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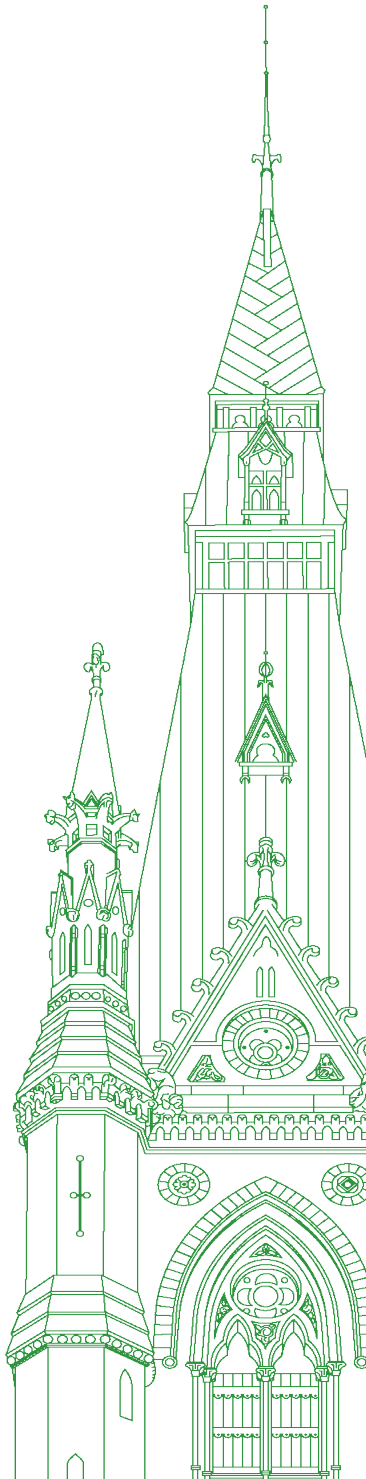

Chair: Salma Zahid

Standing Committee on Science and Research

Monday, June 1, 2026

● (1540)

[*English*]

The Vice-Chair (Tony Baldinelli (Niagara Falls—Niagara-on-the-Lake, CPC)): I call this meeting to order.

Welcome to meeting number 38 of the Standing Committee on Science and Research. We're meeting today to resume our study on Canada's dual-use and defence research needs.

I would like to make a few comments for the benefit of the witnesses and the members. Please wait until I recognize you by name before speaking.

Those on Zoom, at the bottom of your screen you can select the appropriate channel for interpretation: floor, English or French. I will remind you that all comments should be addressed through the chair.

I would also like to remind witnesses that committee members may ask questions in French or English. If you will need interpretation, please take a moment now to prepare your earpiece and select the listening channel you need in order to take full advantage of the time allotted for questions and answers.

I would like to welcome our first witnesses here today.

From the Department of National Defence, we have Dr. Kate Kaminska, director general, bureau of research, engineering and advanced leadership in innovation and science, Defence Research and Development Canada; Wendy Hadwen, assistant deputy minister, policy-industry; and Colonel Marc Prince, director of land force development, Canadian Armed Forces.

From the Department of Public Safety and Emergency Preparedness, we have Dr. Adam Green, director, national security policy.

We will start with the Department of National Defence.

You have the floor for five minutes.

Ms. Hadwen and Dr. Kaminska will share their time, and we will go to Dr. Green afterwards.

Wendy Hadwen (Assistant Deputy Minister, Policy-Industry, Department of National Defence): Thank you, Mr. Chair.

I am the assistant deputy minister for policy-industry at the Department of National Defence. We are all so grateful to have been invited to be part of your study.

I am here for two reasons. I am here because of the role we are playing, in policy, to develop and implement Canada's defence industrial strategy, and because Canada's dual-use and defence research needs are essential to the growth of our defence industrial base.

[*Translation*]

Last year, Canada invested $65 billion in defence and security. In March 2026, we reached the 2% threshold of gross domestic product, or GDP, for defence spending—a threshold set by the North Atlantic Treaty Organization, or NATO. We are now on track to meet NATO's new target of spending 3.5% of GDP on defence.

[*English*]

To reach this ambitious target, we want to build and sustain our defence industrial base and learn from real-world examples, such as the conflict in Ukraine, where we know that efficient R and D, innovation and adoption have been operationally decisive.

While there may be more than one definition of “dual use”, we consider it to be technologies, goods and services that can have an application in the commercial civilian market or the defence, security and intelligence market.

One example of dual-use technology is drones or unmanned autonomous systems. Drones can be used for intelligence collection, reconnaissance and surveillance, and/or to deliver a military effect. They can also be used for tracking wildfires, for example, or for environmental monitoring.

The defence industrial strategy is positioned to accelerate the adoption of Canadian defence and dual-use innovations in drones and many other sovereign capabilities, and turn that into a strategic advantage for the Canadian Armed Forces. That is why Colonel Prince is here, and I hope he will have a chance to share his operational experience with you.

[*Translation*]

It goes without saying that we are working closely with our federal partners, the provinces and territories, municipalities, and higher education and research institutions. This is now a national effort.

[*English*]

There are barriers to overcome for the system to work as it should. We know that industry requires a clear demand signal from national defence. We also know that we want to protect our investments and our industrial advantage, which is why co-operation with Public Safety Canada is so important and why Dr. Green is ready to speak more about this.

I will close my half of the remarks by highlighting some specific actions under the defence industrial strategy that may be relevant to your study.

First, we established a new science and research defence advisory council to strengthen collaboration and to facilitate open discussion between federal partners and post-secondary institutions on, specifically, defence and dual-use R and D.

We are accelerating the security clearance process for defence sector personnel and establishing a standardized accreditation process for industry-operated secure facilities.

We have invested $244 million in defence and dual-use technologies through the defence industry assist stream of the National Research Council's IRAP.

Also, we stood up BOREALIS, which is why I'm pleased to turn to Dr. Kaminska to finish the opening remarks on behalf of National Defence.

Kate Kaminska (Director General, Bureau of Research, Engineering and Advanced Leadership in Innovation and Science and Defence Research and Development Canada, Department of National Defence): Thank you, Mr. Chair and honourable members of the committee, for the opportunity to appear before you today.

I'm pleased to be able to discuss the bureau of research, engineering and advanced leadership in innovation and science, otherwise known as BOREALIS, and its role in strengthening Canada's defence and security innovation.

As the committee has heard from previous witnesses, Canada has world-class talent, cutting-edge research and globally competitive firms. The challenge is ensuring that sovereign Canadian technologies can move quickly from research and development into operational use in support of Canada's defence and security.

BOREALIS was established as part of Canada's defence industrial strategy to help accelerate that transition. Its focus is on strengthening the pathways between research, development, testing and operational adoption by better connecting government, industry, academia and military end-users around shared mission priorities.

A key component of this effort is the establishment of defence innovation secure hubs, otherwise known as DISHs. These hubs provide secure environments where Canadian companies, researchers and government can work together to design, prototype, test and refine their technologies.

In November 2025, a pilot DISH was established in Halifax, focused on the undersea domain, including autonomous systems, advanced sensing and AI-enabled analytics. The pilot has already supported collaborative testing and experimentation activities, helping Canadian companies evaluate and refine their technologies.

● (1545)

The Vice-Chair (Tony Baldinelli): Dr. Kaminska, could you wrap up quickly?

Kate Kaminska: In closing, BOREALIS represents an effort to strengthen Canada's ability to translate research excellence into operational capability.

Thank you, and I look forward to your questions.

The Vice-Chair (Tony Baldinelli): Dr. Green, go ahead.

Adam Green (Director, National Security Policy, Department of Public Safety and Emergency Preparedness): Good afternoon, Mr. Chair and honourable members.

Thank you for the opportunity to speak before this committee today.

My name is Adam Green. I'm the director for national security policy at Public Safety Canada. Part of my remit is to oversee the activities of Public Safety's research security centre.

To begin with, I want to properly frame the remit I will speak to you about today. The research security centre is at the heart of Canada's approach to the challenge of research security, which is a topic that I know has been at the core of the concerns of this committee.

For the committee's clarity, while we do provide information to researchers in academia on a range of security-related topics, during which questions about the security process can be raised, responsibility for personnel-vetting and for delivering security clearances is beyond the scope of the centre's activities.

[*Translation*]

As you are likely aware, national security threats targeting intellectual property and technological know-how have been increasingly prevalent over the last decade as Canada is placing itself amongst the global leaders in research and technology.

[*English*]

Canada's cutting-edge innovation in fields such as artificial intelligence, quantum and aerospace makes the entire research ecosystem particularly vulnerable to threats such as espionage, foreign interference and theft. What makes us innovative and competitive can also make us a target.

To tackle this head-on, in 2022, the federal government made significant investments to enhance Canada's research security posture so as to ensure that Canadian research, innovation and intellectual property would be protected.

[*Translation*]

Part of this funding was used to establish the Research Security Centre which serves as an entryway for the academic community into the Government of Canada for research security advice and guidance. Taken together with a range of policies and processes enacted over the past five years, Canada's research security posture has made us a global leader in this space.

I am very proud to be here before this committee and in a position to share with you that our work is highly regarded by our allies and like-minded partners. Countries throughout Europe, Asia and Oceania regularly look to us to share our experience, provide best practices and to interrogate how they can learn from our approach on this issue.

[*English*]

What sets us apart from most other countries on research security is that our policies are centralized and have a real ability to prevent potential national security threats before they can manifest. We do this by reviewing a proportion of federal grant applications to ensure that the risks relating to the theft of sensitive and dual-use intellectual property are mitigated. No other country in the world has a centralized function to do this.

Similarly, the named research organizations list of our sensitive technology research and affiliations of concern, STRAC, policy, is one of the first of its kind in the world and is referenced by several of our allies in their own research security policies and documentation. This made-in-Canada list is backed by a methodology and a set of tailored indicators that help us determine whether a foreign institution is connected with the military or state security apparatus of a foreign country that poses a national security risk to Canada.

The centre has been successful in building awareness of national security threats within the Canadian research ecosystem. We've delivered hundreds of what we call “safeguarding science” workshops. We've conducted over 140 national security reviews of grant applications. We've connected the right expertise with the academic sector, and we've built a network of hundreds of stakeholders across Canada and internationally. Most of this would not have been possible without buy-in from academia.

Finally, I would be remiss if I did not acknowledge the great work this committee has undertaken as part of its own 2024 study on the security of research partnerships.

● (1550)

[*Translation*]

I am pleased to share that the Research Security Centre has been working with its partners help implement this committee's recommendations.

One of the key recommendations made to Public Safety Canada was to encourage and assist post-secondary institutions in adopting measures to protect researchers and students who are the target of foreign interference on campus.

[*English*]

Our regional advisers, who are spread out geographically around the country, have been working with the office of the national counter foreign interference coordinator to coordinate visits to universities across Canada to speak directly with staff and students on foreign interference challenges on campus, and to offer guidance and support in addressing those issues.

We have also worked with our colleagues in other government departments, as referenced by my colleagues, to provide targeted and timely briefings to university stakeholders and researchers on a variety of issues.

These collaborative efforts have made Canada's research security posture much more resilient to emerging threats. Threat actors will continue to try to adapt their tactics, and academic partnerships will wax and wane with a range of countries, but we are confident that the necessary tools and policies we have put in place will continue to adapt so as to address evolving concerns.

Thank you very much.

The Vice-Chair (Tony Baldinelli): Thank you, Dr. Green.

With that, we're going to go to our first round of questioning of six minutes each.

We'll begin with MP Ho.

Vincent Ho (Richmond Hill South, CPC): Thank you, Chair.

My first round of questions is going to be for the officials at the Department of National Defence and the Canadian Armed Forces.

In your opening remarks, you mentioned the war in Ukraine. I want to follow up on that point for a little bit.

In 2024, Canada donated an advanced long-range air defence system to Ukraine called the NASAMS. We do not operate any medium- or long-range surface-to-air missile systems here in Canada.

