



HOUSE OF COMMONS  
CHAMBRE DES COMMUNES  
CANADA

44th PARLIAMENT, 1st SESSION

---

# Standing Committee on Government Operations and Estimates

EVIDENCE

**NUMBER 019**

Tuesday, May 10, 2022

---

Chair: Mr. Robert Kitchen





# Standing Committee on Government Operations and Estimates

Tuesday, May 10, 2022

• (1610)

[English]

**The Chair (Mr. Robert Kitchen (Souris—Moose Mountain, CPC)):** I call the meeting to order.

Thank you to everybody for bearing with us while we had the votes, and to the witnesses for staying with us, which is much appreciated.

Welcome to meeting number 19 of the House of Commons Standing Committee on Government Operations and Estimates.

Today the committee will be continuing its study on defence procurement projects and its study of the national shipbuilding strategy. The committee will be considering each study separately. The study of the national shipbuilding strategy will be discussed during the first hour, and the study of air defence procurement projects will be discussed during the second hour.

Those witnesses discussing the national shipbuilding strategy will make an opening statement of five minutes maximum at the start of the first hour. After that, the rest of the hour will be taken up with questions from the members.

Those witnesses appearing as part of air defence procurement projects study will have an opening statement of five minutes maximum at the start of the second hour. After that, the rest of the hour will be taken up with questions from the members.

The committee has the expectation that all witnesses will be open about any potential conflict of interest they may have. This is to ensure that the committee can fully understand the context of the testimony it is about to receive. If you feel your testimony may be coloured by a previous or current interest, I invite the witnesses to disclose this during their opening statements.

Today's meeting is taking place in a hybrid format, pursuant to the House order of November 25, 2021. Members are attending in person in the room or remotely by using the Zoom application. Regarding the speaking list, the committee clerk and I will do our best to maintain a consolidated order of speaking for all members, whether participating virtually or in person.

I would like to take this opportunity to remind all participants in this meeting that neither screenshots nor taking photos of your screen is permitted.

Given the ongoing pandemic situation and in light of the recommendations from public health authorities, as well as the directive of the Board of Internal Economy on October 19, 2021, to remain

healthy and safe, the following is recommended to all those attending the meeting in person:

Anyone with symptoms should participate by Zoom and not attend the meeting. Everyone must maintain two-metre physical distancing, whether seated or standing.

Everyone must wear a non-medical mask when circulating in the room. It is recommended in the strongest possible terms that members wear their masks at all times, including when seated. Non-medical masks, which provide better clarity over cloth masks, are available in the room.

Everyone present must maintain proper hand hygiene by using the hand sanitizer at the room entrance. Committee rooms are cleaned before and after each meeting. However, to maintain this, everyone is encouraged to clean surfaces, such as their desks, their chairs and their microphones, with the provided disinfectant wipes when vacating or taking a seat.

As the chair, I will be encouraging these measures for the duration of the meeting, and I thank members in advance for their cooperation.

I would like to welcome the witnesses and invite them to make their first opening statements.

We'll start with the Canadian Association of Defence and Security Industries and then hear from Irving Shipbuilding.

**Ms. Christyn Cianfarani (President and Chief Executive Officer, Canadian Association of Defence and Security Industries):** Good afternoon.

Thank you for having me. In my opening remarks, I would like to give you a Canadian defence industry perspective on the national shipbuilding strategy, or NSS.

When the government unveiled the NSS over a decade ago, the core principle was that the recapitalization of the Royal Canadian Navy and the Canadian Coast Guard would be carried out in Canada. The objectives behind the principle are twofold.

One is to bring predictability to federal vessel procurement, and the other is to end the boom-and-bust cycles that have characterized Canadian shipbuilding in the past. Together, the result should be a sustainable, long-term shipbuilding plan that benefits the Royal Canadian Navy and Coast Guard, the Canadian marine industry and the Canadian economy.

CADSI, the Canadian Association of Defence and Security Industries, and I, as its CEO and president, fully support the basic principles and objectives of the NSS, and we have done so since its inception.

Canada is a maritime nation with the largest coastline in the world, at over 243,000 kilometres, including mainland coasts and offshore islands. That is six times Russia's coastline, 12 times the United States' coastline and 16 times the coastline of China. It's therefore a matter of common sense from a national security perspective that Canada needs a sustainable domestic naval and coast guard shipbuilding industry.

The economics of shipbuilding in Canada are also sound. Innovation, Science and Economic Development Canada has an economic model for the marine industry based on established Statistics Canada input-output multipliers. On average, \$1 million of signed NSS contracts contributes \$1.3 million to the GDP and 12 jobs to the Canadian economy.

In the most recent Statistics Canada-ISED survey of the state of Canada's defence industry, we see meaningful growth in the defence industry in 2020, during the pandemic, a good portion of which is attributable to the NSS work really starting to take off.

There are those who say that Canada shouldn't be in the naval shipbuilding industry and that we should buy our vessels offshore and off the shelf. There is no such thing as "off the shelf" in this business. Canada will be buying tailor-made ships, as we have done in the past and as other countries do. Moreover, Canada has a long history in naval shipbuilding. The last two major Canadian naval vessel procurements, the Iroquois-class destroyer program of the 1960s and early 1970s and the Halifax-class frigate program of the 1980s and early 1990s, were carried out in this country at Canadian shipyards and by the Canadian marine industry.

Then as now, there were controversies over these programs, particularly with the Halifax-class frigate with respect to cost, schedule, and the ability of Canadian industry to deliver, yet Canadian industry delivered an impressive capability with the Halifax class that has served Canada and the Royal Canadian Navy for 30 years and has led to significant exports of high-value systems and technologies developed in Canada.

The focus on the costs of the NSS project to date has tended to be on the visible part of the ships, namely the hull. While this is obviously important, hull construction typically accounts for only 35% of the cost of a warship. Half of the value is in the platform and mission systems, and roughly another 15% is in the design and systems integration. These jobs pay, on average, 60% more than the average manufacturing wage. These are the jobs that employ high-wage engineers, technicians, and technologists. They make up 30% of the defence industry's workforce.

• (1615)

According to studies on the Canadian marine industrial base carried out by ISED and Statistics Canada, Canada has significant capability in the areas of shipbuilding, such as naval ship-borne mission systems and components, maintenance, repair and overhaul, and simulation. Our strength in these capabilities is in part a legacy of previous naval vessel construction in this country. Foreign mili-

tary buyers are less likely to purchase from Canada when our own government does not buy from our own industry. Decreasing domestic buying opportunities decreases our export potential.

We should not lose sight of the possibilities to drive innovation, high-wage employment and exports in the less visible parts of naval recapitalization. The initial acquisition phase of a contract is a small proportion of the costs in the life cycle of a platform, which include mid-life upgrades, technology insertions and long-term supportability. It's in these areas that Canadian industry can achieve the greatest return on investment.

Cost and changing cost estimates are an ongoing issue that have been documented with NSS projects in various studies and reports over the years. This is to be expected in a strategy of this scale, complexity, and duration. The government needs to be a bit more flexible to adjust cost estimates over time as assumptions alter due to changing circumstances. Neither industry nor government has much, if any, control over the price of steel, foreign exchange rates, other input costs or technological advancements.

Two years ago, no one would have predicted that a pandemic-induced global supply shock and a war in Europe would drive inflation in Canada above 6%, its highest level by far in 30 years; and in some of the commodities and technologies used in advanced shipbuilding, inflation is now many times higher than the CPI. It is uncertainties like these that require governments to have built-in flexibilities for a project whose duration is measured in decades.

It is also incumbent on the media, academics, other experts and parliamentarians who comment on these programs to educate Canadians about these uncertainties rather than offering knee-jerk criticisms of the strategy. To abandon the NSS after a decade in would be, in my view, reckless on economic and national security grounds.

In conclusion, as a country with three coastlines, a significant continental shelf, plus new challenges to its sovereignty in the Arctic, having a first-rate navy and coast guard, along with a sustainable domestic naval shipbuilding industry, should be considered a basic requirement of our sovereignty that is not up for debate. It is the price of admission for a G7 economy and NATO membership. The NSS, while far from perfect, provides a road map to that end state.

Thank you.

**The Chair:** Thank you, Ms. Cianfarani. I hope I pronounced that properly.

**Ms. Christyn Cianfarani:** Yes, you did. Thank you.

**The Chair:** Now we'll go to either Mr. Young or Mr. Mooney for five minutes, please.

**Mr. Kevin Mooney (President, Irving Shipbuilding Inc.):** Good afternoon, Mr. Chair, and members of the committee. Thank you for the opportunity to speak to you today on behalf of our over 2,000 employees at the Halifax shipyard.

With me today is Kevin Young, senior vice-president of the Canadian surface combatant program.

I'm a shipbuilder with 35 years of experience, including 14 in the NASSCO shipyard in San Diego, where I participated in delivering 40 ships through eight different programs. My colleague, Kevin Young, has senior leadership experience in nuclear submarine construction programs at BAE in the United Kingdom. We have chosen to live here in Canada because we were drawn to the great inspiration of the national shipbuilding strategy.

I want to take this opportunity to personally invite the committee to visit the Halifax shipyard. I am confident that you will be pleased with what we are getting done for Canada.

I know I have limited time, so my remarks will briefly address three main areas: first, the economic impact of the NSS; second, the COVID impacts on the AOPS program; and third, the preparation for the construction of the CSC.

