HOUSE OF COMMONS
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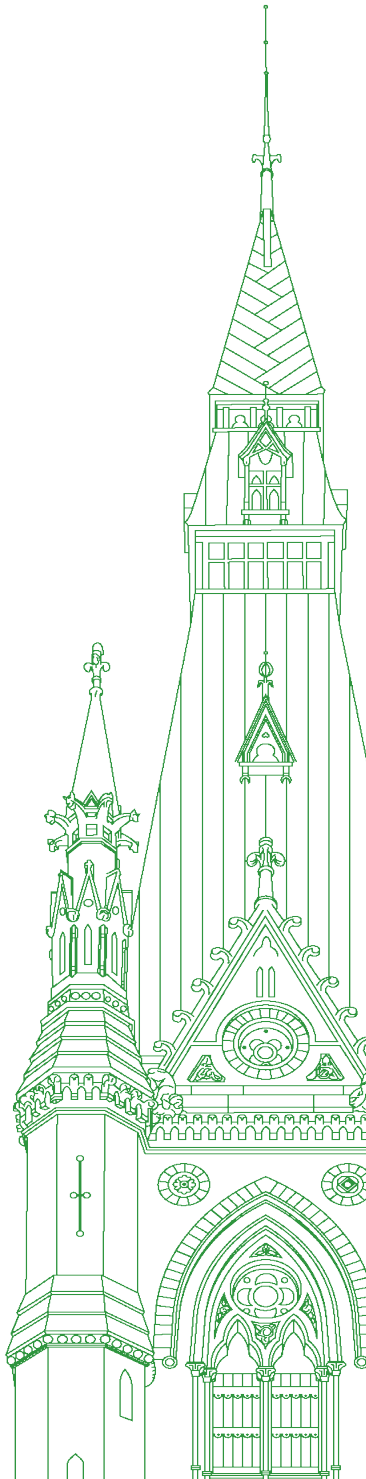
45th PARLIAMENT, 1st SESSION

Standing Committee on Natural Resources

EVIDENCE

NUMBER 053

Monday, November 16, 2026



Chair: Terry Duguid

Standing Committee on Natural Resources

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● (1100)

[*English*]

The Chair (Hon. Terry Duguid (Winnipeg South, Lib.)): I call this meeting to order.

Colleagues, welcome back from the constituency week. Hopefully, everyone had a great opportunity to reconnect with constituents or to rest up, as the case may be.

I acknowledge, as we always do, that we are on the unceded territory of the Algonquin Anishinabe nation.

This is meeting number 53 of the House of Commons Standing Committee on Natural Resources.

I'd like to remind participants of the following points.

Please wait until I recognize you by name before speaking. For those participating by video conference, click on the microphone icon to activate your mic, and please mute yourself when you are not speaking. I remind you that all comments should be addressed through the chair. For members in the room, if you wish to speak, please raise your hand. For members on Zoom, please use the raise hand function. The clerk and I will manage the speaking order as best we can, and we appreciate your patience and understanding in this regard.

Pursuant to Standing Order 108(2) and the motion adopted by the committee on Wednesday, October 7, the committee resumes its study of Canada's nuclear future.

Before we begin, I'll ask our witnesses to be a little patient with us. We have a bit of committee business to go through.

Colleagues, with respect to the helium study, which I know we want to get to, you received a budget request. The amount requested is $9,600.

Is it the pleasure of the committee to adopt this budget?

Some hon. members: Agreed.

The Chair: You've also received three budgets for the nuclear future study and for travel for that study. The trip amount requested for Kanata, Ontario, is a grand total of $6,969.15—that's important.

Is it the pleasure of the committee to adopt this budget?

Some hon. members: Agreed.

The Chair: The amount requested for the Toronto, Kincardine, Durham and Hamilton, Ontario, trip is $54,453.60.

Is it the pleasure of the committee to adopt this budget?

Some hon. members: Agreed.

The Chair: The budget for Chalk River is $7,973.65.

Does the committee agree?

Some hon. members: Agreed.

The Chair: Go ahead, Ms. Anstey.

Carol Anstey (Long Range Mountains, CPC): Thank you, Chair.

I would like to move the motion that I placed on notice, on November 13, for the appearance of the energy minister.

The Chair: Colleagues, you've heard the motion.

Mr. Hogan.

Corey Hogan (Calgary Confederation, Lib.): Thanks, Chair.

I understand from conversations with Tim Hodgson's staff that he's not available that day, but he can be available on December 7.

I move to amend the date to December 7.

The Chair: Do we have agreement on the amendment?

Carol Anstey: Yes, we're fine with that. Thank you.

(Amendment agreed to [*See Minutes of Proceedings*])

(Motion as amended agreed to [*See Minutes of Proceedings*])

● (1105)

The Chair: We'll move on to the witnesses. I would like to welcome them.

From Conexus Nuclear Inc., we have Rachna Clavero, chief executive officer.

[*Translation*]

We welcome two representatives from Polytechnique Montréal, Nicolas Godbout, director of the Department of Engineering Physics, and Darren Hall, SLOWPOKE-2 reactor manager.

[*English*]

From the University of New Brunswick, we have Bradley J. McPherson, director of innovation, Centre for Nuclear Energy Research.

The virtual witness has conducted a mandatory witness onboarding test.

You will all have five minutes for your opening remarks, after which we will open the floor to questions.

Ms. Clavero, we're going to begin with you for five minutes.

Rachna Clavero (Chief Executive Officer, Conexus Nuclear Inc.): Thank you, Mr. Chair and honourable members of the committee.

My name is Rachna Clavero, and I am the president and CEO of Conexus Nuclear. As a Canadian not-for-profit corporation with membership from global CANDU operators as well as SaskPower, Canadian Nuclear Laboratories and McMaster University, our mandate is to enable excellence through collaboration across the sector.

For over 40 years, Conexus has helped establish Canada as a tier-one nuclear nation. By fostering collaboration among utilities, suppliers and research institutions, we have transformed independent expertise into shared global standards for safety and efficiency.

Our work is grounded in a simple principle: When the nuclear industry works together, we achieve stronger results than individual organizations can achieve alone.

For decades, nuclear energy has been a strategic asset for Canada. Today, we stand at an inflection point, with the resources, engineering heritage and provincial commitment to support expansion.

However, our nuclear future is about more than building reactors. It means ensuring that the existing infrastructure operates safely, reliably and efficiently; developing the technologies and capabilities needed for the future; and maximizing the benefits for all Canadians.

The nuclear energy strategy provides an important national framework for advancing these ambitions. Conexus welcomes the strategy and its recognition of Canadian nuclear innovation and capability.

Effective implementation of the strategy demands sustained collaboration across the industry. I would highlight three priorities in which federal leadership can make a meaningful difference.

First, strengthen Canada's existing nuclear fleet and capture the value of long-term operation.

Canada's nuclear fleet is a critical foundation of our electricity system. Decades of safe, reliable operation and successful refurbishment programs represent a strategic advantage. Maintaining and extending fleet performance requires continuous improvement in equipment reliability, outage performance, aging management and advanced inspection and maintenance technologies.

Through collaboration, Conexus enables utilities and suppliers to share experience, develop common solutions and accelerate technologies that improve performance. For example, decades of co-operative work on fuel channels has contributed to longer fleet operations and life extension up to 15 years, generating billions of dollars in value for taxpayers. Examples like this demonstrate how collaboration delivers measurable benefits in safety, performance and productivity.

Second, make collaboration and innovation central to implementing the nuclear energy strategy.

Moving innovation from research to practical application and commercial deployment remains challenging. Individual organizations may lack the resources, the funding or the incentives to address these challenges independently. Collaborative R and D bridges this gap by pooling funding and bringing together the utilities, suppliers and researchers. It also leverages Canada's nuclear experience to reduce risk and accelerate deployment. Investment in industry-led, collaborative R and D and innovation is vital to turning ideas into results.

Third, strengthen Canada's domestic nuclear capabilities and its supply chain.

True energy security means having the domestic capabilities, technologies, expertise and supply chains to operate and maintain our energy infrastructure over the long term. This includes our world-class laboratories and facilities across national assets, the private sector and our universities. Canada has a significant opportunity to build on its nuclear experience and develop technologies for domestic deployment and international markets, as we did in the past.

Today, 15% of Conexus's funding comes from international members. This is funding that goes directly to the Canadian supply chain for execution. Strengthening our supply chain requires investment in innovation, workforce capability and knowledge transfer. It also requires coordination among Canadian companies and research institutions so that they can participate meaningfully in nuclear projects and the knowledge developed benefits the broader Canadian nuclear ecosystem.

Honourable members, Canada's nuclear opportunity is much larger than the individual projects currently under construction and consideration. It is an opportunity to build a stronger, more resilient nuclear sector that supports reliable electricity, economic competitiveness, domestic energy security and long-term innovation.

