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Chair

Mr. James Maloney

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• (0850)

[English]

The Chair (Mr. James Maloney (Etobicoke—Lakeshore, Lib.)): Good morning, everybody. Welcome to our final meeting on Bill C-354.

We are joined this morning by three sets of witnesses. From Athena Sustainable Materials Institute we have Jennifer O'Connor and Jamie Meil, and from the Cement Association of Canada we have Steve Morrissey and Adam Auer.

Thank you very much for being here.

By video conference, I hope we have Mr. Beaulieu from the Quebec Forest Industry Council.

[Translation]

Mr. Gérald Beaulieu (Director, Centre d'expertise sur la construction commerciale en bois (CECOBOIS), Quebec Forest Industry Council): Good morning, sir.

[English]

The Chair: Perfect. Our system is working.

Again, thank you all for being here this morning. The process is that each of your groups will be given up to 10 minutes to deliver your remarks. Following that, we'll open the table up for questions to any or all of you. There are translation devices available if you need them. You will probably be asked questions in both official languages. You are, of course, free to deliver your remarks in either or both languages.

Ms. O'Connor and Mr. Meil, perhaps we can start with you.

Ms. Jennifer O'Connor (President, Athena Sustainable Materials Institute): Thank you very much and good morning. Thank you to the committee for inviting us today. I certainly hope that we can be of service to you.

I'm Jennifer O'Connor and I'm the president of the Athena Sustainable Materials Institute. I'm joined here by my colleague, Jamie Meil, who's our research principal.

I want to take a moment to tell you a little bit about the Athena Institute to help frame the questions later. We are a non-profit research and advocacy group in life-cycle assessment, or LCA. Our mandate is to advance LCA for a more sustainable built environment.

I just want to give you a little glimpse of our history. The organization started about 30 years ago as a research project at an organization called Forintek, Canada's wood products research lab. It's now known as FPInnovations. The work started because there was an interest there in broadening the dialogue, the environmental conversation, about wood products. That led to life-cycle assessment, and that led to gathering up representatives from across different material industries. It eventually became quite clear that, if that work was going to gain acceptance, advance, and be seen as credible, it would have to leave the wood industry, so 21 years ago the Athena Institute was launched as an independent non-profit research institute. Over that time, those 21 years, we have built a substantial reputation. We're seen as an international leader and pioneer in life-cycle assessment applied to the built environment. Our work has directly enabled the uptake of LCA in practice and policy in North America.

One of the key reasons I think that we've been effective and so successful is our ability to put together multi-stakeholder collaborations, to get multi-stakeholder engagement. It's really key to our credibility. It's key to our objectivity. You can see that on our board of directors, where we have representation from across material industries, and these groups are then coming together on our board helping to move the agenda forward, because they all want to be part of the solution in reducing environmental impacts of the built environment.

Just to tell you a little bit more about myself and Jamie, Jamie's bringing here deep expertise in LCA and in materials manufacturing. I'm bringing to you a background in architecture and engineering, and also a very deep background in wood product sustainability and market research, because I spent a good piece of my career at FPInnovations.

The scope of our remarks today will be limited. I note that the bill has two objectives, one of which is to support the wood products industry and promote more wood construction. We are not going to focus on that part of the bill. Our comments are focused on the part of the bill that references reductions in greenhouse gas emissions, GHGs. I would like to share remarks with you that are building on what you have already heard here in committee, what you've already discussed. I'd like to summarize and support that. I've read the transcripts. I'm impressed at the committee's interest in reducing the embodied impacts of construction.

I know you've heard from the wood industry. I appreciate that they've talked to you about embodied impacts. They've talked to you about LCA already. That industry is a long-time champion of cradle-to-grave scientific accounting of GHGs. You heard from them about the value of performance-based policy versus prescriptive policy. You heard from them about the value of using data to ensure that intended GHG reductions actually happen. What I'd like to do is take those messages and share with you how those are reflected in some leading-edge policy today.