Since 2011, Irving Shipbuilding has invested over \$500 million into building one of the most modern indoor shipbuilding facilities in North America. In terms of core capability, the Halifax shipyard compares quite favourably to most shipyards in North America. We have recruited and trained a world-class workforce here in Canada, and since 2012, the size of the workforce at the shipyard has more than doubled. We are now the largest employer of trade apprentices in Atlantic Canada.

Positive economic impacts are being felt across the country. According to a study conducted by PricewaterhouseCoopers, for every one dollar spent in Canada on shipbuilding, up to \$1.3 is achieved in benefits to the national economy. These benefits are in addition to ships acquired through this investment. Another study by the Conference Board of Canada shows that the work at the Halifax shipyard will increase Canada's GDP by \$9.8 billion from 2013 to 2024.

Although COVID undeniably is impacting our operations, our workers have maintained momentum on AOPS while also conducting critical maintenance on the Halifax-class frigates. Since the pandemic started, we delivered two AOPS, with a third coming later this summer. We are well into production on AOPS four and five as well.

HMCS *Harry DeWolf* was the first new ship delivered to the navy since 1999, and last summer marked the navy's first transit of the Northwest Passage since the 1950s.

Last year we completed a major ship repair project on HMCS *Charlottetown*, followed immediately by the dry-docking of HMCS *Ville de Québec*. This sustained tempo at the Halifax shipyard is critical to Canada in maintaining reaction forces able to respond to serious threats to global peace and security.

These successes did not come easily. For over two years, with the impact still ongoing, COVID caused a full shutdown of production work on three separate occasions. To date, on AOPS, we have

lost over one million production hours and about 15 months of scheduled progress. Like most employers, we are suffering from the COVID-induced "great resignation". Our trades attrition rate has nearly tripled, causing a loss of learning and leaving us with a workforce that is less experienced today than it was several years ago, but we are responding. We are actively recruiting highly skilled workers, both here in Canada and worldwide, to achieve the resource levels required for increased AOPS production, increased repair workloads and CSC.

The disruptions in our global supply chain have also been significant, with increased costs and delays in procuring raw materials, finished goods and logistics. Steel, copper and shipping costs have skyrocketed. Shipbuilders are feeling the impacts of inflation, just like everyone across Canada and the world.

Turning our eye to the future, we are ready to meet the challenges on the horizon with our full energy and lessons learned from the last few years. Through Canada's program leadership, we are closing in on an agreed technical baseline and a refined design solution for the Canadian service combatant.

In 2011, Canada was looking at a notional CSC of similar size and scale to the current Halifax-class frigates. Since that time, the actual CSC has grown in size and complexity to satisfy the navy's operational requirements. We need a ship that will protect the nation's interest and the sailors who will take it in harm's way.

We should keep in mind that shipbuilding programs, particularly the CSC program, are a truly national endeavour and bigger than any single company or government department. We encourage the government to apply a single point of accountability for the execution of shipbuilding. This role will consolidate authority and enable difficult decisions and complex trade-offs to be made more effectively.

In closing, I do hope you take me up on the offer to visit our Halifax shipyards soon, so that you can see the work under way and meet the Canadians working on this important project. There is a real sense of purpose at our shipyard. We are proud of our work in building first-class warships for Canada.

Thank you.

• (1620)

**The Chair:** Thank you, Mr. Mooney. We appreciate that.

Thank you for the offer. We are in discussion along those stages, so we will be in touch.

With that said, we'll now go into questions. We will start with Mr. Paul-Hus for six minutes.

[Translation]

**Mr. Pierre Paul-Hus (Charlesbourg—Haute-Saint-Charles, CPC):** Thank you, Mr. Chair.

Good afternoon, Mr. Young and Mr. Mooney. Thank you for joining us. Welcome to the committee.

I have visited the Irving shipyard. It's a large company. I was there when its workers were starting to cut the metal that would be used to build the first Arctic and offshore patrol ship, AOPS, of that series. I was able to see how it worked.

I would like to ask a very direct question. Why does Irving have exponential shipbuilding costs, much more so than other shipyards around the world?

I understand that some problems are related to COVID-19, but the pandemic has hit every part of the world. We are not talking about a cost increase in millions of dollars, but rather in billions of dollars. So it becomes a very important question.

What is the main reason Irving's shipbuilding costs are higher than anywhere else?

[English]

**Mr. Kevin Mooney:** I would comment first of all that the complexity of shipbuilding and starting up a new industry cannot be underestimated.

We've actually been building ships now for approximately six years. We had to bring in shipbuilders from all over the world to help us get started. We see a turnover in those people. Our focus now is on building a team that is going to stand the test of time. Despite the pandemic, as I mentioned earlier, we did deliver two ships, and we have more coming. We are seeing the incremental labour hours that it takes to produce ships continue to go down.

• (1625)

[Translation]

**Mr. Pierre Paul-Hus:** I understand, Mr. Mooney, but, at the outset, five ships were ordered at the price of \$400 million each. For the first ship, and maybe even for the second one, it was normal for costs to be higher because experience was still lacking, but after that, it should have been like a series. The government ordered a sixth ship, which cost \$800 million. Instead of costing less, it cost twice as much.

We recently learned that the total cost has increased from \$2.8 billion to \$4.3 billion. So we are talking about \$1.5 billion more for a series of ships that should cost less in principle, given the experience the shipyard's workers gained from one ship to the next. That's incomprehensible to us.

Is a labour problem behind that change?

[English]

**Mr. Kevin Mooney:** Regarding your specific mention of the \$800 million for the sixth ship, we should keep in mind that \$800 million was a true-up of the cost that was expected to complete all of the six ships. That was not \$800 million for one ship.

Regarding the comment about the total cost number that you put there, that is not a number that I'm familiar with. That may be the total cost that Canada has assigned to all the various aspects of the program, but that is not a number that is familiar to me.

[Translation]

**Mr. Pierre Paul-Hus:** Okay.

Those are figures we received in the report that I have in my files, which confirms that the government paid \$4.3 billion for the six ships. In any case, there is a difference that must be explained.

When it comes to surface combatants, we put questions to a number of people in committee. The initial cost was between \$56 billion and \$60 billion for the 15 ships. Canada's Parliamentary Budget Officer mentioned that it would go up to \$77 billion, but no one in the government can confirm this.

Do you, at Irving, have a better idea of the total cost of those 15 ships?

[English]

**Mr. Kevin Mooney:** At Irving we are only responsible for a component of the total cost of the Canadian surface combatant program. We periodically send our projections for estimates of the cost, but these are focused primarily on the construction of the ship and some of the combat systems. They do not include, for instance, infrastructure. They do not include equipment that is being purchased through a foreign military sales program. They do not include training. There are a lot of costs that are rolled in there that don't fall under Irving's responsibility.

In terms of the cost of a 15-ship program, that is a number that is extremely hard to estimate at this point in time. Every nation would perform that calculation differently. At Irving, we really have our focus on what it's going to cost to build the first three ships, and those are the estimates that we pull together for the government on a regular basis. I think it's very difficult—

[Translation]

**Mr. Pierre Paul-Hus:** You said you were sending in your estimates regularly.

How often does the government receive your reports?

[English]

**Mr. Kevin Mooney:** It's quarterly.

• (1630)

[Translation]

**Mr. Pierre Paul-Hus:** Okay.

You talked about the first three ships. Last week, we met with a representative of Fincantieri, an Italian company that made an offer to the government to build 15 ships for a fixed price of \$30 billion. They were saying that the first three ships would be built in Europe and sent to Irving, which would then build the other ships for a fixed price.

What do you think about that?

[English]

**Mr. Kevin Mooney:** I would need to see significantly more detail on how those numbers were arrived at. I can't comment on numbers that were generated by another company.

We should also point out that the ship that they are providing that price for is a significantly different ship from the Canadian service combatant. It does not contain nearly the capability of the CSC, nor does it contain the customization that Canada requires for its crews, its missions and all of those things as well. It would be irresponsible for me to comment on how they came to that number.

**The Chair:** If at any time any of the witnesses feels that there is more you would like to contribute to an answer, because of our time constraints, you're welcome to submit that in writing. If you just give that to the clerk, then we'll distribute it to our members.

With that, we'll now go to Mr. Housefather for six minutes.

**Mr. Anthony Housefather (Mount Royal, Lib.):** Thank you very much, Mr. Chair, and thank you so much to the witnesses for coming today. I really appreciate your participation.

Mr. Mooney, do you agree with the comment that the costs are exponentially greater than all other shipyards across the world in terms of building these ships?

**Mr. Kevin Mooney:** No, I can't agree with that comment, because it is very difficult to compare the cost of shipbuilding between one country and another country. Different countries apply costs in different ways.

**Mr. Anthony Housefather:** One of the things that you are doing is starting shipbuilding essentially from scratch, and re-establishing a Canadian industry in a way that other countries have continued to build ships over generations. Is that correct? The costs at the beginning are higher.

**Mr. Kevin Mooney:** That's absolutely correct.

I'd like to say that my focus is on the improvement and the development of this workforce for the long term. I'm happy to say that we are getting better every day. We are developing Canadians to be shipbuilders for decades to come, and I think there's great hope in the amount of improvement we're seeing. That's why we'd love to have committee members come to the shipyard and see for themselves what we're doing.