We're gathered here today to talk about military spending. It's important to examine our capabilities' gap, and the Liberal incompetence that's expanding that gap.

This question is for the colonel, but anyone from the Department of National Defence can answer.

Could you please explain Canada's current surface-to-air missile capabilities?

Marc Prince (Director of Land Force Development, Canadian Armed Forces, Department of National Defence): I'm not particularly familiar with air defence. It's not my specialty, but we can certainly look into that.

Vincent Ho: On that point, how can we discuss further military spending when we can't defend our troops from modern threats? It seems like we're procuring advanced weaponry that we don't have for other countries. Is that a problem? Do you think that we need to procure weapons for our own troops, too?

Marc Prince: We have procured ground-based air defence for our troops.

I'm trying to find the nexus to dual-use here.

Vincent Ho: On the weapons that you're talking about for our own troops, are they more advanced than what we procured in respect of the NASAMS in 2024 for Ukraine? Is that comparable, worse or better?

Marc Prince: I'm not an expert on air defence, but I can certainly take your question to our SMEs.

Vincent Ho: Okay. I guess we'll turn the page.

I'm looking at the Department of National Defence's website. There's a whole policy on gender-based analysis plus at national defence.

I'm wondering if any one of you could elaborate on what role this policy plays in all the work that you do when it comes to contracts and procurement.

Wendy Hadwen: The gender-based analysis is one of several policy requirements on accessing funds brought to us by the Treasury Board Secretariat.

We need to answer some key points about the impact of some of our investments, but we didn't come prepared to talk about all of defence investments at this committee. We brought research and development.

● (1555)

Vincent Ho: In the research and development space, there are contracts and grants that are overseen. Do race and gender ever play roles in the selection of these contracts or grants?

Maybe Dr. Kaminska can speak to that, because she does a little bit of work on the grants.

Kate Kaminska: Yes. I can speak to this certainly from the perspective of BOREALIS, the bureau of research, engineering and advanced leadership in innovation and science. As you may or may not be aware, one of the key initiatives is our defence innovation secure hubs. In February of this year, we launched a call for proposals for the next round of defence innovation secure hubs, targeting two technology areas, one of them being quantum science and the other being uncrewed systems, both of which have a nexus to sovereign capabilities.

As part of the evaluation process for that call for proposals, we certainly make GBA+ and other inclusive access considerations part of the evaluation process. This ensures that we access the best and the brightest talent—

Vincent Ho: So what you're saying is that gender and race or other identity markers are factors that you will consider in that consideration process.

Kate Kaminska: It is a factor in the evaluation criteria of the proposals that we receive. They do undergo a GBA+ analysis, yes.

Vincent Ho: Could you elaborate on how that would bolster our defence capabilities?

Kate Kaminska: Well, certainly in the research space we consider the variety of views and perspectives to be a strength of any kind of research proposal. This has been borne out through previous initiatives that we have undertaken under the program we're using, which is called IDEaS. We continue that best practice to ensure that, again, we attract a broad range of stakeholders and innovators in order to bring the best and the brightest to be able to work on hard defence and security R and D problems.

Vincent Ho: How would the GBA analysis promote that? Are you saying that you wouldn't consider the best applicants...if it wasn't for the GBA policy?

Kate Kaminska: All applications are evaluated on merit first. Then we consider a number of factors as additional—

Vincent Ho: You say merit, but then you say also GBA, so—

The Vice-Chair (Tony Baldinelli): We have to move on to the next set of questions.

MP McKelvie, go ahead, please.

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

I have three questions and six minutes. Hopefully, we can get through these.

Dr. Kaminska, I'm wondering if you can speak to the engagement you've had with the academic community, how you're using them in an advisory role and how you're using them to identify the dual-use technologies that we should be investing in and advancing here in Canada.

Kate Kaminska: Absolutely I can speak to that. I will also turn to my colleague Wendy Hadwen, because the primary engagement mechanism we have with our academic partners is through the working group that has been established with particularly the U15 universities but also more broadly under the defence industrial strategy.

The committee has now met two or three times, I believe. Each time, we've offered them insight into our plans. We certainly have solicited active feedback to ensure that what we are proposing to the government also meets the needs of the academic sector; they are absolutely key stakeholders. They provide the talent base for any kind of R and D activity we do. We collaborate quite closely with academia at Defence Research and Development Canada. We use that forum primarily. However, I can also add that for BOREALIS, we hosted an industry and academic engagement day early this year. We had over 300 participants from not only the academic sector, but certainly the academic sector was very well covered in that.

I don't know if my colleague Wendy wants to add anything to that.

Jennifer McKelvie: Likewise, can you share how you're engaging with other government departments? One in particular that I'm interested in is the Canadian geological survey, recognizing that if we're going to be increasing surveillance and drone capabilities, a lot of data can be acquired while we're doing that, using LiDAR, gravity and mag. How are we working with them to ensure that we're really getting dual use in that space as well?

● (1600)

Kate Kaminska: I will say that BOREALIS is designed very much as a whole-of-government effort. It is not just the Department of National Defence. We are working very closely with our colleagues at Innovation, Science and Economic Development Canada, the National Research Council, CSE and other government departments on an as-needed basis.

You're absolutely right that the Geological Survey of Canada would be an important stakeholder as we move into more of the ISR applications you mentioned. We don't yet have an ongoing project with them, but as it is a whole-of-government initiative, I fully expect that as we move into the domains that require that kind of data and that kind of expertise, we will absolutely ensure that we collaborate with them. BOREALIS is in fact designed in that way—to leverage the whole federal ecosystem.

Jennifer McKelvie: My third question has two parts.

The first part is that, in your engagement with universities, are you developing blanket IP and security clearance requirements and working through the process? It will be a bit of a change for academics to participate in this research. How are you doing that?

The second part is that as you define “dual-use research”, are you intentionally casting the net wide? I think the United States has done a very good job of that. Medicine, cancer and major outcomes for soldiers have been included under dual use. Likewise, there are their superfund sites for environmental contamination. They've been casting that net quite broadly.

Can you speak to those questions: one, the blanket relationships with the universities in IP and security, and then the second one on how wide you're casting dual use?

Kate Kaminska: I will answer the second part first, which is to say that the work of BOREALIS is driven by the sovereign capability areas that are defined in the defence industrial strategy. As you may know, they are in fact pretty broad. They do include things like medical countermeasures, for example, for chemical, biological, nuclear or radiological events, which we need to protect our armed forces from. Things like biotech absolutely would be included.

However, we do have to prioritize. We were just stood up in September, so at this moment we are prioritizing three major sovereign technology areas, the first being sensing, which is covered by our maritime defence innovation secure hub; the second being quantum; and third being uncrewed systems. Those two latter areas are the subject of the call for proposals, which I alluded to, and we hope to announce soon who we will be working with in those domains.

For the first question on IP and collaboration with the universities, I will turn it over to my colleague, ADM Hadwen, to chime in.

Wendy Hadwen: Different elements of the federal family have different lines of effort on intellectual property. We are bringing them all together so that we can make sure we do the very best job of privileging Canadian IP and that we don't accidentally put structures in place that will disadvantage us. We know that IP is an essential part of how we maintain and grow an industrial advantage. There are provisions in the defence industrial strategy for us to come together, and we will be working on that as a matter of priority.

The Vice-Chair (Tony Baldinelli): Thank you. I'm going to end it right there.

I'm going to go on to MP Blanchette-Joncas.

[*Translation*]

Maxime Blanchette-Joncas (Rimouski—La Matapédia, BQ): Thank you, Mr. Chair. Congratulations on the fine job you are doing as acting chair today.

Ms. Hadwen, can you tell us who currently sits on the Science and Research Defence Advisory Council?

Wendy Hadwen: Mr. Chair, I thank the member for his question.

There are several federal departments, including ours, namely National Defence; Innovation, Science and Economic Development Canada; the Department of Finance; the Natural Sciences and Engineering Research Council of Canada; the organization represented by Ms. Kaminska, namely the Bureau of Research, Engineering and Advanced Leadership in Innovation and Science; and Defence Research and Development Canada.

There is also the National Research Council of Canada; the Canadian Defence Academy; Communications Security Establishment Canada; the Canada Foundation for Innovation; and U15 Canada, an umbrella organization representing Canada's 15 largest universities. There is also Polytechnique Montréal; Universities Canada; and Tech-Access Canada.

Finally, the University of Toronto, Université Laval, Université de Sherbrooke, University of Yukon, University of Alberta, Dalhousie University and the University of British Columbia are also members.

● (1605)

Maxime Blanchette-Joncas: Thank you.

Why wasn't the complete list of members ever made public?

Wendy Hadwen: Thank you for the question.

It is public now.

Maxime Blanchette-Joncas: So, you felt it was important to announce that you were going to create an advisory council, but not important enough to disclose its membership.

Is that correct?

Wendy Hadwen: We've worked hard since the launch of the defence industrial strategy, which was announced on February 17. Today is June 1, and we have managed, nonetheless, to fill the positions on this council. We have not wasted any time.

Maxime Blanchette-Joncas: We'll come back to the issue of transparency.

Could you tell us what criteria were used to select council members?

Wendy Hadwen: I am not making an official announcement regarding the council's membership. I believe it may change as discussions progress. Based on my experience so far, this is an open council. We are prepared to invite anyone concerned about items on the agenda at any time.

Maxime Blanchette-Joncas: Very well.

I'll repeat my question, Ms. Hadwen. What criteria were used to select council members?

Wendy Hadwen: Thank you for the question.

We started in partnership with U15 Canada and all the government agencies I mentioned. We then targeted a few universities, but that's not an exclusive list.

Our approach is open, but it's impossible to have every institution at the table at any given time. That's where we started, but our work isn't done.

Maxime Blanchette-Joncas: What are the criteria, Ms. Hadwen?

Did you draw names from a hat?

Can you tell me how you went about it?

Wendy Hadwen: Thank you for the question.

We started by asking ourselves which path we could take to get the most out of our innovation throughout the whole country.

We sought representation from several provinces as well as from large and small universities. Obviously, we considered our research and development priorities. We also added an expertise component.

Maxime Blanchette-Joncas: I didn’t realize that trying to assess innovation development or your strategic directions was part of the criteria, but perhaps you could expand on your answer and give me a serious response. I want to know who makes decisions at the end of the day.

Is it the council? Is it BOREALIS? Is it the department, the armed forces?

Wendy Hadwen: Thank you for the question.

First of all, this is an advisory group. We all have programs we are currently managing that provide funding—but we also have a strategic policy mandate, which allows us to discuss the approach we wish to take. We're at the very beginning of that process.

Maxime Blanchette-Joncas: I'm trying to understand your strategy, but you're not answering me.

Who makes the decisions?

Is it BOREALIS, the council or the department?

Could you explain your strategy to us?

Wendy Hadwen: Thank you for repeating the question.

Actually, it's not quite a decision-making committee. It's an advisory committee. So, if there are decisions to be made about a program, it is up to the department—which has the authority and capacity to do so—to implement the program. It is primarily a coordination forum, first and foremost.

Of course, as far as BOREALIS is concerned, my colleague has the authority to make her own decisions.

● (1610)

[*English*]

The Vice-Chair (Tony Baldinelli): Ms. Hadwen, could you wrap up your response? We have to go to our second round.

Thank you.

We're going to our second round of five-minute questioning, and we're going to begin with MP Mahal.

Jagsharan Singh Mahal (Edmonton Southeast, CPC): Thank you, Chair.

Thank you to all of the witnesses for being here.

I want to start with Dr. Kaminska.

With regard to the defence industrial strategy committee committing to creating a new science and research defence advisory council in 2026, I found it was quite difficult for your fellow witness, Madame Hadwen, to answer how the committee will be defined, who will sit on it, how the members will be chosen and why their names have not been made public so far.

Do you want to add something to that? Can you elaborate really quickly on how the members will be chosen, or should I move on?

