



HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

44th PARLIAMENT, 1st SESSION

Standing Committee on Industry and Technology

EVIDENCE

NUMBER 012

Tuesday, March 22, 2022

Chair: Mr. Joël Lightbound



Standing Committee on Industry and Technology

Tuesday, March 22, 2022

• (1555)

[Translation]

The Chair (Mr. Joël Lightbound (Louis-Hébert, Lib.)): Good afternoon, everyone.

I call this meeting to order.

Welcome to the twelfth meeting of the House of Commons Standing Committee on Industry and Technology.

Thank you to the witnesses for being patient today. I apologize for the delay; there was a vote in the House.

Pursuant to Standing Order 108(2) and the motion adopted by the committee on Wednesday, January 26, 2022, the committee is meeting to study the sourcing and processing of critical minerals. Today's meeting is taking place in a hybrid format, pursuant to the House order of November 25, 2021. Members may attend in person or use the Zoom application. I would like to take this opportunity to remind all participants of this meeting that screenshots or taking photos of your screen is not permitted. As for the public health measures in place, at this stage, you know them all, so behave accordingly.

It is my pleasure to introduce today's witnesses. First of all, I must point out that the meeting will end at 5:45 p.m. We're going to try to take all the time allocated to us and spend as much time as possible with our witnesses.

The first part of the meeting will end at 4:45 p.m.; from the Government of Ontario, we will welcome the Honourable Greg Rickford, Minister of Northern Development, Mines, Natural Resources and Forestry.

During the second hour, we will have Mr. Benoît Plante, professor at the Université du Québec en Abitibi-Témiscamingue; Mr. Peter Xavier, vice-president of Sudbury INO at Glencore Canada; from the Québec Mining Association, Ms. Josée Méthot, president and chief executive officer; from Stromvolt Americas, Mr. Robert Kunihiro, director of strategy; from Summit Nanotech, Amanda Hall, a geophysicist; and, finally, from Vale Canada Limited, Mr. Juan Merlini, global director of sales and marketing; and Mr. A. J. Nichols, director of corporate affairs.

Thank you to all the witnesses for being with us.

Without further ado, I give the floor to Mr. Rickford.

Minister, you have the floor for six minutes. We will then move on to the first round of questions.

[English]

Hon. Greg Rickford (Minister, Ministry of Northern Development, Mines, Natural Resources and Forestry, Government of Ontario): I want to thank you for giving me the opportunity to speak to this important standing committee. Industry and technology folks would know that Canada is well-positioned—and for the purposes of today's discussion the province of Ontario as well—to seize, especially in the context of ensuing global strife, a position unlike any other in the history of certainly our province, Canada and the world over in the critical mineral space.

Why? Well, there are probably a couple of reasons.

First of all, countries like Russia and China have a stranglehold on the access and processing capacity of many of the critical minerals that are used today in various technologies, especially the ones that are most exciting to all of us for environmental purposes: electric vehicle and electric battery capacity and, of course, storage potential as well.

All of these things can and will happen, and are happening, in Ontario, and for the benefit of this country. The residual question for us all, colleagues, is about bringing critical minerals home to Canada, and for my purposes, Ontario. It is about being involved in the single biggest environmental policy ever advanced by a jurisdiction the world over. It will bring world-class standards in labour and the environment, while working with our indigenous communities, which is always a work in progress as part of our value proposition. We think there's a role for the federal government, and that's why I am thrilled to be here today.

This started out for me, in the context of my provincial career, at PDAC a couple of years ago, when Joseph Semsar, the former U.S. acting under secretary for international trade, approached Ontario, and myself directly, to discuss the need to build out a secure and stable supply of critical minerals, and to meet the growing demand across northern Ontario.

Move the clock ahead a couple of years to just the past week or two, and we've seen some interesting things. President Biden laid claim to a domestic supply chain, and the need thereof of critical minerals; it's pretty interesting for a president who doesn't have any. His reference to a domestic supply chain necessarily includes Canada at least for the extraction, likely for the processing, and, if we have our way, a significant part of the integrated supply chain, especially in vehicle and battery storage technologies.

Then, just yesterday, Premier Ford, and my friend and colleague Minister Fedeli, got back from Washington. They had a robust agenda to talk about with our U.S. counterparts, and very quickly in every single meeting, it was dominated by discussions around critical minerals.

So, friends and colleagues, this is very real to us. If I've put a value proposition out there for the province of Ontario, it necessarily includes every single province in Canada. We're all busy with critical mineral strategies. We're likely ahead of the curve in some of our jurisdictions, but there's no question our friends in Quebec and especially British Columbia have created aggressive environments for investment in critical minerals, most notably lithium, in the case of Quebec, and various others in British Columbia.

But the demand has been met with opportunity. Our rollout last week of Ontario's first-ever critical minerals strategy, with a solid financial footing with which to advance it, moves it out of the class of strategies, for which governments are renowned for producing, and lesser known for acting on.

This is targeted. It focuses on exploration and innovation in the sector.

- (1600)

[*Translation*]

We have launched Ontario's first-ever critical minerals strategy and invested \$29 million in programs that will advance exploration and innovation in the sector.

[*English*]

Our strategy includes an injection into Ontario's biggest challenge and now opportunity. That's on the exploration side.

Through the Ontario junior exploration program, which includes a new critical minerals stream, we also have a component for a critical mineral investment fund to kick-start innovation for mining and processing capabilities. We don't want to just be miners, friends and colleagues; we want to be involved in the process.

We're well on our way. Cobalt, Ontario, is going to have the first cobalt processing facility and capacity in North America in the not-too-distant future. We see a bright horizon for lithium as well, working with our counterparts around the world to develop the capacity to process.

In fact, in all the excitement of this discussion, I forgot to mention the European Union, which we met with. The European Union wants to set up a strategic alliance with the Province of Ontario. It sees partnerships in Norway and in Germany around processing capacity, something we can learn from those jurisdictions. It knows where it needs to go. It's tired, of course, and fearful of long-term

relationships with countries like China and Russia. Ontario, and I believe Canada, is at the precipice of greatness in the critical mineral space.

Our strategy includes the extraordinary opportunities that we see in the Ring of Fire, a multigenerational potential to produce some of the highest-grade nickel—nickel sulphide—chromite and other critical minerals, including titanium, palladium and the like, coming to a theatre near you. In fact, some of them are being produced and co-operatively developed and processed in some of our more peaceful partners, as I mentioned, in the European Union. That's why it wants to be partners with us.

We believe that responsible mineral development in this region would unlock unprecedented economic prosperity for vast municipalities and indigenous communities across the far north, at least in Ontario, and certainly, from my own experience in the federal chapter of my career, for the benefit of communities in the far north, most notably indigenous and Inuit communities.

As Prime Minister Harper and I discussed at some point in a previous career, we can no longer stand by and see these incredible mining opportunities developed in close proximity to indigenous communities and see, even with resources going to them from the activity itself, a level of poverty that is well known to all of us.

This is an exciting opportunity. That's why we committed close to \$1 billion to support legacy infrastructure projects, particularly for the Ring of Fire. Frankly, the greenstone belt that runs just to the south of it has some of the most exciting open-pit and subsurface mining operations that have come on board in the past three years like has never happened before.

These include cost-sharing agreements to secure an opportunity of national significance for future generations. Notably, our successes in moving a number of key mining projects across critical milestones have evolved with full co-operation and partnerships with indigenous communities and their businesses. They have put into effect substantial and substantive elements of the business, environmental and labour contours to these successful developments. We want to keep that going.

We've also included investments into electric battery materials. We're exploring the expansion of a business model to include building an industrial battery park in Cobalt, Ontario in that region of northeastern Ontario.

Also, as I alluded to earlier, there are some exciting innovations with companies like Frontier Lithium.

• (1605)

[*Translation*]

We know there are many other advanced lithium projects coming close to production, so we must explore partnerships for lithium hydroxide processing capabilities in strategic locations such as Thunder Bay.

[*English*]

I have countless other examples of a long and integrated supply chain. Ontario knows that we can bring to Canada's storefront offerings for some of the most exciting technological developments, not just in the automotive sector, not just in the technology sector, but also for opportunities like national defence. Also, of course, it's not only a robust supply chain here in Ontario, from extraction to deploying these technologies, but as well in global supply chains.

We need the federal government, colleagues. We need you there up in Ottawa to support us. I know there are other great things going on in other provinces that members on this committee represent, and I'm happy to have those discussions.

I'll stand down now and take your questions and comments.

The Chair: That you very much, Minister Rickford, and thanks for sharing some of the work that you're doing in Ontario. It's much appreciated by committee members.

We'll start now with our first round of questions with Mr. Généreux.

[*Translation*]

Mr. Bernard Généreux (Montmagny—L'Islet—Kamouraska—Rivière-du-Loup, CPC): Thank you, Mr. Chair.

Good afternoon, everyone.

[*English*]

We sat together in the House of Commons for a year and a half in 2009 to 2011, so it's a pleasure to meet you here today.

[*Translation*]

Rick... Sorry, I meant to say Greg...

[*English*]

Hon. Greg Rickford: Don't worry, I get called Rick, but with a consonant in front of that sometimes, but we're politicians and we go by a lot of names.

[*Translation*]

Mr. Bernard Généreux: You talked about the importance of a national strategy that would of course include those from Ontario, Quebec and other provinces.

Practically speaking, what does Ontario expect from the federal government in terms of a national strategy?

[*English*]

Hon. Greg Rickford: That's a great question, Bernie, and it's great to see you.

I think two things come to mind. The first one is political and perhaps government-related. The other one is strategic business concepts.

In the first instance, I think that the federal government has to ensure that it's aligned with things that are happening on the ground. Sometimes we wind up at cross-purposes. I've written about Bill C-69 and some of my concerns about it, but you know, it didn't take very long and it was plonked down on the Ring of Fire without any consultation with the provincial government. That was unfortunate. To the credit of Minister O'Regan, he saved the day and we were able—with our partners in the private sector and some of the indigenous communities, and hopefully the federal government will announce it shortly—to ring-fence the impact assessment, or whatever they're calling it, to the mining activity itself, leaving us alone to move ahead with what we're calling the “corridor to prosperity”.

