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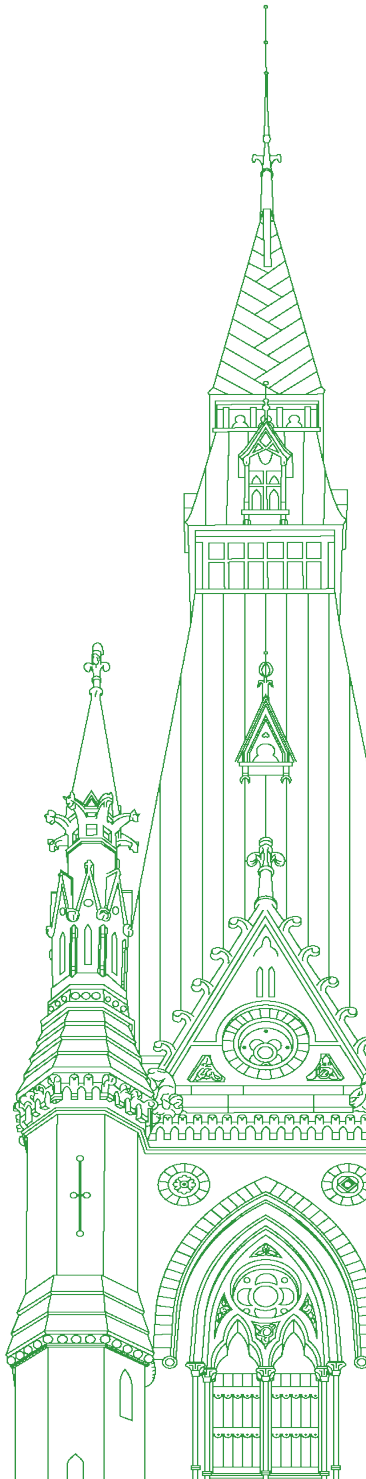

Chair: Mr. James Maloney

Standing Committee on Natural Resources

Friday, March 26, 2021

● (1310)

[*English*]

The Chair (Mr. James Maloney (Etobicoke—Lakeshore, Lib.)): I call this meeting to order.

Welcome, everybody, to meeting number 18 of the Standing Committee on Natural Resources.

As everybody knows, we're doing this by way of Zoom, so we have to be a little bit patient and try to avoid talking over one another and to make sure that our translators have enough time to digest and translate the questions or comments. Everybody's patience is much appreciated.

Before I introduce the witnesses, I want take a trip down memory lane.

First of all, I want to welcome Mr. Fast, who I know is substituting today.

I want to welcome our new parliamentary secretary, Mr. Serré, who is here today only as an observer. We look forward to working with you going forward. This is a homecoming for you. You started out on this committee. Mr. Cannings, Ms. Stubbs and I were part of that original cast back in 2015, so welcome back.

Ms. Stubbs, it's very good to see you today. Welcome back. I think you're here for only an hour, so we better make it count. We're very glad to see you, as always.

On that note, I'd like to welcome our witnesses.

With us today are three individuals and two groups. We have Dr. Eggert, professor, Colorado School of Mines; Dr. Heffron, professor, global energy law and sustainability, and Jean Monnet professor in the just transition, University of Dundee; and Dr. Jeffrey Kucharski, professor, Royal Roads University. As well, we have Investissement Québec and the Research Institute of Mines and the Environment.

Each of our witnesses, as individuals or a group, will get up to five minutes to make opening remarks. I emphasize that it is up to five minutes; I may have to cut you off if we go over on time. We do have strict time limits here. Once all of the witnesses have completed their opening statements, I will open the floor to questions from our members.

Why don't we jump right in? I will go in the order you appear on the agenda, starting with Dr. Eggert.

I should point out that you are free to speak, and encouraged to speak, in either or both official languages. You have translation available to you at the bottom of your screen. All of your mikes and equipment have been tested, so there should be no problems.

Dr. Eggert, you have the floor.

Dr. Roderick G. Eggert (Professor, Colorado School of Mines, As an Individual): Mr. Chair and members of the committee, thank you for the opportunity to appear today.

I'm a professor of economics and business at the Colorado School of Mines, specializing in mineral economics.

Since 2013, I've been deputy director of the Critical Materials Institute, a public-private research consortium established by the U.S. Department of Energy. It consists of research collaborations, involving national laboratories, universities and companies and is aimed at accelerating innovation to help secure raw materials and their supply chains, and ensure the development and deployment of clean energy technologies.

I have organized my opening remarks around one central question, and then toward the end, I'll offer a few preliminary thoughts on possible U.S.-Canada collaborations.

My central question is, what kind of industrial policies should the United States, and, separately, Canada, have toward raw material supply chains? Note that I refer to industrial policy. This reference is deliberate. How a nation takes advantage of its mineral wealth as a producer and how it manages it's supply-chain risks as a consumer fundamentally reflect choices they make about how to approach industrial policy.

I would observe that a false dichotomy often exists in discussions of public policy that are organized around two caricature-like, mutually exclusive approaches to policy. At one extreme there's the “let the market decide”, a sector agnostic approach, and then at the other extreme there's the “have government pick winners and losers”. In reality, most, if not all, governments operate in a messier middle ground between these extremes.

The real questions are: first, how can and should governments support market solutions which focus our attention on things like education and basic pre-competitive research; and second, how can and should governments steer more quickly, so that the market might direct commercial activities toward particular sectors and technologies?

For raw material supply chains, the education and basic research approach would focus on the long-term—five years, 10 years or more—and would only provide scene setting strategic analysis, but would focus on the important inputs to commercial activities, such as educated people and knowledge obtained through basic pre-competitive research.

On the second issue of steering more quickly over the short to medium-term, we might focus on specific sectors. If we think about raw material supply chains, things like establishing public-private partnerships to incentivize and accelerate technology deployment and commercial activity in a specific, more narrowly defined, supply chain, these could include magnets, motors, electric vehicles, or rare earth magnets and motors, battery materials, anodes, cathodes and batteries, for example.

The essence of national industrial policy should be determining the right balance of government activities that support private solutions over the long-term and help steer more actively, and aggressively over the short to medium-terms commercial activities of special priority.

In terms of areas of possible collaboration—and these are not exhaustive, I might suggest—there are opportunities for U.S.-Canada. Certainly, information sharing and broad, forward-looking strategic analysis related to raw materials, university to university co-operative programs and exchanges for students and faculty. This could also include government-to-government collaborations to assess unconventional primary resources, the recovery potential of valuable materials from processed waste streams from both historical and ongoing mining, and the potential for circularizing material life cycles.

● (1315)

Anyway, according to my clock, I'm now at five minutes, so I will stop and look forward to discussing these and other possible collaborations or anything else you might like when we get to questions.

Thank you very much.

The Chair: Thank you very much, Doctor. You're right on time, so it's much appreciated.

We'll go over to Dr. Heffron, for five minutes.

Dr. Raphael J. Heffron (Professor, Global Energy Law and Sustainability, Jean Monnet Professor in the Just Transition, University of Dundee, As an Individual): Thank you for the opportunity to speak to you here today.

I'm a professor in global energy law and sustainability at the University of Dundee. We have one of the oldest energy law centres here, 44 years old this year. I'm also a Jean Monnet professor in the Just Transition, which is an award given by the European Commission.

I'm going to tell you about some research and policy work I've been doing. It's based on this issue of critical minerals and justice.

A crucial issue for the continued development of critical minerals centres on what the vision is for this industry. In today's world, that vision needs to have justice at its core. As the critical mineral industry keeps developing in Canada, justice needs to apply at the planning, construction, operation and decommissioning phases of a critical mineral project.

It's important that society is clear that (a) the critical minerals industry has learned from errors in the energy sector over the years in project development; (b) the value of the critical minerals industry to the energy transition; and (c) that the critical minerals industry will contribute to Canada's just transition to a low-carbon economy.

The critical minerals industry has clearly a vital role and it is necessary to ensure that the stakeholders are all clear that the industry needs what we can refer to as a “social licence to operate” off Canadian citizens.