Kate Kaminska: I do not have that information.

Jagsharan Singh Mahal: Thank you.

Let me go to my next question in that case.

The Liberal government has produced strategies, panels and advisory councils, but soldiers still need equipment. How does this new defence research structure get technology into the hands of Canadian Armed Forces members faster?

Kate Kaminska: BOREALIS was designed with intention to ensure that we prioritize the need to equip our men and women in uniform. As you will see—perhaps this is reflected in the answer we're providing—we're taking very much what we call a crawl-walk-run approach. Rather than spending a lot of time trying to define the perfect system, we're learning as we go.

For example, while we're still building BOREALIS, we are already leaning out on launching and delivering on a number of initiatives, including the defence innovation secure hubs that I mentioned, the first one of which was announced in November. The subsequent ones will be announced very soon as well. We're also collaborating—

Jagsharan Singh Mahal: That means that we should have a timeline for all these projects to be launched on time to make sure that the real purpose is served on time and that they meet the reality on the ground.

What is the average timeline from DRDC-supported research to Canadian Armed Forces fielding?

Kate Kaminska: That is a question that's very difficult to answer because, of course, it depends on the specific technology area you choose. For example, if you look at a domain like quantum technology, it is not yet a domain that's mature enough to be able to field a lot of capabilities quickly. We are certainly getting there, but the science, in many ways, has to still catch up. We are investing, in that case, in the science that needs to happen to get us to the point where we will be able to develop practical applications of these technologies.

Jagsharan Singh Mahal: Can you name one recent DRDC-backed innovation that moved quickly from research into operational use by the Canadian Armed Forces?

Kate Kaminska: A good example of that is our work on the over-the-horizon radar. As you will see and you might have heard, there was a partnership with our Australian counterparts that was announced not too long ago to be able to field the capability quickly. That is something we're very proud of because the foundational science was done at DRDC.

Jagsharan Singh Mahal: Now I want to move to Colonel Prince. If a domestic industrial preference slows delivery of urgently needed equipment, does that create operational risk for the Canadian Armed Forces?

● (1615)

Marc Prince: I don't know. I'd have to study that to get back to you more fulsomely.

Jagsharan Singh Mahal: From your experience as a colonel, why do you find it difficult to find an answer to that simple question on a layman standard?

Marc Prince: What's the approach? I'm trying to understand the approach of your question.

Jagsharan Singh Mahal: My question was simple. If an industrial preference slows down the delivery—

Tony Baldinelli: I'm going to have to interrupt. I apologize. We're over time.

We're going to go to our Liberal member, MP Deschênes-Thériault.

[*Translation*]

Guillaume Deschênes-Thériault (Madawaska—Restigouche, Lib.): Thank you very much, Mr. Chair.

Ms. Kaminska, Canada's innovation ecosystem comprises over 130 federal programs. These programs help foster excellence in research, but they can sometimes be difficult to navigate. I would like to hear your thoughts on how BOREALIS will help to better connect our partners at Innovation, Science and Economic Development Canada with these programs.

Essentially, my question is about how we can ensure that promising technologies are adopted more quickly, safely and effectively—from design through to deployment—where we can see concrete results.

[*English*]

Kate Kaminska: Thank you very much for that question. It's an important one that we've certainly thought about very deeply.

On the first point of there being over 100 different innovation programs, you're right. The innovation landscape is quite congested, and some call it "fragmented". One of the purposes of BOREALIS is to help us evaluate which of that suite of government programs is most applicable to defence and security and which of them we can best leverage to do exactly what you describe: to ensure that we can drive the programming in a way that results in an operational capability at the end.

How do we do that? There are a number of steps we're taking right now to ensure that we can make that transition easier.

Number one is ensuring that we involve our Canadian Armed Forces members from the outset. What tended to happen in the past is that innovation and capability development followed what I would call "parallel tracks". Right now, we're working very closely with our Canadian Armed Forces partners, such as Colonel Prince here, to ensure that we engage them at the very early stages of development.

One example I can give is that BOREALIS is working to support the army's Minerva initiative to ensure that our army members have access to the latest and greatest drone technology, because, as you know, drones are becoming a staple of the modern battlefield. In that way, we're working with Colonel Prince and his organization to quickly define requirements. We have launched a call for proposals called true north precision under the IDEaS program. The intent is to source Canadian-made, cost-effective, drone-based targeting and range-finding capabilities to enhance battlefield awareness. Again, the key to success is ensuring that we're in lockstep with what the army, in this case, wants and that the R and D really meets the needs of the armed forces.

The second part on the other end of the spectrum, if you will, is that we want to make sure there is a pathway to procurement. In that respect, we're working closely with our procurement authorities within the Department of National Defence, and increasingly the Defence Investment Agency as it stands up, to ensure that we can build that pathway from idea through research and development into fielding that technology. I would say we're going even further than that, thinking about potential scaling and commercialization down the road, and engaging our capital market colleagues through it and collaborating with folks like BDC to ensure there's also private capital available for our Canadian companies to scale their innovations.

[*Translation*]

Guillaume Deschênes-Thériault: Thank you very much.

Ms. Hadwen, I'd like to hear your thoughts on collaborating with universities.

How can we ensure that we are prepared and meeting our security requirements? By this I mean preparedness, capacity and tools.

What are we going to do to ensure that collaborations with universities are successful while remaining compliant with security and defence research requirements?

● (1620)

Wendy Hadwen: As you can imagine, it is extremely important for us to collaborate effectively with all universities and research centres, since that is key to maintaining Canada's competitive edge. We certainly don't want to lose that edge because we haven't focused enough on protecting our research.

I'd like to turn to Mr. Green. We've worked very closely together to get to this point in order to protect—

[*English*]

The Vice-Chair (Tony Baldinelli): I'm going to have to stop you there.

We'll now go on to MP Blanchette-Joncas for two and a half minutes.

[*Translation*]

Maxime Blanchette-Joncas: Ms. Hadwen, as I understand it, members of the Science and Research Defence Advisory Council or the organizations representing them will be able to submit projects, receive funding and then participate in programs that will help guide the council.

What mechanism has been implemented to manage conflicts of interest and prevent a member or organization serving on the council from receiving an undue advantage?

Wendy Hadwen: Thank you for the question.

The council has no decision-making power. It is an advisory council, and provides advice on the implementation of Canada's defence industrial strategy. The council itself does not allocate funds, nor does it make decisions regarding our investments.

Maxime Blanchette-Joncas: Of course it doesn't provide funding—but it will inform your decisions.

Who determines the agenda when you meet? Which organization or council member is it?

Wendy Hadwen: The council is co-chaired by U15 Canada and National Defence.

Maxime Blanchette-Joncas: Who decides what topics will be discussed during these consultations?

Wendy Hadwen: The agenda is based on the implementation of Canada's defence industrial strategy, which means it covers all topics addressed in the strategy, ranging from barriers to securing research to security clearances—including the deployment of our sovereign capabilities.

Maxime Blanchette-Joncas: I fully understand.

Will the council's recommendations, advice or proceedings be made public?

Wendy Hadwen: The council is still in its early stages, and—

Maxime Blanchette-Joncas: So that isn't known.

Wendy Hadwen: No, that's not it.

Maxime Blanchette-Joncas: The list was just received today, and a decision will be made later on as to whether or not information about the public consultations will be made public. That is my understanding.

Wendy Hadwen: Was there a question?

Maxime Blanchette-Joncas: Will it be made public?

Wendy Hadwen: We've begun the work, but it's—

Maxime Blanchette-Joncas: Ms. Hadwen, there are two possible answers: “yes” and “no”.

Wendy Hadwen: Of course, transparency is important to us.

Maxime Blanchette-Joncas: Which is why you never released the list. It's up to me, at this committee meeting, to ask you for that list today.

But you're unable to tell me why you didn't post it on the website. So much for transparency.

[*English*]

The Vice-Chair (Tony Baldinelli): I'm going to have to stop you there.

We're going to go to MP Lawton now for five minutes of questions.

Andrew Lawton (Elgin—St. Thomas—London South, CPC): Thank you, Mr. Chair. You're doing a bang-up job in your role. I appreciate that.

Thank you to the witnesses for being here.

Ms. Hadwen, you had referred in your opening statements to the increase in defence spending relative to Canada's NATO commitment and the intersection that has with the dual use policy and the broader defence strategy. I would like to build off that for a moment.

I'm assuming you're aware that we have learned through Order Paper questions and other government information that over $10 billion of the so-called new federal spending on defence is actually just reclassified money that the government was already spending on things on infrastructure, pensions and the Coast Guard. Are you aware of that?

Wendy Hadwen: In order to get to 2% this year, there was an additional $9 billion. That money was invested in four key areas. I'm only able to speak to it because I was part of the technical briefs for that.

● (1625)

Andrew Lawton: I'll just be more specific.

Are you aware that some of the government's stated increases in defence spending have actually just been reclassification of existing government spending?

Wendy Hadwen: What I am aware of is how hard we work to move spending that we had in mind for the future into the present. We accelerated some things that were in planning.

Andrew Lawton: I apologize. Just a yes or no. Are you aware of this? If the answer is yes, I can ask about that. If the answer is no, I can ask about that. I'm just not getting an answer to the question.

Wendy Hadwen: I'm sorry, Mr. Chair.

What I can say is that we moved spending that we had planned for the future into the present.

Andrew Lawton: Okay.

Wendy Hadwen: We brought forward things that were in planning. We either did more, that's the infrastructure spending, or we did—

Andrew Lawton: I'll ask the question in a different way.

Is there any spending the government is lumping under the NATO spending category that previously would not have been in that category? Is there any spending the government is now saying is defence spending, that percentage of the GDP, that a year ago would not have been construed as that?

Okay, the answer is yes. I was just hoping you'd acknowledge that. That's fine.

The concern I have about the dual use strategy is that when we are looking at things that can serve civilian needs and also defence needs, I feel we are moving more towards a direction where it's easier to have these blurred lines where a program or acquisition that isn't actually increasing our defence capability, and isn't actually increasing our security capability, is being classified as that. It is being used to basically artificially inflate a number.

I don't know if anyone is willing to answer this. What's being done to ensure that we aren't doing that and that dual use actually has a defence component that increases what we want our defence system to be able to do?

Wendy Hadwen: Mr. Chair, if it's okay with you, I'll start, and ask Kate to follow up.

For us, the key element of the defence industrial strategy is the 10 sovereign capabilities. For the first time ever, you have the Department of National Defence being very public about its demand signal. That is in response to what we heard from industry in the course of the development of the strategy, which was a very strong interest in understanding what we needed. This is the beginning of our attempt to clarify where we have a need, and that sets the stage, then, for the dual-use aspect of it.

Andrew Lawton: We've had the Prime Minister talk about telecommunication systems, airports, critical mineral infrastructure. These are all very important things, but these are not going to help our soldiers have the tools they need on the front lines, as submarines and aircraft are. What's being done to ensure these vaunted increases to our defence spending are actually increases in our military capacity as a country?

Wendy Hadwen: There is a significant chapter on supply chain in the defence industrial strategy, because we know the size of the country, and the requirement to have a bigger defence presence in Canada calls on us to be more clear about our needs in terms of supply chains.

Andrew Lawton: Could you be more clear in the answers, please? I'm just asking if you are aware that $10 billion has been reclassified to give the government credit for something they aren't doing, which is increasing defence capacity. Why is this being allowed? We're supposed to be proud of this, as a country, when we're just moving around numbers on a balance sheet.

The Vice-Chair (Tony Baldinelli): With that, I'm going to have to stop. Perhaps you can provide a written response to the question my colleague has presented.

I'll go now to MP Noormohamed for five minutes.

Taleeb Noormohamed (Vancouver Granville, Lib.): Thank you, Mr. Chair.

Thank you to the witnesses for being here.

I know my colleagues have been trying to finalize the answer to this.