The federal government has an important role in enabling that outcome. We encourage the government to implement the nuclear energy strategy in a way that recognizes the value of collaboration, supports industry-led innovation and strengthens the capabilities underpinning Canada's nuclear future.

Thank you. I look forward to your questions.

● (1110)

The Chair: Thank you, Ms. Clavero.

[*Translation*]

Mr. Godbout and Mr. Hall, you have the floor for five minutes.

Nicolas Godbout (Director of the Department of Engineering Physics, Polytechnique Montréal): Mr. Chair and members of the committee, thank you for welcoming us today as part of the study on Canada's nuclear future.

My name is Nicolas Godbout, and I'm the director of the department of physical engineering at Polytechnique Montréal. With me is my colleague Darren Hall, who is responsible for Polytechnique's SLOWPOKE research reactor, the only operating reactor in Quebec.

Polytechnique has been training engineers and conducting research in nuclear engineering for more than 50 years. We're one of the few university-based centres for nuclear training and research in Canada and the leading institution able to offer training in French in this field.

Thanks to our infrastructure and network, we're a leading partner for the academic and industrial communities. Our role as a catalyst for technology transfer contributes to the economic resilience of Quebec and Canada.

My message can be summed up in one idea: If Canada wants to become a world leader in the nuclear sector, it must master its own capabilities without depending on foreigners.

For Polytechnique, this sovereignty rests on three pillars: a workforce trained here, open technologies designed here and Canadian resources and supply chains, all within a rigorous and efficient regulatory framework.

Let's start with the workforce.

The nuclear energy strategy for Canada, released last June, calls for doubling the sector's workforce by 2050. That's a major challenge. However, neither the strategy nor the 2026 budget currently provides direct funding for nuclear training.

Developing expertise and a skilled workforce takes time. Polytechnique is currently experiencing the retirement of a generation of researchers, putting the continuity of their expertise at risk. Given that Canada wants to be master of its own house, the need to act urgently is real.

Our first request, therefore, is to provide post-secondary institutions with the resources they need to train the next generation. This means renewing the faculty, funding the maintenance of infrastructure essential to training and research activities, such as research reactors, and developing our digital simulation capabilities. This credible expertise will make Canada a partner of choice for its allies.

Let's turn to technology.

Open-source software such as Dragon and Donjon, which meet industrial standards and are developed here at Polytechnique, offers concrete advantages for modelling and simulation. They protect operators from dependence on proprietary software controlled by foreign interests, thereby ensuring the long-term viability of operations.

Internationally, this is also a significant argument: It makes Canada a reliable partner in exporting CANDU reactors.

However, Canada is technologically behind in the development of small modular reactors. These reactors offer a major advantage: They can provide energy independence for remote and northern regions. We need to catch up. The good news is that many small and medium-sized businesses are already supporting this sector in Quebec and across Canada.

Our second request, therefore, is to adapt the regulatory framework quickly to support these companies and increase investment in research and development, particularly for small modular reactors.

● (1115)

[*English*]

Finally, that brings us to resources.

Canadian researchers have been resourceful in their contributions to nuclear engineering by designing reactors and supplying critical tools. With our uranium deposits, we may build our own Canadian end-to-end supply chains.

Universities are critical partners that produce the research and innovations that will constitute the foundations of a trusted supply chain. Our third request is simple: Fund the professors and the research that make this possible.

[*Translation*]

In conclusion, if the government truly wants to develop Canada's nuclear potential, this development must be built on a strong workforce, open technologies developed here and the development of resources and innovations in the supply chain.

Finally, we recognize that there are also legitimate concerns about developing the nuclear sector in Canada. Although it isn't our role to take a position on the energy mix, we can contribute independently to enriching public debate in order to ensure the socially responsible development of nuclear energy.

Thank you for your attention. We look forward to your questions.

The Chair: Thank you, Mr. Godbout.

[*English*]

We're moving to Mr. McPherson.

You have the floor for five minutes.

Bradley J. McPherson (Director of Innovation, Centre for Nuclear Energy Research, University of New Brunswick): Good morning, Mr. Chair and honourable members. Thank you for the opportunity to speak today before the committee on a topic as important as energy.

My name is Brad McPherson. I'm director of innovation at the Centre for Nuclear Energy Research and an instructor in chemical engineering at the University of New Brunswick. It's a pleasure to be with you today.

I'd like to start by giving a brief overview of the University of New Brunswick. UNB is Canada's oldest English-language university, dating back to 1785. Since then, UNB has led the way with firsts in science and technology. This has led to the creation of over 100 undergraduate and graduate programs, allowing UNB to attract students from over 100 countries. To complement the suite of academic programming, the University of New Brunswick has added 20 research centres and institutes to aid in the significant research and development activities happening each year between our two campuses.

I'm here today representing one of those research institutes, the Centre for Nuclear Energy Research. It has been built on a research program focusing on chemistry, corrosion prevention, aging, modelling, computer coding and safety analysis for CANDU nuclear facilities, while expanding its mandate to include work with light-water reactors and the emerging advanced and small modular nuclear reactor sector. The CNER operates and maintains eight high-temperature, pressurized water loop systems simulating potential operating conditions of various aspects of nuclear reactor plant cycles, and it has a full range of analytical capabilities necessary to evaluate, troubleshoot and model operating characteristics of nuclear facilities around the globe.

The CNER is but one of many research institutes at UNB that can play a key role in the energy sector, and I'd be remiss today if I didn't mention the others here. The Emera and NB Power Research Centre for Smart Grid Technologies, the Canadian Institute for Cybersecurity, the Off-site Construction Research Centre and the Marine Additive Manufacturing Centre of Excellence all form the basis for new nuclear construction in Canada. Together, they will help solve industry challenges, such as modularization, security and remote operations, as well as regulatory concerns.

The University of New Brunswick has the infrastructure and the institutes mentioned in place today because of another first, the Point Lepreau nuclear generating station. Commissioned in 1983, the CANDU 6 nuclear plant at Point Lepreau was the world's first installation of that model. In 2008, the nuclear station was also the first CANDU 6 in the world to proceed through a refurbishment project to extend the life of the reactor unit until the 2040s. Behind these outward-facing initiatives was the need for R and D and talent development, which is where the University of New Brunswick and the CNER have played a major, significant role.

The CNER was established as a joint co-operation between the Atomic Energy of Canada Limited group, the Research and Productivity Council of New Brunswick and UNB to ensure that expertise and capacity were developed and existed in New Brunswick to support such an important piece of energy infrastructure. Programs in academia, such as the nuclear power plant option in chemical engineering, as well as R and D programs under a number of researchers, were established and still operate four decades later.

For Canada to reach goals built around electrification and the doubling of electricity capacity, challenges in the form of new infrastructure, training and upskilling, recruitment of students both domestically and internationally, and the preparation of tomorrow's workforce through academic and experiential learning will need to be addressed.

The universities in Canada that conduct research and teach nuclear content are few, and we all compete for limited funding dollars to advance growth in the sector. Student enrolment typically drives program growth, and that has been a challenge in recent years due to pauses in immigration related to student recruitment and due to the cost of attending programs for students.

UNB welcomes the inclusion of new funding in budget 2026 for nuclear activities related to research. It wishes to remind the committee that R and D activities have a high price tag—as well as infrastructure—but are very necessary. Ensuring that universities and other institutions are complementary to each other and not competing for limited funding opportunities will ensure that the growth of the nuclear sector continues on pace to match the desired outcomes of Canada's nuclear strategy.

● (1120)

Institutions of higher learning cannot carry the burden of funding new infrastructure, building new programs and carrying teaching resources alone if we hope to succeed as a nation and achieve the nuclear strategy objectives released in June of this year. Help with new programs, resources and demonstration of demand through policy and decision-making will be needed to help universities, polytechnic schools, community colleges and other institutions prepare for the workforce demand that is coming in the future. Budget 2026 and the Canadian nuclear strategy allude to a doubling being necessary in a very short period of time.

Finally, the Centre for Nuclear Energy Research has released an important study named “Assessment of a Multi-Technology Nuclear Strategy for New Nuclear Reactor Deployments in Canada”. We would be pleased to share the report with this committee for consultation. The report looks at satisfying new demand in terms of megawatts from a technology-agnostic perspective, while looking at the attributes of new nuclear builds across the country.

Canada needs energy more today than ever before. The time to act is now to meet this challenge head-on.

Thank you, and I would be happy to answer questions from the committee.

The Chair: Thank you, Mr. McPherson.

We're going to start with our rounds of questions and comments.

We are going to start with you, Mr. Kelly, for six minutes.

Pat Kelly (Calgary Crowfoot, CPC): Thank you.

I'll start with Ms. Clavero.

Can you talk about Conexus's involvement with small modular reactor technology?

Rachna Clavero: Certainly. Thank you.

