

New technology in clean and renewable energy generation and storage is creating business opportunities that can create a win-win-win scenario for remote northern indigenous communities by reducing reliance on traditional diesel power generation and creating low-cost clean energy solutions for the community and business opportunities to sell power to mineral developers. This is a goal Avalon is actively pursuing with its partner communities. This not only creates a sustainable business for those involved, but it could also act as a catalyst for other resource development in the surrounding areas.

One need only look at the example of how hydro power development in northern Quebec has economically empowered the Cree nation. New clean energy technology will allow similar models to be created on smaller scales across the north. This will also realize a step towards a cleaner, greener economy that creates economic growth, opportunity, and benefits versus solely increasing cost to industry.

Furthermore, this also relates to NRCAN's “Clean Technology in Canada's Natural Resource Sectors: A Discussion Paper” as well as the committee's question on opportunities to improve our mining practices to address the environmental impacts of the sector.

Supported and encouraged by incentives and programs, clean power generation supports the government's goal of green infrastructure while creating economic development and growth for northern communities, indigenous groups, and Canada as a whole.

● (0910)

In summary, Canada can and should leverage its expertise and natural resource endowment to build out new developing clean tech supply chains, which will not only create northern and indigenous economic development but also make Canada's resource sector more sustainable.

Thank you to the committee for giving Avalon the opportunity to appear today, and I look forward to any questions.

The Chair: Thank you very much, Mr. St. Louis.

Welcome, Ms. Fedorchuk.

Ms. Sarah Fedorchuk (Senior Director, Public Affairs, Mosaic): Good morning to the members of the committee. I appreciate the invitation and your time today.

For those of you who aren't familiar, let me tell you a little about Mosaic and the work that we do. Mosaic is the world's largest producer and marketer of concentrated potash and phosphate, with over 9,000 employees globally, and about 2,200 of them in Saskatchewan. Our operations and joint ventures span across nine countries. All of our Canadian operations produce potash. We completed $8.9 billion in sales in 2015 and have $3 billion in expansion projects under way, including the world's largest potash mine shaft project at our Esterhazy location in east central Saskatchewan. We own assets to the full spectrum of the value chain that takes minerals from raw ore right to finished product that is delivered to customers in over 40 countries worldwide.

Canada is the world's largest producer of potash, with over 30% of global supply. Farmers around the globe depend on our products to help nourish their crops and to maximize the food they can grow on every acre of farmland. Our mission is to ensure global food security by helping the world grow the food it needs. The United Nations estimates that the world population will climb to nine billion by 2050. The world's farmers must produce more food and fuel, and will need more fertilizers to do it. In fact, fertilizers are currently responsible for producing half of the world's crop yields. This last year, in particular, has been characterized by challenging conditions in the agricultural and broader commodities' markets. The steep decline in fertilizer prices and of fertilizer company stock prices follow these trends and were, to some extent, exacerbated by an overstated market perception that increasing crop nutrient supply would outpace demand for years to come.

In a challenging economic climate, innovation is more important than ever as an ingredient to success. We conducted more than 500 product trials last year with highly regarded private researchers and universities, as well as customers and growers. Mosaic has developed a number of premium products that increase crop yields and combat nutrient deficiency. These products are highly sought after by customers in Asia, South America, and across North America. We are dedicated to increasing the sustainability of our business and reducing our environmental footprint. I have a few examples I'd like to share with you.

The use of water is necessary in our processes; however, we are continually looking for ways to use less and recycle what we do use. In our Canadian operations, we currently reuse or recycle 90% of the fresh water we consume. By 2020, Mosaic has made a company-wide commitment to reduce fresh water use in operations by 10% per metric tonne of product. In 2015, we achieved a 2% reduction in fresh water use from the 2012 baseline. We've also made a commitment to real, achievable targets to reduce GHG emissions when meeting the demand for customers. We are proud of our record to date and have committed to reducing direct GHG emissions and purchased-electricity GHG emissions by 10% per tonne of finished product by 2020.

An example of a project that has helped us reduce our emissions is our Belle Plaine facilities' agreement with an industrial partner, which sends water to be used in a cooling process at a nearby plant. The heating water returns to our facility for use in potash production, allowing Mosaic to reduce the amount of energy that would have otherwise been spent on heating water by nearly 183 million kilowatt-hours per year. That's the equivalent of reducing CO2 emissions into the air by 35,600 tonnes, or the equivalent of taking over 7,500 passenger vehicles off roads each year. Also, we have made a decision to transition to electric vehicles from diesel in our underground mine operations. This is ongoing and will continue into the coming months and years.