Right here, in our own federal government, we've seen a lot of movement over the last couple of years towards evidence-based policy, towards data-driven policy, and life-cycle thinking. We've just seen in January the announcement from the Treasury Board Secretariat that greening government strategy has a strong emphasis on cradle-to-grave, full-scope LCA, and over the past couple of years, there's been some interest in greening infrastructure.

● (0855)

We had MP Andy Fillmore's motion 45 a couple of years back and we had Joyce Murray's accountable green lens initiative. Both of those were about bringing GHG accounting to infrastructure spending. A number of initiatives at the provincial and municipal levels are happening along these lines. Overseas, particularly in northern Europe, there's some policy already there.

The question is this: how do you implement an accountable green lens, or the carbon test that you've been referencing here, in policy? How do you go about doing that? We certainly agree that a carbon test is critical, but how do you do that in way that achieves the objectives?

I would like to encourage you to step back and consider this the way that we've been thinking about it—that is, what sort of policy gets put in place to encourage the sorts of actions that have verifiable GHG reductions? You might want to see an encouraging of product improvements across the board, including wood products. You'd want to encourage innovation in industry and in design. You'd like to encourage the reduction in the use of materials. The idea is to optimize, not maximize, material use. You'd want to be sure you had a robust, fair, and transparent system for doing the accounting, with stakeholder buy-in for credibility and acceptance. That requires a really strong technical foundation.

We have a number of ideas about what constitutes that foundation. It involves really good data. It involves standard methods so that we all follow the same rules. It involves tools and all that. I've captured a summary of those comments in a briefing note that I hope you've had a chance to see.

That concludes my remarks, Mr. Chairman.

The Chair: Thank you very much.

Mr. Morrissey or Mr. Auer.

Mr. Adam Auer (Vice-President, Environment and Sustainability, Cement Association of Canada): Thank you, Mr. Chair and members of the committee.

My name is Adam Auer, and I'm the vice-president of environment and sustainability with the Cement Association of Canada. I'm joined by my colleague Steve Morrissey, executive vice-

president at the CAC. Thank you for the opportunity to present our views on Bill C-354.

First, let me state that the Canadian cement industry unequivocally supports the notion that federal procurement of infrastructure, whether direct or indirect through investment transfers to other levels of government, can and should influence construction markets toward low-carbon and climate-resilient design. We also agree with, and in fact have consistently championed, the use of life-cycle tools as the best tools, although not yet perfected, for advancing sustainability in the built environment.

Our issue with Bill C-354 is that it calls on the federal government to leverage its enormous purchasing power to “give preference to projects that promote the use of wood”. The bill appears to be attempting to serve two objectives—first, to support Canada's forest sector, which is suffering under a number of pressures, including softwood lumber tariffs; and second, to help reduce the greenhouse gases associated with buildings in Canada.

Let me start with the first objective. When governments arbitrarily give preference to one product or technology over another, it has a clear distortionary effect on the market, undermining the healthy, fair, and open competition that defines successful modern economies. Canada's forest industry already benefits from tremendous federal and provincial support. The 2017 federal budget alone offered some \$40 million to support the promotion of wood. Such wood-related organizations as FPInnovations benefit from substantial support from the Canadian Forest Service in just about every province and territory. Taxpayer dollars have played an instrumental role in code development and demonstration projects related to tall wood buildings. Governments have also taken the unusual step of leveraging political authority to change building codes to allow taller wood structures. Finally, the wood industry has actively promoted preferential treatment of wood through such policies as “wood first” in British Columbia.

All things being equal, it would be hard to fault governments for looking after the interests of major domestic industries. In reality, however, such measures often simply rob Peter to pay Paul, artificially shifting economic activity from one domestic industry to another.