Ms. Hadwen, in one minute or less, can you please finish your answer on how you're working with the academic community to ensure they're ready for security requirements? I have very limited time, so if you can keep the answer brief that would be great.

Adam Green: I'm happy to lean in on this one. This is a joint approach across government. We have worked hand in glove with the academic community going back to 2016-17. This is because this is an all-fronts approach, whereby a lot of the research and development has migrated away from government facilities into both the academic and the private sector. All the safeguards we were previously focusing on government facilities have now moved into the academic sector, requiring us to work together as the programs and the resources expand.

● (1630)

Taleeb Noormohamed: Thank you very much.

One of the things we hear a lot about when we talk to Canadian innovators and Canadian companies is that they want the Government of Canada and Canada's military to be their customer. Sometimes it is more challenging to become a customer of the Government of Canada or Canada's armed forces than it is to be the customer of other governments or other armed forces. What are some of the things we should be thinking about at this moment in time, when Canada is working on, and the Prime Minister is very clear on, making sure that we have our own independence, that we look at sovereignty as something that is essential, not optional? What are some of the things we need to be doing from a policy standpoint to ensure that those directions and that directive, and that sense of purpose for Canadian innovators being able to sell into Canada, the Canadian government...? And, of course, our armed forces is front of mind.

Wendy Hadwen: We heard lots of these same points as we began work on the defence industrial strategy. That's one reason why there is a new program, the regional defence investment initiative, delivered by the regional development agencies of the government across the country so that small and medium-sized businesses can directly make applications to sell to the government, to national defence, particularly in the dual-use space. Of course, there's more we can do. The country is largely small and medium-sized businesses. We think that working with universities and BOREALIS will give us a chance to be more exposed.

Taleeb Noormohamed: If we then go to the question of how BOREALIS can take this on intentionally, one of the concerns, obviously, is that these small and medium-sized businesses grow in Canada a little bit, they get customers elsewhere, and they recognize or they realize that perhaps they're not going to be able to continue their growth plan here. Of course, that's one thing we want to change, and obviously decisions that we're making are going to help inform that. What else should we be doing, and what are some of the things that you have seen, particularly through the work that BOREALIS is doing as it gets organized, in ensuring that those SMEs can become larger global players based in Canada?

Kate Kaminska: I think it gets to the heart of what we're trying to do with BOREALIS, which is to ensure that we retain the talent that we have in Canada; we retain the IP; and we allow our small and medium-sized companies to grow, thrive and stay in Canada, as opposed to moving elsewhere.

There are many components. There's not one simple answer to this. It's a suite of measures, taken together, that is going to help this problem.

One of them—and I believe this is a key one—is that we need to work with venture capital and the capital markets to ensure that we provide them a signal as to which of these great Canadian companies really have the cutting-edge technology, so that they can secure private investment. This is one of the objectives for the defence innovation secure hubs. We will be bringing Canadian innovators into an environment where they can test and showcase their technologies to the end-users, whether they are our Canadian Armed Forces members or national security partners, and, through that, get a sense of where they can improve their technology to perhaps secure that first contract, that first buy. That will also send a signal to the venture capital markets as to which of the innovations are ones that we can expect to sell, not just in Canada but also abroad.

Canada is a relatively small defence market—

The Vice-Chair (Tony Baldinelli): I'm going to have to stop you there.

With that, I'm going to go to a final, additional round.

We're going to go to MP Ho. You have five minutes.

Vincent Ho: Thank you, Chair.

I'm going to change gears here. In March 2026, the Liberal government announced that it was spending $200 million on a space pad in Canso, as you're probably aware, but in the photos it looks as if it's nothing more than a gravel pit. Last week, we had the president of the Canadian Space Agency at this very committee, and she said that it was the Department of National Defence that was involved in the procurement of the space pad. I just want to confirm that DND was, in fact, involved in the procurement of this space pad.

● (1635)

Kate Kaminska: I can speak only to BOREALIS. Certainly, it is not a part of the BOREALIS program.

Wendy Hadwen: Indeed, it was the Minister of National Defence who announced this investment, as part of moving out the defence industrial strategy's focus on space launch as a sovereign capability. It is a priority because, at the moment, everything that Canada and our innovators send into outer space is not going from Canadian soil.

The amount of money also involved three Canadian companies—

Vincent Ho: Just to follow up on that, did you or did any Department of National Defence official verify the physical state of the Canso site before the so-called investment was made? Do you know if a DND official visited the site?

Wendy Hadwen: I do. National Defence did verify the site and the proposals, and additional environmental assessments and other due diligence was done on all of the aspects of—

Vincent Ho: It just looks like a gravel pit. It's not a fully built-out facility. Is that correct?

Wendy Hadwen: I do not know what the space launch looks like. This is something I can take on notice, and it can come back in writing—

Vincent Ho: What, exactly, is the Department of National Defence leasing for $200 million? Is it a launch pad that we're getting or launching services? Is it access? What kind of infrastructure are we actually getting? Two hundred million dollars is a lot of money. It's not a rounding error. Could you just elaborate on that?

Wendy Hadwen: In the course of preparing the defence industrial strategy, we identified space launch as a really important opportunity because of the intersection of the operational need—so much of our military's domain awareness in the future will likely come from space-based capabilities—but also because of the industrial opportunity. So many of Canada's industries are doing really exciting research that we could be using in Canada to achieve an operational and industrial advantage.

The program specifically—

Vincent Ho: Okay, we understand that space is important.

Wendy Hadwen: If I may—

Vincent Ho: We can all agree on that.

What is, specifically, this $200-million investment that was made just a couple of months ago? The Liberal press release came out from the Liberal defence minister. It talked about the defence industrial strategy and dual use, which is exactly what we're studying here today.

What exactly are we getting? What objective are we achieving with this space pad? It's just a gravel pit. What operational requirement is this gravel pit—which many are describing as a parking lot—meeting?

Wendy Hadwen: The announcement the minister made had three elements to it. One of them is joining NATO's Starlift, an alliance project on space capabilities.

Another is a competition for three Canadian companies to prepare light lift, and they are meant to be ready by 2032. The commitment is for three companies to enter into a competition to launch and deliver a space launch capability.

Vincent Ho: I want to talk, in my last question, about Maritime Launch Services, the company involved in this Liberal boondoggle. It has a pattern of missing deadlines. Back in 2017, it was projected to launch eight rockets by 2022. They have launched only two rockets to date, and one of them was a student-built rocket. One launched in 2025, but it was a commercial supportable test. Neither of them crossed the Kármán line.

Are you confident that Maritime Launch Services will deliver, and if not, what kinds of penalties are there if they miss a deadline?

● (1640)

The Vice-Chair (Tony Baldinelli): I'm going to have to stop you there. We're over time. Perhaps you could provide a written response to the question that the member has posed.

With that, we're going to go for five minutes to MP Rana.

Aslam Rana (Hamilton Centre, Lib.): Thank you, Mr. Chair.

Thank you to all the witnesses for your valuable time.

Dr. Kaminska, Canada's defence industry contributes nearly $10 billion to our GDP and supports over 81,000 jobs. BOREALIS is designed to shorten the distance between promising ideas and impact. What concrete measurable milestones will BOREALIS use over the next three years to demonstrate that it's accelerating that path?

Kate Kaminska: We certainly have set specific key performance indicators for ourselves. One of them is benchmarking ourselves against what the current programming timelines are and aiming to accelerate those timelines.

I'll give a specific example of the call for proposals for the quantum and uncrewed systems defence innovation secure hubs. We launched the call for proposals in February. The proposals—and we received well over 100—were evaluated by a large contingent of subject matter experts and Canadian Armed Forces members within a period of two weeks, which is much faster than the standard review process for a project of that scale, and we are getting ready to announce the winner so that the work can start.

That is one tangible example, one small indicator. Certainly the timelines from idea to implementation are well known among the suite of government programs that exist, so we will be working with our partners to ensure that we streamline processes, that we lower the barriers to entry for folks who apply to these calls for proposals and ultimately get there faster.

Another key component, of course, will be how we tie into procurement. That is still an active area of work, and, again, we're working with the appropriate procurement authorities to do that, whether they be procurement authorities within the department or the newly established Defence Investment Agency.

Those are the types of metrics that we are after.

Aslam Rana: Thank you.

Defence Research and Development Canada has $4.23 billion in North American Aerospace Defense Command's science and technology investments over 20 years. Where exactly does BOREALIS fit, and how are you making sure that it adds value where DRDC currently can't?

Kate Kaminska: That's an excellent question, and thank you for it.

This is the value of BOREALIS being based in Defence Research and Development Canada, because we are co-located with the same colleagues who are working on the NORAD modernization science and technology initiative.

In fact, working on our first maritime defence innovation secure hub pilot, we're using that pilot to accelerate the delivery of some of the capabilities that were under the NORAD modernization science and technology initiative, specifically accelerating the development of the next generation of underwater sensing technologies in partnership with the industrial partners and the academic partners that we have in the DISH.

BOREALIS is serving as a mechanism to accelerate the impact of that investment.

Aslam Rana: Thank you.

Ms. Hadwen, the defence industrial strategy is committing $6.6 billion over the next five years to grow defence R and D by 85% by 2035.

What incentive structures or accountability measures are being put in place so procurement officials are rewarded for speed and innovation?

Wendy Hadwen: We're working closely with all procurement partners in the research and development space. We have the advisory committee and consultative committee I already talked about. You can already see different announcements, including from the Minister of Industry and other ministers of the Crown, to deliver funding associated with the defence industrial strategy.

● (1645)

The Vice-Chair (Tony Baldinelli): Thank you.

With that, we're going to end this round of questioning and this panel with our final MP.

Go ahead, MP Blanchette-Joncas.

[*Translation*]

Maxime Blanchette-Joncas: Ms. Hadwen, how will you ensure that small and medium-sized universities, colleges and college-level technology transfer centres receive a fair share of new investments in defence research—rather than seeing funds concentrated in a few large institutions?

Wendy Hadwen: The defence industrial strategy provides an opportunity for all of Canada to bring partners together around a very important and urgent mission. Our sovereign capabilities statement outlines our priorities. That doesn't prevent all universities and industries from helping us implement this mission to provide Canada with capabilities, which is an advantage.

Maxime Blanchette-Joncas: Thank you.

Ms. Kaminska, regarding BOREALIS, several stakeholders tell us that at times, Defence Research and Development Canada and the National Research Council of Canada operate primarily on a program-based rather than a results-based approach. They reportedly have difficulty collaborating with universities, colleges, college technology transfer centres, and even small and medium-sized businesses.

How will you avoid working in silos and collaborate effectively with all other partners in the research ecosystem?

[*English*]

Kate Kaminska: Thank you very much for the question; it is a very pertinent one.

The one difference we're trying to make with BOREALIS is to focus our partners on missions. It's a mission-based approach to innovation, as opposed to a project-based approach to innovation. For example, in the maritime defence innovation secure hub, we're supporting the NORAD modernization mission set. We are finding, through that experience, that the mission-based approach serves to coalesce stakeholders around a common goal and a common objective. It is not a bunch of small projects but rather a large mission set with different contributors.

[*Translation*]

Maxime Blanchette-Joncas: If you'd like to expand on this topic, please feel free to do so in writing. It is important that we fully understand.

I have one final question.

How will you measure success?

Will it be measured by the number of programs launched, or by technologies that have actually been tested, integrated or adopted by the Canadian Armed Forces?

[*English*]

Kate Kaminska: It's all of the above.

Because BOREALIS is still new, we have established some baseline key performance indicators. However, as I mentioned, we're working with a crawl-walk-run approach. As we develop BOREALIS further and learn from early implementation activities like the maritime defence innovation secure hub, we will certainly endeavour to develop more targeted key performance indicators along the lines you described. It is still very much a work-in-progress.

The Vice-Chair (Tony Baldinelli): Thank you for that.

That ends the first hour and 15 minutes of questioning.

I'd like to thank our witnesses for taking the time to be with us this afternoon.