Please don't ever underestimate the complexity of building ships and getting all the pieces of steel and outfit to come together into a finished product that's going to last for 30 or 40 years and protect the sailors inside her—

**Mr. Anthony Housefather:** —and getting skilled labour to be able to do that.

I note that you're ramping up. We had testimony about programs in Atlantic Canada that allowed people to become skilled workers in the different trades that you use, and you guys are hiring them.

How have these contracts that you've received from the Government of Canada enhanced the economy of Atlantic Canada?

**Mr. Kevin Mooney:** I gave some numbers in my opening comments, but the actual numbers are over 8,200 jobs that will be created through the combat portion of the national shipbuilding strategy.

These are high-quality, highly skilled jobs that a person can make a career out of with a skill that will last a lifetime. I think also that our presence there has contributed an economic impact across Canada, not just in Halifax.

**Mr. Anthony Housefather:** There are spinoff jobs all over the place. About 20,000 jobs a year are created through the national shipbuilding strategy.

You talked a little bit about the challenges that you face, and it's clear that the industry faces challenges during COVID. You have additional challenges as a result of starting up a new program. How has the Government of Canada been of help in terms of partnership, and what can we do more of in terms of assisting you?

**Mr. Kevin Mooney:** At the highest level, I think Canada has stood by us throughout this. The confidence remains. We fully open our books and we fully open our shipyard. We have Canadian representatives on the technical side and the operational side on site non-stop, working with us and watching us every step of the way, encouraging us where they can and criticizing us where necessary.

We are on this journey together—the country, the industry, the shipyard—to develop this industry, and we all have to stay focused on the end goal.

**Mr. Anthony Housefather:** The goal is delivering on time and on budget as best as we can, and we're moving toward that. I appreciate the work that you guys are doing.

Ms. Cianfarani, I have a question for you.

First of all, thank you for your testimony, and thank you for reminding us that moving to a single source, a single department responsible for military procurement, is not a panacea. There has been a lot of simplistic testimony before this committee saying that this solution would somehow magically resolve all of the problems that plague defence procurement in Canada.

Could you speak a little bit to that issue, on why you feel that moving to a single department or a single person responsible is not the be-all and end-all solution, and the challenges that it may pose?

**Ms. Christyn Cianfarani:** Sure.

I'm mindful of the fact that I have a bit of a different opinion from one of my member companies at Irving Shipyards. I believe they are looking at it through an execution lens; I look at it through the lens of the complete procurement system.

One of the challenges that would be faced is the concept of smashing together four or three departments either into a single agency or under a single minister.

The easiest way I can describe it is that if you're in the manufacturing business, one of the first things you're going to do to make your operations more efficient is to map that process. You're going to map it all, in all its ugliness, its inefficiencies and its overlaps, and then you're going to start to take it apart. Changing who runs that beast and all the parts within it—changing the top—does not change the inefficiencies that lie underneath.

The idea that if we take this process in a single department like DND—in some cases of 200 steps—and either give it a new minister or blend it with another 200-step process in ISED, it would magically somehow become more efficient when we didn't actually look at the steps within the process would be quite remarkable in my point of view, having done continuous improvement for one company with the same kinds of inefficiencies with one boss.

That's certainly one aspect that I think is grossly oversimplified.

The second thing, and I've said this to these committees a number of times, is that most countries have governing foreign policies and governing industrial policies, and those—

• (1635)

**The Chair:** Thank you, Ms. Cianfarani. Unfortunately, we have time commitments.

We'll now go to Ms. Vignola for six minutes.

[Translation]

**Mrs. Julie Vignola (Beauport—Limoilou, BQ):** Thank you, Mr. Chair.

Mr. Mooney, I have a few technical questions for you, to get a clear picture of Irving Shipbuilding. I will put them to you one after the other, and then you could take two minutes to answer them.

First, how many halls and hangars are available for the building of ships and refit work at Irving Shipbuilding's shipyards in the Atlantic?

Second, who are your steel suppliers?

Finally, what is your weekly steel cutting capacity?

[English]

**Mr. Kevin Mooney:** The first question was on how many halls and hangars we have. We have three sites for construction in Halifax. Two of them are in Dartmouth, and they're focused on steel fabrication. Those parts are brought across the harbour into our main construction hall, which has two areas: an assembly hall and a module hall. Then the completed large modules go out onto the land level.

That is roughly how the construction process works at Irving Shipbuilding. It was designed with the assistance of a lot of international experts about 10 years ago.

The other questions were related to steel. I'm sorry, could you please repeat those?

• (1640)

[Translation]

**Mrs. Julie Vignola:** Who are your suppliers?

[English]

**Mr. Kevin Mooney:** We purchase our steel through a steel distributor called Stigterstaal, and the steel that they provide is sourced from various areas of the world. The steel used in construction for the AOP ships is a highly specialized steel. We intended at the front end of the program to use steel suppliers in Canada. Unfortunately, due to the special welding limitations and things like that, we had to source from different sources. Most of the steel in the AOP ships comes from outside of Canada.

On the Canadian surface combatant ship, that is still under review, but the initial look is that these are also extremely highly complex steel grades and quantities. We're working closely with BAE in the U.K. They're building the ship right now, and we will use grades of steel similar to what they're using.

I'm unable to comment on the CSC, as it's not yet under construction, but we will do everything we can, of course, to maximize Canadian content on CSC.

Then there was a third question about steel.

[Translation]

**Mrs. Julie Vignola:** What is your weekly steel cutting capacity?

[English]

**Mr. Kevin Mooney:** I'll have to get back to you with that exact number. That's just not a number that I keep on the tip of my tongue, I'm afraid.

[Translation]

**Mrs. Julie Vignola:** Thank you.

The cost of shipbuilding has increased. Mr. Paul-Hus talked about that. We know about the COVID-19 pandemic. Everything was affected, from the extraction of natural resource to their processing and transportation, which may have impacted supply costs.

What have you implemented to try to address rising costs related to COVID-19 and inflationary impact?

What are the impacts of COVID-19 and inflation on costs?

[English]

**Mr. Kevin Mooney:** The impact of COVID on costs occurs in two ways in a shipyard.



One, it has affected the production hours that it has taken to complete the ship. That would be due to the disruption caused by not having all of the workers we needed on any particular day and in any particular week. There were periods of time, even when the shipyard was open, that we suffered 30% absenteeism. We've gone through a very detailed analysis of the additional costs associated with the production inefficiency. It was a study that was conducted by a third party, and that is under review with Canada right now. There was certainly an impact on the production side.

Also, on the materials side, the impacts have been significant. I mentioned the skyrocketing price of steel. That has certainly affected us. The price of steel has gone up by over 150% since April of 2021. The price of copper has gone up by over 100%. Those increases in prices affect not only the commodities—the raw material we use—but also the finished products, because all the suppliers are using them. The shipping costs have also been significant for us.

All of these costs are on the order of millions of dollars per ship, because the increases have been so significant and so sudden.

In terms of what options we have to reduce those costs, on the materials side, I'm open to ideas on that. It is extremely difficult. We are dependent on our suppliers. All of our suppliers on AOPS at this point are single source. I'm not in a position to change suppliers in most cases. We always do that as part of our process anyway, to try to get the cost of material down, but it's not something that I can just instantly do. The material we buy is very highly specialized. It requires engineering approvals and it has to be approved by Canada, so we're in a tight position there.

Regarding the productivity—

**The Chair:** Thank you very much, Mr. Mooney.

**Mr. Kevin Mooney:** Okay.

**The Chair:** We'll go to Mr. Johns for six minutes.

**Mr. Gord Johns (Courtenay—Alberni, NDP):** Thanks. I'm going to keep going with the thread from Ms. Vignola.

First, thank you for being here today.

Mr. Paul-Hus talked a bit about the \$60 billion the department had projected to be the cost of the 15 new warships. The PBO suggested that it was going to be more, at around \$77 billion. Given that you've talked about the major challenges because of COVID and global supply chains, would you say that we're looking more on the side of the PBO forecast?

I'll start with you, Mr. Mooney, if I could.

**Mr. Kevin Mooney:** Yes. As I mentioned earlier, it's difficult for me to comment on those numbers that are being provided because I don't know precisely how they come up with them. I don't know exactly what they contain, but I think in a general sense.... As I said, I can't comment on that \$77-billion number or that \$60-billion number for ships that are not going to be built for 20 or 30 years. There are so many factors that go into that. If I knew that....

What I would say is that the effects of inflation are real, and they certainly don't help.

**Mr. Gord Johns:** What does it look like in terms of all overall impacts from inflation right now? You talked about one product being 100% or more, and different variations. What is it overall? What are you seeing as the increase overall on your part of the projects that are right now being procured by your company?

• (1645)

**Mr. Kevin Mooney:** Are you asking for what it would be overall or in certain areas, as a percentage?

**Mr. Gord Johns:** That's right. What would be the overall cost increase—labour, the challenges, all of it.

**Mr. Kevin Mooney:** We recently had price estimates from all of our suppliers for AOPS seven and eight, and we were able to compare those to the prices we paid for AOPS one through six. In those cases, the prices have gone up anywhere between 15% and 40% on AOPS seven and eight from what it's going to be for AOPS one through six.

Another thing we notice is that suppliers give quotes that are valid for only a short period of time, because they are subject to inflation as well, and their sub-suppliers won't give them firm quotes that have price validity. There is significant price pressure across the supply chain.