I would remind committee members that concrete and steel are also important to Canada's economy. My sector alone employs some 150,000 Canadians and contributes some \$73 billion in economic activity. Because concrete is an inherently local material, our economic impact directly benefits just about every community across Canada. Like forestry, we are also under tremendous economic pressure. For example, in B.C. our sector has lost some 40% of market share to Asian and U.S. imports because those imports are able to bypass B.C.'s carbon tax. Canadian steel is also struggling in the global economy despite producing some of the highest-quality and most environmentally responsible steel in the world.

While there are things government can do to help balance these pressures, never have we suggested, and nor will we suggest, the preferential treatment of concrete over other materials as being among those measures. History has taught us that picking winners is bad policy. It's bad for the economy and fiscally inefficient. Perhaps most importantly, when it comes to transformative challenges like climate change, it disrupts natural innovation cycles that are constantly pushing competing industries to do better. In the case of cement and concrete, this means dampened investment in a raft of transformative low-carbon technologies, including low-carbon fuels and the burgeoning trillion-dollar market for carbon capture and utilization technologies.

Let me use that as a segue into the second stated purpose of the bill, which is reducing greenhouse gases from buildings. First, it is important to understand that carbon emissions from buildings are overwhelmingly associated with the operation of those buildings, primarily heating and cooling. While I would not argue that materials are unimportant, they represent as little as 4% of any given building's global warming potential. In fact, in a well-designed energy-efficient structure, the most important variable in determining climate impacts is longevity. In a high-efficiency, long service life structure, the impact of materials is vanishingly small.

Wood advocates argue that wood buildings yield a net carbon benefit over alternatives. These claims are based on an assumed zero-sum balance between commercial logging and afforestation. You cut a tree and a new one grows in its place. You cut a forest and an ecologically equivalent forest grows in its place. This is a misleading oversimplification of forest carbon cycles and a misrepresentation of the real-world success of reforestation programs, particularly in Canada, where most logging occurs in first-growth forests.

• (0900)

In fact, recent science suggests that when land use change impacts of deforestation are taken into account, even accounting for the regrowth of new trees, some 13 tonnes of greenhouse gases are lost to the atmosphere for every tonne sequestered in a wood product. While life-cycle assessment is the best tool we have to account for a carbon built environment, current standards around the treatment of land use impacts are out of sync with this emerging science. All whole building LCAs of wood buildings, including some of the best tools like the ones advanced by our colleagues at Athena, are restricted by these standards and their assumptions.

Let me end by supporting a notion forwarded by Mr. Giroux of the Wood Council about hybrid buildings in his appearance before this committee. Many of the most interesting, innovative, and sustainable buildings standing today utilize a variety of materials, including concrete, steel, and wood, not because government required any particular material to be used, but because of the natural process of market innovation increasingly directed towards sustainability. It is this very concept the life-cycle integration and optimization of materials and design that must dominate the discussion on low-carbon, climate resilient construction. All three levels of government purchase directly and indirectly some 60% of building materials consumed in Canada. A balanced approach to reducing greenhouse gases from the production and use of all of those materials is the only sensible policy.

Thank you very much for your attention.

• (0905)

The Chair: Thank you very much.

Mr. Beaulieu, over to you.

[*Translation*]

Mr. Gérald Beaulieu: Good morning, Mr. Chair. Thank you very much for the opportunity to talk to members of the committee about Bill C-354. I will speak on behalf of the Quebec Forest Industry Council.

I run the program of the Centre d'expertise sur la construction commerciale en bois (Cecobois) in Quebec. This organization was born in 2007 out of the Government of Quebec's desire to diversify Quebec's forestry economy. The rest of the country was experiencing the same problems.

As you know, in 2007, Canada's forest industry faced an unprecedented economic crisis. To maintain jobs in the regions, the government set up a consultation process on the diversification of the forest industry. Soon, the non-residential construction market emerged.