With that, I'll suspend.

● (1645)

_____(Pause)_____

● (1655)

The Vice-Chair (Tony Baldinelli): I call the meeting back to order.

Welcome back.

I'd like to make a few comments for the benefit of the witnesses and the members. First, 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. For those on Zoom, at the bottom of your screen, you can select the appropriate channel for interpretation: floor, English or French.

This is a reminder that all comments should be addressed through the chair.

I would like to remind witnesses that committee members may ask questions in either French or English. If you will need interpretation, please take a moment now to prepare your earpiece and select the listening channel you need in advance to take full advantage of the time allotted for questions and answers.

I would like to welcome our witnesses.

From Cambrian College, we have Dr. Mike Commito, director of research and innovation, by video conference. From the Canadian Global Affairs Institute, we have Dr. David Perry, president and chief executive officer. From the Canadian Shield Institute, we have Dr. Matthew da Mota, research director of emerging technology and national security. From the Université de Sherbrooke, we have Wendy Therrien, associate vice-president of government relations, and Alexandre Blais, scientific director of the Institut quantique.

Dr. Commito, we will start with you. You will have the floor for five minutes. We will then go to Dr. Perry, Dr. da Mota and, finally, Ms. Therrien.

You can begin.

● (1700)

Mike Commito (Director, Research and Innovation, Cambrian College of Applied Arts and Technology): Thank you, Mr. Chair and members of the committee, for the invitation to appear today.

I am Dr. Mike Commito. I am here on behalf of Cambrian College in Sudbury, Ontario, where I serve as director of research and innovation.

Cambrian is a college with deep roots in northern Ontario's industrial economy. Our work is closely tied to mining, critical minerals, applied research, workforce development and the practical challenges that come with operating in remote, harsh and technically demanding environments. That foundation shapes how we see this study.

Cambrian is already active in areas that matter to Canada's dual-use and defence-related innovation agenda. We are not starting from scratch. We are already working with industry, training the workforce and supporting the applied research and testing that help move technology from an idea into something that can actually be used.

One example is our centre for smart mining, where we support industry-relevant research and technology development in real operating conditions. That includes underground environments that are highly useful for testing technologies in GPS-denied, low-visibility and communication-constrained settings. Those are conditions that matter for mining, but they also have clear relevance for autonomous systems, remote operations and other dual-use technologies.

We also have strengths in electrification and battery-related testing through our Vale electric vehicle lab. That work supports performance validation and helps industry better understand how vehicles and systems will perform in demanding environments. As Canada looks at next-generation platforms, electrification and resilient supply chains, that kind of applied capacity becomes increasingly important.

Cambrian's success in this space comes from the role colleges play in the research landscape. We work at the applied end. We help companies solve operational problems, test technologies, train talent and adopt new tools and systems. We are often working with small and medium-sized firms that need a practical partner, access to facilities and a team that can move quickly.

That role is important, because Canada does not struggle only with generating ideas: We often struggle with adoption. We have world-class researchers, capable firms and strong institutions, but many promising technologies still face a difficult path between early development and real-world use. Canadian colleges help close that gap. We do that in a few ways.

First, we train the people who make innovation usable. Technicians, technologists, operators and other skilled workers are essential to any serious industrial or defence capability. In sectors such as critical minerals, advanced manufacturing, electrification and remote operations, that workforce is central.

Second, we give companies a place to test and validate technology in real conditions. That matters, because end-users need confidence. A technology that works in theory still has to prove itself in the field.

Third, we help connect regional strengths to national priorities. In Cambrian's case, that means bringing northern Ontario expertise into conversations about critical minerals, supply chain resilience, autonomous systems and domestic industrial capacity. This matters for Canada's broader research and innovation system.

Colleges are sometimes left out of the discussion when people talk about science and research, but they are a key part of how research becomes usable. Universities, companies, government labs and colleges play different roles. Canadian colleges contribute through applied research, industry collaboration, technology validation and workforce development. That is especially valuable in dual-use sectors where technologies need to work in real environments and be supported by a skilled labour force.

Cambrian's opportunity is clear. We have existing infrastructure. We have industry relationships. We have the relevant expertise. We operate in an environment that reflects many of the conditions Canada needs to be able to work in, especially in the north and in resource-based sectors. There is real value in making fuller use of that capacity.

From our perspective, the question is not whether colleges belong in this conversation; they clearly do. The question is how Canada can make better use of institutions that are already helping to train people, support firms and validate technology in practical settings.

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

● (1705)

The Vice-Chair (Tony Baldinelli): Thank you.

We're going to go on to Dr. Perry.

David Perry (President and Chief Executive Officer, Canadian Global Affairs Institute): Thank you very much, Mr. Chair and members of the committee, for the invitation to appear today.

In my opening remarks, I'm going to concentrate on three issues: the need for clarity, priorities and pathways to capability.

On clarity, it's welcome to see the various movements, some of which you've just heard about from national defence in the prior session, including BOREALIS and the creation of DISHs, as well as wider efforts at the National Research Council, regionally and in other academic pursuits.

Recognizing that this is still early days—only 104 days, by my count, since the industrial strategy was introduced—it will be important to articulate clearly the intent of these respective lines of effort, what they're all intended to do and how they're supposed to connect and complement each other.

Similarly, with increased interest from Canada's post-secondary institutions and ongoing interest in and enhancement of the industrial technological benefits policy and other industry-focused measures, the wider research and development effort in defence is spread across government research, industrial R and D, and academic activity.

Who is doing what in Canada and what the intended relationships between these efforts are will be important to sort out as well.

Finally, looking internationally, Canada has signed multiple new agreements for enhanced defence and security co-operation in the last year, often with associated research agendas. How these international collaborations connect to domestic ones will be important to clarify, too.

The key here will be aligning these new ventures with our long-standing defence research and development partnerships with the United States of America, which has given Canada unique access to much of the world's cutting-edge innovation and helped foster a four-generation-old North American defence industrial and development ecosystem.

Across the Canadian defence landscape, 1,000 flowers have been planted. Some are already blooming, but we need to know what the overall garden is supposed to look like.

With respect to priorities, in my view, a weakness of our defence innovation ecosystem, historically, has been an overly broad focus relative to our resource commitments. In the past, we've both underinvested and also spread what we have committed too far, too broadly. We are planning very consequential increases in defence R and D, which is welcome, but some of that has been directed, as you've heard, to new initiatives that will dilute some of this effort.

Beyond that, the existing agenda was already expansive, with the Defence Research and Development Canada organization itemizing 16 high-level priority areas, including science and technology for NORAD modernization.

It's not yet fully clear how Canada's sovereign capabilities will change those priorities, but those 10 high-level capability designations, and more than 30 subcategories, give ample opportunity to lengthen an already long list of priorities.

Lastly, as the committee's last session heard, the term “dual use” is quite broad, even though it's very much in vogue. There's little consensus around what that term does or should mean with any level of precision, which further complicates efforts to focus. The contours of what counts as “dual use” need better clarity. Overall, greater prioritization to areas of real importance would maximize our potential return.

Finally, amidst all of these efforts, we need to ensure there are credible pathways for turning research, development and innovation into actual Canadian Armed Forces capability. That's long been a deficiency of our system.

The draft legislation proposed for the new Defence Investment Agency proposes a means of procuring, without competition, defence supplies or services that have received federal funding for research, development and innovation, which is welcome. It's been a long-standing source of frustration for participants in initiatives such as the DRDC IDEaS program that they could be highly successful at solving a defence problem yet unable to sell the Government of Canada that solution. This measure, which would allow for purchasing successful measures that were funded by the Government of Canada, would go a long way to fixing this, if it is successfully implemented.

The pathway between innovation and capability would be further complemented by enhancing the minor capital portfolio at DND. My colleague, Alex Salt, and I just published a paper, which is available on the Canadian Global Affairs Institute website, arguing that increasing the funding available for smaller projects and making it easier to move more of that money quickly would significantly help. It would get innovation into the hands of the military on one hand, and provide more contracting pathways for small and medium-sized enterprises on the other. We think it's a win-win proposition to get more of the smaller firms that can truly drive innovation into the Canadian research and development ecosystem, while quickly equipping the CAF.

Thank you.

● (1710)

Tony Baldinelli: Thank you, Dr. Perry.

We're going to go on to Dr. da Mota for five minutes.

Matthew da Mota (Research Director, Emerging Technology and National Security, The Canadian SHIELD Institute for Public Policy): Thank you, Mr. Chair and the members of committee, for having me.

I'm Matthew da Mota. I'm research director of emerging technology and national security at the Canadian Shield Institute for public policy. We work on creating solutions to enhance Canadian economic and digital sovereignty.

Defence spending, generally, is a notoriously poor long-term economic investment, though it is important and essential for national security. The real value we're going to get out of the promise from the defence industrial strategy has to do with how we leverage dual-use technologies, multi-use infrastructures and spillovers into other sectors. That won't happen by accident.

The risk in not delivering on that is that we spend to meet our targets of 2% and 5% of GDP on defence spending without building anything lasting or durable. A further risk is that in rushing to meet those targets under external pressure, we damage an already strong research ecosystem, which has deficiencies and issues around IP and other areas but is nevertheless world class.

What we need is an ecosystem where non-military research thrives freely, defence needs are communicated clearly and the pathways between them are well defined, focused on investing in deep tech and broadly dual-use technologies, with targeted defence-specific investments where needed and where essential.

Regarding readiness, firms and institutions need to be equipped with the right governance tools and expectations to be able to meet this need. This requires a clear definition of what dual use actually means in the context of Canada's strategic goals. We've heard general definitions, but we need a very specific one about what we're trying to achieve. Without it, we risk over-designation, which might lead us down various negative paths.

This also means developing a readiness assessment framework so that labs, research centres and SMEs understand the research security, cybersecurity and other requirements for dual use and defence work. Institutions also need increased capacity for tech transfer and greater strategic guidance from government to meet the complexity of what is expected.

Finally, Canada needs to close the gap between ideas and production. Co-locating manufacturing with innovation infrastructure is the precondition for spillover to actually happen. Manufacturing infrastructure has its own gravity, pulling in supply and value chains and expanding the ecosystem where technology can be developed, commercialized and scaled, and where good jobs are actually created. The greatest opportunity for this is in high-tech areas like quantum.

Regarding IP and intangible assets, Canada's difficulties commercializing the vast amounts of money we put into R and D are well known. Fixing this requires IP guardrails attached to public funding and institutional capacity to mobilize intangible assets on behalf of Canadian firms, both defensively protecting IP and helping smaller companies compete against foreign competitors wielding large patent portfolios as moats.

Regarding standards, standards shape what gets built, by whom and under what conditions. Canada largely adopts the standards others set. A dedicated standards office capable of coordinating across defence and dual-use domains and positioning Canadian innovations as reference points in allied processes, particularly in NATO, is essential.

In dual-use domains specifically, we need standards that govern how technologies pass between defence and civilian contexts so that firms and institutions understand how this movement should be happening, defining the appropriate controls, data handling, levels of research security and so on required at each stage. These practices currently exist in many fragments. The requirements of the DIS mean we need to make sure we have a more coherent and clear framework for institutions.

It's my recommendation that the committee should recommend an operational definition of dual-use tech geared towards deep tech investment, procurement and R and D decisions; co-located manufacturing alongside every DISH and every hub we built to serve the DIS's needs; an innovation asset collective to mobilize and protect IP, specifically in defence and dual use, with guardrails attached to public funding to ensure that we capture IP and leverage it properly; a readiness infrastructure and a readiness framework covering assessments, research security support and capital access for smaller firms; and a calibrated designation policy that protects what needs protecting without undermining Canadian innovators or the independence of the research ecosystem.

The Canadian Shield stands ready to support the committee and the government, if needed, on any of these issues at any request.

Thank you.

● (1715)

The Vice-Chair (Tony Baldinelli): Thank you, Dr. da Mota.

