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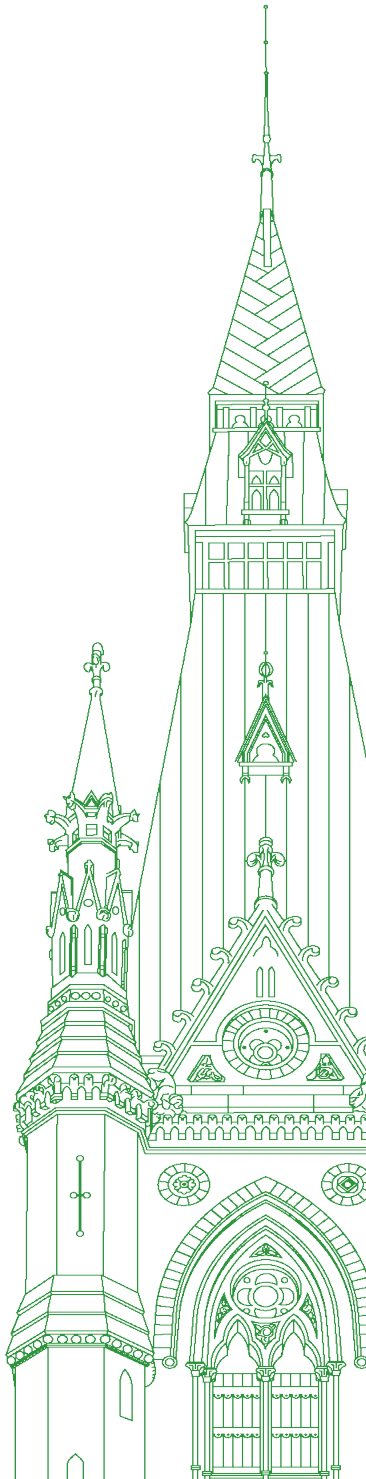

Chair: Terry Duguid

Standing Committee on Natural Resources

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● (1535)

[*English*]

The Vice-Chair (Shannon Stubbs (Lakeland, CPC)): Colleagues, I call this meeting to order. I would like to acknowledge first that we are meeting on the unceded territory of the Algonquin Anishinabe nation.

Welcome to meeting number 41 of the House of Commons Standing Committee on Natural Resources.

I just want to make a comment before starting this meeting. As the clerk, I believe, has informed all committee members by email earlier today, we did have to cancel today's second panel at the last minute due to connectivity issues preventing the panellists from completing their witness onboarding test. Completion of this test is essential and mandatory for witnesses appearing virtually.

Today's meeting is taking place in a hybrid format. I would just like to remind participants of the following points.

Before speaking, please wait until I recognize you. I recognize my own hypocrisy here when I'm the vice-chair, but anyway, moving on.... For those participating by video conference, click on the microphone icon to activate your mic, and then please mute yourself if you are not speaking—

[*Translation*]

Mario Simard (Jonquière, BQ): Madam Chair, please excuse me for interrupting, but there is no French interpretation at the moment.

[*English*]

The Vice-Chair (Shannon Stubbs): Colleagues, we will suspend to deal with this issue.

● (1535)

_____(Pause)_____

● (1535)

The Vice-Chair (Shannon Stubbs): I'm going to bring this meeting to order again.

Thank you to our colleague, Mr. Simard, for raising this issue.

As I was about to say, I would like to remind witnesses that committee members may ask questions in either French or English. If you need interpretation, please take a moment now to prepare your earpiece and select the listening channel that you'll need in advance, in order to take full advantage of the short time allotted for questions and answers. I remind you that all comments should be addressed to the chair, but I'm a bit loosey-goosey on that, as we know.

Pursuant to Standing Order 108(2) and the motion adopted on Thursday, April 23, 2026, this committee shall resume its study of Canada's electrification, energy self-sufficiency and domestic energy security.

I would like to welcome our witnesses. The list has been prepared for me in alphabetical order, but I'm going to do it in the order that the witnesses will present to us today. We have with us George Christidis, CEO of the Canadian Nuclear Association; Dale Austin, the managing director of government relations for the Cameco Corporation; and Sam Boutziouvis, vice-president, government relations, nuclear, for AtkinsRéalis.

Welcome to our witnesses. You will have five minutes each for your opening remarks, after which we'll open the floor to questions from members.

Mr. Christidis, we'll start with you for five minutes.

● (1540)

George Christidis (Chief Executive Officer, Canadian Nuclear Association): Thank you very much. What a pleasure and honour it is to be here today. Thank you, Madam Chair.

Good afternoon, members of the committee. It's a privilege to appear before you today on behalf of the Canadian Nuclear Association.

For over 60 years, the Canadian Nuclear Association has been the voice of Canada's nuclear industry. We represent 200 Canadian members from across the full nuclear value chain, and two of our key members are here today with me.

Energy and electricity are no longer just questions about infrastructure. They are central to our economic competitiveness, our energy security and our social cohesion. The jobs, investments and innovations that flow from this sector will shape the kind of country we are building.

The nuclear sector supports approximately 89,000 jobs directly and indirectly across the country. It contributes more than $22 billion to our GDP every year. Canada is building the first SMR. It has refurbished its large reactors in Ontario—$26 billion—on time and on budget, and is a world leader in uranium and nuclear fuel production, based in Saskatchewan. We supply half of the world's cobalt-60. We're a global leader in nuclear medicine. When we talk about energy, we're talking about all of that.

I want to share something that was said about Canada recently that speaks directly to the work of this committee: Canada is a trusted partner—not just a resource supplier, but a trusted partner. That is exactly what Canada's nuclear sector represents domestically but also on the world stage. Decades of safe operations, world-class regulations and responsible stewardship have made Canada a partner of choice for countries building their nuclear futures, from the United Kingdom, France, Poland and Romania to emerging nuclear nations across Asia. That trust is earned and must continue to be earned.

Here's the most important point for this committee: Our ability to deliver for the world depends entirely on what we build at home, and what we need to build at home is significant. From Ontario and New Brunswick, where nuclear has powered communities for decades, to Alberta and Saskatchewan, which are actively pursuing nuclear energy as part of their long-term energy strategies, there's now a rare national consensus around the role of nuclear energy. That is something this committee needs to take note of.

A study commissioned by the CNA projects that Canada will need up to 150 gigawatts of additional electricity generation capacity by 2050. That is doubling or tripling what we produce today. This demand is being driven by industrial electrification, population growth, the rise of artificial intelligence data centres and the full transition to a net-zero economy. To meet the demand, Canada will need every clean energy source available. No single technology can do this alone: The scale of it requires more hydro, solar, wind and nuclear—all have a role to play. The question is not which technology wins. The question is how we quickly we can deploy these technologies.