Let me explain. When I talk about non-residential construction, I'm referring to everything other than single-family homes, where 99% of the wood is used. The single-family housing market is experiencing a sharp decline, in favour of the multi-family housing sector. Wood may become an increasingly important material in non-residential sectors. So I mean institutional construction projects, such as schools, the commercial sector and multi-family housing.

Cecobois' mandate is to provide technical services and communication tools to architects and engineers to help them integrate wood in construction. It must also be noted that Canadian universities do not teach the use of wood as a building material. We do a lot of work to get professors to offer those courses, so that students in civil engineering or architecture can have training on all materials that can be used in construction, such as concrete and steel but also wood.

Cecobois has been around for 10 years. We have become involved with students, professors and professionals to help them, which has significantly helped increase the wood market in Quebec. Every two years, we will see the progress made in this market. In 2001, wood was used in non-residential construction about 15% of the time. A recent study published in September 2017 demonstrates that, in 2016, the wood market share in that sector had reached 28%. The figure was confirmed by a survey of engineers and architects.

According to the same survey, 40% of engineers and architects said that they intended to use wood for the main structure of the buildings they wanted to build. There is still a lot of work to be done to amend the code, although some amendments have already been made. We know that the process is very long. People in the forest industry, Cecobois and the Canadian Wood Council do not want to cut corners. We want to make sure that changes to the code will be based on technical and scientific data. Regulatory authorities, whether Canadian or provincial, must take action to ensure that wood is recognized as a building material.

Earlier, I mentioned the transformation of the market in terms of the use of wood. In 2001, single-family home construction accounted for over 60% of the Canadian housing market. The market has changed a great deal. Today, 73% of construction in the housing sector is multi-family dwellings. We must diversify our designs and use different types of materials to reduce the environmental footprint of those buildings. They significantly contribute to greenhouse gas emissions, which the federal government and other governments are committed to reducing.

Wood has a number of advantages. By using wood, we reduce the environmental footprint of buildings and we store carbon. This is recognized by a number of international agencies. As early as 2007, a report by the Intergovernmental Panel on Climate Change confirmed that the forest sector in general could make a significant contribution to reducing greenhouse gases, when they are stored by trees during their growth or when they are sequestered throughout the life of the building.

I am going to follow up on Ms. O'Connor's comments on the life cycle analysis.

● (0910)

A number of those studies show that wood sequesters more carbon than other materials, and even has a positive carbon footprint. To this end, let me refer to a study that compares beams made of different materials, but able to support the same load, so having the same mechanical strength in use. One cubic metre of wood emits 60 kilograms of carbon, compared to 345 kilograms for the same volume of concrete and 252 kilograms for steel. You calculate the ratio, but it is clearly established. These are studies by internationally recognized third parties.

Furthermore, wood has very positive effects on people's health, which has been demonstrated in several international studies. I am talking about a decrease in blood pressure and heart rate, and also a marked decrease in the recovery period. In the workplace, wood, which is a natural element, promotes creativity. In schools, it stimulates concentration and attention, while decreasing the aggressiveness of the occupants. Those effects are very appealing.

To explain why we are in favour of a form of wood charter at the federal level, I would like to talk about what has been done in Quebec.

In 2015, the Government of Quebec recognized the Wood Charter as a political commitment, which raised the awareness of government stakeholders and brought them together to reflect on the increased use of wood in public buildings. It seems that this had a major impact on what happened next.

The Wood Charter states that, in every project financed by public funds, the project manager must consider the possibility of using wood. It does not say that wood must be used, but that it must be considered as a building material. A few days ago, Minister Blanchette confirmed that more than 54% of the 188 projects identified had incorporated wood in the final design, which is very interesting. Furthermore, 75% of those projects used wood for the structure, and the others used it as a material for cosmetic purposes.

Why promote wood in Quebec and Canada? It is a local resource that helps create jobs along the entire value chain in rural communities in all provinces. In addition, many entrepreneurs have taken up the challenge of designing new products to help designers create high performance buildings with a reduced environmental footprint.