Finally, we have the Université de Sherbrooke.

[*Translation*]

Alexandre Blais (Scientific Director, Institut quantique, Université de Sherbrooke): Good afternoon, Mr. Chair.

Members of the committee, thank you for giving me the opportunity to contribute to this discussion.

I am Alexandre Blais, scientific director of the Quantum Institute at the Université de Sherbrooke.

The Université de Sherbrooke ranks among Canada's research-intensive universities and is recognized for its collaborative research model. We are also a founding partner of the Quebec innovation zones in quantum science and microelectronics—strategic ecosystems at the heart of today's security and technological sovereignty challenges.

[*English*]

Today I will argue that fundamental research is a strategic contribution to Canada's defence objectives, and that investments in research universities should be recognized as part of Canada's effort to meet its NATO commitments. Research universities like the Université de Sherbrooke not only produce knowledge; they build strategic capacity for the country.

[*Translation*]

I would now like to expand on three important points.

Firstly, there is fundamental research. When we talk about dual-use technologies, attention often turns first to their applications. While these applications are essential, we must recognize that investments in fundamental research contribute just as directly to the security of Canada and its allies.

Quantum technologies offer a particularly clear example. Quantum sciences have civilian and military applications in computing, sensing and communications. But key challenges remain unresolved. We still need to understand how to make these systems more reliable, more robust, more integrated and more useful.

This is why fundamental research is indispensable. Companies play an essential role in developing products and scaling them up, but they depend on universities to solve the scientific and technological bottlenecks that remain unresolved.

This is not unique to quantum science: In the life sciences, fundamental research protects against biological threats and strengthens public health; in the humanities and social sciences, it sheds light on social acceptability and the effects of disruptive technologies on conflict dynamics.

Focusing solely on ready-to-use technologies would make us dependent on other countries for the foundational building blocks of our own security.

This is why investments in research—from fundamental research to applied research—in strategic sectors should be recognized as a legitimate component of Canada's efforts to meet NATO targets—particularly through funding for the three granting councils and the Canada Foundation for Innovation, in order to preserve our long-term strategic autonomy.

[*English*]

For emphasis, let me repeat that focusing solely on ready-to-use technologies would make us dependent on other countries for the foundational building blocks of our own security. This is why investment in fundamental research in strategic sectors should be recognized as a legitimate component of Canada's efforts to meet NATO targets, particularly through funding for the three granting councils and the Canada Foundation for Innovation, in order to preserve our long-term strategic autonomy.

[*Translation*]

The second point is partnership-based research and company creation.

The defence industrial strategy and budget 2026 rightly recognize the role of small and medium-sized enterprises, SMEs, in strengthening Canadian defence supply chains. However, a key lever of this strategy lies within our universities. Most SMEs do not have the capacity or the long-term horizon required to conduct advanced R and D on their own. By connecting them with university research capabilities, we can accelerate their technological development and their integration into defence supply chains.

Universities also generate new companies and new innovation ecosystems. In disruptive sectors, these companies often emerge from years of research, training and shared infrastructure.

For the last ten years, the innovation–partnership–entrepreneurship program at the Université de Sherbrooke has demonstrated the effectiveness of this model. Deployed at the national level, with a defence and dual-use technology component, it would concretely accelerate the R and D capacity of Canadian SMEs.

The third point is obviously talent. Allow me to emphasize a fundamental point: Everything depends on talent.

Canada's ability to develop science and technology for its security depends entirely on the women and men who choose to dedicate their careers to research—to discovering new knowledge and applying it in service to Canadians.

In this regard, the decisions recently taken by the federal government—particularly the indexation of scholarships and investments in research chairs—are steps in the right direction.

Canada must now consolidate this effort through predictable support for the people and the research environments that train them.

Regardless of whether innovations emerge from a university, a national research centre or a company, they will be built on the people trained in our universities.

● (1720)

In conclusion, for Canada to respond effectively to its defence commitments, it must recognize that universities are not peripheral to this effort: They are a strategic pillar. Investing in science, in partnerships with SMEs and in talent development is not an academic luxury. It is an essential condition for Canada's national security.

Thank you for your attention.

[*English*]

The Vice-Chair (Tony Baldinelli): Thank you to the witnesses.

We're going to begin our first round of questions of six minutes each. We'll begin with MP DeRidder.

Kelly DeRidder (Kitchener Centre, CPC): Thank you, Chair.

Thank you to everyone for coming today.

Dr. Perry, I'm going to start with you. I have a couple of questions on procurement.

I align very much with what you said about needing to have our procurement process updated for the current ecosystem we see today. One of the things I've been saying, over and over, is that we need to get out of 1999 and update our procurement processes to ensure that innovation and small business can be at the forefront of helping with our R and D and dual-use technology.

You're an expert in defence procurement. What struggles or failures have you identified in Canada's defence procurement today?

David Perry: I'll touch on two.

One is the lack of clear pathways that I touched on earlier, particularly for smaller companies and innovators in the Canadian ecosystem. They basically have two bookends. You can get access to innovation funding with no clear procurement pathway at the end of that, or at least no easy one, through programs like IDEaS or innovative solutions Canada. For big projects, which are generally won by large primes, often foreign, you can be involved in the supply chain, but that's an indirect route. We need something more in the middle—a bridge between early-phase research and a stepping-stone pathway to something larger.

More broadly, there's a big challenge you're going to have with the industrial strategy, writ large. For a whole host of reasons, over time, a system has emerged that tries to minimize risk—technological risk and delivery risk. If we really want to drive innovation and foster more of that, the whole system needs to change its mentality to be less averse to things that are less well tested or clearly defined, because that's how you get innovation at the end of the day.

Kelly DeRidder: An idea that has come across my desk, in having this conversation, is us going to industry with a problem, instead of industry trying to sell to government what they think is a problem to solve.

Would you agree with that approach?

David Perry: I would.

We've done some of that, but the thing we've lacked is a mechanism to then buy the solution. You've gone and had that discussion. We've not had a clearly constructed system to go from that to actually getting it into the hands of our soldiers, aviators or sailors.

Kelly DeRidder: I agree.

At what point do you think our inability to procure technologies fast enough becomes a national security issue, not just a procurement problem?

David Perry: I think it's one right now.

Kelly DeRidder: Absolutely.

So Canadians are aware, what does this liability look like for Canada, practically speaking?

David Perry: What it means is that we're overly reliant on other people's technology, for one. It means we're not equipping and modernizing as quickly as we should be. It means we've historically under-delivered on the innovation and economic growth potential we could otherwise be achieving through Canadian innovators, small Canadian companies and the wider research and development ecosystem in Canada.

Kelly DeRidder: Would you agree, as well, that IP retention is a problem—that we're innovating in Canada but not retaining the IP? Therefore, we don't own the technology. We buy it back at retail. Is that a piece of what's happening here?

David Perry: The whole intellectual property ecosystem is complicated. I'm not an expert in this particular area, other than I think there are a number of aspects.

We really have to be a bit more specific and focus on what elements of that current ecosystem we find lacking. We have different circumstances. Can we get it from abroad or have some of it go overseas? Is it about control or about maintaining access? I think more definition around what we specifically want to see through a greater focus on intellectual property is warranted.

Kelly DeRidder: Dr. da Mota, would you like to comment on IP? You mentioned it in your speech.

Matthew da Mota: I would agree with Dr. Perry, first off, that we have to be specific about what we're talking about. There are a lot of different areas where we have IP leak.

There's a fundamental layer where technology that's developed in fundamental science never goes to a tech transfer office. It never becomes commercialized, so those ideas just go out into the world. To some extent, we want to support open science where it's appropriate, but I think we want to have some more controls and make sure that we channel these into the right avenues so that we can benefit as much as possible and reuse IP as much as possible in Canada.

Then, when we're talking about IP that is commercialized and then goes out into the market, I think we lose it in a number of different ways, including companies being bought up at small stages because they don't have capital to grow and stay in Canada. That's a partnership issue, and it's a capital issue.

Again, I agree with Dr. Perry about the aversion to risk. I think not only embracing risk but also trying to de-risk certain elements that don't need to be high risk would be important for that. A more comprehensive approach to IP retention, in general, is extremely important.

● (1725)

Kelly DeRidder: Thank you so much.

I want to thank you for coming. I only have a couple of seconds left, and I fully align with what both of you are saying. I hope to see this in the committee report and have some adoption happen through the current government.

Thank you.

The Vice-Chair (Tony Baldinelli): With that, we're going to MP Rana.

Aslam Rana: Thank you, Mr. Chair.

Thank you to all the witnesses for your time.

Mr. Blais, the defence industrial strategy is committing $334.5 million to Canada's quantum ecosystem, including $92 million for the Canadian quantum champions program. Is that investment at the scale and speed needed to keep Canada competitive in quantum for national security purposes?

Alexandre Blais: I think this is a great start. I think the quantum champions program was absolutely necessary.

There was both a danger and an opportunity. There was a danger of losing these four companies to the U.S.—that was a real threat. There's also the opportunity of building something great with these companies.

However, at the moment, what I can say is that we have four quantum hubs in Canada. They have been supported by federal grants. These grants have now run out, and we are at risk of losing the 10 years of ecosystem we have created if there are no further investments in the national hubs that we have in quantum.

Aslam Rana: Thank you.

Quantum technologies are among Canada's most sensitive research areas and are among the most globally contested for research partnerships. How do you balance the need to work with international partners against the security obligations that come with research that could have defence applications as well?

[*Translation*]

Alexandre Blais: It's important to recognize that, when it comes to quantum research, the technology readiness levels, TRLs, are low. The TRLs can be very high. A lot of basic research still needs to be done, a lot of technological bottlenecks still need to be worked out. That's a case where partnership-based research with allies should be prioritized.

We're not at the point of needing to keep that basic research within our own borders. We actually still need to be open to international partnerships. When companies get involved, it's another story, obviously. As far as university research is concerned, collaboration is the right approach.

[*English*]

Wendy Therrien (Associate Vice-President of Government Relations, Université de Sherbrooke): I will just add that one thing we try to do at the Université de Sherbrooke is to really make sure that we have a clear line of sight, whether we're doing fundamental research or doing research with industrial partners that do need to be more protected. Depending on where we are on a particular research project, we put the right kinds of protections in place to make sure that industrial-supported research is protected and that we know whom we are working with.

We have an ethics committee that does review our more sensitive research to make sure that the mechanisms are in place to do what we need to do and to protect IP, which goes to the point that you made earlier.

Aslam Rana: Thank you very much.

Mr. Chair, I would love to share my time with my colleague, MP Brière.

Hon. Élisabeth Brière (Sherbrooke, Lib.): Thank you to my colleague for sharing his time.

Welcome to all of our witnesses.

[*Translation*]

Mr. Blais, you rightly pointed out that the best investment we can make is in talent. You said it was important not to focus solely on basic and applied research, but to also bridge the gap between research and companies.

The ecosystem in Sherbrooke is crucially important. How, then, can the government leverage it to maximize the benefits of Canada's defence industrial strategy, especially from a dual-use standpoint?

● (1730)

Alexandre Blais: Thank you for your question.

The Quantum Institute at Université de Sherbrooke is certainly part of the ecosystem, which includes more than 15 companies and over 200 jobs in quantum technology in Sherbrooke.

I think it's imperative to keep supporting that ecosystem. As I said earlier, we were fortunate to receive support through the Canada first research excellence fund. Although the funding has ended, it's what made the Quantum Institute possible.

The institutes that benefited from the funding these past 10 or so years built up capacity that we could lose. As far as I'm concerned, funding eastern Canada's four quantum research hubs is paramount in order to achieve the goal.

Hon. Élisabeth Brière: The ecosystem in Sherbrooke is the envy of everyone. It has a lot of people talking, especially in the quantum science community.

What is Sherbrooke's contribution to this whole negotiation or development of the defence industrial strategy?