We don't build mines in Ontario as a government. We provide the right conditions for those to proceed. Certainly, the levers that are most accessible to us are things like building legacy infrastructure for health, social and economic policy objectives that I think isolated indigenous communities and more remote municipalities have a serious interest in.

There was a good recovery on the part of the federal government, as we understand, and hopefully the federal government will bring more clarity and certainty in the coming days or week that that's the case.

There's getting together on legacy infrastructure projects. Watay Power in northwestern Ontario, one of the largest-scale hydro projects, has a great relationship with the federal government, a joint investment that will electrify communities that I've lived and worked in back in the day as a nurse, working as a lawyer, and represented politically, Bernard—

Mr. Bernard Généreux: I have another question, Greg.

Hon. Greg Rickford: I know you do, Bernie, but I've just got to get this out.

On the business concept side, it's simply to make sure that we complement each other as provinces in what we can and can't do.

• (1610)

[*Translation*]

Mr. Bernard Généreux: You are no doubt aware of the sale of Neo Lithium to a Chinese group, which was concluded in the last few months. We in the Conservative Party believe that there should have been a more thorough analysis of the sale of this important deposit, which is not in Canada, but involves a company incorporated in this country.

In the future, should we do an automatic analysis of the potential sale of a mine, processed products and anything else involving the minerals we're talking about today?

[*English*]

Hon. Greg Rickford: I think we have an obligation to do it, quite frankly, Bernie, as collective jurisdictions that comprise a confederation called Canada.

The world has come to our doorstep. They've asked us to do more than just mine. They want us to process. They want us to present the opportunity for a fully integrated supply chain.

There's a stranglehold by the current leaders, China and Chinese companies, as well as Russia, especially when it comes to nickel and a couple of other critical minerals that they could cut off at any point in time.

The United States is scurrying around looking for the future of this. I think it's right at their doorstep, frankly. It's called Quebec. It's called Ontario. It's called British Columbia. It's called Manitoba. It's called Canada. From a government and business perspective, I think we have an obligation to offer that to the world.

[*Translation*]

Mr. Bernard Généreux: Are there specific partnerships between Ontario and Quebec on critical minerals?

[*English*]

Hon. Greg Rickford: We do forums through FPTs. Through PDAC, later this spring, we are looking at crystallizing some good discussion points to formalize a venue where we could do complementary work as governments and as businesses.

Obviously, the excitement around lithium in Quebec is justified. In terms of processing and manufacturing, there may be some limitations there that Ontario can help with. I think that jointly we're well positioned in the centre of Canada to do business with the corridor in the United States that they've asked us directly to be involved with.

The Chair: Thank you, Mr. Rickford. That's all the time we have.

We'll now move to Mr. Fillmore for six minutes.

Mr. Andy Fillmore (Halifax, Lib.): Mr. Rickford, it's a pleasure to meet you. You have carriage of the critical minerals file at a historic moment in its role and the way we address the future. With great sincerity, I wish you the best of luck with your strategy.

Ontario right now has, I think, about 130 early exploration projects and about 16 projects that are kind of at a more advanced stage, so there's some catch-up that needs to be done there. I was wondering if you could share with the committee a little bit about how the strategy will bring some balance to that 130 versus 16.

How are you going to catch those other projects up?

Hon. Greg Rickford: We could catch a lot of those projects up right now, Andy, if we could have regulatory certainty from the federal government on some of our major projects, including the Ring of Fire. This is a positive non-partisan conversation that we need to

have and it's happening right now here today. That does prevent us from moving ahead, certainly.

For the purposes of our strategy, this is a great question and a great opportunity for us. Obviously, on the junior exploration side, it's important to lock down and identify, as we have, some of the highest grade of nickel supply in quantity and quality, which is in the Ring of Fire. Its closest comparison would likely be Indonesia, which has to extract it from pig iron and burn off a lot of coal in order to do it.

These are projects that must move ahead. We've moved a couple of major gold mine projects across critical milestones, most notably leave to construct, operation or expansion. Of note, at least in one instance, the Borden mine site is completely electrified.

We've had our own regulatory challenges, I have to admit. We have a bit of a hangover from the previous decade and a half of the last government. We've been working on red tape reduction in our own shop to make sure that these mines can move forward. We're not going to compromise the environmental standards or any of the opportunities with our indigenous communities as partners.

For the collective effort, certainly in the context of our discussion today, we all have to be singing from the same songbook.

• (1615)

Mr. Andy Fillmore: Thank you for that.

You mentioned indigenous partners and we're hearing from mining companies and mining organizations about the importance of indigenous consultation and including indigenous communities as partners.

Could you enlighten us on how the strategy is going to help to bring impacted first nations along to get on board with specific projects and also how we can help to make sure that those nations share in the prosperity that might result?

Hon. Greg Rickford: For the first answer, I go back to my opening comment. Who doesn't want to be part of the single biggest environmental policy that any jurisdiction could advance the world over? That's a new and refreshing way to think about this. There is no green economy without mining. That's very clear.

If you look at some of the more contentious matters that indigenous communities have raised, they are underpinned by concerns about the environment, obviously environmental concerns in the proximity of any mining development that may occur to their reserve for the purposes of the Indian Act or their traditional lands and the collective interests of various treaties.

I can tell you from experience. I mentioned these major mining projects that we've advanced in the past couple of years. They are characterized by significant partnerships and roles by indigenous communities or their indigenous businesses in the business contours of a given project, in the environmental processes and contours ultimately of the project, and of course, importantly, labour. I speak more pointedly of human resources and building capacity in those important areas.

That's why we're able to cut the ribbon on the east-west tie here in a couple of weeks. It's an important piece of infrastructure across northern Ontario that will fortify electrification to municipalities and indigenous communities but also be an additional source of power for some mining operations across the greenstone belt.

I'm trying to keep my answers short. I forgot that you guys have only about six minutes.

Mr. Andy Fillmore: Minister, we have one minute left.

Hon. Greg Rickford: My bad.

Mr. Andy Fillmore: That's quite all right. It's very helpful.

I try to ask this question of each of the witnesses I've been able to speak with: What conditions is your strategy putting in place to facilitate battery recycling and getting the minerals back out when they're expended as a battery?

Hon. Greg Rickford: A lot of this has to be driven by the private sector. My own approach here, as I mentioned in my prepared remarks—or my unprepared remarks, because I didn't really read from the speech—is to have a regulatory environment that supports and facilitates that.

We want to be careful that we don't make the same mistakes as we have in some other mining operations and put the cart before the horse. We have to start producing these, and I take your point. There has to be a plan for life after electric vehicles. The legacy with respect to nuclear technologies is fast becoming “what do we do around nuclear waste management?”

It's an important point. It's one that should be given the kind of deference by provincial and federal governments to plan and prepare for, but it's not all on me, bro, right?

We all have to be in this together and I hope that question is as rhetorical as it would be for our jurisdiction to address in the not-too-distant future.

Mr. Andy Fillmore: Thanks for that. We're just looking for good ideas on how we can make sure that those batteries are recyclable when they get expended.

I'm probably out of time here. Thank you for joining us today and making time for us. It's a pleasure to meet you.

Hon. Greg Rickford: You too, Andy. Thanks.

[*Translation*]

The Chair: Thank you very much.

Mr. Lemire, you now have the floor for six minutes.

Mr. Sébastien Lemire (Abitibi—Témiscamingue, BQ): Thank you, Mr. Chair.

Mr. Rickford, thank you for being with us. I salute the leadership you have shown today by agreeing to appear before the committee to present your province's vision. I sincerely wish that the same thing had happened in Quebec.

That being said, I would like to point out the good questions that were asked by my two previous colleagues, which end up reducing the ones I had on my list.

I'd like to talk about resource processing. I'm particularly interested in the example of the Cobalt mining belt. You know, I'm the member of Parliament for Abitibi—Témiscamingue, so I'm just a few steps away from this company. I have a sailboat on Lake Timiskaming, and when the winds are favourable, I get there quite easily. You have a great processing model.

Could you talk to us about the importance of being able to do this processing close to the resource and the example it sets in terms of land use and economic levers in our resource regions?

• (1620)

Hon. Greg Rickford: Thank you for the question.

We learned from the Plan Nord in Quebec.

There's also the Centre d'excellence sur les métaux critiques et stratégiques Éléments08. I believe it's a project of the CEGEP in your region, Abitibi-Témiscamingue.

[*English*]

These are things that we think have to be part of this strategy, Mr. Lemire. They're lessons that I have pulled from, or are pages from, the success of the Plan Nord du Québec, frankly, which I believe is one of the reasons that northern Quebec is having so much success on a number of levels in responsible resource development and in appreciable benefit for indigenous communities on all aspects of it. I mentioned, of course, the role that the industrial technology centre is playing at, I think, Université du Québec en Abitibi-Témiscamingue. As their MP, I'm sure you would know more about it than I would. Integrating these into institutions of higher learning I think is also a critical element—no pun intended—so that folks have a comprehensive understanding of just what we're trying to develop here.

So it's not just about exploration, Monsieur Lemire. It's also about raising awareness about the potential for things like building capacity for processing, and being fully integrated in a supply chain within the province of Ontario and in co-operation with jurisdictions like Quebec, especially when it comes to transportation and the prolific work you do in bus manufacturing and some of the exciting opportunities that are taking place on the ground around lithium, a power supply for those modes of transportation.

Does that answer your question?

[Translation]

Mr. Sébastien Lemire: Your answer was very complete and very inspiring. Thank you very much.

In the next hour, Benoît Plante, representative of the Centre d'excellence sur les métaux critiques et stratégiques Éléments08, from the Université du Québec en Abitibi-Témiscamingue, will be with us to talk about the role of the centre of excellence. It will help us understand how an academic institution can help companies, especially mining companies, to better innovate.