In terms of exploring risks, as further development of the critical minerals industry is planned in Canada, it will be vital that the risk profile of the industry is reduced. This has clear benefits in lowering costs of finance, ensuring continued operations on site without stoppages, contributing to economic growth, providing good jobs and contributing to the energy transition. In order to achieve all this, the role of justice has to be clear so that all stakeholders will be satisfied.

The international political, business and societal agenda is changing with increased calls for more fairness, equality, equity and inclusiveness—in essence, justice. Hence it's important that Canada remain ahead of such change and have policy that is flexible to adapt to this change.

We can see these calls for more justice if we follow developments due to the 2015 Paris Agreement; climate change action; the UN sustainable development goals; and taxation, disclosure and transparency issues such as ESG investing, rules of foreign investment, economics, environmental impact assessments, insurance, project finance and the rise in imagery and data.

President Joe Biden has gone even further and appointed an energy justice director within the Department of Energy in the U.S.

All these areas I mentioned are calling for more justice, and they try to develop and improve just outcomes within society. For the critical minerals industry, ensuring that justice is at the heart of its development will only be positive. It will ensure that their business will actually develop and with less risk, and it will be sustainable into the future. That is, it will not have to stop operations due to a lack of available insurance, and so on.

Therefore, what are we talking about here when we talk about these forms of justice? We can look at this from, let's say, a just framework. What this involves is examining the problem from four levels.

The first level is ensuring distributive, procedural and restorative justice. I will be brief in explaining them.

Procedural justice should be clear. Restorative justice concerns the need to ensure projects are decommissioned; that is, cleaned up properly. Distributive justice is key, as there should be fairer distribution of wealth created from the critical minerals industry. There is no reason for mining companies to keep earning super-normal profits.

The second level of analysis looks at recognition and cosmopolitan justice. These, in essence, concern inclusiveness. Recognition refers to ensuring, for example, indigenous communities are recognized. Cosmopolitan justice ensures we are engaged with impacts across borders; that is, what will be the contribution of critical minerals to the global energy transition? How will it impact Canada's energy and climate targets under the Paris Agreement and other international commitments?

The third level of analysis concerns space. Where will these critical mineral developments be in Canada? Are they in clusters where, as a result, there might be excessive environmental impacts? Will they contribute positively to regional development across Canada?

● (1320)

The fourth level focuses on timelines and planning for different scenarios in 2030, 2035, 2040, 2050, etc. Here, this question can be asked: When does Canada want an operational critical minerals industry that is just and sustainable? If it's 2030, for example, what types of law and policy—

The Chair: Doctor, I'm going to have to ask you to wrap up very quickly.

Dr. Raphael J. Heffron: [*Technical difficulty—Editor*]

I will finish by saying that today all stakeholders in the critical minerals industry need to be satisfied, and this can be accomplished by reducing the risk profile of the sector. To do so, the vision for this industry has to be that it plays a vital role in ensuring Canada's just transition to a low-carbon economy. Applying a framework to achieve justice can provide a pathway for all stakeholders to engage with to ensure that investment happens and the industry grows in a just and sustainable way.

The Chair: Thank you, Doctor.

Dr. Kucharski, you're next, for five minutes, please.

Dr. Jeffrey B. Kucharski (Professor, Royal Roads University, As an Individual): Mr. Chair and members of the committee, thank you for the invitation. It's my sincere pleasure to appear in front of this committee today. I'm a professor at Royal Roads University in Victoria. I do research and publish on issues related to energy, geopolitics and international trade.

Canada has an abundance of strategic resources that the world, especially the Indo-Pacific region, needs to help develop and sustain their economies. The Indo-Pacific region, driven by continued economic and population growth, will lead global demand for energy and critical minerals in the coming decades. According to the International Energy Agency, the region will account for approximately 60% of a global growth in energy demand by 2040, which will require more than $1 trillion U.S. in annual energy infrastructure investment.

In my published work, I define strategic resources as including Canada's energy resources, such as fossil fuels and uranium, as well as critical minerals, such as rare earth elements. I say that critical minerals are strategic, because they're relatively scarce, located only in certain locations, essential to a modern economy and integral to the energy transition. Access to critical mineral resources is a national security question for many countries and is increasingly vital to economic growth, peace and security.

We need to recognize there are risks to the stability and security of strategic resource supply chains. In the case of critical minerals, limited global supplies, the digital revolution and decarbonization efforts are driving resource scarcity and thus competition to secure uninterrupted access to CRMs. The principal risk is disruption of supplies, whether through shortages, embargoes, trade wars, conflicts or, as seen more recently, global pandemics.

In addition to resource competition, the use of market power as a tool of economic leverage can also be a source of risk. In the past, China has demonstrated a willingness to use its near monopoly over processed rare earth elements as political leverage against countries with whom it has disagreements. In 2010, China cut off Japan from key rare earth supplies in response to a territorial dispute over the Senkaku, or Diaoyu Islands. As well, in May 2019, Chinese president Xi Jinping visited one of China's rare earths magnet plants in a thinly veiled warning to the United States over escalating trade tensions.

Chinese economic strategy documents have continued to discuss leveraging its market power over rare earths in response to geopolitical disputes. Canada and our partners therefore need to prioritize efforts to develop alternative sources and bring them into production as soon as possible.

I'm encouraged by the efforts of the federal and provincial governments to develop a critical minerals strategy, compile a critical minerals list, and enter into agreements with key allies and partners such as the United States and Japan. Developing a viable supply chain for critical minerals in Canada will be the first priority. Ultimately, Canada must also have a strategy in place to leverage our capabilities and resource endowments to forge closer economic, security and political relations with important regions of the world.

It is manifestly in Canada's interest to support the economic and regional security of our partners and allies, and by that I mean those that uphold rules-based international order in the Indo-Pacific region, including Japan, South Korea, Australia, India and others. Canada needs to be well positioned to meet the growing demand for energy and other strategic resources, and to establish a reputation as a stable and reliable supplier and partner to the region. Canada's stake in the preservation of peace and stability in the Indo-Pacific region is significant because our future prosperity will increasingly depend on stable trade, and the political and security relationships we have there. Critical minerals can be an important asset for Canada in this effort.

Canada's economic future depends, in large part, on how we position ourselves to deal with the opportunities as well as the challenges posed in the Indo-Pacific region. It's my hope that federal and provincial governments will work towards coordinating their critical mineral strategies within the overall framework of a broader Indo-Pacific strategy, which I understand is under development now within Global Affairs. It will be important to leverage the benefits of Canada's critical mineral capabilities and resources in order to help advance Canada's broader interests, as well as support economic development, environmental sustainability and security in this important region.

Thank you very much.

● (1325)

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

We're going to Investissement Québec and Dr. Zaghib.

[*Translation*]

Dr. Karim Zaghib (Strategic Advisor, Investissement Québec): Thank you, Mr. Chair.

Good afternoon, everyone.

My name is Karim Zaghib. I currently hold two positions. I am a professor of practice at McGill University and a strategic advisor with Investissement Québec. Before that, I was a researcher for 26 years and also served as general director of Hydro-Québec's Center of Excellence in Transportation Electrification and Energy Storage. I have 35 years of experience in the energy sector. I have developed research, particularly regarding the circular economy, with an interest in materials, from mining to mobility to recycling.

Critical minerals and rare metals are very important for the energy sector, especially for the energy transition, and for health, economic and military applications. Several countries, including China and the United States, classify critical materials and rare metals as national security issues. According to the U.S. Department of Commerce website, the United States classified 35 such minerals in 2018.

Nearly all of those minerals can be found in Quebec, including aluminum, indium, titanium and niobium. Some great opportunities lie ahead for Canada.

I will speak more specifically about batteries, since that's my area of expertise. Batteries, particularly lithium-ion batteries, have an anode, a cathode and an electrolyte. Anode materials such as graphite, silicon and copper can be found in Canada. This is also true regarding the cathode with aluminum, nickel, cobalt and manganese, for example. So these materials are readily found in Canada.

What matters most is this.

[*English*]

We need Canada to have a stable and secure supply chain with zero CO2 emissions. We need collaboration between provinces and also with the United States.

These are great opportunities. Right now, 85% of lithium-ion batteries are produced in China, Japan and Korea. You have OEMs in Ontario, in the U.S. and also here in Quebec.