[*English*]

Wendy Therrien: We applied to be one of the DISHs. One thing we did that was very unique was that we brought together all the partners from our ecosystem—everyone from the CEGEPs to the universities to the applieds—and we all worked together. In C2MI we all worked together to put our strengths on the table. That goes from fundamental research all the way to applied and all the way to putting it in the market.

When you look at a defence application, what you want to be able to do is go deep and understand a problem, and then to quickly—that's what we're able to do in Sherbrooke, which is what makes us unique—put that into the market. I think that's what the defence industrial strategy is looking for: understand a problem, put it into the market and do so quickly. We have that. It's unique, but it could be replicated across the country.

The Vice-Chair (Tony Baldinelli): Thank you. That is time.

We will now go to MP Blanchette-Joncas.

[*Translation*]

Maxime Blanchette-Joncas: Thank you, Mr. Chair.

Good afternoon to the witnesses with us for the second panel.

Mr. Blais, can you give us examples of actual applications that resulted from research done in Sherbrooke, specifically in the areas of national security, cybersecurity, secure communications or regional development?

Alexandre Blais: Thank you for your question.

I can give you a few examples.

The first is SBQuantum, a company that emerged from the Quantum Institute. A student at the institute started the company about 10 years ago. It develops quantum sensor technology that can measure the earth's magnetic field with much greater precision.

About a month ago, in conjunction with NASA and SpaceX, the company launched its sensor technology into low earth orbit to provide precise measurements of the earth's magnetic field. It was part of the U.S. National Geospatial-Intelligence Agency's MagQuest program.

Now in orbit, the satellite will help to measure earth's magnetic field. The technology is particularly helpful for navigation in a context where GPS navigation isn't available, so it has a highly strategic application. It's a very clear and real illustration of how basic research can translate into a beneficial defence application.

Maxime Blanchette-Joncas: That's fantastic.

Obviously, there are challenges in the field of quantum science, and you talked about that.

Would you say the biggest challenge in the field right now is scientific discovery, or is it actually the retention of the talent, intellectual property and businesses that emerge from the field?

Alexandre Blais: I think it's all three.

I can run through the key points I mentioned.

At the field's core is fundamental research. Sometimes, we see examples like the one I just mentioned, with SBQuantum and its sensor technology currently in orbit taking measurements. For a number of technologies, including quantum computing, many technological bottlenecks still need to be resolved. Companies need research institutes. Fundamental research is absolutely crucial and should be done in Canada so we have that IP.

As for talent, if we're not developing it, companies have no reason to stay in Canada. Companies like Nord Quantique, which now employs 70 people, are part of the Canadian quantum champions program. The company is one of 11 in the world that were chosen by the Defense Advanced Research Projects Agency, DARPA, in the U.S., to work with DARPA on developing a quantum computer for the agency.

If the Quantum Institute doesn't grow its capacity to train students, they will go elsewhere. Research institutes need to scale up that capacity, as part of the industry.

● (1735)

Maxime Blanchette-Joncas: Canada is globally recognized for its quantum research, and you are the proof.

Are we not at risk of becoming a country that mainly produces breakthroughs, talent and patents for other countries?

Do we really have the conditions we need to develop companies and the industrial capabilities they provide domestically?

Alexandre Blais: That was our number one concern when we got the Canada first research excellence funding about 10 years ago. Our top quantum export in Sherbrooke was talent. We would train people, and then they would leave for the U.S. or Europe.

By establishing companies, by creating the right conditions for students to start businesses like SBQuantum, Nord Quantique and Qubic, and by attracting new companies, we make it possible for students to train here and stay here. The right conditions need to be in place. That comes back to supporting the ecosystem. Without support, those conditions disappear.

Maxime Blanchette-Joncas: What are the biggest barriers that keep academic discoveries from becoming practical applications? I am referring to barriers such as prototyping, financing, access to government contracts, industrial partnerships and IP protection. Which of those barriers do you run into most often?

Alexandre Blais: They run the whole gamut. Obviously, a lot of what we do is pure fundamental research. At the end of the day, though, we also put satellites into orbit. As you can imagine, we run into those challenges throughout the innovation chain.

That brings me back to support for the ecosystem. We talked about the strategy and intellectual property. That's not my area of expertise, but I can tell you that right now, every institution has its own strategy. There's no doubt that innovative solutions are falling through the cracks.

Having a Canadian strategy and focusing on the best way to protect our quantum IP could give our companies an edge. It could also encourage students to pursue more start-ups, because they'd have the IP to do it. I think the whole gamut matters, all the things you mentioned.

Maxime Blanchette-Joncas: Thank you, Mr. Blais.

Ms. Therrien, I'm going to turn to you now. The ecosystem in Sherbrooke shows that a world-class science hub can develop outside a major urban centre and that the federal government should invest more in regional ecosystems.

I'd like to hear more about how you were able to create what you have in Sherbrooke. It's clear that most of the funding goes to big universities, which are in big cities.

Wendy Therrien: I think it really comes down to two things.

The first is a policy decision. Forty years ago, Université de Sherbrooke decided to invest in quantum science and technology, with no guarantees that it would result in the ecosystem we see today. That decision made it possible for us to really develop that expertise.

The Government of Quebec's decision to create innovation zones came later. Sherbrooke isn't Montreal. It isn't Quebec City. The decision to create innovation zones in a place like Sherbrooke was highly strategic, because it concentrated the expertise that attracted companies and led to more companies being created, as Mr. Blais just explained. That crucial $750 million we received at the time was the key that unlocked what we built.

[*English*]

The Vice-Chair (Tony Baldinelli): Thank you so much for that.

I'm going to the second round of questioning.

MP Ho is next.

Vincent Ho: Thanks, Chair.

My questions are for Dr. da Mota.

The government keeps using buzzwords and empty Liberal rhetoric like “sovereignty”, “buy Canadian” and “defence industrial strategy”, but your work has raised a concern that some of the early spending is going to Canadian subsidiaries of foreign multinationals. When we look at the buy Canadian label that the Liberals define, it does not require the vendor to hire Canadian citizens or permanent residents, or require Canadian ownership. For example, you mentioned that nearly 25% of the Liberals' $6.6-billion industrial strategy funding went to local subsidiaries owned by foreign multinationals within a week. That's over $1 billion. The Liberal government is asking Canadians to treat them as authentically Canadian companies under their vague buy Canadian label.

Is it really a Canadian defence industrial strategy if the company may have a Canadian address but the ultimate ownership, profits, intellectual property and strategic control sit outside Canada?

● (1740)

Matthew da Mota: We're talking specifically about the ammunition capacity that was being built up. The criticism there was that in certain areas, partnering with foreign subsidiaries made sense because they had the expertise. Specifically for nitrocellulose, which is a capacity that Canada does not have and which these other companies do not have in Canada right now, it would have made more sense to partner with a Canadian company. We have plenty of wood pulp companies and underused capacity that can basically be channelled into that production.

I think the definition is still in flux. It's still being developed. I would like to see it privilege Canadian companies more than it has so far, but we also have—

Vincent Ho: The definition is still in flux, and billions of dollars are out the door already. Wow. That's incredible. Only under the Liberal government's watch can that happen.

Canada has a long-standing problem whereby public tax money supports research and development, but the intellectual property and commercialization benefits end up outside the country. More than 50% of the intellectual property generated through industry-directed Canadian university research—taxpayer-funded research—is ultimately scooped up by foreign companies.

Is the Liberal government repeating the same mistake in defence procurement by failing to put strong enough terms and conditions on IP ownership and downstream economic value?

Matthew da Mota: I think there could be a risk for that, but national security has always had very different terms around IP. So far, from what I've seen of the plans from BOREALIS, it seems promising. We'll have to see, but there will have to be significant structural shifts around retaining and mobilizing IP in order to fix those problems, and it's going to need a whole-of-ecosystem approach.

Vincent Ho: The Liberals appear to be branding procurement as Canadian in name only. Some of the production or the final assembly may happen here, but the ownership may not be and strategic benefits of taxpayer-funded investments may flow elsewhere.

For example, you mentioned earlier that the Liberals announced a $300-million rifle order with Colt Canada, and Colt Canada is owned by the Colt CZ Group. It's a Czech multinational, but the Liberal government is going to say this qualifies as buy Canadian because it's under its vague influx definition.

Is there a risk that the Liberal defence industrial strategy will become a capture mechanism for established foreign multinationals, rather than establishing a real launch pad for Canadian-owned firms?

Matthew da Mota: I think every part of our economy has been at risk of being captured by foreign companies for a very long time under multiple governments. This is obviously at risk as well.

For guns, it's a complicated question. I don't think we're looking to invest hundreds of millions of dollars in building up sovereign assault rifle capabilities or new companies. I think emerging technologies and dual-use technologies are the areas where we really want to be partnering and making sure that we're building up Canadian capacities and Canadian research to succeed here.

Vincent Ho: The Liberals seem to treat the defence industrial strategy as a bureaucratic exercise, like everything else. There are new strategies, new agencies, new frameworks and new acronyms. We've seen the Liberals establish a new bureaucracy, the so-called Defence Investment Agency, and appoint a Liberal insider CEO who stands to make up to $900,000 a year. He happens to be an investment banker colleague of the Liberal Prime Minister from when they were at Goldman Sachs.

Is one of Canada's core problems that we need more bureaucracy, rather than actually building factories, supply chains and platforms and hiring Canadians?

Matthew da Mota: One of the main issues with Canada's defence industrial policy up until the DIS was that there were too many cooks in the kitchen. Multiple people have said that. There were multiple different ministers and ministries in charge, and that's been the case for decades.

I think what the defence industrial strategy does.... It's not perfect by any means, but I think the Defence Investment Agency, BOREALIS and some of these other institutions are, hopefully—the signal seems to be moving in the right direction—going to consolidate this authority under one body.

The Vice-Chair (Tony Baldinelli): Thank you for that.

I'm going to MP Eyolfson.

Doug Eyolfson (Winnipeg West, Lib.): Thank you, Chair.

Thank you, all, for coming. This is very valuable information.

I have way more questions than I can ask in my five minutes.

Dr. Commito, regarding Cambrian College, you have a great record. You've developed a lot of applied research knowledge in mining, mining technology and manufacturing, and a lot of these advanced innovations, as you said, already have potential for dual use with our defence sector.

What would your recommendation be? What federal programs and supports would you need to help Cambrian College?

● (1745)

Mike Commito: I think one of the greatest barriers, especially to continuing the work that colleges like Cambrian and CEGEPs across Canada are doing on the applied side, is access to funding. For us to do the work with small and medium-size enterprises that are Canadian-owned and operated and part of the larger defence supply chain, it's about having access to R and D-funded dollars so that they can de-risk these ventures, work with the college and have access to our specialized equipment, our student researchers and our engineering staff.

In order to do that, we need to have a steady and stable supply of funding to help the colleges do the work they need to do in order to help these companies take their innovation to the next level, commercialize it, bring it to market and then look for the next thing to do that could ultimately make them more successful and profitable in Canada.

Doug Eyolfson: You're based in Sudbury, which we know has had a very established mining industry for quite some time. With your work and these programs, do you think Sudbury can build on the established mining hub expertise to become a major hub of applied research?

Mike Commito: Absolutely. Sudbury has the world's largest integrated mining complex. There is nothing like it in the world. We have nine operating mines within our city limits. There will be 15 by 2030. We have over 100 years of capability in building ruggedized equipment that is meant to operate in harsh environments, environments with high salinity and environments that are GPS-denied. We have this existing capacity in the bedrock of our community.

Through our partners, which are also quite innovative in a mining industry that is innovative, there's a real opportunity now to leverage that expertise and see how we can deploy it in dual-use and defence applications. That's without even getting into our capacity and our expertise when it comes to critical minerals.

Sudbury has eight of the 34 critical minerals that have been defined by the federal government. Certainly, there's no shortage here in Sudbury of those key minerals that we need to do the work we need to do to keep pace and keep ensuring that we are leaders when it comes to mining, dual use and defence.