Nuclear is among the most economically advantageous technologies to meet that need. Our analysis shows that the life-adjusted capital costs for nuclear over a 40- to 60-year horizon could be less than half those of firmed-up renewable alternatives. Total system costs for ratepayers could be up to 60% lower. Investment tax credits for nuclear could pay back 95¢ on the dollar within 20 years, compared to 50¢ for other technologies.

However, nuclear cannot meet this challenge without the right enabling conditions, and that is what brings us here today.

On investment, we welcome the government's decision to implement the clean technology investment tax credit retroactively for small and advanced nuclear projects. That was the right call, and it gives project proponents the confidence we need to move forward. We are now asking the government to deliver that certainty for large nuclear facilities through the clean electricity investment tax credit, and to extend the eligibility to the broader nuclear supply chain and uranium mining.

On regulation, we're asking the government to exempt nuclear projects from the Impact Assessment Act and to restore the Canadian Nuclear Safety Commission as the sole federal regulator. The CNSC is a world-class agency with strong foundations to build on. Its regulatory framework needs to be modernized to keep in mind the scale of projects required to keep up with the electricity demand. The current framework adds three to five years to project timelines. That is not a minor inefficiency; it's a strategic liability.

Our workforce study is unambiguous: Labour availability will determine whether Canada's nuclear ambitions are delivered on time and at scale. Workforce shortages are expected to begin at about 2030, with 20% to 30% of the current nuclear workforce reaching retirement age around that year. We're asking that the federal government work with the provinces to attract talent, support apprenticeship programs, expand participation for indigenous communities and under-represented groups, and align our training systems with the scale of what's needed.

● (1545)

The scale of Canada's energy challenge is not a crisis. It's an opportunity. Canada has the technology, resources, expertise and partnerships to lead. If we get the enabling conditions right, Canada will be positioned to meet not only our own growing demand but also the growing demand of partners around the world that look to us for exactly this type of expertise. Leadership is not static. It is earned through the decisions we need to make now on investments, regulations and workforce, and on our long-term commitment to deliver.

The Canadian Nuclear Association looks forward to supporting this committee's work.

I welcome your questions.

The Vice-Chair (Shannon Stubbs): Thank you. You were right on time.

Now we'll go to Mr. Austin from Cameco.

Dale Austin (Managing Director, Government Relations, Cameco Corporation): Thank you, Madam Chair.

Good afternoon. It is my pleasure to appear at committee today on behalf of Cameco Corporation.

During this period of geopolitical uncertainty and change, Canada has a rare opportunity to capitalize on its strategic and competitive advantages in nuclear energy and to lead in the areas the committee is studying.

Cameco is a fully integrated nuclear energy company headquartered in Saskatoon, Saskatchewan. Utilities in Canada and around the world rely on Cameco to provide nuclear fuel solutions and reactor technologies for the generation of safe, reliable and carbon-free nuclear power. Our capabilities in Canada include uranium exploration and mining, uranium refining and conversion, and nuclear fuel manufacturing. Further capabilities include uranium enrichment through our partnership with Global Laser Enrichment, and full Canadian ownership, oversight and control of the world's leading modern, proven and operating light water reactor, the AP1000, through our partnership in Westinghouse with Brookfield.

Cameco's leading position across the nuclear sector, if leveraged appropriately, can position Canada to deliver clean, stable baseload power; a secure, allied nuclear fuel supply; a stronger and more resilient domestic supply chain with exportable nuclear capabilities; and strengthened energy and national security. Nuclear energy can be the cornerstone of long-term economic growth, electrification, energy security and geopolitical influence. The growth of electricity demand, driven by electrification as well as industrial and economic expansion, requires large-scale, reliable and low-carbon power that can be delivered within this decade.

The only technology capable of delivering on that timeline is Cameco's proven deployable AP1000 reactor. Diversifying Canada's nuclear sector to include the Cameco-owned AP1000 would deliver the enhanced national and energy security, global supply chain opportunities, trade expansion and diversification, and strategic geopolitical advantages that can underpin Canada's modern nuclear future.

The world has made a nuclear technology choice. That choice is light water reactors, including those here in Ontario, where Ontario Power Generation is constructing the GE Vernova Hitachi's BWRX-300 light water small modular reactor at Darlington. More than 90%—and growing—of the world's reactors are of the light water design. Among new reactors under construction around the world, 66 of 68 are light water reactors. Tapping into this global opportunity in Canada would unlock export opportunities, international partnerships and Canadian economic potential. AP1000 reactors could modernize the Canadian nuclear sector and enhance the relevance of Canada's nuclear supply chain, talent and innovation around the world.

Uranium is the commodity for which there is absolutely no substitute. Nuclear reactors cannot operate without it. As a result, uranium is highly trade-dependent. Ninety per cent of global nuclear power production occurs in countries that have little or no uranium production. Because of this significant nuclear power generation versus uranium production imbalance, nuclear power programs in countries around the world look to Cameco and Canada to help them manage their uranium trade dependence.

Canada is the second-largest uranium producer in the world, and Cameco has significant capabilities in that area. Those capabilities are backed by more than 465 million pounds of uranium reserves. Our tremendous geologic endowment of uranium offers important leverage if used strategically and if underpinned by an understanding of uranium market dynamics. Energy and national security concerns sit at the top of the priority list for most governments around the world. Countries that have civil nuclear power programs are looking to Canada as a stable and secure source of uranium. Canada must consider deliberate, strategic and tactical uranium resource development to further its geopolitical economic advantage globally and here at home.

Every in-service and new-build nuclear reactor requires nuclear fuel. Canada, Saskatchewan, Ontario and Cameco are world leaders in turning uranium into nuclear fuel. We operate the world's largest uranium refinery and the largest UO2 and UF6 conversion facilities in Ontario. Cameco's fuel fabrication capabilities and Westinghouse's light water capabilities produce fuel bundles that are used in 65% of the western world's reactors.

● (1550)

Cameco, Westinghouse and our partners in the nuclear fuel supply chain have made it possible for important allies around the world—most importantly, in central and eastern Europe—to break free from Russia's stranglehold on the nuclear fuel supply, significantly enhancing energy and strategic security. This is particularly true for our allied nations.

Now is the time to maximize Canada's nuclear fuel advantages and play a leading role in enhancing global energy security. A secure nuclear fuel cycle backstopped by a reliable nation like Canada and a reliable commercial partner like Cameco is of strategic importance to our allies and trading partners.