The stable supply chain here in Canada respects human rights because we have no kids working in mines. We need to think about a strategic plan between our government and also the relationship between the private sector and government sectors.

The opportunity is right here and we do not want Canada to become like Africa, just selling our natural resources to others. We need to make the first transformation here, the second transformation and so on.

Don't forget, we have talented engineers and we have the best universities here. Our universities here in Canada are similar to what they have in Boston or the Silicon Valley and so on. Beyond that, we have creativity. We have one of the largest portfolios of patents and license technologies to many companies worldwide.

I want to really see great collaboration and also to think about transportation of our materials and so on. As you know, when you spoke about lithium, the basis of lithium-ion is the lithium. We have at least six places in Quebec for lithium. Then when you see batteries, for example, Elon Musk says we need nickel. We have nickel here in Canada. We have all the materials here.

I would just like to conclude with...stable, secure, less CO2 emissions, the trustability of our natural resources and to create jobs in North America.

● (1330)

The Chair: Thank you very much.

Last, we have Dr. Godbout for five minutes.

[*Translation*]

Dr. Jovette Godbout (Executive Director, Research Institute of Mines and the Environment): Good afternoon, everyone.

Thank you for your invitation. I was asked to appear to present my organization's expertise in responsible mineral resource development, and to comment on the level of support the federal government should provide for research.

I am the executive director of the Research Institute of Mines and the Environment at the Université du Québec en Abitibi-Témiscamingue, or UQAT. The Abitibi-Témiscamingue region has a long history of mining. UQAT is recognized around the world for its expertise in mining and the environment. Since it was created 35 years ago, UQAT has made socially and environmentally responsible mineral resource development a key component of its development.

Thanks to our numerous partnerships with mining companies, Quebec government ministries and other Quebec, Canadian and international universities, the high level expertise of our professors, the creation of the Research Institute of Mines and the Environment and our research chairs, we can proudly assert ourselves as a key player in the field.

The Research Institute of Mines and the Environment has already been very successful in illustrating our willingness and ability to act as a major player in the responsible development of critical and strategic minerals.

For instance, back in 2014, one of our professors, Dr. Benoît Plante, who now holds a chair, obtained his first collaborative funding to work on the geochemistry of rare earth mining waste. Since then, he has secured over $1 million in private and government funding to develop knowledge of the environmental geochemistry of strategic mineral resources, particularly with respect to lithium, rare earths and graphite mines.

In 2015, UQAT partnered with the Cégep de l'Abitibi-Témiscamingue and its affiliated centre to apply for the first time for $7.5 million in funding from the Quebec ministry of the economy and innovation to develop its research and innovation capacity related to the development of strategic metals in Abitibi-Témiscamingue, funding that was finally granted in 2018.

Even before we obtained this funding, we believed in the field so much that we recruited Professor Lucie Coudert to join our organization. She specializes in the recycling of strategic metals by hydro-metallurgical processes and battery recycling.

With the funding obtained from the Quebec ministry of the economy and innovation, we helped create the Elements08 Strategic Metals Excellence Centre. Of the $7.5 million in funding obtained, UQAT received $3.1 million. With this funding, we were able to recruit two professors to our team to round out its expertise on the entire life cycle of a mine. We welcomed Jean-François Boulanger, a specialist in strategic mineral processing, and Marc Legault, a specialist in the geology of strategic mineral resources.

These new recruits have enhanced UQAT's team of specialists, which now includes 16 professors specializing in the entire mineral development process. Our faculty is one of the largest mining and environment faculties in Canada, and can intervene in every step of the process, from exploration to soil restoration.

Lastly, we also recently created an institutional research chair in the environmental geochemistry of critical and strategic mineral resources.

● (1335)

I was asked to comment on how much support the federal government should provide to this sector. I must say that I agree with Dr. Zaghib. We have a—

[*English*]

The Chair: Doctor, perhaps we can address those ideas during the course of the questions. Unfortunately, we're out of time right now. We have to move on.

[*Translation*]

Dr. Jovette Godbout: Okay, thank you.

[*English*]

The Chair: Thank you.

We'll start the six-minute round with Mr. Zimmer.

Mr. Bob Zimmer (Prince George—Peace River—Northern Rockies, CPC): Thank you, Mr. Chair.

I want to thank the witnesses for coming here today for this important study about critical minerals. We see that Canada has a very important position in the world. I've always said that the world needs more Canada, not less. We need to develop these resources.

Before I get into the questions, I want to correct the record. We heard the minister talk about the Conservative policy on climate change. I want to read into the record what Conservatives actually believe about climate change. I will read it right from our policy document, as follows:

> The Conservative Party believes that responsible exploration, development, conservation and renewal of our environment are vital to our continued well-being as a nation and as individuals.
>
> We believe that an effective international emissions reduction regime on climate change must be truly global and must include binding targets for all the world's major emitters, including China and the United States.

Mr. Bryan May (Cambridge, Lib.): A point of order, Mr. Chair—

The Chair: Mr. Zimmer, can I ask you to pause for one second? There's a point of order. Thank you.

Mr. May.

Mr. Bryan May: Thank you, Mr. Chair.

I appreciate what Bob is doing and what he's trying to clarify. I don't think it has anything to do with the meeting. I'd like him to get back on track with the theme of the meeting, please.

The Chair: All right. Thanks—

Mr. Bob Zimmer: I appreciate that, Mr. May. I'll get right back to it. I'll finish with this:

> We believe [as Conservatives] that the federal and territorial governments should make joint investments to study and address climate change adaptation in the North.

Again, just to clarify, we heard some erroneous statements by the minister earlier this week, and other members of the governing party, but—

Mr. Bryan May: Mr. Chair, a point of order.

Mr. Bob Zimmer: —I will get on to my questions.

The Chair: Mr. May.

Mr. Bryan May: I think what Bob is doing here is incredibly disingenuous. To suggest that the minister is potentially lying to this committee is wrong.

I think the minister pointed out a very important question that I think Canadians across the country are concerned about in wanting to know where members of Parliament stand on their party's policy.

Mr. Bob Zimmer: I'll be nice, Mr. May.

The Chair: Thank you, Mr. May and Mr. Zimmer.

Look, there are all kinds of issues that we disagree on, but I think we can all agree that it's inappropriate to suggest that any member of this committee or any member of Parliament or anybody who appears before this committee is saying something that is deliberately untrue or false.

● (1340)

Mr. Bob Zimmer: Far be it from me to say that, Mr. Chair. All I said was that it was erroneous. Whether they knew about it or not, it was erroneous, because I just corrected the record.

Let's get on to the questions.

The Chair: All right. I just wanted to clear that up.

Go ahead.

Mr. Bob Zimmer: Thank you.

Dr. Kucharski, I really appreciated your comments about the $1 trillion in energy infrastructure that will be necessary just to keep up. We see that in the future the electrification of our world is just going to grow. It's not going to get smaller in any way, shape or fashion. You also spoke about China's near monopoly and using that position to threaten other nations with that monopoly. I'm concerned about that. I'm concerned about that too when it comes to the Communist Party's investment in Canada. I've never seen it more aggressive, and possibly using our own resources somehow against us.

You mentioned alternative sources and that we need a strategy. What would you do to make this happen? What would that strategy look like in terms of investment? When it comes to state-owned enterprises investing in Canada, what would that look like in the future?

Dr. Jeffrey B. Kucharski: I think I'm suggesting that Canada and its partners and allies collaborate together to exploit the natural endowments we already have, such as here in Canada; share technology and investment dollars to invest in critical mineral supply chains here at home; work to supply each other; and be a competitive source of supplies of these critical minerals to do the industries and technologies that will be important to the energy transition as it proceeds over the next several decades. I'm not advocating in any way Chinese investment in Canada by state-owned enterprises. It's quite the opposite. I'm encouraging Canadians to develop their own supply chains in collaboration with partners and allies.

Mr. Bob Zimmer: Thank you. I think we all agree on that. Being a northern British Columbian, I have mines in my riding. We have oil and gas. We have forestry. We have many of those natural resource sectors, and we covet investment but the right investment.