As far as overall energy consumption goes, we've established a company-wide target to reduce our total energy use by 10% per metric tonne of product by 2020. We have a variety of automation products that will turn off heavy equipment when not in use. We routinely make improvements on our operating equipment, such as improved efficiencies in the various boilers and dryers we use, as well as revamping many of our heating and lighting systems. In 2015, the company achieved a 5% reduction in energy use from our 2012 baseline.

Let me close by saying we greatly appreciate your efforts to consult with industry and listen to our concerns. As the Government of Canada develops its climate change policy, we urge you to collaborate with leading industries such as ours. Together we believe we can develop the right strategy to create a more prosperous and sustainable country. We are concerned that setting unachievable emission reduction targets will not only hinder our ability to feed the world's growing population, but also discourage global companies like Mosaic from incremental investment in Canada for new facilities, expansion, and upgrade in existing facilities.

● (0915)

Mosaic strongly supports additional efforts to reduce emissions through offsets, cogeneration, carbon capture and storage, and energy efficiency. The most recent federal budget pledged $2 billion to support provincial and territorial actions that reduce greenhouse gas emissions. We recommend that the government earmark some of the $2 billion to establish an energy efficiency program that will assist with upfront capital cost for new projects. This would help support sectors such as ours, as we work to access remaining emissions reduction opportunities and increase competitiveness.

We believe that the Government of Canada has the opportunity to take advantage of advancements made by the fertilizer industry, by recognizing and promoting the 4R nutrient stewardship: the right fertilizer source at the right rate, at the right time, and in the right place. We also look to you to support an enabling trade from the development of transportation infrastructure across the country.

Mosaic would be pleased to continue this dialogue at any time.

I'm happy to answer your questions now.

The Chair: Thanks very much, Ms. Fedorchuk.

I should also acknowledge the fact that it must be very early in the morning there, so special thanks for making the effort to join us today.

I am going to open the floor to questions now and turn the mike over to Mr. McLeod.

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

Thank you, all, for the presentations. They were very interesting.

My first question is for Natural Resources. I am looking at your areas of priority. You've done some very good work, but there is something that I feel is missing.

In your mandate letter, you were also required to work with aboriginal people. I didn't hear you mention the word “indigenous” or “aboriginal” once. Maybe you could tell me what you are doing on that front. The letter from the Prime Minister indicated that your department was to find a way to better reflect the priorities of the indigenous leadership. I'm curious to see how you are doing that. What is your strategy?

● (0920)

Dr. Magdi Habib: Our lab at CanmetMINING has a mandate to disclose our research, the work on green mining, and the benefits of this work. Last year, we had two round table discussions with aboriginal people to engage them in the work we do on green mining and to provide opportunities for suppliers to benefit from the green mining technology we are developing. As well, the first nations communities of Mattawa sit on our chromite technical committee. We are working with them to develop communication tools to inform these communities of the work being undertaken in the program as it relates to the Ring of Fire. We have some involvement at the R and D level with indigenous communities.

Mr. Michael McLeod: I would also like to ask whether you are working on a strategy. I don't see it as a priority for you. I don't see it listed as a priority. Are you working on an action plan to engage the aboriginal people?

The Prime Minister was clear that he wanted to regain the trust of indigenous people. I'm not sure how you are doing that just by sharing information that the general public has. I think you have to go a little further. Would you be working on a strategy or an action plan that we could use in our discussions with aboriginal people to give them comfort that you are working on the mandate that was provided to you?

Dr. Magdi Habib: The strategy is probably under the purview of our policy group at Natural Resources Canada. I can certainly go back and find more information on the strategy that is currently being developed.

Mr. Michael McLeod: Maybe you could also let me know who you have been engaging in the Northwest Territories. I'm from the Northwest Territories, and I am very interested to see how you are engaging the people there.

Avalon, you had a very good presentation. Thank you very much. I think some really good recommendations were made.

I was around when the Nechalacho was announced and the agreements were negotiated with the aboriginal governments. It was a very exciting time, when things were going really well at Thor Lake.

I'm just curious. What happened?