**Mr. Gord Johns:** Ms. Cianfarani, you talked about boom and bust, and this is something we're hearing a lot about at the committee.

Seeing this happen before in the history of shipbuilding in Canada, what do we do as a nation to make sure that we use this as an anchor, not just for the national shipbuilding strategy but beyond that, as a shipbuilding nation?

Can you speak about the importance of getting this right in terms of the future of Canada being a shipbuilding nation?

**Ms. Christyn Cianfarani:** As I mentioned, I think that in creating a specific strategy around shipbuilding, you have done, to some extent, some of the work. It's called the NSS. It's almost as though it's a rallying call, so that it becomes harder and harder for partisan politics to play out and for subsequent governments to overturn what I think is the goodness that has been started.

It sounds a bit easy to say that we just have to have the willpower to keep going at it, knowing that it is an incredibly complex thing we're doing. As I said, most nations, certainly in the G7, have quite directly articulated industrial and foreign policies. I would argue that these are two things that Canada misses that would anchor such a strategy.

If we had a national industrial policy that talked about the fact that we want to have long-lasting capability in shipbuilding, and then over top of that we plunk the NSS, it gives us longevity. We start to educate ourselves about the fact that it's not simply the initial recapitalization of any type of equipment; it is the tail end of this equipment that will last 50 years and will have billions and billions of dollars of maintenance, repair, overhaul and technology insertion, not to mention evolution for our Canadian Armed Forces.

Those are the principles.

**Mr. Gord Johns:** Great. You don't need to convince me. I'm on board on that. Thank you.

In terms of the policies, we used to have a 25% tariff, as you'll recall, on ferries being built outside of Canada.

What kind of policies could you suggest would help ensure that we're building ships here in Canada to ensure that we're continuing to build a robust shipbuilding strategy?

We know that the Conservatives removed that tariff. Can you speak about policies that might help to support shipbuilding in the long run?

**Ms. Christyn Cianfarani:** I can't speak to the ferry situation. I am not educated on it per se.

There are many types of policy frameworks and mechanisms that are used. You would be familiar with the industrial and technological benefits policy in Canada. Basically, for every dollar spent on a federal procurement of a certain level, it mandates that a dollar is spent here in Canada, which I think is, to some extent, a very passive policy.

Other countries, as I said, have an industrial policy or, ingrained within them, the notion that they will purchase and maintain their national security through their defence economics. In the United States, for example, you will never see a fighter plane that does not come out of Lockheed or Boeing, simply because it is deeply ingrained within the Americans that they will look to home first.

Those are some examples of what you can do from a policy framework perspective.

• (1650)

**The Chair:** Thank you, Ms. Cianfarani.

We'll now go to our second round and Mr. McCauley. You have five minutes.

**Mr. Kelly McCauley (Edmonton West, CPC):** Thanks, Mr. Chair.

Gentlemen, welcome.

I have a couple of questions for you.

We're talking about productivity. How is it at ISI compared to say, peer countries right now? I've seen anywhere from one-eighth of the productivity to one-quarter of the productivity at peer countries' shipyards. Have you done that comparison?

**Mr. Kevin Mooney:** It's very difficult to—

**Mr. Kelly McCauley:** I realize it's difficult. Can you ballpark it or...?

**Mr. Kevin Mooney:** Our productivity is lower than that of other shipyards in North America that are building ships of a complexity that is similar to what we're doing right now.

**Mr. Kelly McCauley:** How much lower?

Again, I mean a ballpark estimate. I'm not going to hold you to it as a.... Is it one-half or one-fifth?

**Mr. Kevin Mooney:** I think it would vary by the shipyard. It's within 20% to 30% of Bath Iron Works in Maine, for instance, which would be one that is right down the road.

**Mr. Kelly McCauley:** Here's a similar question.

On COVID, how did our peer countries deal with this at their shipbuilding sites? I mean no offence, but we hear a lot at this committee about COVID. I've contacted or looked at some of our peer countries, and they've been able to steam through that without a million lost work hours, as I think you commented.

How has it affected other shipyards compared to...?

**Mr. Kevin Mooney:** It's had a severe impact on shipyards. I was just in BAE shipyard in Glasgow last week. We had very direct discussions about the impacts. Their impacts were not quite as bad as ours, but they were bad.

I think it's probably appropriate to point out here there was a risk-averse approach to COVID taken in Nova Scotia. That had a very direct impact on us. We followed the lead of the medical authorities—

**Mr. Kelly McCauley:** I appreciate that. Let me just move on.

I want to chat about the AOPS a bit. As my colleague mentioned, it had been reported previously that it was \$400 million per ship. Now, I know not every single one costs that, but for the first five it was an average of \$400 million. Then when the sixth one came out, the cost was announced as \$800 million. When my colleague talked about \$400 million per ship, he was talking about the average for the first five that had been reported. Now it's \$800 million. The last two for the Coast Guard are now, I think, \$750 million per ship.

Walk us through this. As you're gaining experience and your productivity's increasing quite dramatically, the costs should be coming down rather dramatically. How is it that they're going the other way so dramatically?

**Mr. Kevin Mooney:** Let's try to get the numbers correct so that we're all speaking on an equal footing here.

As I mentioned earlier, the 800—

**Mr. Kelly McCauley:** What is the cost? We've been asking for years and we never get a straight answer from anyone. What is the cost per ship for the first five?

**Mr. Kevin Mooney:** The approximate cost for the first six ships is \$500 million per ship.

Now, you have to remember that the first ship contains a significant number of non-recurring engineering costs—

**Mr. Kelly McCauley:** No, I understand that. The first one may be \$750 million, and then the costs come down, yes.

**Mr. Kevin Mooney:**—so the price of each ship goes down.

**Mr. Kelly McCauley:** Where did it get reported that the sixth one was \$800 million, then, and why are the costs for these two Coast Guard ships so high?

**Mr. Kevin Mooney:** I was not here at that time. My assumption is that it was a contract for five ships that was modified to be a contract for six ships.

**Mr. Kelly McCauley:** What is the cost for the sixth one, then?

**Mr. Kevin Mooney:** It is less than \$500 million.

**Mr. Kelly McCauley:** Is \$750 million per ship for the Coast Guard accurate, then?

**Mr. Kevin Mooney:** I don't know where that \$1.5-billion number came from. We recently submitted an estimate, and that was not the number we submitted.

**Mr. Kelly McCauley:** What is your estimate, please?

**Mr. Kevin Mooney:** We're in negotiations with the Coast Guard on that right now, but it is nowhere near \$1.5 billion.

**Mr. Kelly McCauley:** You understand how a lot of these numbers bounce around, because we ask questions and we don't get answers.

What is the estimate, then?

**Mr. Kevin Mooney:** We have yet to negotiate the terms and conditions of the contract. The terms and conditions drive how much it's going to cost to build the ship.

• (1655)

**Mr. Kelly McCauley:** Let's go back to the fifth and the sixth. With the understanding that there is a massive increase in productivity, how much is saved from the first ship to the sixth ship? I would think the sixth ship's added costs should be around \$250 million to \$300 million. What is adding that sixth ship to the contract costing taxpayers?

**Mr. Kevin Mooney:** The total cost of the six-ship contract—

**Mr. Kelly McCauley:** No, I mean for the added ship. It was five, and then there was one ship added. What does it cost to do that?

**Mr. Kevin Mooney:** I think my answer to your question is that the \$800 million, or whatever number was added to the contract, is not the incremental cost of a single ship.

**Mr. Kelly McCauley:** What is the incremental cost for that last ship that got added, then?

**Mr. Kevin Mooney:** The number we are looking at right now is somewhere between \$400 million and \$450 million for the sixth ship.

**Mr. Kelly McCauley:** I appreciate that. It's been difficult to get straight answers on that. Thanks.

**The Chair:** Thank you.

We'll now go to Mr. Bains for five minutes.

**Mr. Parm Bains (Steveston—Richmond East, Lib.):** Thank you, Mr. Chair.

Thank you to our guests for being here today.

My question is for Ms. Cianfarani. What are some of the challenges you've seen to improving the NSS across the shipyards?

My questions are coming from British Columbia. The Vancouver shipyard is an important part of our marine sector here. What are some issues that you think they are running into, and how can the federal government help?

**Ms. Christyn Cianfarani:** Well, I think the Vancouver shipyard isn't much different from the Irving shipyard in terms of the challenges it's facing. They will be facing escalations for raw materials and services, in some cases due to COVID, and that impact will be across the board in the NSS.

I think one of the best things that can be done is for us as a nation to look at the escalator that the Department of National Defence has for these types of things. It has contingencies built into the programs. You've probably heard about that, but it is unlikely, in my view, that these contingencies would provide enough cover to be able to absorb the kinds of inflationary measures we're seeing right now.

In my view, if parliamentarians wanted to help out the two shipyards and the NSS program in general, you would ask Treasury Board to look very hard at escalators that are outside of the program itself, meaning that the program would not absorb the burden of the escalations we're seeing, especially in terms of inflation, for example.

**Mr. Parm Bains:** Do you any suggestions on improving the local economic benefits to Canadian industry as we approach a conclusion in the FFC project, the future fighter capability project?

**Ms. Christyn Cianfarani:** Oh, you're on planes.

I do not have any insight into the bids that were put on the table by the vendors themselves. We stay out of the procurement offers, so I cannot tell what the winning procurement, the negotiated—the seemed-to-be-negotiated—procurement with Lockheed Martin for the F-35 includes in terms of its benefits to Canada. All I can say is that as the federal government negotiates that, we would want to see a maximization of work, whatever it can be, placed in Canada, perhaps on the platform, but particularly in the case of the in-service support and the technology insertion over the life of that program, if it is an available option to us.