I would like to go to Dr. Zaghib about your comments. You talked about developing our resources and the jobs that come with them in North America. How would you advise us? You're obviously here advising us today, but we want to take these steps further down the road. We see the potential of critical minerals. A lot of Canadians may not know that we have a lot of these minerals in our very own country to develop.

Dr. Zaghib, how would you advise us to give a more positive direction for this sector? What would you do to advise us in our jobs here in Ottawa?

Dr. Karim Zaghib: I'll just give the numbers. This is from Harvard University. Eight million died in 2018 from fossil fuel pollution, *à cause l'essence, à cause du diesel*. We need to accelerate the penetration of electrification as soon as possible. This can be a great economic balance. Quebec is importing $1 billion each month in petroleum and so on. This means that the strategy to enhance this kind of electrification is very important.

When we come to, I think there was a question about China and so on—

The Chair: Doctor, I'm going to have to stop you there. We're going to have to move on to the next set of questions, unfortunately.

Mr. Lefebvre, we go over to you for six minutes.

Mr. Paul Lefebvre (Sudbury, Lib.): Thank you, Mr. Chair.

[*Translation*]

Thank you to all the participants for joining us.

[*English*]

We have another amazing panel of witnesses today. This is super-exciting.

I'm coming to you from Sudbury, the mining innovation capital of the world, as we say. We also call it the nickel capital of the world. Right in my backyard we have nine operating mines and 350 small and medium-sized enterprises in the mining sector alone.

This has been a very exciting study that we have embarked upon. Certainly, as was mentioned, one of the main questions is how we protect or create the supply chain in Canada when it comes to critical minerals from prospecting, exploration, extraction, processing and manufacturing to commercialization that we can do: the magnets, the motors, the anodes and the cathodes. How do we create the supply chain here and make sure that those jobs stay here?

We've heard from many witnesses over the last meetings that we certainly have a large role to play, but we can't play it alone. We need to have partners and allies.

Before I embark upon that, Dr. Kucharski, with regard to your opening remarks on the lay of the land right now when it comes to rare earths, critical minerals and the role that one other country is playing and how it's dangerous for one country to have the monopoly in that, what effect will it it have if we continue on that path and if countries like Canada do not take a stake in protecting those critical minerals? As we know, we just tightened the rules yesterday on foreign takeovers in Canada to protect critical minerals. That was something we did with those rules as a federal government. I just want to hear from you very quickly on the importance of protecting those supply chains because of our market-driven economy versus a state-owned economy.

● (1345)

Dr. Jeffrey B. Kucharski: I think that's why it's important for us in Canada to have our own supply chain independent of countries like China that exert monopoly or near monopoly power over certain critical minerals.

Going forward, it's expected that the economic growth in China is going to drive demand for rare earths and critical minerals, such that it's very likely that China will not be exporting as much as it is currently. Not only can critical minerals be used as a tool for political leverage, but also demand itself within China is going to reduce the supply of critical minerals from the country going forward. It's that much more important that we here in Canada, working with our partners and allies, develop these supply chains so that our industries, including the defence industry and the clean energy sector, are not starved of these important materials, which would put in jeopardy our industries here at home.

Mr. Paul Lefebvre: Thank you.

[*Translation*]

Dr. Godbout, the committee Chair unfortunately had to cut you off. I had the impression you were about to conclude your remarks and make some suggestions regarding the support you hope to get from the federal government.

I had the honour of visiting your campus last September and making some announcements regarding support. I saw the amazing and important work being done there. I'd like to give you a chance to finish your opening remarks, particularly with respect to your work in the area of developing critical and strategic minerals, and also how the federal government could support you and show how important that development is.

Dr. Jovette Godbout: Mr. Lefebvre, thank you for your question and for giving me the opportunity to expand on this.

Quebec and Canada have acquired considerable expertise in the responsible development of known base and precious metals, so we aren't starting from scratch.

I agree with Dr. Zaghib that it's important not to try to reinvent the wheel, but rather to map the expertise in Canada, focus it and support it.

How can research be supported right now?

It's important to understand that, because of market conditions and existing monopolies, the competitiveness and funding of research in the critical and strategic minerals sector are very different than in other sectors. In order to obtain funding levers for research, the industry in Quebec and Canada needs cash investments, especially from the federal government.

We therefore need to review our funding models, because the companies are all in the same place and are well upstream from the mineral development process. We're talking about exploration companies whose financial resources are precarious. In order to move forward on this front, research needs a different kind of support, specifically more public than private investment. We also need greater support for research infrastructures and platform development, because so much technological innovation is needed.

● (1350)

Mr. Paul Lefebvre: Thank you very much, Dr. Godbout.

Since I only have five seconds left, I simply want to say thank you.

[*English*]

I would like to ask a lot of questions of the witnesses, but I will let my colleagues undertake that.

[*Translation*]

Thanks to everyone.

[*English*]

Thank you so much for being here.

The Chair: Thanks, Mr. Lefebvre. You were right on the button.

Mr. Simard, we'll go over to you, sir, for six minutes.

[*Translation*]

Mr. Mario Simard (Jonquière, BQ): Thank you very much, Mr. Chair.

Thank you to all the witnesses.

It's nice to see you again, Dr. Zaghib. We've already had a few conversations on other topics.

Something that really piqued my interest from your presentation was when you talked about how a stable and secure supply chain could be a key element with respect to critical minerals.

What weaknesses and areas for improvement could the federal government address in establishing this supply chain?

Dr. Karim Zaghib: Thank you for the question, Mr. Simard.

We have the materials, the mines and the talent. As for what's missing, let me give you an example.

We have a graphite mine and we want to make this material marketable. We would like to produce spherical graphite from the mine and purify it. Unfortunately, we don't have the industry in Canada to do this, so we have to buy machines from China, Japan or elsewhere.

The federal government therefore needs to work closely with innovation institutes to expedite the development of this industry so we can manufacture the machines close by and be independent, not only in terms of the supply chain but also manufacturing. There are trade secrets, intellectual property and so on, which makes for a very weak link. Appropriate government investments would help us solve this problem. We need to ensure that the processing happens here in Canada for this to be successful.

Mr. Mario Simard: Okay.

I'm not an expert on critical metals, but I recall hearing from Mr. Fung from Torngat Metals a few weeks ago. He explained how to obtain permanent magnets from rare earth oxides.

If I understand you correctly, in terms of permanent magnets, we might not have the infrastructure needed to do the processing in Quebec or Canada, and this infrastructure therefore needs to be developed.

Dr. Karim Zaghib: As I was saying, we really need to develop this primary processing, then secondary, until the product reaches the customer, all here in Canada, with the right machines. Otherwise, we will lose the expertise and the know-how. I agree with that. This all applies not only to materials and the energy transition, such as batteries, but also to rare metals. We therefore need this solution quickly, with help from the Canadian government.

Mr. Mario Simard: You said in your presentation that the issue of critical minerals and rare earths is interpreted in the United States as being strategic elements that are matters of national security. We had some experience with that as part of the CUSMA negotiations. We were asking the government to bring in measures to ensure the traceability of aluminum, to ensure that it was produced in North America. There was the problem of aluminum coming from China by way of Mexico.

Could the same kind of traceability be established for critical minerals and rare earth elements?

Dr. Karim Zaghib: We already have traceability projects, particularly regarding CO_2 emissions, because in Canada, we do have green materials made with renewable energy, including hydro, solar and wind. We can also make [Inaudible—Editor] with intuition and creativity to ensure that these materials are made in Canada.

So, yes, it's possible to ensure the traceability of the origin and the traceability of a product with a green signature without CO_2 emissions.

Mr. Mario Simard: My next question is for you, Dr. Godbout.

From the answer you gave to my colleague, Mr. Lefebvre, earlier, I understood that in other sectors there is a partnership research model whereby businesses are investing a third of the missing funding.

Is it true that it's harder to establish these kinds of partnerships in the critical minerals sector?

● (1355)

Dr. Jovette Godbout: Yes, this Canadian model is envied around the world, because it allows industry to be involved in R & D. It also allows universities to conduct research that is applied to the sector in question.

In the critical and strategic minerals sector, at the moment there are no lithium mines or rare earth mines in operation, for example. This industry does not have the same financial means to support research. It is therefore true that we are not at all at the same level in terms of research capacity.