Conexus had started an SMR program in 2019. Since then, we have had a number of vendors participating in that program. Primarily, that program initially focused on ensuring that our Canadian regulatory framework was prepared to license SMRs within Canada.

More recently, we have started projects to support the BWRX-300 and are executing some projects right now. We also received funding recently—I want to commend NRCan for providing that funding—to support two projects for the SMRs that are at Darlington station.

Pat Kelly: What is the cost to bring a small modular reactor to market? How much has been spent, or how much will need to be spent?

Rachna Clavero: We are a research and development organization. I can really only comment on how much we have provided funding to perform some SMR work over the years. It's a very small percentage since 2019. It's been averaging about 2% of our funding. Utilities are contributing less than about $1 million a year into the research. I cannot comment on the cost of actually bringing an SMR to deployment, to construction or to build.

Pat Kelly: Okay.

Monsieur Godbout, can you talk about the nuclear workforce? You spoke about some of the challenges there. Are the skills taught in your university or within the nuclear training system in Canada transferable between technologies, or are they technology-specific?

How does the training regime interact with industry and the demands of industry?

● (1125)

Nicolas Godbout: Thank you for the question.

We're in a position right now where our capacity to train is declining with the departure of a whole generation of nuclear engineers who are retiring. Polytechnique, as an institution, has been studying that question for several years. We want to commit to rebuilding the capacity to train.

On the question of the skill set and the range of the skill set, the way we see it is that we train engineers for the whole supply chain. I will give a specific example. We have in Montreal the company Velan, which will be supplying the main valves at the top of the small modular reactor being built in Ontario. They have been selected. That part involves a lot of mechanical engineering. Velan has been a partner for a long time.

Our intention is to support nuclear engineering in general, and that includes, of course, energy production as well as medical applications or any other applications of nuclear engineering. That's how we see it.

Pat Kelly: I just lost audio. I don't know if everybody else did.

The Chair: We can hear you.

Pat Kelly: You can hear me. All right.

You mentioned in your opening statement that the role you play is technology-agnostic. You have a role and a responsibility around informing the public. You spoke about the social responsibility around energy production. I suspect that this might be a bit of a hot button for many. Traditionally, many environmental activists have been quite opposed to nuclear energy. Some have also been opposed to other forms of energy generation. I guess everybody has a different idea of responsibility.

Could you address how you handled this and what you see as your own role in the public debate around energy production?

Nicolas Godbout: I believe that as universities, we are very well positioned to speak independently on these important choices. In terms of energy generation, all choices have advantages and disadvantages. In order to make informed decisions, we believe that the public must also be informed and be informed with a certain depth in terms of the advantages of every technology.

The Chair: Thank you, both.

Mr. Guay, you're up for six minutes.

[*Translation*]

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

I would like to welcome all the witnesses, but particularly those representing my alma mater. Indeed, I had the honour of graduating from Polytechnique Montréal. It is therefore my alma mater and I am very proud of it. I did not have the technical skills required to be a physical engineer. So I became an industrial engineer. That does not, however, prevent me from having some questions for you today.

Let's start with the first one.

The SLOWPOKE reactor, which operates at Polytechnique Montréal, is not used solely to generate electricity or to carry out research into electricity generation. Can you tell us about the other applications of this research reactor that you have?

Darren Hall (SLOWPOKE-2 Reactor Manager, Polytechnique Montréal): Thank you for your question.

We primarily use it as a training tool. It is a reactor that essentially serves as a teaching aid. Its design is relatively simple, so it provides an initial introduction to nuclear technology for many students across all disciplines.

The reactor also supports research and development for a variety of projects.

We are really here to support high-quality teaching for students undertaking higher education.

● (1130)

Claude Guay: Are there any applications in areas such as critical minerals or health care? Could you tell us about other areas, apart from electricity generation?

Darren Hall: The SLOWPOKE reactor does not generate electricity, but I imagine you are referring to research into electricity generation.

One of its main uses is neutron activation analysis, which is widely recognized for analyzing critical minerals. There are a variety of sample types, including those from the mining sector. We have built up an excellent reputation over the last 50 years in this field.

It is therefore a research tool that can be used across a variety of sectors, particularly for critical minerals, such as rare earths and other elements of that kind.

Claude Guay: What about isotopes?

Darren Hall: We can identify isotopes, but it's not something that we at Polytechnique have explored specifically.

Claude Guay: Thank you.

Mr. Godbout, you made it clear that research in the nuclear field, or graduates in this field, can specialize in mechanical engineering as well as in chemical, physical or electrical engineering. I have understood that perfectly.

However, those who are retiring are nuclear engineers. How many nuclear engineering graduates does Polytechnique produce today? What needs to be done? I assume we will not be able to double the workforce to meet engineering needs unless we train more nuclear engineers.

Nicolas Godbout: You are absolutely right.

In fact, a leading representative of the Canadian nuclear industry told us two years ago that it was estimated that, for current Canadian projects alone, we needed 1,000 more engineers, including 300 specifically in nuclear engineering. So, yes, it affects several fields. That said, the issue of staff retiring that we are currently facing directly affects the very heart of this nuclear engineering capacity.

Over the past 50 years, we have trained hundreds of experts who are now in Canada and all over the world, making cutting-edge advances in nuclear engineering. At present, the only training programs we have left are postgraduate and vocational courses. We certainly need help to reinvest in training. We need to rebuild our academic staff. Our aim is to recruit, within five years, five lecturers whose expertise lies specifically in nuclear engineering. We are seeking support to enable us to hire this group of five lecturers.

Claude Guay: What is the best form of support the government can provide you with, other than sending a cheque in the post? Where and how should it support you?

Nicolas Godbout: The cheque would be most welcome.

In fact, what we are trying to set up are research chairs and industry chairs. A month ago, we announced our first chair, made possible by a generous donation of $1 million from AtkinsRéalis to help us make our first appointment. We hope this person will be our champion within the institution or the core around which we will rebuild this team.

So, we would very much like to see the extension of existing programs—in other words, the mechanisms the federal government is already using, such as research chairs.

Furthermore, we are very keen to work in collaboration with the Canadian university network. We began discussions over a year ago with universities across the rest of Canada to coordinate our training efforts.

● (1135)

The Chair: Thank you.

Mr. Simard, you have the floor for six minutes.

Mario Simard (Jonquière—Hébertville—Pays-des-Bleuets, BQ): Thank you very much, Mr. Chair.

That is very informative, Mr. Godbout. I particularly liked, in your presentation, the way you approached your role as someone who can help us make a slightly more informed choice. You know, I am not opposed to a public debate on the issue of nuclear power in Quebec. In fact, I am rather in favour of such a debate. However, the parameters I see still leave me somewhat skeptical. Perhaps that is what I would like to discuss with you.

It is difficult for us to grasp the technical scope behind all this. We have had people here who have spoken to us about AP1000 technology, CANDU technology and small modular reactors. However, given that you said this morning that we may have lost some expertise in nuclear engineering, I get the impression that it will be difficult to bring all these projects to fruition as the government wishes—that is, to build 10 new reactors by 2040. I find it hard to see how that can be achieved. Everyone has come to extol the virtues of their particular technology, be it small modular reactors, AP1000 technology or CANDU technology. Yet, as you know as well as I do, the state's resources are not unlimited. These are, after all, rather costly projects. So, in the short term, I cannot see how the government can manage to build reactors quickly, given the expertise we currently have and the resources we can invest in this.

You see, I don't want to stir things up. I fully agree that we need to develop expertise within the academic sector and that we mustn't neglect that. However, from the point of view of the federal government's strategy, I have a few questions. I don't know if you could shed some light on this for me.

Nicolas Godbout: I shall explain how I see things. Our aim is to preserve our expertise. It is important to realize that Quebec's situation is unique. We had a nuclear reactor, Gentilly-2, which operated for several years without incident and for which a very close collaboration was established between Hydro-Québec and Polytechnique to train the team and build up all the necessary supporting expertise. This expertise therefore existed, and we are currently trying to preserve it. We have, in the past, successfully operated a nuclear reactor in Quebec. History shows that it is possible.

As for the question of time frame, it is true that reinvesting in reactors and building new ones takes a certain amount of time. However, as we see it, we believe we have work to do right now. Even if plans are announced with a five or ten-year time frame, it will be too late to launch training programs. We are ready to commit ourselves right now to retaining this expertise and keeping it in reserve, regardless of the choices made by the various governments.

Mario Simard: Aren't we already a bit behind? I look at the government's plans and wonder whether we shouldn't have a much more rigorous strategy.

I found what you were saying earlier interesting: There is the labour force challenge, of course, but we also need to think about open technologies. Let's say we select the AP1000 technology as the type of project we want to carry out. In that case, we'd still be quite dependent, as far as the technological side of things is concerned, on our American neighbours. And we know what's happening with them at the moment.