I'd like to hear your thoughts on important issues, such as the issue of commuter workers and the labour shortage.

From a regional development point of view, what structuring measures have been put in place to address the labour shortage and to ensure the full development of regions and resources?

What are the obstacles you face in your discussions with the federal government?

[English]

Hon. Greg Rickford: You know, I just finished a conversation with the folks at Wyloo, who obviously successfully...or as it will be announced—it's a matter of public information—a considerable stake in the Ring of Fire. It's the billion-dollar question, not the million-dollar question. I spent most of my professional career living and working in isolated fly-in, fly-out communities. That connotation comes with some good and some bad. On the energy side, it likely means that the energy sources come from diesel. We have to stop that, Monsieur Lemire. I'm sure you share that view.

That gets me on my shoebox, if you will, talking about the legacy infrastructure and what governments can really do to contribute to some of these projects and to ensure that communities most proximal to these potentially world-class resource projects have the right legacy infrastructure to support them in a comprehensive way.

The corridor to prosperity that would run up the middle of northern Ontario, that's as vast and remote and isolated as any part of Canada, and that has a compelling need for a corridor there, could supply energy. It could supply a road for better access to health services and programs, economic benefits that move beyond responsible resource development and mining projects in their proximity, and of course broadband capacity. Without these things, these projects just become the kind of legacy that Canada needs to move out of the business of doing.

Some of it will continue to be necessary, particularly in the High Arctic, but even then, governments like our own back in the day had invested in certain critical infrastructure, particularly around highways when and where possible, to ensure that we had alternative corridors for transportation, energy sources and now broadband and the like to ensure that there is a comprehensive sensibility about what we're trying to accomplish here beyond the resource projects themselves.

Does that make sense?

• (1625)

[Translation]

Mr. Sébastien Lemire: Yes, I think that makes a lot of sense. Thank you very much.

The Chair: Thank you very much, Mr. Lemire and Mr. Rickford.

Mr. Blaikie, you now have the floor for six minutes.

[English]

Mr. Daniel Blaikie (Elmwood—Transcona, NDP): Thank you, Mr. Rickford, for being here.

I had the opportunity in the fall to travel to Washington with the International Trade Minister, and with Mr. Hoback from the Conservative Party, and with Mr. Lemire from the Bloc Québécois. We were there to talk to American legislators about an electric vehicle rebate and its potential impact on Canada.

As part of that conversation we were also talking about Canada's role to play in providing critical minerals for the EV market. One of the things that really stood out to me in the course of that lobbying effort was how detrimental it is to Canada's interest not to have a real strategy. When we talk to our American counterparts there is no document that we can use to show them not only the place that Canada can play in their own strategy, but how Canada sees them fitting into our strategy, whether it's for developing resources or manufacturing the cars of the future.

I think that ties in nicely to the questions that were rightly raised earlier around the role of China and Russia in this market. Again, if you treat every acquisition or every new development as a one-off, without taking a properly strategic approach, then it's a lot harder to get to where you want to go, and to protect Canada's national and security interests.

I just wonder if you have some reflections you'd care to share with the committee on whatever efforts are taking place to build a proper national strategy around critical minerals and the EV market that we might take to our allies in order to impress upon them the importance of continuing to work with Canada and ensuring that Canada is part of their plans as we go forward into a very different auto market into the future.

Hon. Greg Rickford: Daniel, this is a really important question that you ask, and a friendly “hello” as a fellow Manitarian. You could appreciate, as my neighbour out there in Kenora, it's great to have a question from you.

Manitoba supplies 100% of Canada's cesium, lithium and tantalum. They're home to some great nickel, copper, zinc and gold mines in their own right. I've had a chance to live in many parts of remote northern Manitoba in previous careers. I've talked at great length about Ontario. I've mentioned British Columbia and Quebec here. I'm trying to be a happy family member and resist the urge to be Marcia Brady, as making a special case for Ontario's critical mineral strategy.

Some would ask why is Ontario doing this, and not the federal government? That may be a cryptic part of your question, or an explicit one. Why isn't there a national strategy?

In Ontario's case I think we see an opportunity that's a little bit different from our provincial counterparts to the extent that with a world-class automotive sector in the manufacturing space, we see this from ground to the car itself, which puts us in a unique position.

But certainly, as I mentioned earlier, on legacy infrastructure and a strategy overall, it behooves the federal government to get this right. Some of these FPTs can be pretty boring and agenda driven. It might be useful for us to think about a critical mineral round table that endeavours to develop a national, coherent strategy for the benefit especially of our neighbours.

We can't have President Biden saying that he needs to focus on a domestic supply of critical minerals. Daniel, he ain't got none. I think there is a little bit of nickel up in Washington State, but other than that, there is not much going on there, so his reference, obviously, was clearly to Canada. I think this is an opportunity for the federal government to get together with its provincial counterparts and develop a strategy that acknowledges not only what we're all doing in this space, what we're all talking about on the side with my provincial ministers, but offers up to our friends in the United States, and frankly to the rest of the world, an alternative to Russia and Communist China.

• (1630)

Mr. Daniel Blaikie: I certainly applaud Ontario's efforts to begin the work of doing some real strategic planning.

Of course, I think that having a federal strategy doesn't look like coming in and telling provinces what to do in their own right, because I agree with you that different provinces have different opportunities. But I think the federal government, in its best light, would convene provinces to try to create a table where, to the maximum possible amount, provincial strategies can be complementary instead of competitive and can serve a wider Canadian interest while respecting the individual opportunities of provinces in this.

I think another component that's best done with the federal government at the table, of course, is recognizing the role of indigenous people and trying to incorporate indigenous people into that planning exercise as early as possible, including that strategic planning.

I know you've spoken a little bit already about some of Ontario's work with indigenous people, but I wonder if you could explain to the committee what steps you're taking to try to incorporate indigenous communities as early as possible into the planning stages of both particular projects, but also the larger question of the strategy.

The Chair: Minister, I would have to ask you to do it in 15 seconds, and I think you won't be able to.

Mr. Blaikie, we can come back in the second round, and you'll have some time for this.

Hon. Greg Rickford: Maybe somebody from the Conservative Party could give Daniel a couple of extra minutes. That was a great question and it's pertinent—

The Chair: It was indeed a great question, but we have a second round. I'll shorten the time, and I'm sure someone will ask that question. I'll let you move on.

We have 10 more minutes with the minister. I'll reduce everyone's time to three minutes for the Conservatives and Liberals and two minutes for the Bloc and NDP, so that we have time for the second panel.

We'll start with Mr. Kram for three minutes.

Mr. Michael Kram (Regina—Wascana, CPC): Thank you very much, Mr. Chair.

Minister Rickford, welcome to the industry committee. Thank you for joining us to share best practices. I understand that the Ontario provincial government has come up with its provincial critical mineral strategy.

I think some people might be reading my notes. One of my questions was about indigenous consultation and participation. Why don't we pick up there, Minister Rickford?

What recommendations would you make in terms of making sure that indigenous communities are included as participants in a critical mineral strategy?

Hon. Greg Rickford: Thanks, Michael.

We're not perfect at it; we're barely good. It's still on a project-to-project basis. I give full credit where credit's due. *Le Plan Nord du gouvernement du Québec* established a template, the James Bay Agreement, which is obviously a world-class document that, generationally, has proved to be the platform from which a lot of this good work has been done in resource development in forestry, mining and—underpinning it—hydroelectricity generation. I give credit where credit's due.

As I said earlier, Michael, the success of our projects over the past couple of years has been characterized by a substantive role, a partnership both in the context of the private partner and the relationship with the government when the indigenous communities have led. In the Ring of Fire, the environmental assessment for the corridor to prosperity, the row—roughly the length of the distance between the Toronto Maple Leafs Scotiabank arena and where the Montreal Canadiens play—is being led by indigenous communities.

Similarly, all of the projects that have moved past the environmental assessment to a leave to construct have opened or are now expanding. They are a testament to the contributions by indigenous communities and/or their businesses and indigenous organizations that have helped put the contours to the business, labour and environmental elements of the project.

We have our own templates—plural—to draw from. I think that's a good indication of what we need to continue to do and how we need to do it.

• (1635)

Mr. Michael Kram: In a response to an earlier question, you brought up Bill C-69 as it relates to the Ring of Fire.

If you were back in federal politics, Minister Rickford, and you could make some changes to Bill C-69, would you offer any recommendations that might be helpful?

Hon. Greg Rickford: I've written extensively about it, Michael. I want to keep this discussion going without some of the partisanship that sometimes infects conversations like today's, because they're important.

A heads-up would have been good, and I have a couple of quick points there. I still am concerned about what I call some of the "windows" for cabinet-level government and/or other stakeholders and potential partners to press the pause button on a given project at a given state.

I think critics, on balance, still have some of those concerns. I would have preferred that we test drove Bill C-69 on a project that crossed provincial boundaries instead of this project, but it's there. We've successfully negotiated it at different levels of governments and private partners, and I think we're in a decent place. We'll learn the lessons moving forward.

The Chair: Thank you, Mr. Rickford.

We'll now move to Mr. Erskine-Smith for three minutes.

Mr. Nathaniel Erskine-Smith (Beaches—East York, Lib.): Thanks, Joël.

Mr. Rickford, I appreciated the comments you made around addressing the regulatory framework and ensuring that we don't sacrifice environmental protections and consultation with indigenous communities.

It's a big week for you in some ways. You have the strategy from the province, and I understand there's a big announcement coming tomorrow on the EV file. When we look to the strategy that you now have in hand on the critical minerals file, it speaks to improving Ontario's regulatory framework, and as part of that, coordinating the new framework with other federal and provincial regulatory requirements.