On top of that, since we live in a market-driven world and are competing not with each other but with countries that have a monopoly on the market for these substances, intellectual property and patents—in other words, confidentiality aspects of the research results—will be important issues to consider.

Mr. Mario Simard: Should we be considering a different funding model, especially for this strategic sector?

Dr. Jovette Godbout: I think there should be specific envelopes from the public sector. Research in Europe for example, particularly in France, is funded by the state, but boosted by industry participation. I think this should be the case for our critical and strategic minerals sector. It would not be a question of changing the research into base and precious metal mines, but rather about setting aside envelopes to develop research in this sector.

Mr. Mario Simard: Do I have any time left, Mr. Chair?

[*English*]

The Chair: Thank you, Mr. Simard. No, you're right on time.

Mr. Cannings, we'll move over to you.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thank you, Mr. Chair.

I thank the witnesses for taking the time to come before us today.

Dr. Eggert, you talked about the two ends of the support spectrum: long-term support through education and research, and short-term support through that short-term steering.

We're in a climate crisis. We're facing dominance from China that is frustrating a lot of our efforts to electrify our energy systems. Everything is changing quickly, and we have to act quickly. I'm wondering if you could expand on what policies the Government of Canada could proceed with that would help us make this change as quickly as possible.

Dr. Roderick G. Eggert: Yes, I'd be happy to talk about that. Can you hear me?

Mr. Richard Cannings: Yes, go ahead.

Dr. Roderick G. Eggert: I think you're correct. There's an urgency to deal with things like climate change and, separately, issues of national security that have gotten people like me out of our comfort zone because my bias as an academic is to lean more heavily on government as a facilitator of long-term market solutions. Yet, we're a decade out from what was referred to as the "rare earths crisis" of 2010-11. While there have been some changes in the location of supply chain activity in rare earths and downstream products, the pace of change is slow, which raises the issue of not just should government have a more activist industrial policy, but through what mechanisms?

I think a key role that government can play more specifically is facilitating the transition or deployment of technology that you might call "early stage", basically private or basic research, to a detailed assessment of feasibility through joint financing of pilot and demonstration facilities.

If one is interested in developing further downstream the commercial activities aimed at battery precursors, for example, anodes and cathodes, or battery manufacturing, I think multinational collaborations among allies and partners are probably the way to work most quickly. This is because the fact of the matter is that certain countries are probably best positioned to undertake the mineral production, and other countries may be better positioned to undertake the downstream processing, which requires not just a good mineral deposit, but also low-cost energy, access to chemical reagents, and other important inputs.

● (1400)

Mr. Richard Cannings: Thank you.

I'm going to turn to Professor Heffron.

You talked a lot about the importance of a just transition, justice in all these stages. When we're talking about critical minerals and the mining industry in Canada, I think Canada's come a long way in the last 50 years or so in terms of that concept of justice in the extraction of minerals. There's been a lot of progress made on those fronts.

Where we seem to be lagging is decommissioning, a topic that you mentioned. We've had some real horror stories with the decommissioning of some mines. There's the Giant Mine in Yellowknife, which seems now to require investment by this government, the federal government, for eternity to keep it from poisoning the area further. We have the situation of oil wells across western Canada that some companies have set up when they're going into receivership. They set up situations where that fiscal responsibility falls on the government.

I'm wondering if you have any best practice models of policies from somewhere else in the world that have really worked, that have ensured that the cost of decommissioning is put on the project and the company, and not treated as some externality for the public purse to clean up at the end of a mine or oil well's life.

Dr. Raphael J. Heffron: Yes, there's what's classed as an energy reserve financial obligation where companies have to put money into a bank account so that there are funds there for decommissioning. Irrespective of that company's sale to another company, let's say here in the U.K., the practice has sometimes been that the company would go bankrupt before, or nearly at the end of, the life cycle of the particular mine, and then the obligation to clean up was left with the government.

More and more we see a financial reserve obligation where companies are forced to put in two hundred million three hundred million, or five hundred million—it depends on the size of the project—which should provide insulation from a company's disappearing in some type of bankruptcy and not fulfilling its decommissioning obligation.

The issue of decommissioning comes if Canada wants to expand this industry. If so, the industry is going to need that public support in five, 10, 15, 20 years if the critical minerals industry is to grow and to be relied upon.

The Chair: Thanks, Doctor. I'm going to have to stop you. I apologize.

Mr. Richard Cannings: Thank you.

The Chair: Mr. Cannings, thank you.

Now we're into the five-minute round, starting with Mr. Lloyd.

Mr. Dane Lloyd (Sturgeon River—Parkland, CPC): Thank you, Mr. Chair.

My first question is for Mr. Kucharski.

I'm looking around the world. You talked about inputs for critical mining. We know that one key input is energy: gasoline, diesel, heating fuel for many of these mining sites. I'm looking at countries, such as China, that are subsidizing fossil fuels to the tune of about $18 billion, versus countries like Canada, where we're actually increasing taxes.

We now see that carbon taxes are going to be increasing to $170 a tonne at 2030. Can you tell us how we are going to be able to compete in this industry when we're taxing the inputs and the rest of the world appears to be subsidizing these inputs?

Dr. Jeffrey B. Kucharski: Well, I think you're right that fossil fuels probably would be used for a lot of mining equipment and processing of critical minerals in Canada, although I'm not sure what percentage of the total cost of production is represented by fuel. Certainly if there are opportunities to produce it using clean energy, such as hydro or natural gas—I consider natural gas a cleaner energy—then we should probably do so.

I'm not sure whether we're really at a great disadvantage over other countries relative to the cost of fossil fuels. In any case, there could be some tax provision provided to this industry to help reduce the costs of energy, should that be a significant factor or a barrier to its development. This is all—

● (1405)

Mr. Dane Lloyd: Are you aware of any cost provisions that are currently in place in Canada?

Dr. Jeffrey B. Kucharski: I'm not personally, no.

Mr. Dane Lloyd: Okay. Thank you.

My next question is to Mr. Eggert.

You're with the Colorado School of Mines, so I'm sure you're very well aware of mining policy, regulations, taxes in the United States. I'm wondering if you can comment on some of the key differences that you see between Canada's jurisdiction and the United States in terms of critical minerals.

Dr. Roderick G. Eggert: In the United States, I think the critical minerals issue is viewed principally from a consumer perspective, so it's about supply chain risks and how to mitigate those risks through a variety of approaches. Clearly there's a producer perspective that says consumer risk leads to opportunities for additional domestic production. I would say that the principal difference is really in one of perspective between the U.S. and Canada.

Canada I think has more of a producer perspective: Aren't there opportunities for Canada to get into the supply chain to alleviate risks that customers face? Whereas in the United States, it's in some sense a little more multi-faceted.

Mr. Dane Lloyd: What do you see in terms of getting a critical mineral mine permitted in the United States versus getting it permitted in Canada? What do you see as key distinctions between the jurisdictions?

Dr. Roderick G. Eggert: I'm not an expert on procedures and processes in Canada, but, at least by reputation, the process of permitting a new mine in Canada is simpler, less time-consuming, and I would say more predictable than in the United States. That's more of an impression than based on detailed knowledge.

Mr. Dane Lloyd: Is that on a state-by-state basis? In Nevada, I have people telling me they can get permitted in a matter of weeks, where, in Canada, we hear testimony that it takes years to get a mine permitted.

Is that a whole-of-United States perspective, or are some states in the United States better at doing it?

Dr. Roderick G. Eggert: Some states within the United States seem to be better at doing this. Arizona, Alaska and Nevada are states that often pop up in surveys, like the Fraser Institute survey of mineral policies and investment attractiveness of exploration, as among the better places to develop mines.

Mr. Dane Lloyd: Why is that? In my few seconds left, why are they better?

Dr. Roderick G. Eggert: I think they are more supportive of mineral development and see the economic benefits accruing to the local communities in the states, and therefore, in terms of implementing processes, give a greater priority to making decisions sooner.

The Chair: Thank you, Doctor, and thank you, Mr. Lloyd, for sticking to the time.

Next, we have Mr. May, for five minutes.

Mr. Bryan May: Thank you very much, Mr. Chair.

To start, I want to thank all of the witnesses for being here. It's pretty amazing to see such a diverse panel of expertise, and I wish we had more time with you.