You would have been aware that in the past Canada maintained, serviced and technology-upgraded the F-18s that were made by Boeing. There was a lot of transfer technology put into this country, and that stands to erode without some kind of involvement by Lockheed, which would most likely take place during the negotiation period, with the Government of Canada playing as much hardball as it possibly can at the time.

**Mr. Parm Bains:** How much time do I have, Mr. Chair?

**Mr. Kelly McCauley:** He's away. Just keep going.

**Mr. Parm Bains:** Okay.

I'll move on to Irving Shipbuilding. How does Irving support smaller Canadian shipyards and small and medium-sized enterprises through its supply chain?

**Mr. Kevin Mooney:** In our procurement process, we absolutely give priority to small Canadian companies and medium-sized Canadian companies. We use them for our HVAC system installations on the ships. We have a dedicated staff resource who helps us constantly survey the local Canadian market to bring in new Canadian suppliers.

- (1700)

**Mr. Parm Bains:** Can you give some examples of where they're located?

**The Chair:** Mr. Bains, you have 30 seconds, just so you're aware.

**Mr. Parm Bains:** What are some examples of some of the cities that might be located in our areas and regions?

**Mr. Kevin Mooney:** I'd be happy to give you a detailed breakdown of all of our suppliers across Canada. That's information we have for you, for sure.

**Mr. Parm Bains:** Thank you.

**Mr. Kevin Mooney:** We have all the provinces represented. I can tell you that.

**The Chair:** Thank you.

We'll now go to Ms. Vignola for two and a half minutes.

[Translation]

**Mrs. Julie Vignola:** Concerning frigates, a decision was made to build Type 26 frigates. Was that decision imposed on Irving by the Department of National Defence? Was the decision made by the department?

[English]

**Mr. Kevin Mooney:** The answer to your question is yes. The decision was made by the Department of National Defence for the Type 26.

[Translation]

**Mrs. Julie Vignola:** Were you consulted on that?

[English]

**Mr. Kevin Mooney:** Irving Shipbuilding had the responsibility to run the procurement process for them. We helped provide the scoring and all that, but we did not have access to the final scoring.

Kevin, perhaps you could provide more detail.

**Mr. Kevin Young (Senior Vice President, Canadian Surface Combatant, Irving Shipbuilding Inc.):** Yes.

Irving assisted in the procurement process, but the requirements, the capabilities expected, the overall scoring and the expectations and decisions that came from it were all made by Canada. Irving was there to facilitate, support and provide advice if asked, but all the issues were Canada's decisions. We were there to facilitate and enable.

[Translation]

**Mrs. Julie Vignola:** Among the other possibilities was the FREMM European frigate.

In what way would the FREMM have been better than Type 26, for a manufacturer, and vice versa?

[English]

**Mr. Kevin Young:** It's a very difficult question to answer, because no FREMM design was offered through the competitive process. There was only an unsolicited bid through Fincantieri, which, as they said last week, didn't meet the requirements that Canada had laid out. It wasn't compliant and it was offered outside of that process. FREMM wasn't offered through another bidder, so we never got to see what that might look like. We got only the bids that were reviewed properly through the formal process as laid out through Canada. The FREMM offer from Fincantieri was outside of that.

[Translation]

**Mrs. Julie Vignola:** Okay.

A few weeks ago, a witness told us that Irving had imposed the choice of Type 26 on the federal government.

What would you say to that witness?

[English]

**Mr. Kevin Young:** There was no imposition from the company on Canada, as I said. Canada set the requirements, the capability and the expectations, and the decision lay with Canada. Type 26, modified to meet the needs of CSC, was the successful bidder through the competitive process activity.

**The Chair:** Thank you.

We'll now go to Mr. Johns for two and a half minutes.

**Mr. Gord Johns:** You talked earlier about the labour market shortage and the challenges around retention and recruitment. Can you speak about how the federal government can support you? Obviously this is applying to all sectors: doctors, lawyers, even border agents and at the airports, as you're hearing. It's right across the whole spectrum.

Mr. Mooney, can you speak about how Canada could best help to support you? Obviously, we have a housing challenge as well, and we can't just rely on immigration to bring people in to fill those jobs when we don't have housing.

**Mr. Kevin Mooney:** Right. You mentioned immigration right there. That, for instance, is certainly one of the biggest areas where speeding up the process would help. There's a backlog right now, and we would hope that the national shipbuilding strategy immigration that we are pursuing will take priority, since it's in the national security interest.

**Mr. Gord Johns:** I think there's a disconnect right now. There's not a housing strategy that's working cohesively with our immigration strategy to ensure that we have housing to accommodate people to fill those jobs. Do you think the federal government needs to work more with a cohesive plan on housing and immigration?

**Mr. Kevin Mooney:** I would highly recommend that. Particularly in Halifax, we're starting to come into a period of housing shortages, and we need affordable housing for our workers to occupy.

• (1705)

**Mr. Gord Johns:** If we talk about smaller shipyards.... I mean, obviously you're a big shipyard. I'm from Port Alberni on the west coast of Vancouver Island, and we're trying to kick off a big floating dry dock, because we have a huge demand for floating dry dock space on the west coast and there's a shortage.

How can the NSS help to support getting the small shipyards to be able to fill some of the needs there, and how can that tie in? As well, how can the federal government create programs for smaller shipyards to be able to get into the business and participate?

**Mr. Kevin Mooney:** I'll be honest with you. I'm focused on my shipyard.

**Mr. Gord Johns:** I'll bet you are—

**Mr. Kevin Mooney:** I'm focusing on delivering ships for Canada and—

**Mr. Gord Johns:** —but do you agree it's important that we create capacity in the smaller shipyards so that we can continue with the robust needs for the larger vessels at the bigger shipyards?

**Mr. Kevin Mooney:** I think anything that increases the shipyard capability.... On the comments made by my colleague from CADSI, I would agree with those 100%. We need to support the expansion of the maritime industry in Canada, and Irving does that through our value proposition commitments and things like that. We do try to help, and we are interested.

**Mr. Gord Johns:** Thank you.

**The Chair:** Thank you.

We will now go to Mr. Paul-Hus for five minutes.

[*Translation*]

**Mr. Pierre Paul-Hus:** Thank you, Mr. Chair.

Mr. Young, you are the senior vice president of Canadian Surface Combatant, is that correct?

You are indicating that is correct.

The federal government paid just over \$800 million for the design of the Type 26 combat ship, correct?

[*English*]

**Mr. Kevin Young:** No, I don't recognize that number exactly. That's for what?

**Mr. Pierre Paul-Hus:** It's for the design.

**Mr. Kevin Young:** The design is still ongoing, sir. It's not complete. There's a whole range of activities under the design contract. It's not just to design the vessel but to design the program, lay out the future plans—

**Mr. Pierre Paul-Hus:** In the budget you received \$800 million—more than that—for the design. That's the number we have actually in the budget.

**Mr. Kevin Young:** The work isn't finished. There's an ongoing discussion with the government as we work our way through this. I don't recognize the \$800 million number.

[*Translation*]

**Mr. Pierre Paul-Hus:** Okay.

We know that Irving is the prime contractor. So it is not the federal government, or another company or Lockheed Martin. Is that correct?

[*English*]

**Mr. Kevin Young:** Irving is the prime contractor for the vessel and is responsible for all of the industry participants, including Lockheed Martin and BAE and all those others. However, we work closely with the government, and most of the key decisions are collaborative activities. Though the final decision rests with Canada, we bring recommendations and solutions, and decisions are made with Canada.

[*Translation*]

**Mr. Pierre Paul-Hus:** Okay.

The project encompasses the design, weapons systems, construction and so forth. Being in charge of the project, you could be expected to be aware of all proposals, costs and various partners. Today we want to know how much the project is expected to cost. It seems no one can tell us. We have been asking the government for two or three years. As contractor for this major project, you must know the costs of all your partners. So you should have an idea of the overall cost of the project.

[*English*]

**Mr. Kevin Young:** As my colleague Mr. Mooney said earlier, we provide a quarterly update to government through a shared-cost model of our scope, but our scope does not constitute the total scope of the CSC program. CSC is the acquisition of a total defence capability, and not just the provision of ships and the combat systems within them.

[*Translation*]

**Mr. Pierre Paul-Hus:** Who is responsible for the weapons systems? Is it Lockheed Martin?

[English]

**Mr. Kevin Young:** Yes. The government provides the ammunition for the vessel, the training, the infrastructure to operate the vessel, so there's a lot more than just—

[Translation]

**Mr. Pierre Paul-Hus:** With respect to construction, weapons systems and Lockheed Martin's specialized communications systems, does the government discuss these costs for the surface warships with Lockheed Martin?

[English]

**Mr. Kevin Young:** No, that's our side.

[Translation]

**Mr. Pierre Paul-Hus:** Okay.

So you should have an idea of the costs thus far.

[English]

**Mr. Kevin Young:** We provide regular costs to the government. What they add onto those—what is additional to those to provide the estimates they formally provide—is in the order of \$60 billion, which they have provided publicly. Our number is below that number, and the difference is reasonable enough to believe that it is a credible number. I don't know enough of those costs to be able to say that it's the right number.