You don't have to answer in full, but, if you can give some examples, it might be helpful. What would be really helpful for our purposes as we look to the way we can complement our own work with yours is if you and your officials can follow up at some point with a more detailed set of examples where, as we develop our own strategy, we can make sure that we complement our strategies in a more perfect way.

Say anything you like in response, but it's the follow-up I'm most interested in.

Hon. Greg Rickford: In general terms, Nathaniel, as I said earlier—and this is a metaphor—it's singing from the same songbook, understanding and respecting what each jurisdictions holds near and dear to them and what the value proposition is. I mentioned that Ontario's strategy is bold, because we have a rare opportunity from extraction right through to the technology being manufactured here in southern Ontario. That is an extraordinary, one-of-a-kind opportunity.

There are differences as we move across the country, but to the extent that major environmental assessments may come into play, especially as they may pertain to a national interest, it's important

we sit down as partners and ensure that we're thinking about it the right way. We understand that our role is not to build mines, but to create the right conditions for communities—including, most notably, indigenous communities—to benefit from them; to be satisfied, from a business, environmental and human resource perspective that we're pulling the right levers at the right time; and providing, at the same time, the kind of business certainty that these large-scale investments require.

I would finish very quickly with the infrastructure piece. I can't stress enough that these legacy infrastructure projects are actually bigger than the mining projects over the course of time. Building the corridor to prosperity is going to provide, arguably, a lot more contemporary jobs and processes, when you think about it, than a mining operation sustained over the course of time.

Being involved as full partners on those kinds of things would make sense to me. We're hearing great things from the federal government on this.

• (1640)

[*Translation*]

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

Mr. Lemire, you have the floor for two minutes.

Mr. Sébastien Lemire: Thank you again for your testimony, Mr. Rickford.

I think the issue of strategic critical minerals is very directly related to the issue of the electrification of transportation, which is also a very important issue.

I will tell you an anecdote. Last week, there was Mr. Zelenskyy's speech. I decided to go through Ontario to come home, which I had already done a few times. I knew that the fast-charging stations in Deep River weren't working, because I had run into this problem in the past. So I checked my app before I left Quyon. The electrical load was 90%. I went to Mattawa. The two fast-charging stations there were not working. I got home about 10 hours later. I had to tow my car to North Bay, where there were no fast-charging stations. The tow truck couldn't take me to Timiskaming because it would have had to cross a border.

In short, my question is very simple: Does the issue of strategic critical minerals include electrification and the production of fast-charging stations?

A public network similar to the electrical system might be possible. I can tell you that I would use it from time to time, and I would be very grateful to have access to it.

[*English*]

Hon. Greg Rickford: I'm glad to see the traditions are still alive, touting your riding and your jurisdiction and taking shots in your question at other members in a friendly kind of way. Nonetheless, Mr. Lemire, let me be pointed in my response, given the time constraints.

There's no question that electric vehicles are all the rage, baby, as Austin Powers might frame it, but there are a couple of other important things that critical minerals have to do for the world, and they can come from Canada. Frankly, battery storage would be really nice in our major corridor through southern Ontario and Quebec, so we don't have to spill electricity at ridiculous prices into the United States. I'm not sure if you've thought about that, but we're looking at that in Ontario. Batteries will require those kinds of critical minerals to do storage. Given the demand of other high-tech industries, including our iPhones and everything else, you can't have one of those without critical minerals.

Of course, there's also national defence. If you take a look at the situation between Ukraine and Russia, and the implications for jurisdictions the world over, this is in part about a looming crisis around critical minerals. There's access to titanium. Russia has threatened nickel. Many of these elements are absolutely essential as countries around the world increase their defence spending. Most defence technology comes—

The Chair: Thank you, Minister.

Hon. Greg Rickford: Jöel, don't cut me off.

The Chair: I know. I'm sorry.

Hon. Greg Rickford: I'm sorry, Mr. Lemire.

The Chair: I have the abject role of interrupting all the time to respect time.

Hon. Greg Rickford: It's a happy gavel.

The Chair: Yes.

We'll now move to Mr. Blaikie for two minutes, for our last questions.

Mr. Daniel Blaikie: Thank you. We talked earlier a little bit about the important role that a proper federal strategy could play in negotiating with our allies to protect Canada's security interests and resource development. We were just about to get around to the opportunities that might present to better integrate indigenous people into the planning of the industry. Hopefully, this would lead to more success in terms of projects that both respect the environment and create opportunities for local communities, but also don't end up trapped in some of the ways that we've seen resource development get trapped, when the concerns of indigenous people have been responded to with more of a “divide and conquer” mentality than a proactive collaboration from the outset of the project. As I say, this could even be sooner, if we include indigenous people in the strategic planning for the industry.

I just hope you'll take the rest of my time to speak to that question.

Hon. Greg Rickford: The triggering in the way you initially framed it, Daniel, got me all fired up. Of course, I think what you and I would be concerned about is provincial strategies evolving in the absence of the federal one, and forcing jurisdictions like the United States to come specifically to a given province. And, boy, wouldn't it be a shame if the federal government missed out on that important dialogue? But as it pertains, obviously, to indigenous communities, as I said, we aren't perfect. We continue to try to get better.

I think we have some early successes as a government on some major mining projects. Manitoba Hydro, I think, and the Government of Manitoba way back in the day would want to do their hydro-electricity build-out a lot differently. I was there as a nurse in charge in Cross Lake when we were getting turkeys and roast beefs basically as compensation for the flooding of those lands.

Manitoba Hydro has done a great job since, and the Manitoba governments, in various political forms, have worked hard to ensure that reconciliation is meaningful as it relates to Crown corporations, but also has an economic element to it. I think that's where the federal government has a rare opportunity to join with partners and ensure that beyond free, prior and informed consent, beyond the duty to consult, which a court can say has or hasn't been met, a meaningful opportunity is provided for indigenous communities to be equity partners in these projects.

Wyloo talked to me today about the extraordinary, fully integrated profile that indigenous communities and peoples have in their projects. Let's stop going to court and start going to the bank together on the opportunities that we have.

Oh, by the way, build road access and corridors that can bring other important things that governments ought to be providing to these indigenous communities, or supporting, like broadband and alternative forms of energy, in Ontario's case, with way too many communities on diesel-powered generation.

That will change in the next couple of years, Daniel, but those are the things that we think we should be working on immediately.

• (1645)

[*Translation*]

The Chair: On behalf of all the committee members, thank you very much, Mr. Rickford, for taking the time to be with us this afternoon. It is very helpful to us as we continue our work. We hope you enjoy the rest of your day.

Without further ado, we will move on to our second panel.

Mr. Plante, you have six minutes.

Mr. Benoît Plante (Professor, Université du Québec en Abitibi-Témiscamingue, As an Individual): Thank you very much for giving me the opportunity to appear before the committee.

I am Benoît Plante, professor at the Institut de recherche en mines et en environnement, or IRME, of the Université du Québec en Abitibi-Témiscamingue, or UQAT.

I am a geochemist, specializing in the environmental geochemistry of mine waste, with a particular focus in recent years on critical and strategic mineral resource mining projects.

I am proud to hold the Institutional Chair in Environmental Geochemistry of Critical and Strategic Mineral Resources. Since 2014, I have been conducting several research projects in partnership with mining industry stakeholders developing these resources, particularly on rare earth elements, graphite and lithium.

The institute where I work has 16 world-class professors and provides a first-class teaching and research environment. There are more than 20 technical and professional specialists. More than 90 students and interns from all levels of graduate studies are currently studying there, in very close collaboration with colleagues from Polytechnique Montréal.

The institute is internationally recognized for its focus on developing innovative, economically and socially responsible environmental solutions throughout the life cycle of a mine, from resource exploration to mining remediation.

The institute carries out its research activities throughout Quebec, including in the Far North of Quebec, but also in Canada.

Thanks to our many partnerships with mining companies, Quebec government departments, other Quebec and Canadian universities and internationally, we can proudly present ourselves as a key player in the field.

Historically, research at the institute has been focusing primarily on the base and precious metals sectors. However, our team has already achieved many accomplishments, which demonstrate its willingness and ability to act as a major player in the responsible exploitation of not only base and precious metals, but also critical and strategic metals.

For the institute, it is of the utmost importance to be at the heart of the responsible development of these minerals, in the same way it is recognized on the world stage for the responsible development of base and precious metals.

To that end, concrete measures have already been taken by the institute and UQAT in terms of research and training in this area of activity. In particular, we have hired Professor Lucie Coudert, a specialist in the recovery of critical and strategic metals and now the Canada Research Chair in Tailings Reprocessing, to extract critical and strategic metals.

Professor Jean-François Boulanger, a specialist in the processing of critical and strategic mineral resources, particularly rare earth elements, and Professor Marc Legault, a specialist in the geology of mineral and strategic resources, have also been hired in recent years to support our research and development efforts in this area.

Canada has deposits of many critical and strategic mineral resources and has the expertise to develop them responsibly, building on the expertise developed in the base and precious metals sector. However, several additional challenges remain, requiring further research and development efforts. These efforts are needed to further develop and transfer the expertise for responsible mining of these critical mineral resources, and ultimately to bring them to scale in Canada.

Among the challenges is the funding of research in partnership with deposit developers, critical and strategic mineral resources, which poses an additional challenge to the precious and base metals

sector. Indeed, the financial precariousness of most critical and strategic metals players means that they do not have many material, human and financial resources, and access to the funding levers currently available is particularly difficult. Indeed, the current levers require significant financial and material resources that are often unrealistic for these developers.

So I think Canada does have the potential to become the leader in the responsible production and processing of critical and strategic metals. Canada should continue to innovate by offering more funding measures specific to critical and strategic metals, which will help intensify research efforts and position Canada as a world leader in responsible mining. In this way, Canada could become a model for other world powers.

This concludes my opening remarks.

• (1650)

The Chair: Thank you, Mr. Plante.

We now go to the Glencore Canada representative, Peter Xavier, vice-president.

Go ahead, Mr. Xavier.