I'm going to focus my questions back to Dr. Eggert. When I was preparing for today, I looked at your background and also at some of the things you mentioned in your opening remarks today. I was very interested in the idea about the Canada-U.S. relationship when it comes to these minerals. Could you elaborate a little more on how you think that could work, specifically in this area?

● (1410)

Dr. Roderick G. Eggert: I'd be happy to.

I think Canada and the United States are natural partners in this area, not just because of our close geographic proximity but also because of our similar attitudes about the role of government generally in commercial activities. I think it should be a two-pronged approach when seeking out collaborations there.

One prong is in the education, workforce development, basic research and development area. For example, there could be government-to-government collaborations assessing the resource potential of unconventional primary resources. What's the potential of recovering speciality materials, things like gallium, indium and tellurium from mined wastes that, at present, are unrecovered? What are the opportunities in the areas of commercial policy, public funding and collaborative efforts at pilot and demonstration facilities to speed along or accelerate the deployment of new technologies even more aggressively?

There could also be industry-led collaborations involving entities from both countries that focus on priority, raw-material supply chains, perhaps modelled after something called SEMATECH in the United States in the 1980s and 1990s, which basically sanctioned industry collaborations toward a strategic priority, semiconductors.

Mr. Bryan May: Thank you for that.

With the new U.S. administration placing a heavy emphasis on trilateralism and wishing to also bring Mexico back to the table, not just Canada, do you see there being a role for Mexico in the U.S. critical mineral strategy? What would that role look like between Canada and Mexico?

Dr. Roderick G. Eggert: I don't have a thoughtful response to that except that it seems to be a natural opportunity to explore, given, if nothing else, the geographic proximity and potential efficiencies in transportation between different stages in a multi-stage raw-material supply chain.

Mr. Bryan May: How far-reaching do you believe the influence of China is with this? I know we've had some conversations already today about the instability of the industry and price fluctuations, and as you know, all these businesses want assurances that there is that reliability of the market. How far-reaching would you say China is on that issue particularly?

Dr. Roderick G. Eggert: I think it is far-reaching. I'm not sure how much of that far-reaching impact is intentional, however, on the part of the Chinese. I think, by and large, in the area of raw material supply chains, they're primarily focused on using their domestic mineral resources to further manufacturing in China, so they're looking out for China. As someone mentioned, they are actually becoming somewhat resource-dependent on foreign countries, and in many of the supply chains, they actually have greater dominance in the mid-stream than they do at the mining stage.

Mr. Bryan May: How am I doing for time, Mr. Chair?

The Chair: You have 13 seconds. Put them to good use.

Mr. Bryan May: I'll simply thank Dr. Eggert for his comments today.

The Chair: Great. Thank you, Mr. May. I appreciate that.

We'll go on to Mr. Simard for two and a half minutes.

[*Translation*]

Mr. Mario Simard: Thank you, Mr. Chair.

Dr. Zaghib, as you mentioned in your presentation, transportation electrification is the industry best positioned to tackle climate change and help us move towards a low carbon economy.

In this sense, is carbon pricing a good measure to develop the electrification of transportation in your opinion?

Dr. Karim Zaghib: Yes, this is an important avenue. However, we also need to be careful. We must not upset customers who own gas-powered cars, especially middle-class families.

In addition to taxation, there should be a hybrid strategy that includes incentives, where both levels of government, federal and provincial, inject money to help average families buy these vehicles. We need to educate people. Young people today are very familiar with electric cars. However, if we start forcing middle-class people to change no matter what, they'll resist.

Slowly, with gradual changes, people will buy into the idea. The fact that both levels of government are establishing the stimulus programs we've seen recently is important.

● (1415)

Mr. Mario Simard: Generally, in major economic transitions, the government tries to get involved. In recent years, superclusters have been created. We saw this in the field of artificial intelligence, where the federal government announced a $950 million strategy. The idea was to create 50,000 jobs over a 10-year period. As we saw, this was not very successful in the field of artificial intelligence.

Do you think this kind of supercluster could be created not only in the battery sector, but especially in the critical minerals and rare earths sector?

Dr. Karim Zaghib: On the energy transition, batteries and hydrogen, the federal government must absolutely be involved in the process, whether through clusters or programs directly related to the Department of Innovation, Science and Economic Development or an interdepartmental program. It must be part of a very collaborative process, because this is the way of the future.

We forget that the energy transition affects not only the electrification of transportation, but also energy storage. We saw what happened in Texas with its power networks. Storage includes the network where the car and the house are connected, for example. All this corresponds to what I call the globalization of the energy transition.

[*English*]

The Chair: I'm going to have to interrupt. I apologize for doing that.

Thank you, Mr. Simard.

Mr. Cannings, now we're going over to you.

Mr. Richard Cannings: Thank you. I'll just stay with Mr. Zaghib, because he's all warmed up there.

However, I just want to mention something. You talked about how the conversion to electric vehicles might be slower because of middle-aged, older people. KPMG just put out a poll that showed that 60% of people in Canada have said they want their next vehicle to be electric. Therefore, this might, and I think probably will, happen a lot faster than some people think.

I want to ask you about the circular economy that you mentioned. When we talk about electric vehicles or electrification, a lot of that revolves around things like batteries and the recycling of these batteries.

I have some companies in my riding that are leaders in that technology. What opportunities do you think there are in that branch of the circular economy?

Dr. Karim Zaghib: It's a great question.

Today we're going to have equilibrium between urban mines and natural mines. Urban mines will be for recycling. We have three types of recycling.

In terms of direct recycling, today with cell fabrication, between 5% to 10% of these cells are not used, so we need to recycle them. Right now, we have a huge market for direct recycling.

Behind that, we have cobalt, nickel and manganese. We don't like to continue to get these minerals from mining, so recycling becomes a very important complement with mining, natural mining, and so on. We can also create jobs and save jobs, because we have the technology. We have the process here in Canada. Also, it can be a great opportunity to work with the U.S.A., to develop a circular economy initiative between the U.S.A. and Canada for upstream, downstream, and recycling of materials.

Mr. Richard Cannings: Thank you.

To focus on graphite, which you mentioned, I have a graphite mine in my riding. They obviously are facing that problem of finding the middle market, because 99% of the places that use graphite to make anodes in lithium ion batteries are in China. I wonder if you could comment quickly on what the Canadian government could do to stimulate the growth of that middle market in Canada.

● (1420)

Dr. Karim Zaghib: Yes. I've known this material for 35 years. We have two ways to make graphite. There's natural graphite, and we can also use petroleum coke to make artificial graphite. I believe the federal government must help with this mine or this artificial graphite. Assist them with investments to bring machines here. If we have the machines, we are able to make it at low cost, with the greenest and least CO2 emissions.

I have a lot of experience. For example, when I was at Hydro-Québec, I licensed technology to Nouveau Monde Graphite. With innovations—

The Chair: Thank you, Doctor. I apologize that I have to keep interrupting, but we have to keep to our schedule.

Mr. Richard Cannings: Thank you.

The Chair: Thank you, Mr. Cannings.

We will now go to Ms. Stubbs for five minutes.

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

Thanks to all the witnesses for being here.

Of course, just for clarity on this issue around regulatory approvals, among the major mining developers in the world, Australia has an average of two years for approval of mining projects. The United States has an average of seven years for the approval of mining projects. Canada has an average of over 10 years for the approval of mining projects. Of course, right now there are two mining applications sitting in the queue in Canada, along with $20 billion worth of other resource projects sitting in the queue, waiting for cabinet decisions and to proceed through the assessment.

I would invite any witnesses, although I think we've already established the answer, to advise on whether or not there in fact are any projects for rare mineral development waiting for approval right now in Canada.

I don't know if Dr. Kucharski knows, or....

The answer is that, no, there aren't any rare mineral projects waiting in the queue for approval and assessment. Of course, it's directly linked to the fiscal and regulatory uncertainty in Canada and the negative impact on the private sector. I want to applaud this committee for taking on this study. I worry, though, about the length of time it takes for things to happen in Canada.

Last year, on behalf of the Conservatives, I called for stricter rules on foreign takeovers of strategic natural resource assets and projects, in particular from state-owned enterprises and China's Communist Party. I do want to applaud the government on the announcement they made this week.