• (1710)

[Translation]

**Mr. Pierre Paul-Hus:** Okay.

So, you are saying that the government has estimated the costs at \$60 billion to give itself some leeway. For your part, you think it is a bit lower than that.

Considering inflation and the cost of steel and materials, is that figure still valid?

[English]

**Mr. Kevin Young:** Yes, because this is a long-term program with assumptions about inflation and escalation. Material costs will not be just what they are today. We're not buying all those things today. They are projected over time, using data that the government wishes us to use so that they are consistent with their other cost projections.

[Translation]

**Mr. Pierre Paul-Hus:** Thank you. I have one last question for you.

In this major project, there have been issues with labour and related costs, as well as the cost of inflation and materials. In your contract with the federal government, is your profit margin protected, come what may? If there are unexpected costs, do taxpayers have to cover them?

Is there a risk for Irving, considering all the potential consequences?

[English]

**Mr. Kevin Young:** For the construction of the vessels, we have no contract at the moment. There's an umbrella agreement that describes our role, but we have no contract with a fee or a figure or a cost. That's still in the future. It's to be negotiated. As part of that, obviously there will be a discussion around costs and fees, but we're not at that point yet.

**The Chair:** Thank you, Mr. Young.

We'll now go to Ms. Thompson for five minutes.

**Ms. Joanne Thompson (St. John's East, Lib.):** Thank you. I'd like to begin with Ms. Cianfarani.

You referenced COVID in your opening remarks. Could you speak to the repercussions, if indeed you feel there are repercussions, of the pandemic as we move forward?

**Ms. Christyn Cianfarani:** Interestingly enough—

**Ms. Joanne Thompson:** Sorry; that's as it relates to shipbuilding.

**Ms. Christyn Cianfarani:** On shipbuilding, there are two very interesting dynamics with respect to the pandemic.

One is that because of the economic stability of continuing to be able to build ships during the pandemic period, hardship or not, we actually saw statistical growth in the defence sector. In 2020 the sector, predominately buoyed by shipbuilding and the ability to continue to build ships, grew by \$2.2 billion in GDP and 13,900 jobs. That's a testament to the fact that when you have something that's economically stable in an environment like a pandemic, which is a snap shock, it is quite good for economic stability.

That said, in terms of the NSS itself and its costs, you heard the shipbuilders say there are long-term ramifications in labour shortages and cost escalations that come from supply chain issues. We are seeing those, and not just in the NSS. We are seeing it across the sector in general. I believe that business in general is seeing it. We've heard escalations, for example, of up to 400% in certain supply chain areas, so there are long-term ramifications. As I said, even though these programs are for 10 years, it will be very hard in the short to medium term for these businesses to absorb those losses without some kind of management from a programmatic perspective.

Our worry is that we certainly don't want to see the number of ships get cut, for example, in order to accommodate things like inflation or labour shortages, which increase wages.

**Ms. Joanne Thompson:** Thank you.

Following along with that thread and going back to a reference earlier on boom and bust, do you see, as Canada moves through this shipbuilding strategy, that there's a capacity for other global government markets, a capacity to maintain momentum by looking outside of just Canadian shipbuilding needs?

• (1715)

**Ms. Christyn Cianfarani:** In general, the defence sector exports between 50% and 60% of its goods. In shipbuilding, it's a little bit more challenging. The reality is that this ship is fit for Canadian purposes, and the design of the ship is from Britain, so the Type 26 will be sold around the world. There is no question about it.

In terms of the skilled labour and the ability for it to generate itself within Canada, yes. There are certain parts and components within that ship, for example, being done by Lockheed Martin. That's the combat management system, which I believe will probably become available to the export market and be sold on the export market, just like the previous generation that's in the Halifax-class frigates.

To answer your question, it is twofold. One is internal and the other is external. However, it's not the ship itself—the platform or the hulls—but most likely the guts inside.

**Ms. Joanne Thompson:** In my remaining time, I want to throw it to you—coming off of some of your opening remarks—to speak about how we can continue to build Canada's resilience in the shipbuilding sector, looking critically at the things that have gone well as well as the challenges in a very open way.

It's your time to continue with your opening comments, because I found them quite interesting.

**Ms. Christyn Cianfarani:** I think that in this country, it's almost as if we relish procurements that don't go well. When I look at the NSS, there are many little projects within these very large projects that are going well. When I look at shipbuilding, it truly is nation building.

Forty per cent of the growth we saw in this sector came from shipbuilding. It provides significant employment to individuals on both coasts. Atlantic Canada has greatly benefited from having the shipbuilding resource—

**The Chair:** Thank you.

I apologize, Ms. Cianfarani, but we have time commitments.

With that, we have now come to the end of our first hour.

I want to thank Irving Shipbuilding for being here with us, as well as Ms. Cianfarani.

Ms. Cianfarani, you will be with us in the next hour to answer questions, but because we are bringing in one more witness virtually, we will suspend very briefly and then come back quickly.

• (1715)

(Pause)

• (1720)

**The Chair:** I call the meeting back to order.

We're now going to go into our second hour. Due to time commitments, unfortunately—and we want to be respectful of time—we are going to very quickly do an introduction.

Mr. Aubertin has joined us. Ms. Cianfarani is with us as well.

Ms. Cianfarani, you've provided us with a statement in advance. We have distributed that to the members, so they already have that.

If you're okay with just taking questions from what you've distributed, that will help us manage our time.

**Ms. Christyn Cianfarani:** That's fine.

**The Chair:** Mr. Aubertin, would you quickly do an opening statement, please?

[*Translation*]

**Mr. Alain Aubertin (Chief Executive Officer, Consortium for Research and Innovation in Aerospace in Québec):** Thank you.

To begin, let me tell you about the Consortium for Research and Innovation in Aerospace in Quebec, or CRIAQ, which was established 20 years ago. It was founded by members of the industry who have been well established in Canada for just over 75 years. I am referring to major manufacturers of Canadian equipment, as well as level 1 companies, and pioneering universities in aerospace research. From the outset, the Quebec government has supported the creation of CRIAQ.

For the past 20 years, our work has essentially consisted of funding collaborative aerospace research. What does that entail?

It means serving as a bridge between universities, colleges and research centres and industry specialists to enable them to conduct collaborative research projects with support from all levels of government in order to advance technology and develop talent in Canada, and maintain Canada's leadership in the aerospace industry.

For the past 20 years, we have helped our members and partners through all the waves of technology in the industry, from the first composites to the most sophisticated bionics, such as electric flight command technology, and an increasing number of onboard electrical systems.

The projects we fund today are primarily in new sectors and new segments such as drones, changes in electric hybrid propulsion, and of course the whole digital aspect, including cybersecurity, which is becoming a very important part of our portfolio.

We are an aerospace industry research group. That means that each project we fund is an idea that initially comes from industry. We then bring researchers together to develop talent and technologies. Without the initial contributions from industry, our programs would not happen. So it is really applied research to develop technologies and train new generations of innovators and engineers in our sector. We have been doing this for 20 years.

In Canada, about 75% of research and development in the aerospace sector is conducted in Quebec. Specifically, it is in the greater Montreal area. This does not exclude other very innovative ecosystems elsewhere in Canada, however, with which we work very closely. Now there are also innovations relating to energy, including hydrogen, electric energy, quantum energy, and so forth. These are other ecosystems that we work very closely with.

In the past 20 years, close to \$300 million in research projects have been funded. Most of that funding has gone to the development of highly qualified talent at the masters, doctoral or postdoctoral level. These people are now industry specialists who hold research chairs at Canadian universities in the aerospace or materials sectors, or industry product specialists and leaders.

The network now has 175 members and partners, about 140 of whom are in Quebec, but there is an increasing number of members outside Quebec. In fact, although we are based in Quebec, close to 40 network members outside Quebec are from universities, SMEs and top-notch companies right across Canada.

All of this has impacted our industry. More than 2,000 of our project graduates now work in the industry; licenses have been transferred to companies that have developed technologies currently used in various engine and aircraft manufacturer programs, as well as onboard systems; research work has led to the creation of startup companies; and of course there has been considerable international influence.

- (1725)

This international influence has meant recognition for CRIAQ thanks in a way to the ecosystem, to the intensity of the research work. It is quite unique to have such an ecosystem that supports an industry that is widespread.

I will now draw your attention to three important points.

I would like to tell you about CRIAQ's legacy. We were fortunate to receive federal funding to manage a second consortium, CARIC, the Consortium for Aerospace Research and Innovation in Canada, for five years. We worked very closely with another consortium on green aviation in Canada, for 10 years. So we have an outstanding legacy.

Regarding the industrial and technological benefits or ITB policy, I would say we have all the processes, all the practices, and all the know-how to lead and mobilize the ecosystem to create consortia in keeping with this policy. This includes traceability of transactions and traceability of work in order to benefit industry and technology in Canada, as the policy provides. Of course you are already familiar with the value proposition pillars in the policy.

I will focus primarily on innovation, that is, the multiplier factors in the policy. Contract holders must have the opportunity to have multiplier factors on research and development investments in order to further innovation in Canada and to enhance our technology leadership through defence and security supply contracts. We have everything we need to fully reap the benefits for Canada.