Shouldn't we instead focus on a specific technology and try to see it through to completion? I mention this because Tim Gitzel, from Cameco Corporation, gave evidence before the committee and said that, for the first reactor we manage to build, we would have no control over the cost, but we would be able to reduce the associated risks. So, I suppose we cannot go down three different paths; that would be too complicated.

Nicolas Godbout: Yes, we feel that we are already running a little behind in reinvesting to rebuild this chain of expertise so as to support various nuclear sectors. We will therefore need to move quickly, indeed, to achieve the stated objectives.

As for open technologies, we very much welcome a trend we are seeing in the industry, namely the move towards standardized and modular approaches. This is what enables the same designs or the same broad design principles to be replicated in the construction of reactors.

It is true that, in every case, the first ones are the most difficult.

● (1140)

Mario Simard: Who can provide this expertise to the government? I don't know if you are the ones who can do that. Who could provide the government with a framework enabling it to determine, for example, whether the most rational approach would be to focus solely on CANDU reactors, or to look into small modular reactors, in order to further develop expertise? Is this something that Polytechnique could do to reduce the risks associated with these projects?

Nicolas Godbout: Polytechnique's approach is to work collaboratively. To answer these major and very important questions, we need everyone's expertise and experience. We need the experience of companies and designers who have worked on construction sites in Canada and abroad.

We are more than willing to collaborate, but we do not presume to have all the answers.

The Chair: Our thanks to both of you.

[*English*]

Ms. Anstey, you have five minutes.

Carol Anstey: Thank you, Mr. Chair.

Ms. Clavero, I'd like to start with you.

Canada was once a world leader in nuclear research, supported by facilities like the National Research Universal reactor at Chalk River, which closed in 2018. It played an important role in nuclear testing, materials research and the development of Canadian nuclear technology. Can you speak specifically to what research capabilities we've lost since its closure?

Rachna Clavero: Thank you for the question.

We are still a world-recognized research country for nuclear research. We did not lose capability. At the time that NRU was shut down, we did a very thorough evaluation, which was performed through Conexus, to look at capability maintenance across the country and supporting the CANDU reactors.

At that time, we recognized that we are able to continue to perform the research work we require. We have been able to use the important facilities at Canadian Nuclear Laboratories to provide us with the hot cells we need to do testing. We've been able to use the burst test facility at sites such as Kinectrics to allow us to do testing.

We do have the facilities we need to perform our research today. We will need more in the future, so we welcome another research reactor discussion for Canada.

Carol Anstey: I'd also like to ask you about uranium enrichment. You talked about supply chains as we move towards developing new nuclear technologies that are going to require this enriched fuel. What would it take to establish a commercially viable domestic enriched-fuel supply chain, in your opinion?

Rachna Clavero: With regard to enriched uranium, one of the reasons that obviously Canada went with the CANDU design was that it requires natural uranium. We have a huge advantage here for that and for the entire fuel cycle that exists today within Canada.

Enrichment requires processing facilities, so there would really need to be a detailed benefit-cost assessment. In the past we have done that and found that it's not viable for Canada. However, we would need to look at it again.

I think the decisions around technology are really the most important decisions to decide whether we have a business case within Canada or not.

Carol Anstey: If we go in that direction, are we at risk of building a new generation for nuclear reactors while remaining dependent on foreign countries for critical parts of the supply chain?

Rachna Clavero: CANDUs in Canada really do have a benefit because we have the full supply chain here. Ninety-eight per cent of our supply chain is here.

Carol Anstey: I realize that. If we go with the enrichment process, is that a risk we run?

Rachna Clavero: It would be something that we would have to review and analyze. If you look at the BWRX-300, we have secured fuel for that reactor.

Carol Anstey: Thank you.

I want to turn the conversation in a little bit of a different direction. Your organization has helped its members achieve billions of dollars of savings through decades of collaboration and innovation, yet Reuters reported in February 2024 that no new nuclear projects have been approved since the Liberal government's Impact Assessment Act came into force in 2019. Canada's newest reactor had come online more than two decades earlier.

I'm just curious: To what extent have regulatory barriers prevented Canada's nuclear expertise from translating into new projects, in your opinion?

● (1145)

Rachna Clavero: I don't know if I would say regulatory barriers were the reason why we haven't had a new reactor in Canada. Demand has actually been the reason why it hasn't been there. Demand is changing, which is why we're now looking at new reactors.

In terms of the regulatory regime, some excellent work has been done on the impact assessment. The nuclear energy strategy speaks to it, and the recent federal budget also talks about reform on the regulatory side. Our regulator is a world-class regulator that is looking at ways to improve the system. There are still things that we can continue to work on collaboratively to improve our regulatory framework. We do need to do those to be successful on new reactors.

Carol Anstey: Okay.

Mr.—

The Chair: You only have five seconds.

Carol Anstey: That's fine.

The Chair: Thank you, Ms. Anstey.

Mr. Hogan, you have five minutes.

Corey Hogan: Thank you, Chair.

Thank you, all, for being here.

Coming from the university sector myself, I'm so happy to see two post-secondary institutions and Conexus joining us with a focus on research and collaboration.

I'm going to do a little table setting. Budget 2026 put $6.5 billion into the nuclear strategy, including $261 million for NRCan to support nuclear supply chains, R and D and research reactor capacity, and $127 million to AECL for, among other things, workforce development, research infrastructure and R and D. That's net new and there are those joint investments in trade—$6.5 billion for team Canada strong—which will also hopefully benefit nuclear.

Let's call that a starting point. I completely take the overall point about how difficult it will be to keep up with future demand. There are the table stakes, but not necessarily enough to win the pot.

Given that, starting with Ms. Clavero, I'm wondering if you can give your thoughts on the budget investments and what else we might want to consider, particularly in R and D and workforce development.

Rachna Clavero: First of all, I would like to say that budget 2026 is an excellent budget. It really is. What it puts out there and tables, coupled with the nuclear energy strategy, is really a great start for Canada. It really speaks to the work that the industry has done to get support from the federal government to move in this direction.

Specifically in terms of financing, my partners here spoke about research and the need to invest in the institutions. There has been a lot of focus around investment for new reactors. That needs to be there, but we need to make sure the infrastructure is secure, which means we need to look at how we continue to fund the industry.

I would give the example that when Conexus began 40 years ago, we were getting matching dollars from the federal government on every dollar that the utilities put into the programs. Today, we have no stream of funding from the federal government. I would welcome that as an opportunity.

We spoke about universities. Conexus programs actually support a number of research chairs across the country. Again, supporting that collaboration really does feed into the supply chain. It promotes and helps capability at the laboratories.

Corey Hogan: Thank you.

As we go into the workforce, and training in general, this is an area primarily of provincial responsibility, but obviously this is an area where the federal government can help. Funding research brings academics into the system, and that helps if you're looking to train people.

I'm wondering if each of you have thoughts on this and other federal mechanisms that this committee could recommend to support the training of the engineers and nuclear scientists we will need across Canada. I'm hoping you can also talk about the role that demand from the sector itself could play. If we know we are building reactors and we have strong order books, how might that incentivize people in a pull from industry in order to get more people involved in this as well?

Maybe we can start with you, Mr. Godbout.

Nicolas Godbout: First, we also salute the last budget in terms of the investment in nuclear engineering. These envelopes that you alluded to, in terms of research and support of the supply chain, are really kick-starting the whole field. What we did not see were amounts earmarked specifically for training, so we would really stress that point. The research chair is an excellent mechanism to shore up the capability.

In terms of the pull with the industry, that's a direction that we are also pursuing very strongly. We want to work with the industry and the supply chain. We also expect some help from them so that we can have internship programs and can work more closely in collaboration when building training programs and training for the real applications.

● (1150)

Corey Hogan: Mr. McPherson, did you have any thoughts you wanted to add to that?

Bradley J. McPherson: I appreciate the opportunity to discuss this.

I think it's important for everyone to also recognize that New Brunswick and Ontario are in a bit of a different situation with current operating utilities today. There are workforce challenges today—and in the next five, 10 and 20 years—that need to be met for the existing fleet of reactors. That's something that post-secondary education institutions are looking at: how they can satisfy the retirements that are coming and then, on top of that, the new builds and growth.

From an industry perspective and from a government perspective, with technology selection and signals from utilities and government that new projects will go ahead, we've seen that drive new student recruitment efforts because students are looking at tomorrow and at careers of 30 and 40 years. That's where they may spend their careers, and they want to see new projects go ahead and offer them the ability to have a fulsome career in the nuclear industry.

As we look at new opportunities, training aspects, infrastructure.... These are all important. We need students to populate these programs, and we need these programs to be robust enough to meet industry needs. Therefore, having industry at the table to demonstrate what needs they see, and then aligning that with new resources for training and education purposes in conjunction with new infrastructure, all of this forms the total package of attracting and satisfying the workforce.

The Chair: Thank you, both.

[*Translation*]

Mr. Simard, you have the floor for two and a half minutes.