We say yes to Bill C-354, which we think seeks to be a policy to use wood. This bill recognizes the benefits of wood for economic development, but also its positive effects, especially on the quality of life of the occupants. It also addresses Canadians' need for greater use of wood. The bill builds on what is already being done in several provinces, including Quebec, British Columbia, Ontario and Alberta. I also know that Nova Scotia is considering a similar program.

In response to the remarks by Ms. O'Connor and the representatives from the Cement Association of Canada, I would like to point out that we must promote wood, but not under any conditions.

We must quickly improve the normative environment so that the choice of materials is guided more by their carbon footprint, energy efficiency and embodied energy for the life of a building.

At the same time, it is important to promote the adoption of green technologies and solutions. Your government is very committed to that. We are talking about buildings with an environmental footprint that is much more carbon-efficient. You are involved in the construction of high-rise buildings; we must demonstrate that wood can be an effective and efficient material.

Furthermore, the appearance wood market, architectural woodwork, employs tens of thousands of people in Canada. It is a popular market for architects and engineers who want to use those materials. For us, this is a very attractive area in which we want to continue to design new products.

● (0915)

Wood represents a very good opportunity for regional economic development. Let me give you some significant figures. A cubic metre of wood in a plant's yard is worth about \$69, but when it is converted into structural products installed in a building, such as cross-laminated timber, it is worth more than \$2,200. By increasing the value of wood from \$69 to \$2,200, wealth is created in all regions of Quebec and all along the value chain, in addition to reducing the environmental footprint of buildings.

That brings me to the end of my presentation.

Thank you, Mr. Chair.

[English]

The Chair: Thank you very much.

Mr. Whalen, you're going to start us off.

Mr. Nick Whalen (St. John's East, Lib.): Thank you very much, Mr. Chair, and thanks to all of you for coming to what I understand is our last meeting on this legislation.

Ms. O'Connor, does Athena measure the carbon footprint of the deforestation associated with creating wood products? Do you guys have figures associated with that?

Ms. Jennifer O'Connor: I'd like to give that question to Jamie.

Mr. Jamie Meil (Research Principal, Athena Sustainable Materials Institute): There are various standards for doing LCA. We've looked, of course, at the linkage between what's happening in the forest and what's happening with the wood product throughout its life cycle. Certainly, there is a disconnect there in terms of the LCA standards internationally.

The latest one that we are typically following at this point is called ISO 21930. It just came out in 2017. It is basically the governing document, if you will, for how to do an LCA for construction work. Essentially what it says is that what's happening in the forest is very site-specific, as opposed to what may happen with the wood product going downstream—

Mr. Nick Whalen: You do measure it according to this standard?

Mr. Jamie Meil: We do it according to a standard.

Mr. Nick Whalen: The Cement Association has made a claim in their remarks that “13 tonnes of greenhouse gases are lost to the atmosphere for every tonne sequestered in a wood product”. Do you think that would be an accurate assessment for wood products created in Canada?

Mr. Jamie Meil: Not necessarily: it depends on what type of forest. There is certainly a high degree of uncertainty as to what's happening in the forests and how it's being—

Mr. Nick Whalen: Are they within the right order of magnitude? Is it a 13:1 ratio?

Mr. Jamie Meil: I don't think it's a 13:1 ratio, no.

Mr. Nick Whalen: What's the order of magnitude?

Mr. Jamie Meil: It's probably around 4:1.

Mr. Nick Whalen: Okay.

Mr. Morrissey and Mr. Auer, can you table before the clerk at your earliest convenience the math that you used to come up with this statement made in your opening remarks? It seems a little incredulous—

Mr. Adam Auer: It's not our math. It's from the Bureau of Land Management in Oregon, which did the study.

Mr. Nick Whalen: Okay. You'll table their report.

Mr. Adam Auer: I'll table the study, yes.