[English]

Mr. Peter Xavier (Vice-President, Sudbury INO, Glencore Canada): Thank you.

It is a pleasure, obviously, to come after Minister Rickford. A lot of our interactions are at a provincial level, being strong champions of the industry here in Ontario.

Mr. Chair, committee members and fellow witnesses, my name is Peter Xavier. I'm vice-president of Glencore Sudbury operations. I appreciate the opportunity to speak to you today on behalf of Glencore, with a focus on Sudbury, my area of responsibility.

We welcome the standing committee's work and initiative reflecting on the importance of critical minerals. At Glencore, we are responsibly sourcing the commodities that advance everyday life. Our portfolio is made up of critical minerals that will enable the transition to a lower-carbon economy.

We are one of the largest producers of copper, nickel and cobalt in Canada and we have made a public commitment to prioritize investment into these commodities. They are essential not only for batteries but for many uses in the modern economy, from getting clean water and electricity to your home to the infrastructure and technology we all depend on. Our by-products include many of the 31 minerals considered critical as set out in the Canadian Minerals and Metals Plan.

In Canada, where Glencore is currently celebrating 100 years of operations, we operate eight industrial sites across our nickel, copper and zinc operations and directly employ close to 8,000 people, including contractors.

Glencore's Sudbury operations have a role in supplying critical minerals. We are currently developing our next generation of deep mines that will utilize electrical vehicles and enable us to continue supplying these critical minerals. Our Sudbury smelter processes concentrates from around the globe and is a world leader in recycling both nickel and cobalt from scrap, catalysts, batteries and electronics. Our smelter utilizes an electric furnace powered by a clean electrical supply and recently completed a project of over \$300 million to reduce emissions.

We also operate in conjunction with and beside our indigenous partners, employing hundreds of indigenous workers and having several memoranda of understanding or participation agreements in place.

We are currently investing in the future with approximately \$2 billion to develop new mines both in Sudbury, Ontario, and at our Raglan mine in Northern Quebec, which will provide a source of nickel, copper, PGMs and cobalt to at least 2035.

These new investments require a significant amount of capital, have longer payback periods and are inherently riskier as we need to go deeper or into more remote areas. Therefore, to promote additional investment, all levels of government regulating our industry must be able to offer a high degree of investment certainty.

Canada needs to support the search for base metals to enable discoveries that can lead to mining opportunities. Deposits require significant time and investment in exploration and mine development, and with the high cost of new capital, seeing returns on investment could take well over 10 years. It is important to remember that for the most part we do not set the price for which we sell our products and therefore cannot pass on most costs to our customers.

We recommend incentives to conduct exploration activities in and around existing and former operations in the hope of expanding ore bodies and utilizing existing infrastructure.

Once ore bodies are identified, generating the necessary investment to develop and operate a mine requires a well-defined business case and regulatory certainty in order to provide confidence over the long-time horizon. The key to attracting such major investments is predictability, whether in energy pricing, emissions standards, permitting, closure requirements or carbon strategies. Changing goalposts during investment risks deterring investment in Canada. Governments need to develop a coordinated approach across ministries as companies often are forced to deal with government in silos.

It is also clear that we need to innovate in order to develop mines that are getting deeper, occurring in more remote areas or declining in grade. Innovation can be accelerated by optimizing the relationship between academia, mining companies, SMEs and entities such as CMIC and CEMI.

When it comes to non-base metals and strategic minerals, we welcome incentives that determine whether there are critical ele-

ments worth recovering from our existing tailings or slag, while recognizing that there are additional regulatory hurdles to overcome.

Glencore is a unique operator in that custom feeds are part of our operational strategy. For more than 30 years, the Sudbury smelter has been recovering metals through the reprocessing of spent materials originally meant for landfill and is now one of the largest recyclers of nickel and cobalt in the world. As well, our Horne smelter in Quebec is one of the largest electronic scrap recyclers in the world. To promote additional recycling capabilities, consideration should be given to offsetting the costs of carbon associated with processing these materials while we continue to explore ways to reduce our emissions.

In summary, Glencore is a major supplier of the critical minerals that will supply growing demand from the transition to a low-carbon economy, and we're already investing in mines and facilities in order to be able to do that for years to come. We look forward to continuing dialogue with the Government of Canada on how we can further our shared goals of responsibly sourcing and supplying these important and critical commodities.

Thank you.

• (1655)

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

We'll now move to Madame Méthot,

[*Translation*]

president and chief executive officer of the Québec Mining Association.

Thank you for being here today, Ms. Méthot. You have six minutes. Please go ahead.

Mrs. Josée Méthot (President and Chief Executive Officer, Québec Mining Association): Good afternoon.

Mr. Chair, members of the committee, thank you for inviting me to appear before you today.

Since I have a limited amount of time, I'm going to dive right in.

The Québec Mining Association's mission is to promote, support and proactively develop a responsible, committed and innovative mining industry in Quebec.

To that end, we took part in the consultation process that led to the development of the Canadian minerals and metals plan. We were also part of the consultations on the Canadian critical minerals list, recommending that it include Quebec's already established list of critical and strategic minerals, or CSMs.

We also participated in the consultations held by the Quebec government in late 2019 and early 2020; that process was similar to this approach. The consultations culminated in the release of the Québec Plan for the Development of Critical and Strategic Minerals 2020-2025 in the fall of 2020, a plan the industry welcomed.

The Quebec government then adopted a strategy for developing a homegrown battery industry, thereby helping to stimulate demand for Quebec's critical metals. The province has introduced a number of measures to develop the sector. In last year's provincial budget, Quebec created a tax credit for CSM development, which is meant to help mine proponents move from the exploration stage to mine development and make the significant investments required.

In today's provincial budget, the government brought in additional measures to support CSM processing. Quebec is well positioned for the future.

I won't spend the limited amount of time I have telling you about all of the producing mines or mining projects under development in Quebec. I will point out, however, that some of the CSMs we produce are the result of by-product production, namely cobalt, copper and platinum group elements. Others, such as nickel, graphite, niobium and titanium, are the result of primary production.

On the lithium and graphite fronts, we have some very advanced projects. Sayona is operating a lithium mine that had been placed on care and maintenance, meaning it was a previously producing mine. The company also has a lithium carbonate production plant and two other mining projects. In addition, the company is considering building a processing plant for the conversion of spodumene into lithium carbonate, but has not ruled out the possibility of producing lithium hydroxide.

For its part, Nemaska Lithium, is working on a project to process the transformed base material from its lithium mine into lithium hydroxide. We also have two other lithium mining projects going through the approvals process.

We have a graphite producing mine and two projects in the advanced development stage. One of those is being carried out by Nouveau Monde Graphite, which, in 2021, began construction on a high-purity graphite plant and an anode materials plant for lithium-ion batteries.

We have the minerals necessary for Canada to compete as a supplier of the mine feedstock the global energy transition needs. What's more, with our hydroelectricity, legislative framework, and environmental and social practices, we can position homegrown mineral resources as clean resources that adhere to responsible sourcing requirements and policies.

We see real potential to further diversify Canada's mining sector and take advantage of the tremendous socio-economic impact of CSM development. Governments that move quickly to secure a competitive edge will be in an ideal position to benefit from the growing demand for critical minerals. Governments around the world recognize the importance of these emerging sectors and are investing billions to develop their own.

Canada must carve out its place. It has the resources and expertise. The industry needs clear policies to accelerate CSM explo-

ration, reduce project approval times, streamline the process and introduce greater predictability, and reduce the risks to investors who choose to do business in Canada.

● (1700)

Adopting a Canadian critical minerals strategy would send a clear message that the Government of Canada views its mining sector as a real answer to climate change and a highly promising source of wealth for Canada. The spinoff generated by CSMs will add to the benefits Canada already draws from traditional sectors, building even more added value into mineral resource development. That will inevitably attract more investment and secure a strong mining sector in Canada.

The Québec Mining Association submits that a Canadian strategy should build on the complementary expertise the provinces and territories have gained so we can all go further together. We must act quickly because the world has already mobilized to secure CSM sources. The decisions on supply sources are being made now.

Thank you.

The Chair: Thank you, Ms. Méthot, of the Québec Mining Association. I've taken note of that.

Mr. Kunihiro, please go ahead.

[English]

Mr. Robert Kunihiro (Director, Strategy, StromVolt Americas Inc.): Thank you very much.

To the members, thank you for the opportunity to speak.

I'm here as the director of strategy for StromVolt, which is striving to be the first North American lithium cell manufacturer in Canada. Initially we will serve the commercial markets for buses, material handling equipment, agricultural vehicles and perhaps marine craft. We are also fully capable of supporting automotive and light-duty trucks.

Just by way of a quick background, I am an auto person by background. In the last 15 years, I have been the CFO of two large, tier one auto suppliers, one being the largest harness provider to battery electric vehicles in North America. I continue to work today with the APMA, Accelerate ZEV, Trillium and of course with Strom-Volt.

The proposition we have will create something in the range of 1,500 jobs by 2030. We're very excited about that and looking forward to the conversation today.

Maybe just at a high level before the conversation, I would like to draw out a few points here. Certainly time is very short. Europe is 10 years ahead of us. Asia is probably 20 years ahead. Right now, there are a lot of good signs of things happening, but I don't see an overall strategy or who is actually driving that to make sure things happen.

On the other major point I'd like to raise, there was some earlier discussion about the impact of Buy America and the threat that poses to Canada. I would put to you that Europe is acting as one. China is obviously a very formidable competitor, especially with the fast start they've had. I strongly urge you to take advantage of our relationship with the United States and perhaps North America, but at least with the United States. Act jointly with them because we have a lot of what they don't have. We have leverage to make sure that the value add happens.

To me, a "made in Canada"-only solution is folly. It's a dream. It can't happen. It's not possible. Again, I stress that we need to work with our U.S. friends—our U.S. brothers and sisters—to effectively compete with Europe and with communist Asia.

Thank you.