Canada must diversify its nuclear capabilities to best capitalize on the global opportunity delivered by its world-class nuclear sector. Market diversification, supply chain and economic growth, energy and national security need to be built on the strength of the Canadian nuclear industry and the global reach of the AP1000 technology. Canada benefits from having Cameco as a Canadian champion with strategic control over multiple globally important nuclear facilities and technologies, with long-term, durable uranium contracts.

As the global nuclear industry grows in profitability, Cameco's success is truly a Canadian nation-building success. Every dollar of profit that Cameco earns comes home to Saskatoon.

Thank you very much. I look forward to your questions.

The Vice-Chair (Shannon Stubbs): Thank you, Mr. Austin.

I hope committee members will forgive me for using my prerogative as the chair to let the witness finish his comments.

Now I will go to Mr. Boutziouvis for five minutes.

Sam Boutziouvis (Vice President, Government Relations, Nuclear, AtkinsRéalis): Thanks, Madam Chair, distinguished members of this committee and colleagues. Thank you for the opportunity to appear before you today.

AtkinsRéalis supports the objective to develop a stronger, more resilient, more independent economy and country. Strength at home allows us to project strength abroad and to be better partners to our allies. It makes sense in the times that we are living in.

Canada—including a number of provinces, as has been outlined—is approaching a generational decision about this country's energy future. My colleague George has indicated how electricity demand is set to increase and the reasons. I won't go through them again. To meet that demand while maintaining reliability and reducing emissions, new nuclear generation of large reactors will play an essential role.

The question before us and, respectfully, before your committee is not simply how much nuclear capacity Canada should build. It's about what kind of nuclear nation Canada wants to be. Will we remain a country capable of designing, building, operating and exporting our own nuclear technology, or will we gradually become dependent on another's reactor designs, someone else's intellectual property and a supply chain based primarily in another country? That's a question before this committee.

The answer is clear. Canada should pursue a made-in-Canada nuclear strategy anchored in CANDU technology. CANDU is more than a reactor design. It represents a complete Canadian industrial capability. Few countries in the world can claim ownership and control over the entire nuclear value chain. Canada can. Our uranium is mined in Saskatchewan by my colleague to the left. Our engineers design the systems across a number of companies. Our manufacturers produce critical components. Our operators run the reactors. Our workers maintain and refurbish them over decades of service. That capability is a strategic national asset. Once lost, it would be extraordinarily difficult and costly to rebuild.

There's a compelling economic case. Public funds will help support the next generation of nuclear projects. Canadian governments therefore have a responsibility to consider where the benefits of that investment will ultimately flow. When Canada chooses and builds CANDU reactors, the vast majority of project spending remains in Canada. Canadian firms receive the engineering contracts. Canadian manufacturers produce the components. Canadian workers fill the skilled jobs. Canadian communities benefit from the long-term economic activity that follows.

By contrast, if we adopt another country's reactor technology, a significant portion of that value inevitably leaves the country through imported components, another's intellectual property and overseas engineering services. The issue is not whether international partnerships have value. They do. The issue is whether Canadians can benefit from the maximum economic return from the investments that will go into large conventional nuclear.

Beyond economics, there's a broader industrial consideration that complements the Canada strong ambition. Canada's nuclear sector supports a highly sophisticated ecosystem of suppliers, fabricators, service providers, engineers, researchers and skilled tradespeople. These capabilities have been developed over decades through the design, construction, operation, refurbishment and life extension of CANDU reactors.

However, industrial capabilities do not sustain themselves indefinitely. If domestic demand for Canadian-designed reactors declines, specialized skills will erode, supply chains will weaken and expertise will migrate elsewhere. At this pivotal moment, as has been outlined—I'll just repeat it, actually—Ontario, Saskatchewan, Alberta and New Brunswick are either preparing for or considering technology selection processes for large conventional nuclear reactors.

Recently, the Honourable Tim Hodgson, Minister of Energy and Natural Resources, announced the development of a transformative new nuclear energy strategy for Canada to be released at the end of this year. The strategy is to build on decades of Canadian innovation, including CANDU technology, abundant uranium resources, a world-class workforce and a globally respected nuclear safety regime. This strategy should encourage provincial leaders to choose CANDU. The livelihoods, expertise and future opportunities of workers, which George outlined earlier, are tied to the decisions now being made.

● (1555)

Shifting to another reactor technology would have significant consequences for Canada's nuclear workforce and supply chain. Following the success of the CANDU refurbishment and life extension program, which has thus far been delivered on time and on budget, supplanting a proven domestic technology would cause substantial disruption. Rather than building on the momentum created by decades of investment and expertise, Canada risks revisiting the lessons of the Avro Arrow era, when the loss of a strategic domestic capability carried consequences that extended far beyond the immediate project itself—and extend to today.

On the energy security dimension, CANDU reactors operate using natural uranium, a resource that Canada possesses in abundance, as Dale has indicated. In an increasingly uncertain geopolitical environment, supply chain resilience is no longer an abstract concern; it's a strategic necessity.

Finally, Canada has expressed ambitions to be a global leader in nuclear technology, including in the development and deployment of small modular reactors. These ambitions are strengthened with a strong domestic large-reactor program. Countries are far more likely to purchase technologies that are actively deployed and supported in their home market.

A robust domestic CANDU program strengthens Canada's credibility as a nuclear exporter and reinforces our reputation as a trusted technology partner. The decisions made over the next several years will shape Canada's energy and industrial landscape for generations. This is not simply a procurement decision or a tech selection, and it is not an electricity decision. It's a decision about whether Canada will continue to possess sovereign nuclear capabilities, sustain a world-class industrial ecosystem and capture the full economic benefits of its own energy investments.

The opportunity before us and before you, Madam Chair and members, is to build on that legacy to ensure that it remains a source of Canadian strength for decades to come. It's about building a stronger, more resilient and more independent economy and country.

Thanks. I look forward to your questions.

Thanks for your forbearance, Madam Chair.

● (1600)

The Vice-Chair (Shannon Stubbs): Thank you to all the witnesses for your testimony here.

What a great nation-building reminder about the economic and geographical linkages between all the parts of our great country, especially the importance of that prairie province, and the whole country's national and economic security. That was a great message of unity from all of you.

For six minutes, we'll go to our first questioner, Mr. Malette.

Gaétan Malette (Kapuskasing—Timmins—Mushkegowuk, CPC): Thank you, Madam Chair.

Mr. Boutziouvis, I've heard from a few of you that we're a nuclear exporter, but what seems to be one of our great criteria is that we are trusted across the world. Can you expand on that?