Mr. Nick Whalen: To you, Ms. O'Connor, with respect to something like cement, does your organization measure the carbon sequestration potential of cement and concrete?

Ms. Jennifer O'Connor: Do you want to go again, Jamie?

Mr. Jamie Meil: We work with the Cement Association of Canada quite regularly. They're a big member, and every year we are looking at their product and at how it can be improved.

They are certainly moving that forward. They have innovative new products out right now in terms of cement. One's called Portland-limestone cement. For that product by itself, relative to regular Portland cement, as soon as you start using it—and you can pretty well use it in any application—you get a 10% reduction in your carbon footprint. This Portland-limestone cement has been around for about 30 years. In Europe, you're allowed to use percentages of up to 30% to 40% of that product in your concrete mix design.

• (0920)

Mr. Nick Whalen: How does that product compare with wood for carbon sequestration over its life cycle?

Mr. Jamie Meil: Concrete doesn't really sequester carbon until it's set.

Mr. Nick Whalen: Sure.

Mr. Jamie Meil: On the carbonation side, it depends on the application. If it's on a roadway as opposed to a building, it'll sequester that carbon at different rates. It can be anywhere from 3% to 40%.

Mr. Nick Whalen: There are other products that are on the market as well. I want to get a sense of how your organization establishes metrics so that they can be used in government procurement to determine whether greenhouse gas reduction goals are going to be met with any given material.

With respect to some new concretes and cements that are being made, I know that there were a bunch of patents in the early 2000s around using flue gas to create the calcium carbonate. Those were actually carbon-negative products, because they're removing flue gas that would otherwise go into the atmosphere. Those are going to be out of patent pretty soon.

Do you have metrics that would be available for government to use with respect to those materials?

Ms. Jennifer O'Connor: There are standards for doing life-cycle assessment of products that apply to all material, so we have the techniques and the mechanisms. A couple of the questions you've asked about wood products and cement and concrete are highlighting that there are areas that are still evolving in methodologies.

The Cement Association raised some important points: there are unresolved issues early in the life cycle for wood products that we're still sorting out the methods for, and there are unresolved issues for cement products at the end of the life cycle. Jamie was just mentioning that they do sequester. There's a difference between “store” and “sequester”—

Mr. Nick Whalen: Yes.

Ms. Jennifer O'Connor: —and we haven't quite worked into the methodologies yet how to properly credit concrete for what they do later in use and at end of life.

Mr. Nick Whalen: Maybe I can now turn a bit to the bill. Not everything in the bill that Mr. Cunnings has proposed I would agree with, but there are some proposals about how we can better use government procurement to make sure we meet our clean energy goals and how can we make sure wood is not disadvantaged from other products in construction, because it seems we've heard a lot of testimony that we shouldn't be trying to show a preference for wood, but at the same time, there are a lot of impediments in building codes to the use of wood, so maybe levelling the playing field is worthwhile.

Do you think there's a role for government to play rather than at the contract award stage for the use or the preference for wood or greenhouse-gas-reducing products? Maybe the contract design stage or the standards development stage would be a more appropriate place for government to play a role in helping people select materials that are going to have a greenhouse gas benefit.

I open this to all three.

Ms. Jennifer O'Connor: I've been speaking a bit. Would you fellows like to go?

Mr. Adam Auer: I think we would probably agree that there absolutely is a role. As I think the Athena Institute would agree, there is a lot of work to be done on life-cycle inventory data. Other jurisdictions have done a good job of shoring up their national life-cycle inventory data in a way that supports the development of more advanced life-cycle tools. That's certainly a role government could play working on the standards, putting criteria into bids and inviting the private sector to innovate solutions around low-carbon resilience in a cost-effective way.

All of those things are things we would support, and they would inherently also require, I think, some work to continue to advance the LC methodologies and data.