Mr. Brian St. Louis: The real issue is that, like a lot of commodity prices, the prices for rare earths are relatively depressed right now.

It's a very advanced project. It's one of the most advanced heavy rare earth element projects in the world. We reached feasibility study. We had our environmental assessment. The reality is, there's not a lot more incremental work we can do on the site. We are going to need a large capital infusion to build the project, and that's just not available in the capital markets right now, with where they are. We are still active on the site. We are still marketing the site, but we are in a bit of a holding pattern for now. We are still optimistic long-term that the supply and demand, and the strategic issues surrounding rare earths, will support the development of it.

Mr. Michael McLeod: You had mentioned in your presentation the issue of unresolved land claims.

Mr. Brian St. Louis: Yes.

Mr. Michael McLeod: It's a good one because it's a challenge that I struggle with right now. We have a huge area in the Northwest Territories that's virtually pristine, untouched, with a lot of potential, but there are barriers, including infrastructure, roads, and the high cost of power. All these things are there, but the land claims issue is something we have to move forward on.

I wanted you to elaborate a little more on the issue of the impact and benefit agreements. You have signed impact and benefit agreements. You know what it takes to sit down and sort these things out. You said we needed to do more than that now, or that's the way it was done 20 years ago, and it's not relevant today.

Mr. Brian St. Louis: I think there are two stages to that. As you know, in the Northwest Territories you're negotiating with numerous groups. Their claims vary and the impacts, of course, vary. The reality is that with an impact and benefit agreement, if there are no large impacts, then there's not going to be the benefit at the other side. Building on that, what we're trying to say is the resource industry—it's starting to do so, and I know you've seen a lot of positive indigenous organizations in the Northwest Territories—should go beyond, let's say, a transfer payment. It's a positive step, but I think it's about economic and social empowerment, training, capacity building, and businesses. That's where the industry should be going. That will bring the first nations into the discussion more frequently and bring economic empowerment, such as what you talked about with Canmet. We want to see them as part of the process and not as a separate aspect of it, per se, if that makes sense.

● (0925)

Mr. Michael McLeod: Yes, and I totally agree. In western Canada and the north, all the northern jurisdictions, we have probably over 650,000 people sitting in communities unemployed, and we have projects all around us. I know you were talking to probably six different aboriginal governments at the same time.

Mr. Brian St. Louis: I think it might have been seven, but don't quote me on that.

Mr. Michael McLeod: It must have been challenging, but more has to be done. I think there has to be a strategy by our government to make that change. The aboriginal populations don't migrate to where the work is. They stay in their area, and they work as a collective. They stay in the communities that most of them were born in, and it makes a big difference on how we strategize to engage them.

I have one last thing on the use of alternate energy. We recognize that diesel is expensive in the north. Most of the mines have done very well in engaging on the alternate energy front. Some have been using windmills. Some have been using solar. They're leading the charge for us, and a lot of the communities are already looking—

The Chair: You have about 30 seconds.

Mr. Michael McLeod: Maybe you can talk about that.

Mr. Brian St. Louis: Yes, absolutely. As we saw with the announcement from the government yesterday, it's now a huge financial incentive for companies to supply their projects based on clean energy. One of the benefits is that the technology for clean energy and storage is advancing to the point where you can run your operation sustainably and at the large load capacities that were not possible five years ago. As I mentioned in my remarks, I think the government should be focused on incentives for resources companies, either new or existing, to transition into using clean power and energy storage to operate their projects. It'll have an economic benefit, and also an environmental benefit.

The Chair: Thanks very much.

Mr. Barlow, over to you.

Mr. John Barlow (Foothills, CPC): Thank you very much, Mr. Chair, I appreciate it.

Thanks to all the witnesses for being here this morning. It's great information.

I want to start with Ms. Fedorchuk, in Saskatchewan.

I grew up in Yorkton, Saskatchewan. I know the impact that the Esterhazy mine has had on that part of the province, and the economic boom that it has brought to what was a downtrodden area of Saskatchewan at one time. I found it interesting with some of the numbers that you are talking about in your presentation for the mine and Mosaic at more than $8 billion in sales last year. Potash is Canada's second-highest valued mineral right now. It shows the economic impact of not only Mosaic, but of that industry on the whole.