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

Mr. Godbout, the federal government's strategy envisages the construction of 10 new reactors by 2050. A witness who appeared before us here told us that building a small modular reactor from scratch takes between 10 and 15 years. Yet the government believes it can build two by 2035.

If we factor into the calculation all the expertise that this will require, does that seem realistic to you?

Nicolas Godbout: Over a period of nearly 25 years, yes, that seems realistic to me.

To return to your previous question on construction timescales, I would say that, if we have modular approaches that can be replicated, I believe it is desirable to set ambitious targets.

These areas of application are also relevant to very Canadian or Quebec-specific contexts, particularly remote communities. We are hearing more and more about nuclear energy production in space or on the moon. I believe all these areas are worth exploring.

Mario Simard: I understand that your specialty is nuclear energy. However, from a technical point of view, storage capacities for intermittent energy sources are constantly improving and their generation—whether solar or wind power—is becoming much cheaper. In light of that, do you not think that there will come a tipping point where it will make more sense to move towards intermittent energy sources, given that storage is better?

When I look at the capital cost, I see that it is still very high for a small modular reactor. We're talking about $150 per megawatt-hour. And that's without taking construction costs into account.

Nicolas Godbout: Actually, that's an excellent question. Studies carried out by the Trottier Energy Institute at Polytechnique suggest that nuclear energy competes with large-scale energy storage. So, the question is entirely relevant. As for strategic choices, we will need to carry out assessments to see whether very large-scale electrical energy storage can progress at the same pace as the roll-out of nuclear reactors.

● (1155)

Mario Simard: I just need three seconds, Mr. Chair.

Mr. Godbout, is it possible to table that study you have just mentioned with the committee?

Nicolas Godbout: Yes, of course. We will follow that up.

The Chair: Thanks to both of you.

[*English*]

Mr. Patzer, you have five minutes.

Jeremy Patzer (Swift Current—Grasslands—Kindersley, CPC): Thank you very much.

Ms. Clavero, in your response to my colleague about SMRs on enriched fuel, you said you had secured the fuel for your reactor for the testing. Where did you get that fuel from?

Rachna Clavero: I'm sorry. I'd like to clarify that Ontario Power Generation has secured their fuel supply. This would be a question to discuss with them. They have talked about it in public.

Jeremy Patzer: All right. I just wanted to clarify that.

At Polytechnique Montréal, Mr. Godbout, where do you guys get the fuel for your SLOWPOKE reactor?

Nicolas Godbout: I will let my colleague Darren answer that.

Darren Hall: We actually converted our fuel. SLOWPOKE back in 1976 was highly enriched uranium. Since 1997, it's been low enriched uranium.

We'd have to see the actual source and maybe get back to you on that. I don't want to say something that's not correct. I don't have an actual answer, but we could find that documentation for you.

Jeremy Patzer: Yes. I would appreciate it if you could table that with the committee.

Mr. Chair, maybe you could follow up with them on that.

The reason I ask is that I'm from Saskatchewan. Obviously, we have some of the largest uranium deposits in the world in northern Saskatchewan. Generally, I just want to hear whether any of the institutes working in the field of nuclear study are utilizing the resource we have right here in Saskatchewan.

Are there any planned or future developments with Saskatchewan uranium, going forward, from anybody in the meeting? We'll start with Polytechnic Montréal and then go to Ms. Clavero and maybe UNB.

Nicolas Godbout: There aren't at the present time. We don't have the answer because, in 1997, neither I nor Darren was present at the last refuelling operation. We don't expect to need refuelling for 15 or 25 years. It's really a long-term question.

Jeremy Patzer: Ms. Clavero.

Rachna Clavero: Our membership is really made up of the utilities. SaskPower did join Conexus in 2024, so we would work with them for any future fuel needs.

Jeremy Patzer: At UNB, is there any collaboration with Saskatchewan at all on uranium?

Bradley J. McPherson: At present, we don't typically do much on the fuel side, but we do collaborate as necessary as part of the Conexus group and as part of the UNENE group and others. As projects materialize, we're certainly open to conversations.

As a matter of fact, we're having a conversation with the Saskatchewan Research Council today.

Jeremy Patzer: That's fantastic.

Ms. Clavero, what are the biggest practical challenges with doubling the electricity grid capacity by 2050? Have you done any work on that?

Rachna Clavero: What we spoke about earlier around workforce capabilities and capacity is definitely a challenge. I think we will need, as a country, to really invest in getting our capabilities and growing that population. It's not only about reaching students within university but about getting to students at a younger age, because it's the ones who are in high school right now who will help us in the future. It's about getting them interested in nuclear.

We spoke about the regulatory space. There are some very good things that are happening in the regulatory space, but we continue to work on ensuring that we are looking at these projects from a risk-informed approach and making sure that our regulatory framework is ready for different technologies, such as SMRs. For our existing fleet, and even technologies such as AI, robotics and automation, are we ready to regulate those?

The third thing is that we really need to make sure that our supply chains are ready. We have had an industry that has been holding still for almost 20 years, and now we're suddenly expanding at a rapid pace. The supply chain needs contracts, projects and definitive decisions made so that industry knows what to prepare for.

● (1200)

Jeremy Patzer: Give a very short answer, please.

Beyond the labour force, what would be the number one risk that you face right now in the industry? What's the biggest thing that would need to be de-risked?

The Chair: Give a quick answer, please.

Rachna Clavero: I would say the biggest risk is that we're not putting enough attention toward the actual cost and investment needed for R and D and capacity.

The Chair: Thank you.

Thank you, Mr. Patzer.

The last person on this panel is Mr. Danko for five minutes.

John-Paul Danko (Hamilton West—Ancaster—Dundas, Lib.): Thank you, Mr. Chair.

I'm the member from the riding of Hamilton West—Ancaster—Dundas, in Ontario. We have McMaster University in my riding.

The nuclear industry has been a very important part of Ontario's economy for a long time. I'm really pleased to be joined by a fellow nuclear representative from the province of New Brunswick as well.

When we look at Canada's nuclear strategy, I think it's intrinsically tied together with the electrified Canadian economy strategy. These things go together in generation capacity and then distribution, with billions of dollars of federal investment to help support both. In total, it's over $115 billion in the next five years for electrification. There's some direct investment in infrastructure, and we just saw, in budget 2026, $6.5 billion specifically for the nuclear strategy and the nuclear industry.

Maybe I'll go first to Mr. McPherson from the University of New Brunswick. You have experience in New Brunswick with the CANDU CANDU6 reactor that you have there. How did you see that as being part of New Brunswick's economic growth and uplift?

I'd also like your comments on the federal investment in the nuclear industry moving forward.

Bradley J. McPherson: With 40 years of CANDU history, Point Lepreau has been an integral part of the economy of New Brunswick. It provides several hundred high-paying jobs, ancillary spinoffs in the supply chain and an indirect job market in the southern part of the province.

New Brunswick, like most Canadian provinces, is a heavy winter-load location, so having adequate baseload through Point Lepreau, which provides 40% of New Brunswick's electricity, ensures that we have the ability to meet not only domestic demand but also industrial demand as it grows. In terms of emissions and greenhouse gas reductions, New Brunswick sits at over 80% GHG non-emitting every year. Point Lepreau makes up a big part of that.

We get a number of intrinsic values from nuclear in the province. As we looked at the opportunity to conduct the first refurbishment of CANDU 6, we learned a tremendous number of lessons—lessons that Ontario can now apply to come in on time and on budget in terms of new refurbishments in that province. We can also look at opportunities to expand across the country into Saskatchewan and Alberta. We've been able to generate lessons in New Brunswick, in terms of what new nuclear opportunities look like across the country.

In terms of thinking about opportunities outside the scope of nuclear—like wind west, new renewable generation and backing baseload for Quebec, P.E.I. and others—nuclear provides that backbone. When you can work with industry to ensure a cheap, safe, reliable and sustainable baseload of electricity for the system, you can have conversations about new AI centres and new manufacturing, which propagate jobs and investment in the economy.

Overall, federally, I'm very excited to see the budget that's been tabled and to work with federal partners like NRCan, ISED and ACOA. New infrastructure, new programs and new resources will continue to be the significant investments that we need not just in New Brunswick but also across the country to facilitate the goals of the nuclear and electrification strategy.

● (1205)

John-Paul Danko: I think I have just about a minute left.

I am going to ask about workforce capability and capacity. You've all spoken about that as a risk, but I see it as a real opportunity. Those are jobs for the next generation, which is fantastic news.

In the little time I have left, Ms. Clavero, I would like to ask you about the export of CANDU technologies around the world as an economic growth opportunity for Canada.

The Chair: Answer in just 30 seconds, please.

Rachna Clavero: Absolutely.

The international fleet is now refurbishing. The first opportunity is to take those refurbishment lessons learned and use them overseas.