[Translation]

Mr. Nick Whalen: Mr. Beaulieu, perhaps this is not what your association is asking for, but do you think it would be more appropriate for the government to intervene when contract requirements are established rather than at the end, when they are awarded?

Mr. Gérald Beaulieu: Mr. Whalen, thank you very much for the question.

It's not a matter of procurement policies requiring that wood be used. We are talking about the government setting an example. We are calling upon the regions to mobilize in order to create jobs from local resources. We also want to reduce the carbon footprint.

With the Wood Charter, the Government of Quebec does not impose the use of wood as a material, but asks people to consider the possibility of using it.

Let me remind you that, in 1941, the National Building Code prohibited the use of wood in buildings with more than four storeys. It was in the very particular context of fire safety.

In virtually every port city in the country, buildings made of solid wood and more than 100 years old have been converted into offices or apartments, and they are still very resilient.

The idea is to make sure that the use of wood is considered. This is no longer the natural reaction of decision-makers, since their studies did not teach them to use wood in the design of buildings.

The idea is not to favour one material over another, but to ensure that the use of wood is considered in the design of buildings and that we can demonstrate that—

• (0925)

Mr. Nick Whalen: Thank you, Mr. Beaulieu.

[English]

I guess we've heard a lot of testimony here already that it's "consider" over "prefer", and I think we can probably arrive at some amendments to the proposed bill that achieve that goal.

The Chair: Thank you.

Mr. Falk.

Mr. Ted Falk (Provencher, CPC): Thank you to all of witnesses for coming to committee this morning and providing some testimony.

Mr. Auer, I want to start with you. You indicated early on that our forest or wood industry is a challenged industry. We know the wood industry already sees quite a bit of government subsidy through FPInnovations. Millions of dollars every year are channelled in there.

Does the cement industry or the concrete industry have any such government funding?

Mr. Adam Auer: The only recent examples of government funding for the cement industry would be in the context of the Ontario cap-and-trade system where some of the auction revenue has been recycled to support our transition to lower carbon fuels. A similar program exists in British Columbia. To my knowledge, these would be the only two examples of government subsidy.

Mr. Ted Falk: So your industry doesn't receive any federal government funding—

Mr. Adam Auer: Not that I'm aware of, no.

Mr. Ted Falk: —for innovation or for...?

Mr. Adam Auer: There are research grants that flow through universities to study things like resilience, new products like high-performance concrete.... What am I missing?

Mr. Steve Morrissey (Vice-President, Cement Association of Canada): Low-carbon fuels.

Mr. Adam Auer: Yes, there is research doing life-cycle assessments around the carbon benefits of different lower-carbon fuels, for example.

Mr. Ted Falk: You don't have a specific organization like FPInnovations that would receive millions of federal dollars every year?

Mr. Adam Auer: No.

Mr. Ted Falk: You're on your own.

Mr. Adam Auer: Yes.

Mr. Ted Falk: Okay.

Can you tell this committee a little about the challenges your industry is facing?

Mr. Adam Auer: We are in the process of some significant regulatory developments provincially and federally on the issue of climate change, carbon pricing being the centrepiece of those efforts. There are others, for example the clean fuel standard that's being developed right now at the federal level. They all place cost pressures on our industry.

For the most part, governments have worked very hard to try to design systems that protect the competitiveness of energy-intensive trade-exposed sectors like cement, but they have not always been successful. B.C. is our case study for what happens when those systems are—I would say in the case of B.C.—incomplete. They've missed a couple of things that normally go along with carbon pricing systems.

As I mentioned in my remarks, we've seen about a 40% loss in market share to imports that come from facilities that are not subject to the same environmental regulatory requirements that we are, and which we would suspect, in many cases, have much higher emissions on the manufacturing side. In any case, this concept of leakage generates additional GHGs from transportation, for example. This is all while simply shifting production to other jurisdictions.

That's one very concrete, if you will, example of what happens when these policies are not designed correctly.