There remains the fact that the ongoing challenge for Canada is that much of the infrastructure required and the approval for mining projects takes too long. An example of that is Teck's Frontier mine, which spent eight years in the approval process. Then they cancelled their application, because they were getting signals that the Liberals would deny it. This uncertainty has a major impact on investment and development and really makes no sense. I'm sure the members of this committee all know that there's an abundance of lithium resources in lithium brines and subsurface oil fields in Alberta and that the oil sands are also sources of titanium and zirconium. The oil sands as a sector is the largest private sector investor in clean tech in the entire Canadian economy.

Given those resources there, the resources in B.C., the abundant rare earth resources in northern Quebec, in the Northwest Territories and in Ontario, do any of you, Dr. Eggert, Dr. Kucharski or Dr. Zaghib, know about any pilot projects that are going on right now to develop these projects that hopefully one day can make their way into the uncertain regulatory process in Canada?

Dr. Roderick G. Eggert: I'll just say very quickly that I have the impression that there are pilot and demonstration activities ongoing in Canada, but I can't name any in particular.

Mrs. Shannon Stubbs: Okay, thank you.

Do any other witnesses know of any pilot projects happening with the private sector collaborating with all of the different levels of government?

Certainly to unlock the oil sands and the third largest crude oil reserves on planet earth, it did take risk taking, pioneering and really proactive partnerships among governments, academic and research institutions and, of course, obviously, the private sector, which is crucial in all of this.

Dr. Eggert or Dr. Kucharski, can you comment on the CUSMA provisions that contain that three-year window where auto manufacturers can receive duty-free treatment if they source 75% of the lithium being used regionally?

I wonder if you have any thoughts on the likelihood, the feasibility or the ability of Canada to be able to scale up to reach that level of production within the remaining timeline, which is only two years.

● (1425)

Dr. Roderick G. Eggert: I am not familiar with that particular CUSMA provision.

Dr. Jeffrey B. Kucharski: I don't have any information about that specifically.

Mrs. Shannon Stubbs: Dr. Zaghib, do you know if there is any work going on to be able to scale up for auto manufacturers?

Dr. Karim Zaghib: It's the same answer from me. I am more on the science side, so if you have a question on the science side or process. But, sorry, on CUSMA, I'm not an economist, so I cannot help you on that.

Mrs. Shannon Stubbs: Okay.

The Chair: That's okay, Doctor.

Thank you, Ms. Stubbs. Unfortunately, that's all the time you have.

Mrs. Shannon Stubbs: Thanks, Chair.

The Chair: My pleasure.

Last in this round and probably last before we conclude with our witnesses is Ms. Jones for five minutes.

Ms. Yvonne Jones (Labrador, Lib.): Thank you, Mr. Chair.

Good afternoon, everyone.

I want to thank the witnesses for your excellent testimonies today.

I'm the member of Parliament from Labrador, so mining is an old industry for us, but as we look at new mineral development and critical minerals going forward, we're seeing lots of interesting changes and tremendous optimism around where we're going.

My question is for Mr. Kucharski. It pertains to a Reuters article yesterday outlining that the Government of Canada has tightened the rules around foreign takeovers, especially as they relate to our critical mineral supply chain.

A while ago the Minister of Natural Resources announced that there is a list of 31 critical minerals. He mentioned that one of the criteria to be included on that list of critical minerals is that the mineral must be important for Canada's national security.

Can you explain why it would be dangerous for a country—and not particularly a friendly one—to own the supply chain for minerals critical to our national and continental security? I also ask if you could put it in terms of the larger historical context of a continental defence strategy. Could you speak to that a little for our committee today?

Dr. Jeffrey B. Kucharski: Okay, that's a big topic.

Critical minerals, and I talk about other strategic resources like uranium, so to use uranium as an example, that's certainly an important mineral used in the nuclear power and defence sector that we have had strict controls over for many, many years. There's a regime and protocols around that to prevent proliferation and so on.

I don't know if that's being thought of as a model by the federal government in any way, but I think that's some historical context for the protection of certain critical minerals. Now that we have a list in Canada, I think it's good that the federal government is targeting some of these critical minerals and ensuring that they use that as a filter when applications are made for investments in critical industries. We can use that in some cases to prevent certain countries that are perhaps not allied with our values and with the direction that we want to go in from making investments.

I think that investments in mines or companies that have some role in developing or processing critical minerals by a country like China would be potentially dangerous. They could use their ownership and control over those companies and resources to restrict or slow down the availability of those minerals to Canada and its partners and allies. In terms of market power, I want to focus more on the economics right now. A country like China that has these state-owned enterprises that are essentially subsidized by the state and strategically controlled by the Communist Party could exert influence anywhere in the world over how those resources are used.

This is the concern that I think the government has, quite rightly.

● (1430)

Ms. Yvonne Jones: Thank you for your response.

My next question, if I have time, Mr. Chair, is for Ms. Godbout. It has to do with training that will need to be done before workers can enter the mine and extract critical minerals.

I'm not sure what work you have done around this, but are there specialized training programs for different mining applications?

What recommendations would you have for the federal government around training and preparing workers for the workforce in the critical minerals sector?

[*Translation*]

Dr. Jovette Godbout: If I understand correctly, Ms. Jones, your question is about the need for specific training in critical and strategic minerals compared to other training programs.

The existing training programs can meet current needs for the most part. We have a highly skilled workforce that is trained through research and postgraduate studies at master's and doctoral levels.

There will definitely be a greater need for training for individuals who are going to work in our industry and help us develop the field, particularly in terms of clean technologies and processes to extract, treat, process and recycle these substances in an environmentally responsible manner.

[*English*]

The Chair: Doctor, thank you. There always seems to be one witness who ends up being the victim of my cutting them off more than the other. Today it was you, so I apologize.

Thank you, Ms. Jones.

Unfortunately, that's the end of the allotted time for our witnesses today. I want to say thank you, on behalf of the committee members, to all of the witnesses for coming today and providing very valuable information. As you can see, we could go on much longer than the time allocated, but unfortunately, that's all the time we have. Again, we want to say how grateful we are.

The witnesses are free to leave and then we can carry on to deal with committee business. We are scheduled to move in camera, but before we do that, I am going to release the witnesses and then we can have a brief discussion, if that's acceptable to everybody.

Thank you.

Dr. Jovette Godbout: Thank you.

Dr. Raphael J. Heffron: Thanks, everybody.

● (1435)

The Chair: The meeting is continuing.

The agenda, as everybody can sees, calls for us to go in camera to deal with some committee business, which we will do. However, there is this issue of Mr. Patzer's motion. Not to pre-empt anybody's appetite to speak, I understand there will be some objection to going in camera to deal with that, which is why I haven't jumped right into that portion of the meeting.

Unless I am wrong about that, why don't we proceed and deal with Mr. Patzer's motion, which was circulated shortly after our meeting on Monday? Everybody should have a copy of it.

Mrs. Stubbs, you have your hand up.

Mrs. Shannon Stubbs: I do, Chair.

The Chair: Why don't you start us off, then?

Mrs. Shannon Stubbs: Okay, thank you. You're so amiable. I thought I was going to have to be cheeky with you right off the bat.

The Chair: I don't know what they've told you, but you got bad information.

Mrs. Shannon Stubbs: Chair, it is my pleasure to be back with all of you on this committee, and to Richard and to Marc and to Paul, who I participated on this committee before, I am glad to be here. Thanks to my Conservative colleagues for keeping up the good fight on this committee.

Because I am substituting for Jeremy Patzer, I do want to move his motion at this time. I move:

> That the committee invite the Minister of Natural Resources and officials to appear to consider the Main Estimates for a minimum of two hours, at their earliest convenience, but no later than May 14th, 2021.

Of course, that motion was put on notice and spoken to on March 22, 2021.

I think this is an important invitation. Probably there is no need to go in camera to discuss this aspect of your future committee business, although I understand why there would be a desire to block and delay the minister from appearing. It does seem to me, just from the point of view of an outsider and also as a person who was your friend and your colleague on this committee myself, that there is a—

● (1440)

The Chair: You still are—but I don't want to interrupt you. Please, carry on.