• (1705)

[Translation]

The Chair: Thank you, Mr. Kunihiro.

Amanda Hall, please go ahead. You have six minutes.

[English]

Ms. Amanda Hall (Geophysicist, Summit Nanotech Corporation): Good afternoon. Thank you for having me today. I really appreciate the opportunity to speak with you.

My name is Amanda Hall. I'm the CEO and founder of Summit Nanotech. I'm a professional geophysicist. I've been in the resource extraction space in western Canada for nearly 20 years. I used to work in the mining sector in Saskatchewan, and I did industrial processing in Ontario as well.

In 2018 I quit my job drilling oil wells and decided to start my own lithium company. I evaluated lithium resource technologies all around the world and decided none of them were good enough, so I invented my own. I recently won the NRCan prize for leading female innovator in the Women in Cleantech Challenge. As a company, we're at about 41 employees right now.

We recently received funding from BHP Temasek out of Singapore and Capricorn ventures out of the U.S.A. So we have a lot of international investors—not my choice. I would have preferred Canadian investors, but Canadian investors are a little bit more gun-shy than international investors.

Our technology is a sustainable way of extracting lithium from solutions. It has better greenhouse gas emissions and better waste creation metrics. We have higher yields, with all sorts of benefits to using our technology. We're deploying it in South America, however, so just to feed further into what Robert was just saying about joining forces with the U.S.A. to have a North American solution, I would even stretch that further south to say that we need to have a

North American and South American solution to the battery supply chain problems that we're experiencing today.

In terms of U.S.A. resources, we have partners in the U.S.A. that we're working with. We have partners in Argentina and Chile. We do not have Canadian partners, and there are a lot of reasons why, so I don't think it's wise to turn a blind eye to the amount of resources the U.S. has in terms of lithium. I don't know about the other battery metals. That's not my expertise. Lithium is my expertise.

Our technology is at the pilot scale. We sent a 40-foot sea can down to South America just last month. We'll be developing the technology into larger-scale operations in South America as soon as we can.

I'll stop there. Thank you.

• (1710)

The Chair: Thank you very much.

From Vale Canada Limited, we have Mr. Merlini and Mr. Nichols.

The floor is yours for six minutes.

Mr. A. J. Nichols (Director, Corporate Affairs, Vale Canada Limited): Thank you very much, Mr. Chair and members of the committee, and good afternoon.

My name is A. J. Nichols. I'm the director of corporate affairs for Vale's base metals. I'm joined by my colleague Mr. Juan Merlini, who is Vale's global sales and marketing director for base metals.

Vale would like to acknowledge the indigenous peoples on whose lands we operate in Manitoba, Ontario and Newfoundland and Labrador.

Our company is one of the world's largest integrated mining companies, with global headquarters in Rio de Janeiro, and a market cap of approximately \$90 billion. Our global base metal business, headquartered in Toronto, has a rich 120-year history and operations across five continents. In Canada we operate in Newfoundland and Labrador as well as in Ontario and Manitoba. Our operations in Canada employ nearly 25,000 Canadians. Our direct and indirect GDP contributions to the Canadian economy over the past 12 years have totalled over \$58.4 billion Canadian.

We produce metals that are critical to building a cleaner and greener future. We are one of the world's largest producers of high-quality and low-carbon nickel, and are the only fully integrated nickel operations in Canada. We are also an important producer of copper and responsibly sourced cobalt, all of which are key critical minerals that are essential for the decarbonization shift that we see is under way and also demanded by society.

Vale shares the Canadian government's determination to decarbonize and create a greener and healthier future for Canadians. For example, in our Ontario operations predominantly, we've introduced 47 battery-electric vehicles in our operations underground. We're very proud of this milestone. We're looking at more opportunities to electrify our fleets.

We have also set ambitious decarbonization goals across the company, targeting a 33% reduction in GHG emissions by 2030 and also trying to aim for carbon neutrality in 2050. However, our GHG agenda is only one part of Vale base metals' broader effort to advance our ESG performance throughout our company and also in our industry. We believe that the Canadian mining sector has a unique opportunity to be a benchmark and a global standard for sustainable mining and the supply of critical minerals.

I would like to turn things over to Juan. He can provide more comments and insights on the market dynamics and supply chains as they relate to critical minerals.

Juan, I'll turn it over to you.

Mr. Juan Merlini (Global Director, Sales and Marketing, Base Metals, Vale Canada Limited): Thanks, A.J.

Members of the committee, good afternoon.

As we look to the future, Vale's base metal strategy is to shift 40% of our total class 1 production to the emerging EV industry to meet growing market demands for our products. Nickel, copper and cobalt are important components of the EV supply chain. To meet Canada's aspirations to be a North American and global leader in the EV battery and critical minerals market, we must address several issues.

First, while Canada is well positioned with its nickel reserves and producing mines, we must bring more supply to the markets to meet demand for EV vehicles. Meeting the demand will be a challenge, particularly for nickel and copper. Bringing new nickel, copper or cobalt deposits online is capital intensive and it takes a considerable amount of time. Even in the most stable and favourable mining investment jurisdictions like Canada, it takes at least 10 to 12 years from the discovery of a viable deposit to reach commercial production.

We also need to develop strategic, long-term partnerships with leading academics, institutions, customers and OEM producers that support long-term and significant investment. These innovation and supply chain ecosystems are essential and have already begun to formulate.

Coordination across government jurisdictions is also essential, as the supply chain will need federal, provincial and local coordination to respond to this generational opportunity. Provinces such as Ontario and Quebec are focusing significant attention on this, but we cannot stress the importance of multi-level government coordination that provides new investment, policy certainty and permitting support.

Finally, I would like to discuss the localization of supply chains. While the battery supply chain is still formative in Europe and North America, automakers prefer a localized supply that helps them lower their scope 1 and scope 2 emissions and provides secu-

rity of supply. It is great to see the recent announcements surrounding investments of various supply chain actors in Ontario and the province of Quebec.

Moreover, COVID and recent events in eastern Europe, as well as supply chain disruptions in Canada, reinforce the need to reduce supply chain risk. We believe this pressure has had a lasting impact on emerging battery supply chains and we must ensure that we build in sufficient resiliency in order for Canada to be the strategic supplier of choice.

If we were to leave you with one key message, it would be to focus your attention and efforts on increasing the upstream production and tonnage needed to support battery electric vehicles. While hundreds of billions of dollars have been spent on developing the battery supply chain, Canada must make significant investments to expand the raw material supply of battery materials. Given the lead time needed to bring new mining capacity online, such action must start now and it must be supported by prices that stimulate private investment. Without the battery metals in the right form, creating battery hubs with domestic raw materials will be very challenging.

Thank you very much. We welcome your questions, and we are happy to provide any further information that the committee requires for this study.

● (1715)

[*Translation*]

The Chair: Thank you, Mr. Merlini and Mr. Nichols.

We have time for a round with six minutes for each party. That will take us to 5:45.

Go ahead, Mr. Deltell. You have six minutes.

Mr. Gérard Deltell (Louis-Saint-Laurent, CPC): Thank you, Mr. Chair.

I want to say hello to my fellow members and everyone participating online. As I said to Mr. Généreux, the calibre of this afternoon's witnesses is so impressive that it's almost a shame we have so little time.

I also want to thank the honourable member for Abitibi-Témiscamingue for the information he gave me earlier about the happenings in his beautiful part of the country.

Speaking of the country, I want to put my first question to Josée Méthot. Hello and welcome, by the way.

This isn't the first time we've had the pleasure of speaking, Ms. Méthot. We've had discussions in other circles. How nice to see you today. You said in your opening statement that, a year and a half ago, the Quebec government adopted the Québec Plan for the Development of Critical and Strategic Minerals 2020-2025, positioning itself for the sector's future. You said that Canada should do the same.

Can you give us a specific example of how Quebec's experience should inspire Canada?

Mrs. Josée Méthot: Good afternoon, Mr. Deltell. We have indeed had a chance to speak on several occasions in the past.

Quebec decided that it needed a strategy. It adopted not only the Québec Plan for the Development of Critical and Strategic Minerals 2020-2025, but also a strategy to develop the battery sector. On top of that, the province introduced a sustainable mobility policy. As you can see, its strategy is part of a comprehensive integrated vision, fostering the conditions for Quebec's mining sector to diversify.

Mr. Gérard Deltell: You brought up diversification, Ms. Méthot.

Are you referring to diversification in terms of secondary or tertiary processing? Is it fair to say that, as soon as the shovel goes into the ground, it's the beginning of the end for the mine and so operators have to start planning for reclamation?

Is that what you mean?

Mrs. Josée Méthot: I would say two aspects come into play.

First, we have to diversify the resources we extract from the ground. Obviously, Quebec is known for gold and iron mining. The province excels in that area. It also mines nickel and other minerals. By developing critical and strategic minerals, the industry can diversify into other sectors.

Second, by establishing its plan for the development of critical and strategic minerals, its comprehensive vision and strategy for the development of the battery sector, its sustainable mobility policy and all its initiatives to address climate change, Quebec is making clear its desire for sector development.

Thanks to the battery sector, a mining project no longer means what it used to. Now, the government wants to stimulate demand to bring companies to Quebec for the development of battery components and cells. By stimulating demand for critical and strategic minerals, the province is in turn supporting the development of mining projects. That's what I meant. The idea is to undertake more and more processing, to benefit from the added value processing brings. That's not easy, however, because it's harder to obtain financing. Mining companies clearly have expertise in mineral extraction, and now they are being encouraged to undertake more integrated projects involving primary and secondary processing. Not only does the financing required increase, but so does the risk.

When Quebec decided to create its own battery sector and to adopt a development plan, it committed to bringing the value chain to the province, which is known for its mining expertise.

• (1720)

Mr. Gérard Deltell: Thank you for that answer, Ms. Méthot.

Now I have a question for Professor Benoît Plante.

Good afternoon, Mr. Plante. Thank you for contributing to the committee's study and sharing your insight.