Second, Cernavodă 3 and 4 are the two units that will be completed in Romania. These will be the next new CANDUs in the world, which is a great opportunity. Other countries are very interested. Partners in China are interested in CANDU.

There's a lot of opportunity for growth, and we continue to see our portfolio of services for international members grow.

The Chair: Thank you.

Colleagues, let me thank our witnesses on your behalf. It was a great panel this morning, with a strong focus on research and development and workforce development.

I want to thank our analysts for putting together a complementary set of witnesses for us, as they try to do in all of our studies.

With that, colleagues, we are going to suspend for about five minutes while we change over to the next panel.

● (1205)

_____(Pause)_____

● (1210)

The Chair: Colleagues, we're back in session.

As you know, bells are likely to go off a little after 12:30. We will be able to hear our witnesses and then likely, with the will of the committee, have about 15 minutes or so of Qs and As. I think we'll have time for one round, maybe even a reduced one round. We will see where we're at.

Welcome to our witnesses. We have with us, from Bruce Power, Pat Dalzell, vice-president, corporate affairs and market development. From Nuclear Waste Management Organization, we have Derek Wilson, president and chief executive officer, and Dakota Kochie, director, government and external affairs. From the Organization of Canadian Nuclear Industries, we have Ivette Vera-Perez.

Dakota, I think you're from Manitoba. We go back a ways, don't we? I will talk to you later.

Welcome to all.

Our virtual witnesses have conducted the mandatory witness onboarding test, and I have a few comments for the benefit of the new witnesses.

Please wait until I recognize you by name before speaking. Also, as a reminder, all comments should be addressed through the chair. Each of you will have five minutes for your opening remarks, after which we will open the floor to questions.

Mr. Dalzell, we're going to start with you for five minutes.

● (1215)

Pat Dalzell (Vice-President, Corporate Affairs and Market Development, Bruce Power): Thank you, Mr. Chair and members of the committee, for the opportunity to appear today as part of the study of Canada's nuclear future. As you said, my name is Pat Dalzell. I'm the vice-president of corporate affairs and market development at Bruce Power.

By way of background, Bruce Power operates one of the world's largest nuclear generating facilities and provides about 30% of Ontario's electricity. We're currently advancing one of Canada's largest clean energy infrastructure programs through our life-extension program. Our experience gives us a practical perspective on what it takes to deliver large-scale nuclear projects safely, affordably and successfully.

I'd like to leave the committee with a simple message: Canada does not need to start from scratch to build its nuclear future. We'll build on the expertise, infrastructure, workforce and project delivery experience we already have.

The discussion today is no longer about whether nuclear energy has a role to play but what the next steps are in making that future a reality. As electricity demand continues to grow, driven by electrification, economic growth, data centres and energy security considerations, the question is, increasingly, how Canada will best deliver new nuclear capacity efficiently, affordably and on schedule. Our experience at Bruce Power demonstrates that we can.

Through our refurbishment program, we have shown that large and complex nuclear projects can be delivered safely, on schedule and with strong cost discipline. Most recently, our unit three major component replacement project was completed ahead of schedule and on budget. In fact, we returned unit three in early June, seven months ahead of schedule, just in time for the high-demand days of summer in Ontario, and it's been providing that electricity 24 hours a day, seven days a week, ever since.

In our view, experience matters. Established sites, experienced workers, mature supply chains and strong project governance are critical ingredients for successful project delivery. Those are advantages Canada already possesses and should continue to build upon.

The second point I'd like to emphasize is the importance of regulatory efficiency. Canada has one of the most respected nuclear regulatory systems in the world, and maintaining that standard is nonnegotiable. However, we believe there are opportunities to improve efficiency and predictability by reducing duplication between federal assessment processes and the expertise-based review conducted by the Canadian Nuclear Safety Commission. The issue is not safety; the issue is duplication. We can maintain world-class environmental protections, indigenous engagement and nuclear oversight while creating more efficient and predictable approval processes.

My third point is that investment certainty matters. Nuclear projects require significant upfront investment, but they provide reliable, emissions-free electricity for generations. Federal investment tools, including investment tax credits and financing mechanisms, can help attract private capital, improve project certainty and support long-term infrastructure development that supports our Canadian economy while maintaining affordability.

A Canadian Manufacturers and Exporters report that's being released this week finds that the four nuclear projects planned in Ontario will contribute $882 billion in GDP and 3.45 million job-years across Canada. It's estimated that these projects will require up to one million tonnes of Canadian steel. These are significant impacts to our economy and, importantly, at Bruce Power the benefits of the clean electricity investment tax credit, in particular, flow directly through to Ontario ratepayers through the lower investment costs reflected in our price of power. The return on federal support is simple: lower costs, more investment, good jobs and reliable Canadian energy for decades to come.

Finally, Canada has a significant competitive advantage in its nuclear workforce and supply chain. The long-term investments made in the refurbishment program have helped create the highly skilled workforce and strengthened domestic manufacturing capacity that must be leveraged to power our future. Canada has the talent, expertise and the industrial capability needed to succeed. The key is providing the long-term certainty necessary to grow that advantage and to deliver the next generation of nuclear projects.

Mr. Chair, Bruce Power's experience demonstrates that Canada has the expertise and the industrial foundation to achieve its nuclear ambition. The priority now is ensuring that the federal policies, regulatory processes and investment frameworks enable that capability to be deployed safely, competitively and efficiently.

● (1220)

Thank you, and I look forward to your questions.

The Chair: Thank you, Mr. Dalzell.

We're going to go now to Mr. Wilson and Mr. Kochie.

You have the floor for five minutes.

Derek Wilson (President and Chief Executive Officer, Nuclear Waste Management Organization): Thank you, Mr. Chair. I appreciate the invitation to be here.

I'd like to begin by acknowledging that the session we are participating in today is being conducted on the traditional and unceded territory of the Algonquin peoples.

I'm glad to be among industry and government colleagues who understand the importance of ensuring Canada's nuclear sector can continue to support our country well into the future. I'm proud to be the president and CEO of the Nuclear Waste Management Organization, an organization created by an act of Parliament in 2002 to develop and implement Canada's plan for the safe long-term management of used nuclear fuel.

We are an independent, not-for-profit organization, and we are fully funded by Canada's nuclear fuel waste producers. By funding us, the waste producers demonstrate responsibility for implementing a long-term management plan. As witnesses come forward to testify about developments across the sector and new technologies on the horizon, Canadians and indigenous peoples can rest assured that the safe and secure management of radioactive waste is never an afterthought.

While utilities take accountability and continue to safely manage waste streams at reactor facilities, the current approach is interim, and a permanent long-term solution is required. It is internationally recognized that deep geologic repositories, or DGRs, represent the best way to protect people and the environment over the long term.

Earlier this year, the federal government released its nuclear energy strategy for Canada, which recognized the importance of world-class, long-term nuclear waste management. This strategy confirms that Canada is among the leading countries in the world, on a clear path to closing the nuclear fuel cycle while keeping people and the environment safe.

One of our organization's core values is that we owe it to future generations to not leave the waste that we created and benefited from as a burden for them to manage. That is why we're implementing a solution in this generation. In November 2024, we delivered on that promise by selecting Wabigoon Lake Ojibway Nation and the Township of Ignace as the site for the project. The people of both communities demonstrated their willingness to move forward by conducting their own community processes. This historic decision for Canada was driven by their thoughtful leadership, over a decade of active engagement to learn more about the project and time spent considering the future of the communities they call home.

Construction of the DGR will begin only after regulatory approval. We are actively building the evidence, designs and relationships that regulators need to make a sound decision. Our commitment to scientific excellence will stay with us throughout the regulatory reviews and into the responsible, well-managed construction and operations of Canada's first DGR.

The NWMO is currently engaged in the Major Projects Office process to have Canada's DGR for used nuclear fuel considered for listing under the Building Canada Act. This process reinforces the importance of this project for Canada's long-term energy security and prosperity. We are committed to working closely with governments to ensure regulatory processes are more coordinated and more efficient while preserving safety and necessary oversight.

The successful implementation of the DGR for used nuclear fuel will allow for a solid foundation to implement projects supporting new technologies and their waste streams. Canada's net-zero future and energy security increasingly demand new nuclear, from refurbishments to small modular reactors, full-scale build-outs and other emerging technologies.

That growth is good news, but it also means we owe the country a plan for how we manage the new radioactive waste being created. Public support for new nuclear depends on safe, socially acceptable waste solutions.

Recognizing NWMO's expertise and success, in October 2023, the ministry of Natural Resources Canada tasked the NWMO with implementing a second deep geologic repository. The second DGR will be built to house both intermediate-level and high-level radioactive waste, including used fuel from future reactors. Planning for that second repository is still in the early stages of development, and a new siting process is moving towards launch in 2028. The second repository gives us the opportunity to plan for what's emerging and to build on what we've learned.