Yet Canada is not reaping the social, economic and technological benefits of this policy for its leadership and sovereignty at present. We have to recognize the tremendous efforts in the industry, of

course, but also in all the processes. Yet we can only bemoan how slow the supply processes are, and especially the disconnect between the intent of the ITB policy, and what is actually required of companies when they win contracts. We have 20 years of experience in this sector. We have received very little major funding from ITB, and very little in the way of industrial and technological benefits, except for indirect SME funding and some financial support. Unfortunately, we cannot expect big things from this policy at this time.

We therefore recommend that the federal government do more, and act more quickly to monitor the organizations that win supply contracts. Quick implementation is needed with specialized and recognized entities which can provide the traceability required by Innovation, Science and Economic Development Canada. Structuring projects are also needed to comply with contracts and materiel delivery, and also to contribute to the growth of new technologies and new industry expertise and competencies for our country.

In closing, I would also recommend that the government should facilitate and release \$49 million in investment funding for aerospace research and development, as announced in June 2019 by the minister of Innovation, Science and Economic Development at that time, but has still not been provided. The parameters of the strategic innovation fund are such that we are waiting for the quick implementation of a similar investment in research and development for Canada's leadership. These investments have not yet been made.

That ends my presentation.

- (1730)

**The Chair:** Thank you, Mr. Aubertin.

[*English*]

We'll now go to questions. We will start with Mr. McCauley for six minutes.

**Mr. Kelly McCauley:** Thanks, Mr. Chair.

Ms. Cianfarani—again, sorry if I'm butchering your name—you commented earlier. Do you actually believe that Seaspan or Irving will be able to export ships in the future, considering our cost disadvantage and our capacity issues?



**Ms. Christyn Cianfarani:** Well, it's not so much their ability to be able to export the ship; it's whether or not Canada would undertake such a team Canada approach to a ship and if another nation would want to purchase it with their own customizations.

When you—

**Mr. Kelly McCauley:** What nation would you see buying a ship, considering our massive cost disadvantages?

I'm just putting it out there. I appreciate what you said. I don't want to say it's a disservice to Canadians who are watching, or to our report, but I want it to reflect reality.

Considering, again, our cost disadvantage, our capacity disadvantage, are we actually going to be able to sell ships abroad?

**Ms. Christyn Cianfarani:** I can't answer that because I'm not another purchasing nation, but these—

**Mr. Kelly McCauley:** Okay. That's a fair answer. Thanks. I appreciate what you were saying earlier.

Where does CADSI get its funding from?

**Ms. Christyn Cianfarani:** We have a membership model. Right now, we have about 550 industrial partners, and then we also get our funding by running an event. We run the very large trade show called CANSEC. Those are our two—

**Mr. Kelly McCauley:** I know that's coming up soon. The federal government provides grants. I think it was \$600,000 in the last couple of years, according to the Treasury Board website.

The members of the NSS would also be contributing members as well, right?

**Ms. Christyn Cianfarani:** Yes, of course.

**Mr. Kelly McCauley:** Okay, wonderful.

I want to talk a bit about the ITBs, the indirect industrial and technological benefits, because you brought it up a lot.

One of the issues that came up with the ITBs, of course, was the famous french fry ITB for Irving. Do you think it brings legitimacy to the ITB debate when we allow someone to have an offset from a french fry factory, as much as I'm happy that it's in Alberta?

• (1735)

**Ms. Christyn Cianfarani:** Well, it depends how you set up your ITBs.

As you heard Mr. Aubertin say, there are various multipliers for the ITBs that are—

**Mr. Kelly McCauley:** Are the ITBs, from a CADSI point of view, meant for technological development in Canada?

**Ms. Christyn Cianfarani:** There are variations on the ITBs.

Predominantly, we would like to see direct ITB placed on the actual equipment that is being procured. Secondly, we would like to see it in innovation technology and other research places. Then, with what we call a third tier of ITB, which is less incentivized—meaning these multipliers—businesses are incented to put their dollars into areas where they get \$10 for every \$1—

**Mr. Kelly McCauley:** I understand that. Let me ask you this: Are we hampering your membership with some of these ITBs?

In London, Ontario, we have General Dynamics building the LAVs there. Are we hampering the ability to create jobs or technology by saying that they need to invest in a food manufacturing plant somewhere? Is that a special deal for them? Do we need to be a lot more open or flexible with our ITBs?

**Ms. Christyn Cianfarani:** The amount of the ITB that can be direct depends on the platform. There's a portion of it that is direct on the platform.

We know that in the case of the light armoured vehicles in London, for example, there are over 400 companies involved in the direct application of building light armoured vehicles. That is a significant portion of their industrial and technology benefit piece. Then there would be what we call the indirect piece, which goes into other things, some of that being social procurement. It could be indigenous procurement or social programming, and it could be things that are less attractive, such as your french fry manufacturing plant in Alberta.

**Mr. Kelly McCauley:** It's not mine, but it will sure address our french fry capability gap.

Is it a stumbling block at all for the membership at CADSI to deal with how we set up the ITB regimes? Are some more flexible than others? I think a french fry factory is a bit flexible, compared to what I think most ITBs are meant for.

**Ms. Christyn Cianfarani:** Well, that's the thing. The direct and the indirect aspects allow the business to basically do its best to bring back that value to the economy. In some cases, what you're going to find is that a piece of technology is already sourced. It is largely “off the shelf”, let's call it, and the amount of customization is very limited, so the ability for that company to work right on the platform is quite low, and therefore they would do a lot of indirect work. A good example would be an airplane platform. It would have a lot of indirect work versus direct work, just simply because it's sourced elsewhere, outside of Canada.

I would say that members are very split on how useful ITBs are to them. In the case of the shipyards, I think the shipyards have made tremendous use of ITBs. When we are purchasing a platform that is made outside of Canada, I believe that a lot of the foreign companies prefer the indirect ITBs, because they are not necessarily interested in replacing their sourcing mechanisms—which could be in the United States, for example—with a Canadian firm.

**The Chair:** Thank you, Ms. Cianfarani.

We'll now go to Mr. Kusmierczyk for six minutes.

**Mr. Irek Kusmierczyk (Windsor—Tecumseh, Lib.):** Thank you, Mr. Chair.

I want to continue to talk about the industrial and technological benefits program and specifically its importance to Quebec aerospace, so I have a question for you, Mr. Aubertin.

We know, for example, that about 72% of the ITB program benefits in Quebec go to aerospace and that this is the largest proportion of any region in Canada.

There are over 45 academic institutions and research organizations across Canada that benefit from the ITB, including, for example, Polytechnique Montréal and McGill. Recently, Lockheed Martin also joined the Institut Quantique at the Université de Sherbrooke. That was an investment of \$1.3 million that was facilitated by the ITB.

I just want to ask you this, Mr. Aubertin: What does the ITB program mean to Quebec aerospace? Also, how can it be improved?

• (1740)

[Translation]

**Mr. Alain Aubertin:** Thank you.

The ITB policy is very important for Quebec. There are of course many industry players in this segment, and several sub-segments of defence and security in Canada and around the world.

Yet the vast majority of manufacturers and universities in our sector in Quebec are focused on civil aviation. As I said, the products of research and development are also focused on the defence and security sector.

The ITB policy therefore has a strong structuring effect. It has the potential to enable universities to secure long-term faculty commitments and to lead them to invest in the development of labs. This in turn provides for concentration of activities in niche areas, such as quantum technology, materials, advanced bionics, cybersecurity or the shift to future air mobility, with drones and air taxis. A university that has a structuring contract with a company is afforded a long-term vision, over five or 10 years, which really changes everything.

There are also established research centres, small centres affiliated with technical colleges. These centres benefit as well, because they can quickly acquire the infrastructure for robots or automation systems, for instance, and master those competencies, and their clients are primarily SMEs. This has a strong structuring effect, both for the centres and for future clients.

These kinds of transactions are carried out by certain partners in our ecosystem, but it is on a case-by-case basis. So we need to find ways to ensure that, in the future, contracts under this policy that have structuring effects are not done on a case-by-case basis. That would mean that each of us in our ecosystem would not have to spend so much money and do so much work to meet representatives of this company or that company, travel abroad, come back, meet with people, and so forth. There are a lot of transaction costs for the funded party to be considered by someone who would be agreeable to this investment. That is why I think established structures are important, and I am pleased that the ITB was also raised by my colleague Ms. Cianfarani from the Canadian Association of Defence and Security Industries, because they have very strong direct and indirect structuring effects, and we need more of them.

[English]

**Mr. Irek Kusmierczyk:** Thank you very much for that thorough answer.

I want to switch gears really quickly. This is a question to both of the witnesses. It deals with the question of workforce and labour shortages.

According to a recent Aerospace Industries Association survey, only about 24% of workers in aerospace are women, and about 8% are Black. The International Aviation Womens Association did a similar survey that found similar results. I'm sure that the situation is not that much different here in Canada. One of their conclusions in that survey was that "the aviation industry is not sustainable if more than 50% of the population doesn't see aviation as a successful career".

I want to ask both of the witnesses how your organizations are helping to recruit and retain more women in the aerospace sector. How can Canada help the aerospace sector develop a more diverse workforce?

**Ms. Christyn Cianfarani:** I can take it on a national level.

There are three things that are happening.

One is measurement. You came out with that statistic. In 2018, for the first time in the defence sector, we started to measure the number of women in the defence industry in order to be able to set up programming that would incentivize women to come into the sector.