Sam Boutziouvis: Sure. We have developed over 50-year relationships with countries such as Korea, China, Romania and Argentina, where there are existing CANDU reactors. We are refurbishing them at present. Everywhere we go, sir, we talk about developing 100-year relationships with those countries in order to refurbish those reactors, to extend them and to sell more CANDUs.

These are the criteria we consistently hear from countries: We want to be part of the CANDU ecosystem. We want greater localization. We want you to train our workers. We want to be part of the CANDU system. We want to benefit more in terms of economics and job creation. That's in the countries where they're seeking to increase their clean electricity output. They seek Canada as a trusted partner and ally in countries such as Poland and Turkey, where we are now, and also in Argentina. We celebrated just this week the 50-year anniversary of our relationship with the Republic of South Korea. We are seeking greater partnership with that country, both within the country, to refurbish the reactors and build more, and to also extend the partnerships abroad.

We are trusted. We are welcome. We have the expertise. We are prepared to suggest localization efforts in training. We have an excellent export credit facility that is very supportive of Canadian technologies and, in particular, nuclear. We have a trade commissioner service that is of tremendous importance as we comb the world looking for partners and for countries that are interested in Canadian CANDU technology.

CANDU is proven. It's proven because of the operation of the reactors in Canada and around the world, and in particular in Romania. If I may, with Cernavoda 2 being one of the top reactors in the world, what we have is potential clients actually going to Cernavoda to visit the reactor so that they can see for themselves what the future may look like for their countries, especially countries in eastern Europe.

Thank you.

Gaétan Malette: Thank you.

Of course, we are a world leader, and we must stay there. As one of the world's largest producers of nuclear energy, how could we further leverage our nuclear capabilities to provide for an emerging global demand while also maintaining our energy sovereignty?

Sam Boutziouvis: Thank you, sir.

I'm going to use a well-worn statement: We need a team Canada approach. There is no country, vendor or purchaser of a technology we go to where the Government of Canada is not needed or welcome. We have to go in with the Government of Canada—together.

That includes..... I missed this, and I apologize. We have a world-class regulatory system that is principles-based and is in hot demand in every country we go to in order to sell CANDU reactors. There are already consultations under way with our regulator to learn about the codes and standards and how the safety systems work with this very proven technology.

It takes a team Canada approach with the existing supply chain. Also, because of the incredible demand that both of my colleagues outlined and that I've certainly endorsed, we're going to need all hands on deck in order to meet the Canadian demand as well as the international demand for large conventional nuclear reactors.

I think we're all ready to rise to that challenge.

● (1605)

Gaétan Malette: All right. Thank you.

I have one last question. We are leaders, and the tough thing always is to remain a world leader. What could the federal government do to further support our domestic nuclear development?

The Vice-Chair (Shannon Stubbs): You have 25 seconds to answer.

Sam Boutziouvis: I'm sorry. I'm long-winded, Madam Chair.

As George has outlined, the investment tax credits have been very helpful, so I'll just go back to what I said. A strong domestic nuclear regime and nuclear ecosystem help support nuclear abroad, and then a team Canada approach, which ministers and parliamentarians support with their trade commissioner service abroad, is the best way to ensure continued success in the international space.

The Vice-Chair (Shannon Stubbs): Thank you.

Now for six minutes, we go over to Ms. McKelvie.

Jennifer McKelvie (Ajax, Lib.): Thank you, Madam Chair.

My first set of questions is for Mr. Austin.

Cigar Lake is pretty cool. It's a really cool geologic deposit. We're pretty lucky to have it. How important is it for the domestic uranium that we need, but also globally?

How should we be balancing that in terms of keeping it for ourselves versus selling it abroad?

Dale Austin: Cigar Lake is a very cool mine. It is a very cool deposit. Cameco operates two of the largest high-grade uranium mines in the world at Cigar Lake and McArthur River. Together there are roughly around 30 million pounds a year of production out of those two mines.

We're a trading nation, so we need to trade that uranium around the world. It is a global supply system. Canada is the second-largest uranium producer in the world. Countries around the world rely on us. Do we need to keep it for ourselves? We have more than enough supply to service all of the reactors that we hope to build, that Sam hopes to build, and that GE Vernova hopes to build. That won't be an issue.

What we need to try to understand is that as global demand for uranium increases, we predict that by the mid-2030s we're going to start to see more demand. How are we going to meet it? What do we need to do to make sure that we have uranium mines coming online when that demand hits the market? We don't want to front-run that demand because it destroys the value of the resource, but we want to make sure that resource is available when that demand starts to hit.

Even here in Canada, Ontario is talking about building somewhere in the neighbourhood of 10 to 12 large nuclear reactors, coming online starting in the mid-2030s. We will project out to make sure that there is enough uranium supply available to meet that demand.

Jennifer McKelvie: Nuclear has been positioned to be something to lead the transition away from fossil fuels. As a corporation, how is Cameco getting on board with that as well? What are your plans for decarbonizing and your plans for decreasing fossil fuels as you build up your production of uranium?

Dale Austin: Just so I understand, the question is what we are doing to reduce our own carbon footprint. That's an excellent question.

What we are doing now is that we're working with the Province of Saskatchewan, and it has just announced a grid connector from north to south that will allow us to pull power. Right now, a lot of our mines have propane, so we're looking at ways to do that.

Obviously, we are in the process of looking at microreactor technologies and the potential for those. I would say that is in the very early stages, but there are certainly possibilities for microreactors not only to service our mine sites in northern Saskatchewan but potentially to provide electricity for our northern partner communities.

As we mentioned earlier, the Saskatchewan government is in the process now of deciding whether or not to bring low-carbon nuclear power onto the grid, which will obviously help to reduce emissions, particularly as it starts to replace coal in the Saskatchewan grid.

● (1610)

Jennifer McKelvie: That's great to hear.

Mr. Christidis, my nuclear physics isn't great, but I give the example of fission and fusion. On fusion, can you talk about some of the investments that are happening in research in that area?

George Christidis: Canada has the capability to take a look at that industry as it evolves. There's a question of which fusion technology will emerge. There's a bit of a competition in the market. The heavy water tritium fuel side that comes out of the CANDU reactors is a big component of the opportunity that Canada has to build from that and look at it.

Canada is in a very good spot from the perspective that a lot of the nuclear companies and supply chains are looking at the potential for fusion, but fusion is a bit further out.