The next few years will be telling. Success looks like a project that moves from planning into execution, progress that Canadians and indigenous people can see and trust. We made a promise to not leave nuclear waste as a burden for future generations. We plan to keep it.

Thank you. *Meegwetch*.

● (1225)

The Chair: Thank you for that.

Finally, we move to Ms. Vera-Perez.

You have the floor for five minutes.

Ivette Vera-Perez (President and Chief Executive Officer, Organization of Canadian Nuclear Industries): Thank you, Mr. Chair and members of the committee, for inviting me to contribute to your study on Canada's nuclear future.

My name is Ivette Vera-Perez. I am the president and CEO of the Organization of Canadian Nuclear Industries, OCNI. We represent almost 300 nuclear suppliers that employ approximately 20,000 highly skilled Canadians. Roughly 75% of our members are small and medium-sized businesses located in over 80 communities across the country.

Our role, plainly stated, is to turn contacts into contracts. We connect suppliers, utilities, project developers and governments to help Canadian companies secure work on nuclear projects, both domestically and internationally.

The opportunities are growing significantly. In Ontario, Bruce Power is advancing its refurbishment program and exploring new builds at Bruce C. Ontario Power Generation is also constructing the G7's first commercial, grid-scale SMR, preparing for Pickering refurbishment and exploring new builds at Wesleyville, Lambton and Nanticoke.

Ontario's nuclear expansion is expected to contribute more than $800 billion to Canada's economy and create approximately 150,000 job opportunities over these projects' lifespans. To put this into perspective, Canada's entire nuclear sector currently supports approximately 89,000 jobs and contributes roughly $22 billion annually to our economy.

Beyond Ontario, Alberta, New Brunswick and Saskatchewan—the latter of which generated approximately $2.6 billion in economic activity in 2024, through uranium mining and milling activities—are at various stages of exploring the use of nuclear energy in their systems. Collectively, these initiatives will increase demand for Canadian manufacturing, specialized services and skilled workers. This is where OCNI's direct work with industry becomes particularly important. We are using our knowledge and connectivity to lead initiatives aimed at strengthening the domestic nuclear supply chain and ensuring it's ready to capitalize on these developments.

In September, OCNI received $1.88 million from the Government of Ontario for a three-phase initiative to map supply chain capabilities and identify strategies to strengthen them.

In Saskatchewan, we are partnering with SIMSA and the Southeast Tech Hub, with support from PrairiesCan, to help local businesses gain the knowledge, qualifications and connections needed to enter the nuclear supply chain. The great news is that these projects could provide a foundation for a national level assessment.

Our team is also working to connect Canadian companies with projects and partners abroad. Over the last decade, OCNI has facilitated more than 20 trade missions to countries such as Romania, Poland, Sweden, Norway, the U.K., Argentina, India, South Korea, Japan, China and France, to name a few, and signed MOUs with supplier associations in over seven countries. These efforts have connected Canadian suppliers with international buyers and partners, opening doors to export opportunities across refurbishment, new build and SMR programs.

Our work on international relationships also gives us the unique insight into emerging projects, global supply chain requirements and the capabilities that Canadian businesses need to compete abroad.

With that in mind, OCNI encourages the federal government to focus on three priorities. First, undertake a national nuclear supply chain assessment to identify existing capabilities, current and future workforce needs, and strategies to address bottlenecks. Second, strengthen Canada's international competitiveness through export financing, coordinated trade promotion and co-operation on technical certifications, regulatory requirements and workforce mobility. Third, provide targeted financial grants and tax incentives to help suppliers purchase specialized equipment, expand manufacturing and meet nuclear-grade certification requirements.

Canada's nuclear future has the potential to strengthen Canadian manufacturing, support skilled employment and deliver lasting economic benefits to communities throughout the country. Our organization stands ready to work with government and industry to position Canadian suppliers and workers to seize these opportunities, both at home and internationally.

Thank you, Mr. Chair. I look forward to your questions.

● (1230)

The Chair: Thank you to all of our witnesses.

Colleagues, we're going to be interrupted by bells shortly. We'll just take it as it comes, but we'll likely have time for just the first round of questions.

I apologize to our witnesses. You won't get grilled as heavily as you might have been if we'd had the full range of questions today. We also welcome briefs and follow-ups, so please feel free to do that.

Ms. Anstey, we're going to start with you for six minutes.

Carol Anstey: Thank you, Chair.

Thank you to the witnesses. I'd like to start with Mr. Kochie and Mr. Wilson.

You talked about how in 2023 the federal government tasked you with planning the second underground nuclear waste repository, because the current storage arrangements are temporary and unsuitable for the long term. You have a site picked, but we have the target of 2050 for the waste disposal infrastructure.

Can you speak to the main factors that contribute to this lengthy time frame?

Derek Wilson: The second DGR project was actually an outcome of the integrated strategy for radioactive waste, which was undertaken from 2020 through to 2023. In the recommendation of that, the NWMO was tasked by Natural Resources Canada to undertake that study on behalf of Canadians, so we did the study in that time frame.

In that study, we were looking at the entire life cycle of waste and all waste streams within that. The three recommendations coming out of it were that low-level waste was to be in near-surface disposal facilities, with the waste owners responsible for it themselves. Intermediate-level and high-level waste would be in a deep geologic repository. We already had used fuel in a deep geologic repository through the existing Nuclear Fuel Waste Act. When going through that study, we looked at both co-location with the first DGR as well as the potential for a second DGR location, specifically for intermediate-level waste and high-level waste.

At that time, new nuclear projects were being announced. Our current DGR that we're licensing up at the Wabigoon Lake Ojibway Nation and Ignace site is specifically for the existing fleet of CANDU reactors and the projected 5.9 million fuel bundles that are going to be created from that. We're looking at the potential for a second DGR.

We started our siting process for the first DGR in 2010, and we are expecting to be in operation by 2043. Taking lessons from that, we're trying to reduce the time frame from selecting a new site to getting it operational. We also want to be very cognizant of not interrupting the first DGR project, because that is going to be fundamental for us to be able to address the current liability on the ground, as well as being able to leverage that workforce. As we transition from the first DGR project, if a second DGR is required, we could transition those resources into that project.

Carol Anstey: Okay.

I think about transportation of this waste as well. Is that something that you've considered when doing this work?

Derek Wilson: The transportation for intermediate-level and high-level waste is, currently, already being done between reactor sites and interim storage facilities. It's already licensed activity and already well established within the existing operators, so we're not looking at that as part of the NWMO's mandate.

Carol Anstey: Okay. Thank you.

I'd like to cede the rest of my time to my colleague.

Jeremy Patzer: Thank you very much.

I'm going to go to Bruce Power.

The Alberta Court of Appeal ruled on October 9 that Ottawa's 2024 legislative modifications failed to fix the core constitutional flaws previously identified by the Supreme Court of Canada. You mentioned in your opening remarks issues with the Impact Assessment Act in regard to duplicity.

I'm just wondering if you have any specific suggestions for this government beyond just the duplicity bit. If you wanted to expand on that, it's great, but do you have any suggestions for this government to try to help them get the Impact Assessment Act to be constitutional and respect provincial jurisdiction?

● (1235)

The Chair: I'm sorry. Before you answer, if you don't mind....

Colleagues, the bells have rung. I need your agreement to continue. What I suggested was that we would just do the first round of questions.

Some hon. members: Agreed.

The Chair: You have my apologies, Mr. Patzer.

Please proceed.

Pat Dalzell: Sure.

My remarks were really focused on what.... Actually, we think the solution, as we've recommended it here, of having the life-cycle regulator oversee the whole process from start to finish, including the impact assessment, is the right way to avoid some of those challenges.

Without getting into the legality of the previous version of the legislation, I would say, to us, the CNSC as the life-cycle regulator, doing the oversight and the decisions around the impact assessment for nuclear sites, is the right way for this to be shaped. We've been pretty consistent in our view that their being the experts in the nuclear field ultimately helps streamline the whole process. Making sure that the folks who are most informed about our industry and what we do and who have the history of our impact on the site and understand what we report out on...it helps reduce some of those duplicative processes and makes the outcome the best for the people of Canada and for our industry.

Jeremy Patzer: Some of the delays that possibly could have come from the duplication, like you're saying, from the process taking longer, what kind of impact have they had on projects or potential future projects for Bruce Power? What is the potential that could be lost going forward if these changes are not made?

Pat Dalzell: Ultimately, I think these changes will result in a better outcome, a more streamlined outcome. At the same time, we had already agreed on a charter with the Impact Assessment Agency that helped shape the timelines of the outcome for the site. At the end of the day, what we're looking at is better, safer outcomes for everybody, better understood outcomes and certainly a process where you don't have to go through the education piece.

As I said, the CNSC are the experts in this space. They would understand the regulatory filings that we've been producing. We've been operating at our site here for decades, and we consistently file environmental reports with the CNSC. We assume that ultimately you'd end up with a fairer, safer process.