You talked about your goal of reducing emissions by 10% by 2020. I'm wondering how yesterday's announcement from the Liberal government of a $50 per tonne carbon tax over the next four years is going to impact the goal of reducing your emissions. Your premier called yesterday's announcement "grossly arrogant". In a province where the residents do not support a carbon tax, and the Liberal government is now imposing a carbon tax on your province and your industry, what kind of impact this is going to have on Mosaic?

Ms. Sarah Fedorchuk: Because yesterday's announcement is so new, our finance and sustainability departments are still doing the models to figure out what the impact and the different options would look like for Mosaic.

I think our biggest concern right now for our market is competitiveness. The Russians can produce potash a lot cheaper than we can because of where their currency is at. Anything that gives Canadian potash producers a competitive advantage is seen as a positive at this stage, just because pricing is so low.

Right now, we are still going through the models and trying to figure out what the impact to our business is, but we are concerned about the competitiveness of Canadian potash.

● (0930)

Mr. John Barlow: You also mentioned how you need to find ways to not discourage investment to ensure that this industry can grow. We're talking about expanding our agriculture and ensuring that we're able not only to feed Canadians but also to have the potential to feed the world.

I'm assuming that this announcement yesterday certainly does not help or address your concern about discouraging investment. I would think that this punitive carbon tax is going to be a very difficult signal to industry in terms of looking at investing in Canadian mineral resources.

Ms. Sarah Fedorchuk: When the market is in a dip, as it is now, there is a lot of internal global competition for those capital dollars. For us to be seen as a less business-friendly environment would be a concern to us, yes.

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

I want to now ask Mr. St. Louis a couple of questions.

I was going through the minister's mandate letter again last night as we were preparing for today's presentations. I noticed that nowhere in the mandate letter did it say anything about maintaining the mineral exploration tax credit or the flow-through shares, and I find that very concerning. We've heard from several mining operations especially how important the junior mines have become in terms of taking on the burden of a lot of the exploration work. You're kind of the risk-takers.

There are a lot of comments in the letter about supporting green technology and that kind of thing, which is important, but I am concerned about the lack of direction in or the lack of commitment to maintaining those two programs. From a junior mining perspective, can you talk about the importance of the mineral exploration tax credit and the flow-through shares and what the potential consequences would be if those two programs were not renewed?

Mr. Brian St. Louis: Absolutely.

The flow-through share program is something we make use of very regularly to fund our operations, bottom line. That's one of the ways we raise funding. In a tough capital market, it helps to make it a little bit easier.

The mineral exploration tax credit applies more to earlier-stage work, so that would be drilling-type exploration work. As a diversified company, we still are always trying to look at new projects. We're doing some exploration in a few sites right now, including in New Brunswick, actually, where I think you're from, MP Harvey, where we could claim the mineral exploration tax credit. It's near your riding.

Ultimately, as we develop the green and clean industries, we're going to need raw materials to feed these supply chains. To get those raw materials, we're going to need to explore and see what we have in Canada.

In conclusion, yes, the flow-through share program and the mineral exploration tax credit are very important to the junior mineral development and exploration industry.

Mr. John Barlow: We had a previous study on the oil and gas sector that asked many of the same questions we're asking here, but one thing that was interesting and came out of that study was the existence of a group called COSIA, an oil sands group where a lot of the major companies are sharing innovation and technology without patents and without having to worry about the economics on that side.

Maybe you or Ms. Fedorchuk can answer this question. Does a similar group exist on the mining side, where some of the major companies or juniors would be sharing technology and innovation as a goal of advancing your environmental stewardship and technology and innovation?

Mr. Brian St. Louis: Absolutely. I'm sure my fellow witnesses could talk about some of them.

A more sector-specific one that we're a member of is the Canadian Rare Earth Element R and D Initiative. We've worked with numerous players from industry, academia, government, and commercial labs, as well as some end-users, on developing technology, clean processing, and environmental regulations surrounding rare earths.

There are some higher-level groups. The Canada Mining Innovation Council I believe is one. There's a lot of work going on at the National Research Council that is related to energy storage, which of course goes into the raw materials mining sector.

I might be missing one or two, but yes, there are similar groups. They may not be as high profile as the oil sands group, but yes, there are such groups.

● (0935)

Mr. John Barlow: Perfect.

Thanks very much.

The Chair: Mr. Caron, welcome. I neglected to mention that earlier. Thank you for joining us today.