If I could bring it back a bit, if you don't mind, to some of the questions you asked of both Dale and Sam, I want to reiterate the importance of decisions that need to be made now. Fusion is going to be a great technology in the future. We don't know what that future looks like yet. That industry is going to have to shape and form. What we are facing right now is the need for big decisions to be made—whether they're on the regulatory environment, the financial piece, the IT investment tax credit or whatever the financial models are—to really get this critical energy infrastructure sector enabled to build.

At a critical time when we're looking at a recession and we are facing national security and energy security uncertainty, this sector is going to produce jobs and innovation, but the regulatory regime has to be ready and the financial environment has to be ready, along with the workforce and the supply chain.

I know it's a bit of a loop back, but I really need to emphasize the importance of that. That's why we look forward to the nuclear energy strategy and to implementing that effort as quickly as possible.

The Vice-Chair (Shannon Stubbs): Thank you.

That's your time.

Jennifer McKelvie: Thank you.

The Vice-Chair (Shannon Stubbs): It almost seems like a strategy at the end of the year might be too late. It would be my chair's prerogative to insert that little comment. We'll all do our jobs here to continue to work together and try to get some action.

For six minutes, we will move to our colleague, Monsieur Simard.

[*Translation*]

Mario Simard: Thank you, Madam Chair.

Gentlemen, I have a few questions. Please do not think that I have any preconceived notions about nuclear power, but I would like to share with you some entirely legitimate concerns. Let us look at it together.

Mr. Christidis, in your opening statement, you spoke about the regulatory framework. Did you suggest that you would like the impact assessments for nuclear power to be less restrictive? I thought I heard you say that earlier. Is that correct?

[*English*]

George Christidis: That's a very important question, so I want to be absolutely clear. We're talking about no duplication and making sure that there's one regulator within.... It's in the documentation for consultation that the government released. Safety is absolutely essential. Our industry is based on social licence. We really want a strong and independent regulator, but we need certainty in the process and the certainty of timely decisions.

Quite frankly, given the recent history in Canada of energy infrastructure across different sectors, there's this need for certainty of the regulator. It is not a surprise that there are uranium, potash, etc. We need—

● (1615)

[*Translation*]

Mario Simard: Thank you. I understand.

So, you don't want there to be any duplication of impact assessments. In your view, there should only be one assessment. Should it be carried out by the federal government?

[*English*]

George Christidis: The nuclear industry is federally regulated.

[*Translation*]

Mario Simard: Yes.

[*English*]

George Christidis: It absolutely has to be. The CNSC is a specialized regulator. It's an arm's length court—

[*Translation*]

Mario Simard: I understand.

[*English*]

George Christidis: We say that the impact assessment agency should be there.

[*Translation*]

Mario Simard: I have some advice for you.

Nuclear power involves certain risks, as you are well aware. If you speak to anyone of my generation, you will see that what we still remember is Chernobyl and its irreversible environmental damage. Calling for a relaxation of impact assessments is, in my view, not a good idea. I'm telling you this as a politician. I think you'll face a backlash that will outweigh any benefits you might gain.

Why do I think that? Like me, you may have seen the recent ruling by a judge regarding waste management at Chalk River. When it comes to nuclear energy, people lack the technical knowledge, yet they still have reservations, because nuclear power can have significant environmental repercussions which, in turn, can have an impact on people's health.

In my view, it is not a good idea, from a communications standpoint, to appear before a House of Commons committee to ask for a relaxation of impact assessments. It is possible to find workarounds, but the fact remains that, in the minds of the majority of people, nuclear energy is associated with danger.

I'm saying this in a completely friendly spirit. All we're trying to do here is ensure that Canada and Quebec are energy-secure. If we want to move forward and get certain projects off the ground—projects which, in the case of nuclear power, might not go ahead in Quebec—we need to give this some thought. It's in the collective interest. However, and I say this in the collective interest as well, I do not think it is a good course of action for you to call for a reduction in impact assessments.

[*English*]

George Christidis: Madam Chair, if I may, I want to be absolutely clear. No one's talking about a reduction. We're talking about not having duplicative agencies. The question is the creation of an impact assessment agency in the Canadian—

[*Translation*]

Mario Simard: Is there any duplication of assessments at the moment?

[*English*]

George Christidis: The recommendation we have—and we could certainly provide the submissions that we've crafted—is about the Impact Assessment Act being recognized or flowing within the Canadian Nuclear Safety Commission, a single regulator—

[*Translation*]

Mario Simard: Yes, I understand.

[*English*]

George Christidis: We'd be happy to provide our submission.

[*Translation*]

Mario Simard: Right. I was just sharing my understanding of the matter.

I'd like to come back to a second point.

Federal schemes provide tax relief and certain tax credits. However, when I look at the difference between the costs of a nuclear project and those of an intermittent energy project—whether it be wind or solar power—I see a huge disparity. This means that, ultimately, the disparity in the tax credit is also enormous.

If you were to say that a company like Hydro-Québec could receive a tax credit for building a dam, that would involve enormous costs. It's a poor example, since Hydro-Québec doesn't pay tax to the federal government, but it's just to illustrate that we're talking about huge sums.

If we grant these same benefits to nuclear projects, there is a risk that this will tie up a considerable amount of public money. I therefore have some reservations in this regard, particularly as we know that wind and solar projects incorporating battery storage strategies are progressing very rapidly.

Should we put all our eggs in one basket—in this case, the nuclear basket?

● (1620)

[*English*]

The Vice-Chair (Shannon Stubbs): Thank you to my colleague. Of course, it was his time, so I didn't interrupt.

[*Translation*]

Mario Simard: I'll give him time to reply later. I'm not that petty.

[*English*]

The Vice-Chair (Shannon Stubbs): We are over the time. I was going to invite the witnesses to follow up with thorough written submissions as well, to respond to you.

Would colleagues like to give the witness a chance to answer, since Monsieur Simard's opened it?

[*Translation*]

Mario Simard: I can give him some time on my next turn.

[*English*]

The Vice-Chair (Shannon Stubbs): Give a quick response, and then you can provide the committee with more written context.

George Christidis: Our basic position is that, first of all, energy sources should have applicability for the investment tax credit and that all clean technologies have a role to play.

Nuclear technology, though, creates significant jobs. Part of the response is the investment that's made, through either the investment tax credit or programs. There's a huge opportunity to actually create jobs. Wind and solar have a role to play, but they're a valuable variable technology.

If I may suggest, all we need to take a look at is the history of Germany.

The Vice-Chair (Shannon Stubbs): Thank you. Of course, I invite you to expand on that in a written submission.

Now we will go to Mr. Malette for five minutes.