You said earlier that the current leveraging effect was not realistic when it came to processing and that governments should continue to provide funding. Ms. Méthot just told us that secondary and tertiary processing require massive investments and that mining companies don't necessarily have processing expertise.

What should be done to bridge the gap between mining companies and processing, Mr. Plante?

What should we do to make the current leveraging effect realistic and achievable?

Mr. Benoît Plante: Thank you for your question, Mr. Deltell. I appreciate your giving me the opportunity to provide a real-life example.

Quebec introduced the Joint Research Program on Sustainable Development of the Mining Sector. It created dedicated funding for CSMs. The program has a leverage of 1:10, which is excellent. In other words, a company needs to contribute just 10%, and it can be in-kind, which makes things a whole lot easier.

There isn't anything similar at the federal level. The Natural Sciences and Engineering Research Council of Canada has done a lot to improve partnership grant programs. For instance, it offers a 2:1 leverage through the alliance grant for small and medium-sized businesses.

The 1:10 leverage becomes a lot more attractive to companies with limited resources, like critical and strategic metal developers.

Mr. Gérard Deltell: I realize the leveraging effect is 1:10, but doesn't that require an enormous investment?

Mr. Benoît Plante: The leverage definitely requires a major contribution from the government.

That said, the Quebec government's total funding envelope isn't through the roof. We are talking about projects that receive a maximum of \$300,000 in financial assistance over three years. Four or five projects a year receive that level of funding, so clearly, a lot more applications come in than the program can accommodate.

I think the federal government can play a role in increasing the available funding by establishing a similar leverage.

The Chair: Thank you, Mr. Plante.

Go ahead, Ms. Lapointe. You have six minutes.

Ms. Viviane Lapointe (Sudbury, Lib.): Thank you, Mr. Chair.

[English]

Hello. It's a great day when there are two companies that have a significant impact on Sudbury here today that I get to talk to, so it feels like home week on the Hill. Thank you to Glencore and Vale for agreeing to be here today.

My first question is to Vale. In March of last year, Vale testified at the natural resources committee during their study on critical minerals and associated value chains. What I'd like to do now is hear more from you about how Canada can position itself as a key supplier of critical minerals globally but also how can we ensure supply domestically.

Mr. Juan Merlini: Vale continues progressing on its EV strategy. We continue developing the relationship with the key customers and bringing to the attention of the Canadian market what we can offer. We can offer definitely not only our current nickel production, which has one of the lowest carbon footprints in the nickel industry with the highest standards in terms of ESG, but we also can offer a potential growth. We have been promoting all our potential in how we can enhance our strategy in fostering the battery material supply chain in Canada.

It is a significant effort. We have been into this process for almost two years. We are starting to see some of the results of the discussions become more effective, more direct. We are getting more alignment. But still it's a big challenge. I think we still have a lot of investments in order to bring more nickel and also to shape the profile of our nickel production in order to fulfill the requirements that are very specific for the battery materials.

We continue working hard. We have a strategy where we want to position a significant share of our nickel production into the EV supply chain, but more than that to enable the right support with the right alignment, the growth. We are also looking to other opportunities. We are studying recycling, so recycling the black mass, the material that comes from EV batteries. We are looking for ways to adjust our material. We keep progressing and I think there is a lot of opportunity for Canada finding the right alignment, finding the right opportunity. I think it's a unique opportunity that Canada can pursue.

• (1725)

Ms. Viviane Lapointe: Mr. Merlini, I have a question on your point on supply chains. Over the course of this study, this committee has repeatedly heard the need to develop our localized supply chain. Can you tell us what do you need from legislators to expedite a process that is evidently behind?

Mr. Juan Merlini: There's expediting the licensing, the coordination between all the levels of government, the federal, provincial and the local; supporting the right incentives for exploration in order to pursue some of the technological investments required to fulfill the demand for the battery material supply chain; and creating the right conditions for that supply chain to move here in Canada. We are upstream; we are in the mines and processing our nickel concentrates to a form that still requires significant investment in order to fulfill the battery materials.

I think on our side, we are very engaged with the government and very clear in terms of the requirements in terms of support and in creating the environment to attract all this investment. Canada has a long tradition of mining and it's a very stable jurisdiction. But we need to catch up now. The size of the challenge, the investments that are required, the amount, the volume, the stability that is required to fulfill the EV industry is unprecedented, and that's the support we need from all levels.

Ms. Viviane Lapointe: What is needed from a policy perspective to go from raw material mined, for example, in Sudbury, to a product that's ready to use in Canada's auto sector for EV batteries?

Mr. A. J. Nichols: The good news, Madam MP, is that we already have a lot of the processing in place in Canada. In Sudbury, as an example, we have a fully integrated operation where you have exploration, mining, processing, milling and final products being produced in Canada.

As Mr. Merlini alluded to, what is interesting is that now you have industry that's looking at how we can get into battery-grade materials, where we're shifting an existing production that could be used for interesting applications into the EV battery material market.

With provinces such as Ontario and Quebec, as we heard from the testimony of Minister Rickford and Ms. Méthot representing the Quebec Mining Association, there is a lot of excitement going around regarding the midstream, as well as OEM announcements on the downstream.

If you look at it in terms of a giant set of ingredients for baking a cake, Canada is attracting that because of its stable jurisdictions, its financial markets, its access to capital and its predictability in its regulatory and legislative regimes provincially, as well as federally. This already offers a lot of comfort and incentive for major tier one investors—both domestic and international—to look at Canada as a very attractive jurisdiction.

What has been reiterated by our fellow panellists is that we have to dot the i's and cross the t's to make sure that we have a coordinated approach to get that supply chain anchored and working in a very coordinated way throughout government, as well as industry, academics and associations. That way, we can sit around the same table and figure out what the problems are that we need to solve communally, as well as the opportunities that we can seize together. Having that whole-of-government approach at federal, provincial and local levels will even accelerate the attractiveness of a jurisdiction like Canada.

• (1730)

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

We'll now move to Mr. Lemire for six minutes.

[*Translation*]

Mr. Sébastien Lemire: Thank you, Mr. Chair.

I want to thank the witnesses for their wonderful presentations.

Obviously, I'm going to start with Mr. Plante, from the Université du Québec en Abitibi-Témiscamingue, or UQAT.

In his mandate letter, Minister François-Philippe Champagne is tasked with ensuring “that Canada is a world leader in clean technology, with a focus on critical minerals and the development of a sustainable battery innovation and industrial ecosystem”.

How does the partnership-based work you and the university are doing help to achieve that goal?

Mr. Benoît Plante: Thank you for your question, Mr. Lemire.

Our work will focus on the exploration and responsible development of resources, which means managing waste to minimize environmental impacts. That involves reducing the environmental footprint as well as the consequences of ecosystem contamination, the physical stability of works and so forth.

We work with graphite, lithium and rare earth mine developers. In most cases, our work is partnership-based. The work is carried out not by professors at the university, but by students, whom we refer to as highly skilled personnel. It's really a golden opportunity. Working on these challenges and training the leaders of the future, who will see to the responsible development of critical and strategic metals, means that their work is published in forums available industry-wide, ecosystem-wide, including developers, consultants and, of course, governments.

Any breakthroughs they achieve are available to the entire community of stakeholders. Those breakthroughs benefit not only the developers we work with, but also all members of the ecosystem. The problems, challenges and opportunities before them are similar, even if the mines aren't identical, geologically, physically or socio-economically speaking. That is an example of how we are helping to bring about advancements in the sector, so that Canada and Quebec can become world leaders.

Quebec and Canada have tremendous expertise, largely gained in the base and precious metal sector, and we can already apply that expertise to many common challenges in the critical and strategic metal sector. Nevertheless, a good many sector-specific challenges exist, including water treatment and contaminants. A lot of research and development work needs to happen, and the critical and strategic metal industry, as a whole, will benefit.

Minimizing the environmental impacts of processing, as responsibly as possible, poses numerous challenges. My area of focus is geochemistry, but the professors I referred to earlier will work on improving the stages of processing so that it can be undertaken responsibly, in a way that mitigates the negative impacts as much as possible.

Mr. Sébastien Lemire: That's quite the model. The focus is on building synergies with companies, investing in innovation and developing skills.

In its last budget, the Government of Canada allocated \$9.6 million over three years to establish a critical battery minerals centre of excellence. Abitibi-Témiscamingue would be an ideal place for the centre. You and your team could be one of the centre's leading partners.

What do you think?

• (1735)

Mr. Benoît Plante: Of course, if I were speaking for my own bailiwick, I would say that UQAT and the Cégep de l'Abitibi-Témiscamingue provide a very significant pool of expertise that could contribute to R and D in the field. That doesn't include the many potential mining partners in the area who may want to participate in research. The conditions in Abitibi-Témiscamingue are perfectly suited to a centre of this nature.

We have teachers at every level, from college right up to post-graduate studies. We are home to a high concentration of mining workers and mining companies with the capacity to invest. We have a site where new technologies could be tested. All that to say the area would make an ideal location for that type of centre.

Mr. Sébastien Lemire: Thank you, Mr. Plante.

I have a quick question for Ms. Méthot.

Ms. Méthot, how would you describe the condition of the secondary and tertiary processing sectors in Quebec? We could even talk about quaternary processing.

Where are projects being carried out involving chemistry, cathodes, anodes, cell production and reclamation? Can you quickly walk us through how the situation is shaping up for the future?

Mrs. Josée Méthot: In my opening statement, I mentioned a few of the projects we anticipate in the future. For example, I talked about Nouveau Monde Graphite and its project to produce value-added graphite anode material. Sayona and Nemaska Lithium are working on projects to transform spodumene into lithium carbonate and lithium hydroxide. Sayona is waiting to find out whether its application will be approved, and Nemaska's project has received approval. The issue of financing has yet to be settled, however.