Mr. Guy Caron (Rimouski-Neigette—Témiscouata—Les Basques, NDP): Thank you very much.

[*Translation*]

This is a return to my roots given that, when the last Parliament ended, I was the NDP critic for natural resources and vice-chair of the Standing Committee on Natural Resources. I'm delighted to be here today. Thank you very much.

My first question is for Ms. Fedorchuk.

I'd like to pick up on the carbon tax issue, which was mentioned earlier. It's an option Canada has talked about for a while. I'm curious as to whether Mosaic has done any work in recent years to reduce its carbon footprint and lower greenhouse gas emissions, as other sectors of the industry have done.

[*English*]

Ms. Sarah Fedorchuk: Yes, absolutely. We have had a number of initiatives, for example, the automation project I mentioned that turns off our heavy equipment when it's not in use; and the water project we have with an industry partner near one of our facilities to heat the water using their steam, so that we are using less natural energy to heat the water we need to use in our process at that facility.

We've also done feasibility studies on using renewable energy in our process. Right now, it wouldn't be a question of us not being able to do it technically or the engineering being out of the realm of what we could do, but rather, it would be the upfront capital expenditure that we would have to put into switching some of our sites over to renewables.

Mr. Guy Caron: So you've made some progress there. In any case, you are going in that direction.

One could argue that this actually makes your processes more expensive than those of Russia, for example, with whom you're competing. Yet you're still doing it because you can find an advantage in it. Right?

Ms. Sarah Fedorchuk: We believe we definitely have a responsibility to the communities in which we operate to look at all projects that would make our mining operation sustainable while still remaining cost competitive.

Mr. Guy Caron: You're a member of the Saskatchewan Mining Association. Are you a member of the Mining Association of Canada as well?

Ms. Sarah Fedorchuk: We are a member of the Saskatchewan Mining Association.

Mr. Guy Caron: And the Mining Association of Canada?

Ms. Sarah Fedorchuk: Through the SMA, we are a member. We're a member of the SMA, which is a member of the Mining Association of Canada. We're a member of Fertilizer Canada.

Mr. Guy Caron: You are aware that the Mining Association of Canada actually established a policy in support of carbon pricing back in the summer, the summer of 2016.

Ms. Sarah Fedorchuk: I wasn't aware of that. We are still discussing, thinking, and looking at what it would mean for Mosaic as a whole.

Mr. Guy Caron: I'm just looking at the release here. It was issued actually on April 13, 2016, and is entitled "Mining industry supports carbon price to address climate change".

Ms. Sarah Fedorchuk: I wasn't aware of that one.

Mr. Guy Caron: That's okay. Thank you very much, Madame Fedorchuk.

[*Translation*]

Mr. St. Louis, I'm going to go quickly.

[*English*]

One thing struck me in your presentation when you were talking about the relationship with aboriginal communities. You said, basically, if I recall, that the negotiations you have, the discussions you have, tend to be inefficient because you don't speak the same language.

You have projects all over the country. You have some in the Northwest Territories, New Brunswick, Ontario, and Nova Scotia. Is it the same everywhere? Have there been some differences where you were able to actually construct or engage in a meaningful dialogue? What could you take from those successful examples to translate that all across the country? Is it possible?

In addition, you gave us one possibility, which is to actually have business-to-business engagement with somebody from Natural Resources, somebody from the government with experience with first nations. What other advice would you give the government in that regard?

Mr. Brian St. Louis: I'll start with the first part of the question, the differences regionally. I don't think it's necessarily even just regionally; it's sometimes community by community. The capacity levels, the business development levels in some communities are quite strong, and there are some communities that are thriving based on that. I can't think of any example off the top of my head, but there are numerous communities that are thriving.

There are other communities where the unemployment rate is in the 90% range. The capacity isn't there. They don't have an economic development arm. There are big differences, basically, in some of the communities versus others.

With that in mind, as an observer, my recommendation to the government would be that in the communities where the capacity isn't there, where you can't even have the business-to-business conversation because they don't have any business expertise and don't have a development corporation, trying to build that up would be the forefront of creating economic development.

If one goes into a community and can't find someone to have a business discussion with, it's very tough for, let's say, us as a junior resource company to help them along in developing that capacity. It wouldn't just be from the perspective of a company like ours; those types of initiatives can help the community in all types of negotiations, in all types of business opportunities, even outside the resource sector.