The second thing is programming and policies. As an example, in the industrial and technological benefits programming, indirect benefits could be used. There could be multipliers for indirect benefits to incentivize companies to hire and train women. We've suggested that the policy could be used to upskill women and create university programming to incentivize women to join.

The third thing is that CADSI is the parent organization for an organization called WiDS, Women in Defence and Security, which is made up of many women in defence and security. We provide mentorship, professional development and a community for women, particularly in the defence sector, because the numbers in our sector are roughly between 13% to 15% women.

• (1745)

**The Chair:** Thank you, Ms. Cianfarani.

I apologize, Mr. Aubertin. Unfortunately, we've run out of time. If you can provide that to our clerk in writing, it would be appreciated.

I will now go to Ms. Vignola for six minutes.

[*Translation*]

**Mrs. Julie Vignola:** Thank you very much.

A few weeks ago, Mr. Aubertin, the federal government announced that it had chosen Lockheed Martin's F-35. I have two questions about that.

Were you surprised by the choice of the F-35?

In your opinion, what economic benefits will this agreement with Lockheed Martin generate for Quebec? To what extent do you think its workforce and expertise will be called on?

**Mr. Alain Aubertin:** Thank you for your question.

No, I was not surprised by the choice. The process was conducted in such a way that officials were able to assess the expertise of the various organizations and their proposals over a number of years.

Firstly, the expected benefits of such a contract, as noted earlier, can be direct. For instance, they can include jobs in the manufacturing and final design of the aircraft's sub-components. In Quebec, there are more than 225 SMEs and industry organizations, not to mention all the universities that are closely involved in our consortium. Furthermore, there are indirect benefits for the development of skills and expertise through workforce training programs.

We are strong believers in the transition to sustainable aviation, and thus in reducing the environmental impact of factories, and reducing greenhouse gas emissions through new technologies and new electrical systems that can be installed onboard for command and propulsion. The development of suppliers resulting from all this direct work has a strong structuring effect.

With respect to innovation and research and development, this is a golden opportunity to reap industrial and technological benefits for Quebec, and even for all of Canada, because there are a lot of partners outside Quebec. There are members who have a presence everywhere. So it is a structuring project.

**Mrs. Julie Vignola:** Thank you very much, Mr. Aubertin.

My next question is somewhat related to the last one I asked you, so you will have the opportunity to develop your idea.

A few weeks ago, witnesses stated that the partnership between Canada and Lockheed Martin on the F-35 design had generated \$2 billion in benefits for the Canadian aerospace industry, before the contract. They were referring to the design only. Does that amount sound right to you? We do not have the regional data, but do you know what percentage of those benefits will go to Quebec?

At this point, do you think Quebec's aerospace expertise will be called upon under the agreement between Canada and Lockheed Martin? Do you see that coming up in the negotiations?

• (1750)

**Mr. Alain Aubertin:** I cannot speak to the value of the investment made in the past, namely, \$2 billion for the aircraft design itself. I can tell you however that some of our SME members benefited from direct transactions with Lockheed Martin. As a result of

those transactions, those SMEs developed their technology and conducted structuring projects with CRIAQ.

You asked whether I see positive elements coming up in the negotiations. At this point, we have not in any way been asked to cooperate with Lockheed Martin or Innovation, Science and Economic Development Canada to identify specific technology centres, project ideas or centres of excellence in Quebec in order to make progress in this area.

**Mrs. Julie Vignola:** Are you concerned that you were not asked to participate in the process thus far, or do you consider it normal at this stage of the process?

**Mr. Alain Aubertin:** I would not say it is abnormal, but I think the key industry expertise needed by Lockheed Martin must be defined right away, as well as the various aspects of innovation that encourage workforce skills development. We must also look at the main research areas, such as onboard artificial intelligence and highly sophisticated navigation systems for detecting or avoiding collisions or countermeasures. It takes a lot of time to train people and to understand the science behind this field. I think this should be an urgent priority.

**Mrs. Julie Vignola:** Indeed.

So ultimately you are saying that the government does not consult the aerospace industry enough with regard to fighters and NO-RAD in particular. Could it consult the industry more extensively?

**Mr. Alain Aubertin:** Yes, but that would also mean consulting stakeholders in research and innovation. There are stakeholders in the industry, but academics are also a part of the research and innovation ecosystem. We represent people from the industry, but academics in this field could also make a contribution.

[*English*]

**The Chair:** Thank you.

Now I'll go to Mr. Johns for six minutes.

**Mr. Gord Johns:** Thank you.

Thank you again, both of you, for taking time to testify here today at this committee.

We heard earlier about the ITBs, and I just think cheaper isn't always better. We've seen infrastructure and defence procured internationally, in Africa and South America, and we see that we have crumbling examples of cheaper infrastructure built here in Canada.

I want to touch on the ITBs a bit.

Ms. Cianfarani, I want to take a different angle. Can you talk about the critical importance—the value proposition—when it comes to the multiplier effect for human rights, the environment and fair wages, and ensuring that we have supply chains and are developing national security around procurement and ensuring that we do it here at home in Canada? What are the benefits?

That would be great.

**Ms. Christyn Cianfarani:** We use a policy here in Canada that's called an "offset policy", which is the ITB value proposition. As I said, for proposals of a certain size or bids of a certain size, you apply this policy. This is what incentivizes corporations to put supply chain and other technologies or other research projects, etc., in Canada—

**Mr. Gord Johns:** Sorry; yes, I understand that. I'm just hoping that you can underscore the importance of it in terms of economic leakages for our country and opportunities in the long run for developing our manufacturing sector.

**Ms. Christyn Cianfarani:** Well, as I said, it's critical, because if you don't do this, what happens is that major platform acquisitions will be sourced from other nations.

For example, in the case of the NSS, if we had just bought the Type 26 from the Brits, it likely would not include a maintenance transfer of technology or even a build here in Canada, and effectively we would be hamstrung by another nation getting all the economic benefit. It is a critical piece, because that is the way in which we get work in Canada on things that we don't do in Canada by nature.

• (1755)

**Mr. Gord Johns:** I really appreciate your valuable feedback.

Mr. Aubertin, in terms of dual-use technology for both military and civilian purposes, in my own riding I have a company named Coulson Aviation that's doing very important work fighting forest fires all around the world, not just here in Canada. They've refitted their helicopters and airplanes to fight fires around the world.

Do you think we could do a better job in creating dual-purpose military equipment? Perhaps you can speak a bit about how things have shifted.

In the case of our allies, we see Ukraine under attack right now and the important role that Canada could be playing on the civilian level as well. Perhaps you can speak about that, Mr. Aubertin.

**Mr. Alain Aubertin:** Thank you.

[Translation]

Yes, quite right.

Technological developments in military aviation have benefits for civil aviation and vice versa. Let me give you an example of the benefits for military aviation.

There are aircraft derived from the Bombardier Global 7500 that have been used by the US military for a number of years. Although the developments we support in the ecosystem benefit civil aviation for the most part, all the other subsystems and manufacturers in the supply chain also benefit military aviation.

We see the same thing in the various military aerospace platforms. The robustness of the systems developed for the military enable civil aviation to produce variants of those systems. We must bear in mind however that companies are subject to very strict rules in terms of export controls, controlled goods, and so on.

As a result, there will always be certain limitations associated with developments in military aviation that are carried on by civil aviation.

[English]

**Mr. Gord Johns:** I was really impressed, Mr. Aubertin, with your strengths and ambitions document as part of the presentation that you sent us.

You talked about accelerating the decarbonization of air transport. Can you elaborate on how Canada could better support decarbonization and lowering greenhouse gas emissions within your sector, and some of the ambitions that you have and that you're working on?

[Translation]

**Mr. Alain Aubertin:** Yes.

Among the vectors for change that contribute to a sustainable aerospace sector, navigation is an important area. Airline companies are working very closely with the major navigation system suppliers, including Thales and CMC Electronics, in Canada. Navigation can be optimized in terms of ground traffic, parking and landing. Optimizing navigation can result in close to 30% of greenhouse gas reductions.

Another change vector relates to propulsion, whether hydrogen and its variants, hybrid or fully electric propulsion. In Canada, there is a history of engine manufacturers in this niche: GE Aviation, Rolls-Royce, Pratt & Whitney Canada, as well as Safran, which provides equipment for helicopters and fixed-wing aircraft. That capacity exists because the suppliers associated with these groups are here.

Another area is aircraft modification. Level 1 groups and original equipment manufacturers design new aircraft configurations.

So there is both technological and industry expertise. We have worked with the industry and universities to accelerate the new generations of technology in order to decarbonize the sector.

[English]

**The Chair:** Thank you.

With that, I'd like to thank you, witnesses, for your testimony today and for bearing with us. We were supposed to be done by 5:30, and it's six o'clock, so I appreciate your bearing with us for all this time and answering our questions.

If you feel there is something you might like to add to your testimony, by all means, please submit that to the clerk and we will distribute it to all the committee members.

With that said, Ms. Cianfarani and Mr. Aubertin, thank you very much for being with us.

I'd like to thank our interpreters and our technicians for all the work they've done and for bearing with us for the extra half-hour, and I thank as well our analysts and our clerk. As many of our committee members can see, Ms. Miriam Burke is with us part time when Paul can't be with us.

With that said, I declare the meeting adjourned.

---





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

---

### SPEAKER'S PERMISSION

---

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

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

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

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

---

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

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

---

### PERMISSION DU PRÉSIDENT

---

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

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

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

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

---

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