Gaétan Malette: Mr. Christidis, don't worry. I have another five minutes, and I have a few nice questions for you.

Mr. Austin, of course, you are the expert, and nuclear is very complex. You talked about uranium being very critical and how we have good reserves. You also mentioned uranium enrichment. You will have only about five minutes, but I'll ask this question.

For our education, could you walk us through the supply chain, where we have shortfalls and where we need to invest, and maybe touch on uranium enrichment?

Dale Austin: I'm happy to do so.

It takes roughly 18 to 24 months from the time we mine uranium to the time it finds its way into a nuclear reactor. We mine uranium and mill it in northern Saskatchewan. It goes to Blind River, Ontario, to be refined and purified. At that point, it goes to our conversion facility in Port Hope, Ontario, where it's converted into two different things: uranium dioxide, UO2, which we use for fuel for CANDU reactors; and uranium hexafluoride, UF6. which we then ship them on to the next stage in the fuel cycle, which is uranium enrichment. At that point, they get turned into nuclear fuel and put into fuel bundles.

That's my 45 seconds on the nuclear fuel cycle.

Gaétan Malette: Before I continue, where is the uranium enrichment done?

Dale Austin: Uranium enrichment currently occurs in seven countries right now. I'll read them. It's done in Russia and China, but if we exclude those, the commercial enrichers are France, Germany, the Netherlands, the United Kingdom and the United States.

Currently, there are more than 30 countries in the world that have civil nuclear programs. Those five enrichers supply fuel to those 30 countries. Not every country that has a civil nuclear program has enrichment capabilities.

Gaétan Malette: Do we not have uranium enrichment?

Dale Austin: We do not have uranium enrichment here in Canada.

Gaétan Malette: Should we? I guess this is part of the future strategy. What do we need to do, as the federal government?

Dale Austin: Should we enrich? That will depend on the business case.

Cameco is a publicly traded company. As I said in my remarks, we have uranium technology that we are trying to stand up right now.

Enrichment in Canada will only happen if there is a business case for it, and the business case for enrichment in Canada is based on a significant number of light water reactors being built here. Even then, I would say it is a long-term plan for enrichment. Significant federal government work would be required to make the policy, regulatory and treaty changes to become an enriching country, but that shouldn't stop us—and it hasn't stopped Canada from deploying light water reactors.

Enrichment from secure allied partners is available, as I said, in France, Germany, the Netherlands, the United Kingdom and the United States. Cameco deals with those enrichers on a daily basis as part of our commercial operations.

● (1625)

Gaétan Malette: We're thinking of the future. We never know what will happen. We have a shortfall there. What kind of investment would we need? Is it a 10-year window or a 15-year window?

Dale Austin: You would need an investment in time and effort from the federal government in order to become an enriching country. You would need an investment in light water reactors to set the business case. In Cameco's case, we would have to make sure that the business case supported a multi-billion-dollar investment in an enrichment facility.

Gaétan Malette: Thank you.

The Vice-Chair (Shannon Stubbs): Thank you for the completion of that round.

I'll keep myself together this time, unlike at the last meeting.

We will go, for five minutes, to our colleague Monsieur St-Pierre.

Eric St-Pierre (Honoré-Mercier, Lib.): Thank you, Madam Chair. Thanks for keeping it together. I appreciate it.

[*Translation*]

I would like to thank the witnesses.

If I may, I shall put my questions to you in my preferred language.

My first question is for Mr. Christidis.

How might an increase in the industrial carbon price benefit the nuclear industry?

[*English*]

George Christidis: May I have a clarification on the question on the rates? I didn't quite catch the question. Excuse me.

Eric St-Pierre: If you want, I'll translate. I'll try again in French for the next question.

How does the industrial carbon price affect the nuclear industry? How can it benefit the nuclear industry?

George Christidis: When there is a price on carbon and there is an effort to reduce emissions, all clean, non-emitting technologies including nuclear obviously get an impetus in terms of their potential growth. You saw that in hydro and you see that in renewables. Nuclear would be part of those technologies as you're looking to do that type of reduction of emissions and, of course, if there is a price.

I would argue, based on the question, that we're also leaving this space where it's just the carbon conversation. We're seeing an increased need and desire in industry and in terms of national security goals for a stable, reliable energy source that has a strong economic and social cohesion bent to it. The argument or conversation is now a combination of reducing emissions with the carbon price and, increasingly, reliability, jobs and economic growth.

Eric St-Pierre: Our government introduced an electricity strategy a few weeks ago with the goal of doubling the electricity grid by 2050.

Can you quickly comment on the role of nuclear with regard to the doubling of the grid?

George Christidis: That's exactly the point, so I thank you for that question.

Without large and small nuclear technologies, meeting those very ambitious goals will be very difficult. There have been jurisdictions domestically, but also internationally—I have pointed to Germany, for example—that attempted to do those types of efforts without nuclear, only to find themselves dependent on a 70% import of Russian natural gas.

There is a conversation to be had on the important role of all technologies coming together to achieve what's best in each province. Each province will assemble the right combination of technologies to address its economic, environmental and social goals. We've always argued that there is a role for all, and we have a role in that as well. We are seeing ourselves as a very strong partner in those conversations.

Eric St-Pierre: Mr. Christidis, a few years ago there was a lot of buzz around SMRs, or small modular reactors. Can you provide data? Where are we in terms of the technology uptake in Canada? Can you speak to where SMRs have evolved in the Canadian market over the last couple of years? Do you have any data or any reports that you can submit to this committee that speak to the current role and the projected role of SMRs in our economy?

● (1630)

George Christidis: I could certainly follow up with more information.

Very quickly, four SMR units are being built at Darlington by Ontario Power Generation and its partners. SaskPower is building another four in Saskatchewan. They've gone through a process of identifying a location. They have to go through regulatory. Alberta has held an engagement process to look at both large and small technologies. I should add that large nuclear is now very much a part of the conversation domestically.

The SMR projects in Ontario and Saskatchewan are linked to the SMR projects in Poland and eastern Europe, where they're looking at working with the Canadian supply chain to look at those opportunities as well. It's a very robust and very growing part of our sector.

Eric St-Pierre: We know that indigenous communities are often remote. They're shipping in diesel and paying enormous prices for that diesel. What role do SMRs have in energy sovereignty for indigenous communities within Canada?

George Christidis: Thank you for the question.

We'd say that indigenous communities would look at the opportunity of nuclear technologies if it fit their needs and if it fit what their vision is of themselves. We would argue that the small and very small reactors, in the future, would be the types of technologies, along with other technologies, that those first nations could consider for their own futures.