I'll move on to the second question, which I believe is, what can the government do to help with the duty to consult?

● (0940)

Mr. Guy Caron: It's more, what advice would you have for the government in terms of negotiation? If we have this different language being spoken, it's actually hard. What should the government do about it?

Mr. Brian St. Louis: That's a very complicated question, I suppose. One aspect is the direct conversation between the government and the proponent, depending on the jurisdiction because, ultimately, a lot of this goes to the provincial government, so it depends on the region. But just a more active participation on the duty to consult kind of permeating the technical environmental side, where that makes it so the company or the proponent can have a more business-oriented conversation while providing the information to the government and the indigenous group on the regulatory permeating side....

Have that as a separate discussion versus the business side. I think keeping those two apart is wise, because commonly the two goals will frustrate the ultimate goal when the macro-level goals of the proponent, the government and the first nation are generally lined up.

[*Translation*]

Mr. Guy Caron: Mr. Habib, what is your reaction to what the government may do precisely to improve the level of dialogue between industry and first nations and ensure talks can lead to a satisfactory outcome for both sides?

Do you have any comments or suggestions in that regard?

Dr. Magdi Habib: I certainly support the suggestion made earlier.

Mr. Guy Caron: Thank you.

My last question is for Mr. St. Louis. It pertains to infrastructure, specifically, green infrastructure.

[*English*]

We know that mining is infrastructure-intensive, especially in regard to roads, rail, and power. Does the infrastructure situation right now—

The Chair: I'm going to have to interrupt you. Sorry, we're over time.

Mr. Guy Caron: Over time, okay.

The Chair: Mr. Serré.

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

First to Mr. St. Louis on the mineral tax credit and flow-through shares that we had talked about under the previous government. It had expired, so we extended it one year.

Mr. Brian St. Louis: Yes.

Mr. Marc Serré: You're in favour of us continuing with that. Is that your assessment?

Mr. Brian St. Louis: Yes, that would be safe to say. I'm sure you guys have heard it from the Prospectors and Developers Association of Canada already, and ultimately, generally their interests are aligned with ours.

Mr. Marc Serré: Okay.

Also, Mr. St. Louis, you mentioned in your presentation that yesterday's announcement on prices on carbon was a large initiative...incentives that will use clean tech and help the economy and also be a benefit to the environment. I want you to expand on that.

Mr. Brian St. Louis: Absolutely. I think, ultimately, a lot of the details on the announcement will flow, and we haven't seen those yet, so getting into intricate details would be challenging for me.

Ultimately, our business is supplying the clean tech/green tech high technology sector with commodities they need. So for us, growth in energy storage needs in Canada or North America, or globally, is good for our business, and I think it can help us as a country economically. If we're coming back to the committee topic, leverage those opportunities.

Mr. Marc Serré: Also, you mentioned the lithium battery.

Mr. Brian St. Louis: Yes.

Mr. Marc Serré: You're kind of five years away, but there's a company in Sudbury that is producing batteries for heavy equipment machines; they're selling actually to companies in Russia. Are you aware of that, or are you working with them?

Mr. Brian St. Louis: I am sorry. I meant the five years was for raw materials production for Avalon specifically. There's another project in Canada that might be on a little more of an advanced timeline. I can't speak to that, though.

Yes, we are aware there are some smaller players in Canada versus, let's say, the powerhouses in the battery sector, the LG Cam, Samsung, Tesla, etc. There are some smaller players, and what I think you'll see is some of these smaller players growing or partnering. Ultimately, it's going to be economic for a lot of these battery companies to have operations in North America to supply the North American market as it grows. We're pretty optimistic that some of this can be done in Canada. What we're hoping is that instead of, say, producing the raw materials and then buying an electric vehicle from another jurisdiction, that we capture that entire supply chain, the raw materials, the processing, the chemical, the cathodes, etc.

● (0945)

Mr. Marc Serré: Thank you.

My question is for Natural Resources.

The last time Ms Campbell Jarvis was here, I asked the question related to ecosystems and clusters, and my colleague, Mr. Barlow, also alluded to clusters.