The Chair: Thank you both.

Ms. McKelvie, you have six minutes.

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

Thank you for the opportunity to ask questions to a former employer. It's been eight long years—certainly, I think political years are longer than real lifetime years—since I left the NWMO. What strikes me is the considerable progress that has happened. When I left, a site had not been identified.

I'm really wondering if you could speak to the value of a willing and informed community. That is something that I know was taken very seriously. I'm wondering if you could demonstrate what that process has been for the informing of the community and also how willingness is demonstrated through a consent-based process.

Derek Wilson: Thank you. It's been eight years, has it?

Willingness is a foundation for our decision-making. We were not going to select a site if we didn't have an informed and willing host community. That was one of the three overriding criteria we had in our site selection process. It took time. We started the process in 2010 and made the decision in 2024, which was longer than we had originally anticipated, but it was required in order for the communities to become informed.

Informing happened in a number of different ways, depending on the community and on the level of knowledge in each of those communities. Really, we wanted to ensure that there was a grassroots acceptance and understanding of the project and the potential impacts of that project, both beneficial impacts and potential other impacts associated with a multi-billion-dollar project in their community.

The communities themselves decided how they were going to come to a consensus or a decision in which the community was engaged. In the case of Ignace, it was through a community-driven process where they sought to get an understanding of the community's willingness to accept the project. Wabigoon Lake Ojibway Nation did its own process throughout its own community. It wasn't the same, and we weren't prescribing how they had to do it.

What it does do is bring a level of knowledge so that they are making an informed decision. That, in our minds, was critical and foundational for a consent-based process. We're going to be applying that same consent-based process to the second DGR project as well, incorporating the learnings that we had through implementing adaptive phase management and going through the process to locate the first DGR site.

● (1240)

Jennifer McKelvie: In the summer, your project was referred to the Major Projects Office. I'm wondering if you could speak to what you would like to see, should your project be designated. I'd also like some clarity around your timelines. The reason is that often for projects that are listed, we say on the government side that it would be one year, one process for review, but that clock doesn't start until the submission of the application. I think we need to be clear that, should your project be listed, this is not happening in a year. There are still additional steps that are there.

Can you walk us through what is left in the regulatory process for you and how the Major Projects Office could be a benefit?

Derek Wilson: I think the Major Projects Office, from our perspective, is bringing some certainty around the regulatory timelines, as well as around the potential for efficiencies in those processes. If we can get efficiencies between the federal processes and the provincial requirements, provincial permits and so on, we see that as being potentially a mechanism where the Major Projects Office can help coordinate and collaborate through some of those issues.

As far as the overall timelines, we don't expect that the timelines are going to change significantly. As you say, we have a body of work that we have to do in order to prepare impact statements, whether they be through the Impact Assessment Agency of Canada or through the CNSC. Then there's the due diligence that the regulators have to do. There's a consultation process, and we want to ensure that there has been adequate consultation on the project.

In our minds, it brings more of a certainty of time as opposed to an opportunity for fast-tracking time. That's what we're really hoping to see out of this—that coordination and collaboration between the regulatory agencies—so that we have that efficiency. It gives us that comfort that we're going to be on the schedule we have in front of us, which is already assumed to be optimistic, given the existing IAAC process.

Jennifer McKelvie: Great. Thank you.

I'm wondering if you could also speak to the importance of international partnerships and the work you're doing with others around the world, and also the work you're doing with Canada's best top researchers in these fields. How has that international partnership and that research collaboration really informed the work you do?

Derek Wilson: It's a really good question.

Those partnerships are invaluable, especially when we look at our international colleagues. As you are probably well aware, Finland now has its operating licence for the first operating used-fuel DGR in the world. Canada can be proud that it's probably in the top five countries in the world making progress toward realizing the deep geological repository for used fuel and closing the back end of the fuel cycle. That work has really been valuable to us.

With the Canadian industry, academics and national labs, we've had a long-standing relationship with those institutions since the beginning. We're starting to see a transition. In early days, it was on research and development. It was really testing our safety case and testing our understanding of geology, geomechanics and so on.

Now we're seeing that transition into how we are going to realize this project. How are we going to move from R and D into implementation? It's exciting because the industry as a whole is going through that, and we're seeing that internationally as well. Now we're seeing the agencies that are responsible for fuel management moving from the R and D space into the execution space. I think they're working collaboratively together, and we're working collaboratively with the industry.

The Chair: Thank you. It's a good place to end.

Jennifer McKelvie: Mr. Chair, since we don't have time to ask the other witnesses, would it be possible for Ms. Vera-Perez to send in information about some of the work she's doing on indigenous-owned and women-owned businesses and supply chains? Getting some of the successes around that and best practices would be great.

The Chair: Thank you. That's a great suggestion.

[*Translation*]

Mr. Simard, you have the floor for six minutes.

Mario Simard: Thank you, Mr. Chair.

I'm going to address Mr. Wilson. I'll give him a moment to put on his earpiece. I want to make sure he can hear the interpreters clearly rather than my provincial accent.

Mr. Wilson, I believe that, in a project such as yours, what seems most important to me is social acceptability, and this is based on a sense of trust.

For some time now, when people talk about projects of national interest, the association the public generally makes is that these are projects we want to carry out at an accelerated pace. If you mention both a fast-track approach and nuclear waste, for my part, a red light goes on in my mind.

As an ordinary Quebecker, I do not believe it is appropriate for your project to be designated as being in the national interest. I even think it's counterproductive for you, in that it may encourage more people to oppose it, as they'll get the impression that the consultation will be rushed through and that, at that point, the aim will be to brush aside certain entirely legitimate concerns.

I'm telling you this because I've been aware of objections for some time now. A few weeks ago, I believe it was the town of Dryden that asked, in essence, for the same thing: that these projects should not be classified as being of national interest.

Furthermore, last year we had a discussion with colleagues during which we wondered whether transport would be included in the impact assessment. It wasn't clear, and it was causing concern for some people that transport might not be taken into account in the impact assessment.

So, I'm telling you this because I don't know how you view the matter, but I don't believe it's to your advantage for your project to be designated as being of national interest. I don't know how you can reassure the public, but I believe this isn't the best way to carry out an assessment when dealing with something as sensitive as nuclear waste.

I'd like to hear your views on this. Perhaps you can reassure the average Quebecker and me. I have a great many concerns when we combine the idea of an accelerated process with the concept of nuclear waste.

That's making Mr. Guay yawn.

● (1245)

[*English*]

Derek Wilson: Thank you for the question. I'm going to respond in English.

The Major Projects Office, on this project.... On the topics that you spoke of—trust, transportation and the sensitivity of such a project—when we're talking about used nuclear fuel, those concerns are there regardless of whether it's through one process or another. Those are the types of questions that the general public would expect us to be asking of this type of project.

I believe you used the words “fast-tracking”. From my perspective, the MPO process doesn't give us a fast track. We still have to do the work that we have to do. We still have to meet the regulatory requirements that are in front of us, and we still have to ensure that there's an appropriate amount of consultation on this project. I don't see it as fast-tracking.

If we can see efficiencies through that process, and if we can see collaboration between government agencies and between provincial and federal governments, that will bring efficiency to this process, so we'll have a bit more certainty that we can hold the schedule we have in front of us to have an in-service date for this project.

The national importance of our project is that we have an existing liability of used fuel on the ground. We have to address that liability. Regardless of new builds, regardless of anything else going on, there is still that liability.

It's having the certainty that we can move the project forward. Doing it with a very respectful, diligent and robust regulatory process is our interest through this. If that can come through a major projects designation, then I think that's worth it.

[*Translation*]

Mario Simard: Thank you.

I'm going to ask you a quick question: In your opinion, will transport be taken into account in the impact assessment? You can answer me later, because I'd like to address another aspect that I think is important.

When we look at comparisons between energy production using nuclear technology and that from other energy sources, we see that the costs per megawatt differ significantly.

In your view, are waste management costs taken into account when comparing the production costs per megawatt of hydroelectricity with those of nuclear energy?

● (1250)

[*English*]

Derek Wilson: That's a good question.

The NWMO doesn't make the decisions on the type of technology that's selected. That is a decision between governments and utilities in terms of what energy mix they choose to look for.

When you're looking at a nuclear project, the cost of disposing of that waste—and this is unique to the nuclear industry—is known, is quantified up front and has to be costed for.

The decision will be made by industry and government in terms of the technology mix. We just have to make sure that we are following it and that we have a plan to address the waste when it comes from that particular source. It's not within our mandate to actually do the business case on technology on a per kilowatt basis or on disposal cost.

The Chair: Thank you both.

Thank you, colleagues, for your patience.

We apologize to the witnesses for not being able to give you the full time today. As Ms. McKelvie mentioned, we welcome briefs, and we really appreciated your testimony today.

Colleagues, with that, we're going to adjourn. We'll see you upstairs for a vote.

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