We are poised to seize the opportunities before us right now, and the work we've been doing is now increasingly important as we think of it as a national security question.

Doug Eyolfson: I took particular interest in what you were saying about working in remote and harsh environments. I'm an emergency doctor, and for 13 years, I flew with an air ambulance company that serviced northern Manitoba. We had many of the same issues. We flew to very remote places and sometimes had to provide advanced medical care with no contact with the outside world. We were also working in very hard conditions. It's not easy to find a transport ventilator that works in -40°C, and those sorts of things. That's very pertinent experience that I've had.

Are there things that you're working on or have established, for instance, in rescue or something? I would imagine that in remote mining, there would have to be some technology for rescue that works in these areas. Do you have technology already that could be applied by the defence sector?

Mike Commito: Yes, absolutely. We were actually working with a local partner in Sudbury called RufDiamond, which was founded by a CAF veteran. He has partnered with a company out of Quebec called Zeal Motor, and they make the Fat Truck platform, which is an amphibious, all-terrain vehicle that can go through swamps, muskegs and waterways. It's a perfect dual-use application, because it's been deployed for civilian uses, such as search and rescue, remote forest fire suppression and mineral surveying.

They've been looking to develop new technology that could be onboarded onto this unit and be deployed for far and remote applications, whether it's Arctic sovereignty or any actual defence applications. Working with that company, they've been able to access our resources at Cambrian to then come up with the next service offerings that could be provided potentially—

● (1750)

The Vice-Chair (Tony Baldinelli): I'm going to have to stop you there, but thank you for that answer.

I'm going to MP Blanchette-Joncas for two and a half minutes.

[*Translation*]

Maxime Blanchette-Joncas: Thank you, Mr. Chair.

Mr. Blais, the government says it wants to create Canadian champions in strategic sectors like quantum science.

Should those champions come solely in the form of companies, or should they also come in the form of strategic ecosystems capable of producing talent, IP, start-ups and industrial benefits?

Alexandre Blais: Thank you for your question.

I said earlier that the Canadian quantum champions program meets a need. I agree in that respect.

There is another important need, however: the need to support ecosystems. As I said, we face a real risk. Like the risk we faced of losing our champions to the U.S., we now face the real risk of losing the capacity the ecosystem has built over the past decade or so.

We need ecosystem champions, and we have them, so support for them is essential.

Maxime Blanchette-Joncas: Were you consulted on the criteria for determining who the Canadian champions would be? Were you notified?

Alexandre Blais: We did our best to make our case to the government regarding who the champions should be, but we weren't consulted on the details.

Maxime Blanchette-Joncas: Could you tell us what criteria are essential for a hub like Sherbrooke's to realize its full potential in relation to talent, IP, start-ups, industrial partnerships, capacity to participate and regional benefits?

Alexandre Blais: Actually, what we would like to see are whole ecosystems. They start with research excellence. Without research excellence, there's nothing to build on. The first thing is to establish a centre of research excellence. We have that. It takes more than that, though. It takes the whole start-up ecosystem, including the intellectual property piece.

I can also say that we don't just have the Quantum Institute in Sherbrooke. We also have prototyping institutes, which are absolutely crucial to transform ideas into applications. We have that prototyping capacity. We have centres like C2MI, which is a partnership between Université de Sherbrooke and IBM and Teledyne DALSA, making it possible to turn a prototype into an industrial application. We have the whole innovation chain required to turn an idea into a prototype and, then, an industrial application. Few ecosystems in the world are as complete.

[*English*]

The Vice-Chair (Tony Baldinelli): I'm going to have to stop you there.

We will now go to MP Mahal for five minutes.

Jagsharan Singh Mahal: Thank you again, Mr. Chair.

Thank you to the witnesses for being here.

I would like to start with Dr. Perry.

Dr. Perry, when you appeared before the national defence committee in 2023, you said Canada's defence procurement problems were systemic and persistent, upwards of two-thirds of the projects were delayed by a year or more and there was no detectable sense of urgency in the system.

Since then, has anything changed meaningfully, or are we still stuck in the same cycle of Liberal delays, reviews and announcements?

David Perry: That was a few years ago, and a lot has changed since then. Certainly, the senior level's political focus is quite significantly different, and it's moved in a positive direction.

In my discussions with folks in the industry, the big thing they remark on is how the sense of urgency and actual, meaningful change haven't yet translated down to the working level. Day to day, in terms of how procurements are moving, with a couple of exceptions, they're not seeing a whole lot of evidence of the urgency being conveyed at the top.

Jagsharan Singh Mahal: Is it fair to say that there have been some decent announcements made, but concrete action still lags on the ground?

David Perry: I think it's not yet become widespread. Whether or not some of those recent announcements, which were a long time coming in some cases, are more representative, and what the next slate of new announcements, beyond what's already been moved out the door will be....

Jagsharan Singh Mahal: Dr. Perry, you will recall that during the war in Afghanistan, the Harper government was able to move quickly on key urgent operational requirements, including airlifts, armed vehicles and helicopters. What did that period show about political will and urgency in procurement, in your opinion?

David Perry: I think it showed that when you really have the political will and a sense of urgency and focus, you can move things very quickly. It's about trying to replicate some of those same conditions, not just at the top, but throughout the whole system, right down to the working level.

Jagsharan Singh Mahal: Are you satisfied that the current Liberal government has the same level of will when it comes to delivering and when it comes to dealing with the delayed procurements?

● (1755)

David Perry: Politically, I think there's been a very strong indication that there is that kind of political will and urgency. What we really need are some wider changes that go down into the bureaucracy to change processes and some of the policy directions—both high-level policy and administrative policy that is set government-wide—and, as fast as we can, change some of the culture to refocus on the speed of delivery.

Jagsharan Singh Mahal: I agree.

Dr. Perry, in your opinion, what should come first in defence procurement? Should it be the needs of the Canadian Armed Forces or the industrial objectives of the government of the day?

David Perry: In reality, in most circumstances, it's always going to be a balance, but I think we need to keep the capability for the military top of mind. I worry that in some of these industrial strategy initiatives, we're not keeping as much of a focus on actually equipping the CAF as we should be.

Jagsharan Singh Mahal: Thank you for the answers.

Now I would like to move to Dr. da Mota.

You argued that Canada risks overdesignating too many technologies as dual use, which could misallocate funding and make it harder for DND to identify genuinely strategic investments. In your view, is the federal government currently using the term “dual use” too broadly, and could that lead to taxpayer dollars being spread across projects that do not meaningfully strengthen Canada's defence capabilities?

Matthew da Mota: I think my answer is no. I think NATO defines it very broadly. They're very open to countries deciding what dual use means when they do their defence spending.

I think there needs to be more focus over time on what exactly dual use should mean for Canadian priorities. That will be a process, but I think it is essential to not incentivize companies and institutions to try to turn fundamental research, which we've heard so much about in terms of how important it is, into targeted defence research when it doesn't have to be. I think we need the demand signal to get research to support the defence needs rather than the other way around, most of the time.

Jagsharan Singh Mahal: One concern I have is that government may use “dual use” as a catch-all phrase to make spending announcements look defence-related even when the actual military benefit is unclear. What criteria should Parliament use to judge whether a dual-use investment generally contributes to the Canadian Armed Forces' capabilities?

The Vice-Chair (Tony Baldinelli): I will have to stop you there.

Perhaps you can provide a written response to the member's question.

With that, we will go to MP Nathan for five minutes.

Juanita Nathan (Pickering—Brooklin, Lib.): Thank you, Mr. Chair.

Thank you to the panellists, including the panellist online, for being here.

This question is for Cambrian College. Large universities often receive much of the attention in discussions around defence innovation, but colleges play a unique role in applied research and workforce development. How can institutions like Cambrian College help bridge the gap between research, commercialization and the skilled workforce that Canada will need to support advanced manufacturing and defence innovation?

Mike Commito: I think it's an important question, especially on the implied R and D side of things. We are the bridge, especially when it comes to proving out a concept, testing and validating a new technology, and then hopefully getting that to market.

Through the work that colleges and CEGEPs do with applied research, we are training the next generation of workers on the technology that will be deployed. I think by bringing colleges further into the conversation around defence and dual-use applied R and D, that will only enlighten the future workers we have at our colleges and CEGEPs to better understand what role they could play in helping to develop and test and deploy these new technologies, wherever they may be.

Juanita Nathan: Thank you.

In these courses where the research and innovation happens in the colleges, what is the gender? Do you see a lot of females in these programs much more than before?

Mike Commito: Certainly it's getting better, but in an industry like mining, which has traditionally been male-dominated, you obviously see it skewing more towards male students. Through initiatives we've been doing at Cambrian College—for example, “Jill of All Trades” is an annual event—to really encourage girls and young women to consider a career in skilled trades and engineering technology, that is improving. I think as society continues to shift forward, we're seeing more and more women take these opportunities to join the skilled trades.

It's certainly not easy, and we still have a lot of work to do, but we do pride ourselves, especially in our group here at Cambrian College, on having near gender parity when it comes to the students who are working with us on applied research projects. That includes students who are working in welding and fabrication, mechanical engineering and IoT-based programs as well.

● (1800)

Juanita Nathan: Thank you for that.

Ms. Therrien, Canada produces world-class researchers and graduates in such emerging fields as artificial intelligence, quantum science and advanced engineering. What more can governments, universities and industries do to ensure that this talent remains in Canada and contributes to Canadian innovation rather than being recruited abroad?

Wendy Therrien: I think some of the points my colleague made earlier are fundamental to the ability to retain talent in Canada. Number one is creating the kinds of ecosystems that produce the spinoffs that Canadians want to work at and want to stay at. Then it's having those pathways between a university or a college, as we talked about, so that the innovation cycle continues to drive itself. Not everywhere in the world will you have top-of-the-line quantum computers and top-of-the-line quantum researchers and companies all coming together. When we can create those ecosystems, people don't want to leave. Those ecosystems don't exist everywhere. We need to really concentrate on building up the strengths we do have so that we're creating the environment that allows that.

Fundamental research investment, applied research investment—those are all our building blocks. Then, as we talked about, there's the IP policy that allows us to retain our talent, and the kind of champion programs that identify companies that are winners and that we don't want to have leave our country. It's that whole menu of things that allows us to retain the Canadian talent, because at the end of the day, it's Canadians who will protect our country.

Juanita Nathan: Do you feel that we are moving in the right direction?

Wendy Therrien: I think there are a lot of the building blocks, but I would be remiss not to say that we need to do better at helping to retain the international talent that we attract to our universities and colleges.

Juanita Nathan: Thank you.

Canada benefits enormously from international collaboration in science and research. As government strengthens research security measures, how do we ensure that we remain open to global collaboration while also protecting Canadian interests and sensitive technologies?

Wendy Therrien: Absolutely, and as Dr. Blais mentioned, it really depends on the kind of research we're doing. In terms of the fundamental research we're doing in areas such as quantum and other areas that are technologically sensitive, it's fine for that research to be open, because we're at the very fundamental level. As we move forward towards more applied levels, it's important to have the safeguards in place in order to know who you're partnering with, who's going to have access to that research and who controls the intellectual property.

That kind of reflection is being stimulated by policies that are at the federal level, but ultimately, it is our responsibility at the university level to be applying those principles on a project-by-project level and putting in place the mechanisms to know who we're working with and why, and the kinds of partnerships that are trust-based, as well as the kinds of legal agreements that allow us to be really clear about what we're doing and why and for whom.

The Vice-Chair (Tony Baldinelli): Thank you.

Thank you to our witnesses, and thank you to the members of Parliament.

We've completed two full rounds of questioning. Seeing that the clock is past six, is it the will of the committee to continue on for an additional round or does the committee wish to adjourn?

An hon. member: Adjourn.

The Vice-Chair (Tony Baldinelli): I have agreement to adjourn.

Thank you. This committee is adjourned. Thank you to our witnesses.