When we look at clusters and R and D, that is, mineral exploration, operations, innovation, and commercialization, even our own Library of Parliament notes indicate that we have 37 clusters in Canada. However, they're essentially just mine sites, they're not necessarily clusters. What I've heard a lot from the private sector is that a lot of the innovation and exploration, R and D, is not necessarily linked enough with the commercialization, the private sector. COSIA does that a lot, but in the mining sector, we don't really have a COSIA that will look at the overall.

What is your role with the private sector, and how can you get closer to the private sector? I know you have some minimal staff in Val-d'Or and Sudbury, but other than that, how can we get closer?

In your priorities, you don't necessarily mention the private sector and the commercialization that is needed to expand that.

Dr. Magdi Habib: As I mentioned in my presentations, we are connected with different players or stakeholders along the innovation ecosystem. That includes the private sector and the suppliers of equipment. We are connected to the ecosystem in terms of the innovation players along the innovation system with CIMIC, CAMIRO, MIRARCO, and CEMI.

In the past two years, we've seen significant progress in terms of communication between the different innovators or innovation centres. We have a common goal on how we can take our technology from the lab to the market. In the years to come we hope that we can communicate even better to make sure that the R and D and the work that we're conducting in our laboratories will move quickly from the lab to the market. We are connected with different organizations, and we now have a common purpose for commercialization of our innovative technologies.

Mr. Marc Serré: I'm happy to say that you're right. In the last two years, there's been an improvement on the commercialization. What I'm hoping from the industry perspective is that we set something up like COSIA to look at more on the industry side, because that's what industry is saying. That's kind of missing, and it's because we're in silos right now. It needs that overall.

Mr. Chair, I'll ask Mr. Tan to ask questions.

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

I have one question for Mr. Habib.

From your slides, I can see you have a wide collaboration with the universities, research centres, and other stakeholders. I wonder if you have a policy in place to encourage your staff or scientists to go to workshops and conferences and to give lectures at universities in order to share your knowledge with other Canadians or stakeholders.

Dr. Magdi Habib: This is one of our priorities in an R and D environment like CanmetMINING, which employs different scientists and engineers. Our role is that we participate in events and conferences, present our work, interact with different organizations, and bring new ideas that we can undertake in the lab. One of our expenditures at CanmetMINING is focused on sending our technical scientists and engineers to conferences and meetings.

Mr. Geng Tan: Your researchers are in different streams. I used to be a scientist, so I know a little bit about NRCan. There could be a computer scientist, physical scientist, research scientist, or engineer. I want to make sure they're all encouraged and supported in that sense.

● (0950)

Dr. Magdi Habib: I agree. We don't really differentiate between the different categories of computer scientists or engineers as long as the work they're doing is innovative. We disseminate that knowledge and expertise to the outside world.

Mr. Geng Tan: They're all encouraged to go outside to share their knowledge.

You are senior management in a government department. In your capacity, do you believe that other government departments have the same policies?

Dr. Magdi Habib: As I mentioned in my presentation, we have what we call the GMI IGWG, an intergovernmental working group that is basically composed of provinces and territories. We work together with the GMI IGWG members to address all the issues on innovation, barriers to innovation, and commercialization of technologies. We've done many studies in the past where we've collectively worked with provinces and territories to address the issues. We have a common goal and common objective toward innovation and commercialization.

The Chair: Thank you.

I have one question for you, Mr. St. Louis. You mentioned crowdfunding. That's a subject I've had brought up to me by people who were traditionally the ones to raise money for small-cap mining operations. One, is this something the industry is in favour of? Two, how would it work? And three, is there any regulatory concern that people should be aware of?

Mr. Brian St. Louis: I'll be frank, I'm not particularly knowledgeable on the details of crowdfunding. We haven't done crowdfunding. We've just seen, I guess, in other instances, such as the tech sector...which in a way has a lot of similarities with the exploration sector. It's high-risk risk capital.

This is something that I think has been done. Basically, let's say you thought you had a prospective deposit and you'd done a little surface work. You could publish that and say, “I need to raise *x* dollars to do X work.” You could potentially drill some holes, let's say, to verify that a deposit was there.

With regard to the regulations surrounding it, I'm not sure if they've really been developed yet. My guess is that there would probably need to be some work done there, though.

The Chair: All right.

Thank you to all of you for taking the time to join us today. We appreciate your being here. I'd like to thank Ms. Fedorchuk in particular for getting up so early this morning.

Thank you. We will suspend and then move in camera.

[*Proceedings continue in camera*]