Lithium and graphite processing have their place in the new sectors. I have no doubt that, at some point, the possibilities of rare earths will be explored. As I understand it, more R and D is required on that front than in the case of lithium and graphite. The goal is definitely processing. Everyone wants to undertake processing in Quebec. Processing is being talked about all over Canada. More processing is on everyone's mind.

We need to plan for all markets. Some are already well established. You're talking to representatives of Vale Canada and Glencore Canada. The nickel sector is doing well, and the same is true of copper and cobalt in Ontario. We have always advocated the opportunities that new sectors present, so the processing of critical and strategic metals is a promising area for Quebec and the rest of Canada.

I said this already, but I can't stress it enough: the government needs to move quickly on approving projects so they can advance. The race is on.

The Chair: Thank you, Ms. Méthot.

Mr. Blaikie, you may go ahead. You have six minutes.

[English]

Mr. Daniel Blaikie: Thank you very much.

Ms. Hall, I want to come back to you, first of all to congratulate you on your achievements, but also to follow up on a comment you made in your opening statement about the reticence of Canadian investors. I just wonder if you might have a little bit more to say about why you think that Canadian investors have been slow to get on what we're hearing is a train with a very promising future that's leaving the station. Do you think that's because international investors are just more bullish? Do you think Canadian investors are used to often being able to invest in contexts where government de-risks their investments?

What do you think are some of the reasons that Canadian investors aren't trying to get more aggressively into this developing Canadian market? What are some things you think might respond to whatever concerns are out there that are impeding Canadian investment in our own resources?

• (1740)

Mrs. Amanda Hall: I believe international investors have a broader perspective of what the opportunity is, and they have more confidence in the solutions that we're offering from a sustainability perspective and from an advanced materials perspective.

I don't think Canadians are uneducated in this space at all, but the risk tolerance is a little bit lower. They tend to sit back and follow rather than lead in most cases. Even the BDC, the Business Development Bank of Canada, sat out on my last financing round just to wait and see what would happen. Then, of course, the international investors swooped in. They want us to leave Canada and set up shop somewhere else, but I've been fighting to stay in Canada and continue our progress here.

It's a shame that we don't have more Canadian investor support, but I think it's just a little bit of a risk tolerance issue.

Mr. Daniel Blaikie: Thank you very much for prioritizing Canada.

We've talked a lot already, just in this panel alone, about the importance and the significance of having a federal strategy in Canada for critical resource development. To what extent do you think that might help? Certainly the Business Development Bank of Canada has a pretty obvious role to play in a federal strategy.

When we talk about electrification and the professed climate goals of the current government, clearly there's room to try to advance that strategy.

I guess I'm just curious to know what elements you think could be incorporated into a Canadian critical minerals strategy that might spur more Canadian investment in the industry.

Mrs. Amanda Hall: I think what investors are looking for in new start-up companies or companies that are in the resource extraction space for sustainable battery metal development is customer traction. You just don't get that in Canada the way you do internationally.

My customers are in South America because they're willing to pay for this technology. They're willing to pay for the scale-up and the development of the technology. Canada just doesn't seem to have that appetite. When our customers are all international, then our investors become international as well.

I'm finding that even EV manufacturers from outside of Canada are looking to secure the upstream supply chain by investing in the resource itself and in the extraction technologies themselves. It's in their best interest to secure that and be able to have some control over where the product is going.

BHP out of Australia and Temasek out of Singapore want to know where the lithium is coming from and where it's going in the world. It's in their best interest to invest early and invest upstream as much as possible to make sure they have some say in where the product ends up.

Mr. Daniel Blaikie: To what extent would you say those international customers that are helping to drive investment from outside Canada in our talent and in our resources are supported by their national governments, which have strategies?

Is this just something they're doing on their own, kind of spontaneously, or would you say they have a little more courage and a little more confidence because they're operating within a national strategic context where they're from, which Canada figures into?

Mrs. Amanda Hall: One advantage that Canada has is that these international producers of battery metals have been in production for decades. I'm speaking mostly of lithium because that's my specialty.

They have 20- or 30-year offtake agreements with battery manufacturers out of Asia. They need to satisfy those offtake agreements by making sure that their supply chain is optimized and never has any downtime, of course.

The governments in Chile and Argentina are supporting lithium development and production. The Chilean government asked me to join their clean tech board for helping get lithium out of the country in a more sustainable way because they know that Canadians have a reputation for doing things the right way. We can fly that sustainability flag up our pole and people do look to us as an example of the right way to do things.

In Australia, Chile and Argentina, they know they need to improve on those archaic methods of extraction in order to comply with social demand and ESG regulations from government. They're looking for new technologies like ours to help them achieve those goals.

Canada is behind the eight ball because we haven't started producing yet. That urgency and that sense of needing to do that as fast as we can isn't as strong here. We're a little bit slower in the adoption of new technologies. However, the good thing about Canada is that we can develop processes from the ground up using new, sustainable processes, and advanced materials and technologies that are coming out of Dr. Plante's labs.

• (1745)

Mr. Daniel Blaikie: If Canada wants to be a big player in EV manufacturing, what does it mean for manufacturers that might operate in Canada if in other countries they're already kind of securing Canadian resources and technology for their supply chains? How does Canada then come late to the game to position itself as a serious EV manufacturer?

Mrs. Amanda Hall: It's going to be challenging. Coming from the oil and gas sector, I saw this play out over the years. When your resource is more expensive than everybody else's, it's really hard to sell it. It's hard to sell it internationally. It's even hard to sell it in Canada. There's a reason why eastern Canada uses Saudi Arabian oil; it's cheaper than Alberta oil.

You can apply the same conceptual ideologies around lithium. If it costs me \$8,000 to produce a tonne of lithium in Canada, but I

can get it for \$3,000 a tonne in Chile, why would I buy Canadian lithium?

I think the answer in the short term is to have the government subsidizing as much as possible our ability to innovate in the space and make sure that we get our operating costs down as low as possible. This happened in the shale gas sector as well. We drove down the cost of producing shale gas to a point where it was competitive. Competitive pricing and competitive production is a very important goal that we'll have to try to meet.

The other thing that's missing that Canada could probably step in and fill is that if you produce a tonne of lithium in Quebec today, you still have to transport that tonne of lithium to Asia to be turned into a cathode before it can go in a battery in the Gigafactory in Houston with Elon Musk. It has to go to Asia because there's no alternative here in North America. We don't do cathode manufacturing here and we need to in order to keep the supply chain local.

The Chair: Thank you very much. That was very interesting.

I want to thank all of the witnesses for taking the time this afternoon. It's been very useful for this committee.

I'd like to remind you that if you want to table any documents that you think might be useful for us, please feel free to do so through the clerk.

This meeting is adjourned.

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

SPEAKER'S PERMISSION

The proceedings of the House of Commons and its committees are hereby made available to provide greater public access. The parliamentary privilege of the House of Commons to control the publication and broadcast of the proceedings of the House of Commons and its committees is nonetheless reserved. All copyrights therein are also reserved.

Reproduction of the proceedings of the House of Commons and its committees, in whole or in part and in any medium, is hereby permitted provided that the reproduction is accurate and is not presented as official. This permission does not extend to reproduction, distribution or use for commercial purpose of financial gain. Reproduction or use outside this permission or without authorization may be treated as copyright infringement in accordance with the Copyright Act. Authorization may be obtained on written application to the Office of the Speaker of the House of Commons.

Reproduction in accordance with this permission does not constitute publication under the authority of the House of Commons. The absolute privilege that applies to the proceedings of the House of Commons does not extend to these permitted reproductions. Where a reproduction includes briefs to a committee of the House of Commons, authorization for reproduction may be required from the authors in accordance with the Copyright Act.

Nothing in this permission abrogates or derogates from the privileges, powers, immunities and rights of the House of Commons and its committees. For greater certainty, this permission does not affect the prohibition against impeaching or questioning the proceedings of the House of Commons in courts or otherwise. The House of Commons retains the right and privilege to find users in contempt of Parliament if a reproduction or use is not in accordance with this permission.

Also available on the House of Commons website at the following address: <https://www.ourcommons.ca>

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

PERMISSION DU PRÉSIDENT

Les délibérations de la Chambre des communes et de ses comités sont mises à la disposition du public pour mieux le renseigner. La Chambre conserve néanmoins son privilège parlementaire de contrôler la publication et la diffusion des délibérations et elle possède tous les droits d'auteur sur celles-ci.

Il est permis de reproduire les délibérations de la Chambre et de ses comités, en tout ou en partie, sur n'importe quel support, pourvu que la reproduction soit exacte et qu'elle ne soit pas présentée comme version officielle. Il n'est toutefois pas permis de reproduire, de distribuer ou d'utiliser les délibérations à des fins commerciales visant la réalisation d'un profit financier. Toute reproduction ou utilisation non permise ou non formellement autorisée peut être considérée comme une violation du droit d'auteur aux termes de la Loi sur le droit d'auteur. Une autorisation formelle peut être obtenue sur présentation d'une demande écrite au Bureau du Président de la Chambre des communes.

La reproduction conforme à la présente permission ne constitue pas une publication sous l'autorité de la Chambre. Le privilège absolu qui s'applique aux délibérations de la Chambre ne s'étend pas aux reproductions permises. Lorsqu'une reproduction comprend des mémoires présentés à un comité de la Chambre, il peut être nécessaire d'obtenir de leurs auteurs l'autorisation de les reproduire, conformément à la Loi sur le droit d'auteur.

La présente permission ne porte pas atteinte aux privilèges, pouvoirs, immunités et droits de la Chambre et de ses comités. Il est entendu que cette permission ne touche pas l'interdiction de contester ou de mettre en cause les délibérations de la Chambre devant les tribunaux ou autrement. La Chambre conserve le droit et le privilège de déclarer l'utilisateur coupable d'outrage au Parlement lorsque la reproduction ou l'utilisation n'est pas conforme à la présente permission.

Aussi disponible sur le site Web de la Chambre des communes à l'adresse suivante :
<https://www.noscommunes.ca>