The Vice-Chair (Shannon Stubbs): Thank you, gentlemen. You were right on time.

Now for two and a half minutes, we will move to our colleague Monsieur Simard.

[*Translation*]

Mario Simard: Thank you, Madam Chair.

Mr. Christidis, I'm sorry; I didn't mean to cut you off just now. I'm still a bit perplexed when it comes to nuclear energy, though.

I was just looking for a study that had previously been presented to us at a committee meeting. I believe it was carried out by Hatch. I couldn't find the study, but in some old notes I had, I saw that the cost of solar energy is 2.5¢ to 10¢ per kilowatt-hour; for wind energy, it is 3¢ to 12¢ per kilowatt-hour; for hydroelectric power, it is 3¢ to 10¢ per kilowatt-hour. However, in the case of nuclear power, we are talking about 10¢ to 22¢ per kilowatt-hour. It is therefore a fairly significant investment from the outset, and that's without taking waste management into account.

I know there are challenges associated with intermittent energy sources such as solar and wind power, but storage capabilities are still advancing quite rapidly. In fact, the Chinese are currently demonstrating this.

I understand what you're saying about jobs, but in the long term, is investing in nuclear power worth it?

[*English*]

George Christidis: Thank you for the question.

Because you mentioned China, China's building 60 nuclear reactors. Across the international stage of countries that need more electricity to reduce emissions, they have all baked-in nuclear.

In terms of the price of nuclear, I'd argue that it's almost a region-by-region conversation. In Ontario, the IESO, which is a system operator, has hourly updates of the cost of power and where it comes from, and nuclear is very competitive.

Madam Chair, I could share the website. It shows you the competitiveness.

[*Translation*]

Mario Simard: That is what I would like you to convey to the committee. If you could provide the committee with figures showing that nuclear power can be competitive, we could include them in our report.

What I have seen so far is rather the opposite: when a nuclear project is developed, costs spiral out of control, they are high, and waste management is uncertain. If you could provide us with information that contradicts this, we could take it into account when drafting our report.

[*English*]

The Vice-Chair (Shannon Stubbs): Thank you, gentlemen.

George Christidis: I'd be happy to...Madam Chair.

Refurbishments are the story in Ontario. It was $26 billion, on time and on budget.

The Vice-Chair (Shannon Stubbs): We're a couple of seconds over. I just wanted to make sure that Monsieur Simard could finish his questioning.

I certainly invite all of you to submit information per his questions.

Now we are going to move to Mr. Malette for a five-minute round.

Gaétan Malette: Thank you, Madam Chair.

Mr. Christidis, we've talked about safety. You've talked about one regulator. Can you expand on that and what can we do as a government to help?

● (1635)

George Christidis: We'll share our detailed regulatory positions. They're quite clear.

Overall, it's just for the industry. I would argue that all industries in their respective regulatory frameworks understand the process, timelines, reduction of duplications and focus on safety. In this environment, where, quite frankly, there's a heightened need for industrialization, jobs and investment, the regulatory regime is going to be quite important in terms of attracting investment and meeting those climate, energy and social goals.

It's a global trend. It's a global trend that all regulatory regimes, whether you're talking Europe, United Kingdom, United States or Asia, are all looking at a combination of those factors about meeting multiple goals through those regulatory regimes.

Sam Boutziouvis: Pardon me, Madam Chair. Can I have just 30 seconds?

Mr. Malette, if I may, I'll make it as simple as possible. The Canadian Nuclear Safety Commission is world class. They used to do these assessments. They should be allowed to do them again. The CNSC is the appropriate life-cycle regulator for nuclear.

Consolidation makes eminent sense for this committee and this government to consider, because life-cycle regulation and seamless transitions are extremely important from a regulatory point of view and, secondly, duplication of work on the regulatory front should be avoided as much as possible.

Going back to the first point, the CNSC should be the life-cycle regulator for nuclear.

Gaétan Malette: Thank you.

Mr. Christidis, you've mentioned nuclear medicine. I remember being involved with my hospital board, probably 10 or 15 years ago, and I think there was a crisis. Would it have been at Chalk River? We forget about it, but how important is nuclear in nuclear medicine?

George Christidis: Thank you for the question.

It's very important. One of the strong benefits of the Canadian nuclear industry and the reactors used at Darlington and Bruce is that CANDU reactors generate medical isotopes that are used for a number of different procedures for nuclear medicine—fighting cancers and other different procedures—to the point where it has gotten significant international attention, including from the IAEA, based in Vienna.

One of the benefits that come from the nuclear industry is the innovation across different sectors—advanced materials, medicine, etc. Therefore, many countries and provinces are looking at nuclear technology as a centrepiece of their innovation system.

Gaétan Malette: I want to come back to uranium enrichment. Here in the House of Commons, there's a lot of talk about making Canada self-sufficient. In every industry, too often we export our products before we do more with them.

In the future, could this uranium enrichment be an export for us? What are we looking for from government? Is it possible that one day we would be involved in uranium enrichment and be fully independent? We get along with our allies—you mentioned France—but it's always important to be self-sufficient.

George Christidis: Thank you for the question. I don't know if it was to me, but I'll defer to my colleague.

I will say that the president of Cameco recently spoke at the Saskatchewan Chamber of Commerce—he and Dale would know much more than I do—but he did signal that perhaps it is a conversation that Canada should start to have.

I think Dale could provide a little more insight in terms of what that entails. It is a significant lift, though, that the Canadian government would need to consider. It's a treaty-based type of initiative.

I do think Dale might have something more to add.

Gaétan Malette: Madam Chair, with your permission...?

● (1640)

The Vice-Chair (Shannon Stubbs): The catastrophe is that it's the end of our time.

We will now move over to end this panel, with five minutes for the parliamentary secretary, but I do certainly invite Mr. Austin to address that if he can, if it comes up in the questioning, and definitely provide a written response.

We'll go over to the parliamentary secretary for five minutes.

[*Translation*]

Claude Guay (LaSalle—Émard—Verdun, Lib.): Thank you, Madam Chair.

Mr. Christidis, I'll echo your words. If I understood correctly, earlier, you said that, according to the calculations, we would need to add around 150 gigawatts of generation capacity in Canada.

Has your organization made any projections to determine what proportion of these 150 gigawatts should come from nuclear power, compared with other methods of electricity generation, in order for Canada to meet its targets?

[*English*]

George Christidis: Thank you for the question.

Indeed, our association has done research, and it has identified, for the energy demand, that about 150 gigawatts will be needed. We project that 115 would come from nuclear to meet that demand. We could certainly share that report with the committee.