Mrs. Shannon Stubbs: Thank you, Chair.

There's really a glaring and striking lack of participation and attendance by the current minister at this committee, isn't there? I would just remind my friends that it appears that the Minister of Natural Resources has only bothered to appear at this committee twice since being elected in 2019. Once in December and then again, finally, this week. Apparently that was for one hour of supplementary estimates where he tried to cover the supplementaries and the mains together.

I would just contrast that, Chair, with our previous experiences on this committee together in 2016. The then minister was here three times on the mandate letter and then for both estimates. In 2018 he appeared twice, and then....

I'll wrap up soon. I just want to make the case as to why members of this committee should support the motion, Chair.

He appeared twice in 2018 and twice in 2019. I understand as an outside observer that the current minister didn't show up for the forestry study, despite your committee passing a motion calling him to appear. He didn't show up for his mandate letter—

The Chair: I am going to interrupt you. This is for your benefit, and not anybody else's.

I understand and respect what you're saying, and you're factually correct about previous ministerial appearances. However, because you're not a member of this committee, you might not appreciate that this minister has accepted every invitation to come here and has attended, with the exception of when his father died.

There were two times he couldn't make it. That explain the times you're referring to when he didn't come. Every invitation that has been extended to him has been accepted, and he has been here, with that exception. You weren't aware of that.

Mrs. Shannon Stubbs: Thank you, Chair. That is certainly a compassionate, understandable reason.

The Chair: Your colleagues were aware of it.

Mrs. Shannon Stubbs: I have also experienced that and the challenge it is in the past pandemic year. Thank you for reminding me of that. I did speak to the minister personally about it when it happened.

It is still the case though, now, that it is the minister's responsibility to come to this committee at his earliest and next opportunity. I think there's good reason for it. Colleagues, I'm sure that we all agree. If this is still the same kind of committee as it was before where we all worked together in the mutual and best interests of the whole country, then I know we'd all agree that that this sector is crucial for Canada's economic recovery.

The challenge is that there's no shortage of crises that remain in the sector, with the loss of $200 billion in oil and gas projects and over 200,000 energy workers have lost their jobs. Included within that are innovation, clean tech and brain drain, as mentioned by our witnesses earlier. Billions of dollars in dozens of indigenous agreements on those projects have been lost at the same time.

The TMX has been over-budget and behind schedule; the Keystone XL cancelled; Line 5 threatened, despite the purported close relationship between the PM and the new administration; and there's the death of the Kitimat LNG project, which would have been crucial to reducing emissions and to Canada's role in the world. There is $20 billion worth of projects, dozens of private sector projects, that are sitting in the impact assessment review right now, either in the early stages or literally just waiting for a cabinet decision.

I just want to make the argument that, given the presence of ministers past at this committee—and thank you Chair for the context—and given all the serious concerns facing this sector, which is so crucial to the entire country, I urge members of the committee to support the motion tabled by my colleague from Cypress Hills—Grasslands.

● (1445)

The Chair: Thank you, Ms. Stubbs.

I realize that you weren't aware of that. That's why I interrupted you, to correct the record. This minister has, like previous ministers, always been willing to come and has come every time he's been invited. He will continue to do that. We all on this committee agree that it's important, as you pointed out.

Mr. Lefebvre is our next speaker. I think that what he's about to say will probably confirm that.

Mr. Lefebvre, the floor is yours.

Mr. Paul Lefebvre: Thank you, Mr. Chair.

Once again, the minister is happy to appear before the committee. The only request I make is that, as the mains need to be reported before May 31, the minister has requested that he come on May 28. That is the date.

As you know, when we invite a minister, it's up to their calendar. It's up to them to decide which date—

Mr. Bryan May: I'm sorry, Mr. Chair. I've got to interrupt.

The Chair: Go ahead.

Mr. Bryan May: I'm sorry. I'm getting the French translation, not the English. I think there might be a technical issue.

The Chair: I saw your hand up. I'm not having the same problem, but maybe our translators can just check to make sure the system is right.

Mr. Bryan May: I'm hearing you now in English, which is great.

The Chair: Okay.

Mr. Paul Lefebvre: Do you want me to—

The Chair: Carry on.

Mr. Paul Lefebvre: The minister, once again, after being invited is more than happy to appear before the committee. He will appear. I know the request is for May 14. He asked that we extend that to May 28, which would allow him the time he needs to be here before we are able to report the mains in the House. That's my only intervention. Hopefully, we can all support that and he will be happy to appear.

The Chair: Thanks.

Mr. Lloyd and Mr. Cannings both have their hand up. You're proposing to adopt the motion, but also you're proposing an amendment that the date of May 14 be changed to May 28.

Mr. Paul Lefebvre: As you know, Mr. Chair, whenever we request or ask for a minister to appear before committee, we can't fix the date for him or her. They offer a date they're available, and so that's the date he is available.

The Chair: That being the case, we'll have to discuss the amendment.

We move to Mr. Lloyd.

Do you have any points you would like to make on Mr. Lefebvre's proposed amendment?

Mr. Dane Lloyd: Yes. Thank you, Mr. Chair.

May 14 is more than six weeks from now. It's currently March 26. I think six weeks for the minister to prepare to come to committee for two hours is more than enough time. I know the minister's quite busy, but we're not doing a lot of travelling right now. We all know that there's not a lot of travelling going on. Frankly, the minister's in the Atlantic bubble. I just don't see the reason why the minister isn't able to clear his schedule and why we're being asked to accept an amendment for a ludicrously late date of May 28. Frankly, that only gives us three days before the main estimates have to be brought up. I oppose this amendment.

Thank you, Mr. Chair.

The Chair: Mr. Cannings, you're next.

Just on scheduling so that we're all clear, I took a look at the calendar, Mr. Lloyd. It's 14 days, but it's actually one meeting, because the following week we're not sitting and then there's a long weekend in there as well. The 28th is actually the next meeting after the 14th.

Mr. Paul Lefebvre: Exactly, it's our next meeting. Thank you, Mr. Chair.

The Chair: That's the reason.

I still would be able to report on the estimates in the House, as I did earlier this week. This week I did it the same day that we dealt with them.

Over to you, Mr. Cannings.

Mr. Richard Cannings: I just want to say that I'll be supporting this motion and the amendment too. I know this is the standard way ministers respond to requests. They provide a date. It is a bit tight with that requirement around the main estimates, but I'm willing to go along with that. I would also back what you said about the minister's attendance. We've also had a pandemic, so this committee hasn't really been sitting as much as it did in normal years. I've found the minister very approachable and open to engagement outside of committee time. I would just like to make those comments.

I really think that it would be very good to hear from him again. A lot of things will have happened in those two months. We'll have had a budget finally. We'll have the main estimates to talk about. I support both the motion and the amendment.

● (1450)

The Chair: Okay. Thank you.

Mr. Lefebvre and Mr. Lloyd have their hands up. I'm assuming that's because they didn't take them down.

Mr. Dane Lloyd: That was my old hand.

The Chair: That's your old hand? Okay. Thank you.

Why don't we vote on the amendment now if nobody else who wants to speak to it?

Madam Clerk, can we have a vote, please?

The Clerk of the Committee (Ms. Hilary Jane Powell): We are voting on the amendment for the date to change:

> That the committee invite the Minister of Natural Resources and officials to appear to consider the Main Estimates 2021-22 for a minimum of two hours, at their earliest convenience, but no later than Friday, May 28, 2021.

The Chair: The only thing that's changing is that the 14th becomes the 28th for the purposes of this vote.

(Amendment agreed to: yeas 11; nays 0)

The Chair: The amendment passes. lf there's any further discussion on the motion as amended, we can do that now. If not, we can move to deal with the motion. I'm going to take a leap of faith, based on the vote on the amendment, and assume that the voting outcome on the motion will be the same.

Maybe we can do this by a show of thumbs to save time. Is everybody in favour of the motion as amended?

(Motion as amended agreed to)

The Chair: Thanks, all of you. That was easy.

I'm now going to suspend while we go in camera. In the email that everybody received earlier today, there will be a second link there to log in. I will see everybody momentarily. Thank you.

[*Proceedings continue in camera*]