As an aside, we have also done a workforce study that we could share for background.

The Vice-Chair (Shannon Stubbs): I think that would be invited by all committee members.

[*Translation*]

Claude Guay: Quite right, Madam Chair. I would very much like this information to be sent to the committee.

It's funny, because I'm older than my colleague from the Bloc Québécois, and I have more images in my mind than just those of the Chernobyl accident. I know that nuclear energy is used all over the world. This was an accident linked to a technology used by a particular country. I know that you offer much safer technologies for Canadians. That is true of all of you.

The latest polls I've seen suggest that the Canadian and Quebec populations are becoming increasingly open to nuclear energy. What could we do to encourage Canadians to see nuclear energy for what it is—namely, a clean source of energy? As you have all mentioned, it is a predictable, sustainable and low-emission source of energy, at a time when we are trying to reduce our emissions. So, what more could be done, whether by you, by the government or by all of us together?

[*English*]

George Christidis: The way I would respond is that I actually think the public is further ahead than you realize. When it comes to the younger demographic's comfort in addressing climate, those who are worried about the climate, they will put nuclear on the table—the younger generation will. We're seeing a significant increase in people asking about the role of nuclear for meeting the climate...but also for jobs and investment. I have to say, the Canadian operating record, the safety record of the industry, is something that gives a lot of confidence in terms of the potential.

I know that Chernobyl comes up often—it's a very logical question. However, you're talking about a defunct Soviet technology in a defunct Soviet system that had a defunct regulatory regime. We're not talking about current experiences.

If I may lean in a bit further, I want to raise this: Japan is in the process of increasing its nuclear energy mix. This is Japan, which has had a very difficult experience with nuclear, to say the least, and it realizes that there's a foundational need for nuclear technologies to meet its climate, energy security and innovation goals.

I'll leave it there, but that would be my response to that question.

[*Translation*]

Claude Guay: Thank you very much.

Mr. Austin, the question I am about to ask you will probably be my last one, given the time I have left.

As a parliamentary secretary, I spend a great deal of my time working with the mining industry. I know that, as you mentioned earlier, Cameco is a major uranium producer.

On the one hand, what challenges do you face?

On the other hand, what opportunities do you have to do even more or to do things better?

● (1645)

[*English*]

Dale Austin: Thank you for the question—

The Vice-Chair (Shannon Stubbs): We're at 19 seconds, but here's what's going to happen. I'm going to use my chair's prerogative and you're going to answer this question.

Some hon. members: Oh, oh!

Dale Austin: Thank you—I think.

What are our opportunities and challenges? Let's start with the opportunities. The opportunities are exactly what Sam, George and I have been talking about today. There is a tremendous future for nuclear energy in Canada. There is a tremendous future for nuclear energy around the world, and Canada is well placed to capitalize on that.

We have a fully functioning critical mineral and uranium supply chain that's value-added. It exists here in Canada. We have multiple Canadian-owned technologies that we can export to the world. All of those technologies are going to need uranium, and it's uranium that Cameco mines, in abundance, in northern Saskatchewan. It is a tremendous opportunity.

What are our challenges? You've heard them today from my colleagues and me. It is the workforce. How are we going to train the people we need to mine uranium effectively and efficiently? Cameco is very fortunate in that we have tremendous relations with our indigenous partners in northern Saskatchewan. They want to come to work in our mines. Their businesses want to support our mining operations. We're the largest industrial employer of indigenous people in the country. How can we tap into that population of people who are interested and willing to work and live in the north, which is where they live?

It is the workforce and, frankly, if I may, it is northern infrastructure. When the federal government talks about supporting the north, it often talks about north of 60°. There is a tremendous band of economic activity just south of 60°, where the bulk of our uranium mines are. We need roads, highways and systems to move that resource, and that's because we are going to need to move a lot more of it. How are we getting that resource from northern Saskatchewan to Ontario and then to the world?

Those are the two that I would highlight.

The Vice-Chair (Shannon Stubbs): Thank you.

Thank you to all of the witnesses for your presence here today.

Thank you to all of the members for those important questions and important responses.

Of course, we'll extend the invitation again: Please follow up with any written submissions with more context and information.

Colleagues, that is all of the time that we have today with this panel.

I have to remind everyone that our next meeting will be on Tuesday, June 9, when we will have an informal meeting with the U.K. Energy Security and Net Zero Committee for an hour, and then one hour of regular business to continue this current study. Please also note that the analysts will need your recommendations for the energy export report before the House adjourns for the summer.

Thank you to all of our support staff, translators, clerks and analysts, and for everybody's patience with the technical challenges here.

Parliamentary Secretary, go ahead.

Claude Guay: That'll be an easy one. The clerk told me something one-on-one on the forestry study that I wanted him to share with the team here.

The Clerk of the Committee (Jean-Luc Plourde): All right. I didn't expect to do it right here, but—

The Vice-Chair (Shannon Stubbs): Well, I'm the chair, and you don't have to if you don't want to.

Voices: Oh, oh!

The Clerk: No, it's fine.

Claude Guay: I didn't think there was a big problem.

The Vice-Chair (Shannon Stubbs): I don't exactly know what you're asking. That's why I offered.

The Clerk: As some of you know, the forestry task force report was made public this morning. As per the motion that was adopted in committee earlier this session, we will be receiving the two co-chairs of the forestry task force on June 16 for an hour.

[*Translation*]

Mario Simard: Madam Chair, we also still have our dispute with our friends at Enbridge, who are avoiding us. They are just as friendly as we are. I don't know if the clerk can tell us where we stand, but as for me, I want to show the people at Enbridge some love; I want to hear what they have to say; I'm ready.

The Clerk: As regards Enbridge, we have been in contact with them on several occasions. I have still not received a reply from them. So I shall continue to contact them.

● (1650)

Mario Simard: I know that these large companies often have PR firms that monitor the committees. Perhaps we should simply point out to them that they can be summoned to appear, and that it would look bad in the media to be summoned to appear before a House of Commons committee. Are we collectively reaching the end of our patience? I think I'm very close to it myself.

[*English*]

The Vice-Chair (Shannon Stubbs): Thank you, Monsieur Simard. I think that is a discussion that we should have as committee members, because, of course, I also support transparency and that motion. I think we'll have a discussion about this and figure out what we will do about it. Thank you for that reminder.

Again, thank you, everybody, for your patience and forbearance with our technical challenges—especially the witnesses who came here to be present with us—and for your assistance and accommodation today.

Is it the will of the committee to adjourn this meeting?

Some hon. members: Agreed.