Mr. Ted Falk: You also made reference to that report from the Bureau of Land Management or the State of Oregon.

Can you expand a bit on that briefly?

Mr. Adam Auer: I don't know the methodologies that were used to calculate that number. As I said, it's a study that was done by the Bureau of Land Management, which tried to capture some of these uncertainties that exist in the life-cycle assessments around wood products, in particular trying to capture some of those upstream impacts.

One of the concepts is a notion of a carbon debt, for example. If you cut a primary forest and replant it, even if we assume that you get 100% regrowth, you're not returning to a primary forest and you get a net loss of carbon. There's a carbon debt there, and that debt has to be calculated within the overall life-cycle profile of the wood products that come from that harvest.

They've tried to factor in some of those considerations—soil, carbon impacts, that sort of thing—to come up with a more realistic account of carbon impacts that doesn't just assume that every tonne of carbon you take out is going to be replaced by a new tree that grows in its place.

• (0930)

Mr. Ted Falk: Right, okay.

One thing I've noticed in my area is that even in a lot of the residential construction, Styrofoam block building is replacing traditional wood construction.

Do you have any comment on why people would be doing that?

Mr. Adam Auer: I think you're referring to insulated concrete forms, which are a highly energy-efficient and very durable form of

construction. In particular, as there is more emphasis on developing high-efficiency buildings, net-zero buildings, we're seeing more and more interest in that concrete technology because of its performance.

Mr. Ted Falk: Okay, very good.

Thank you for that, and thank you for the work you're doing as an industry in innovation and contributing to our infrastructure.

Mr. Adam Auer: Thank you.

Mr. Ted Falk: Ms. O'Connor, you talked a little about life-cycle analysis. Do you have any data on life-cycle analysis comparisons between wood and concrete?

Ms. Jennifer O'Connor: It's a comparison that we certainly could do, but I would want to emphasize that it's not particularly of interest to us as an institute to compare materials. One form of the engagement that we get from industry is that industries are looking to make improvement within their sectors. The Cement Association is one example of an organization that has done that.

The point I'd like to make is that all materials have impact. We build with all materials. They're all critical to construction. What is more interesting to us is how we encourage improvements across all those sectors, so that we overall have an improvement and a reduction in environmental impacts.

Mr. Ted Falk: Wouldn't you do a life-cycle analysis on various building products?

Ms. Jennifer O'Connor: We do. We create the data for the products, and that serves two purposes. It helps those industries understand where the impacts are happening and so where we can look for improvements, and it also allows us to roll all that data up to the impacts for a whole building. Yes, we have the data on the products.

Mr. Ted Falk: Okay, but you don't have the comparison.

Ms. Jennifer O'Connor: We can do the comparison. I'm just suggesting to you that we don't necessarily find that useful.

Mr. Ted Falk: I think it would be. If we're giving preference—

The Chair: I'm going to have to stop you there, Mr. Falk.

Mr. Cannings.

Mr. Ted Falk: Thank you, Mr. Chair.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thank you, all, for being here today. I have questions that will last all day, but I'll just try to get through things quickly.

I'll just start with Ms. O'Connor here with the Athena Institute. Thank you for the history of your organization. I remember when the Technology Enterprise Facility was built across the street from my office at UBC. It was probably back when Adam was a student of mine way back in the distant Pleistocene or whenever. I'm just wondering how things have progressed since then. We've heard some back and forth here today about concerns that Mr. Auer mentioned about how, when we go in and log an area, there is an initial carbon debt. I see that reflected in FPInnovations documents.

I'm just wondering how close we are to an LCA that, if this bill is passed, we could use to assess projects and give comfort to concrete, forest, and steel industries that it was a level playing field and that we were really assessing things properly. As an ecologist, one of the reasons I'm putting forward this bill is to make sure that we are reducing greenhouse gases. Could you comment on that? How close are we to that?

Ms. Jennifer O'Connor: I'd be happy to do that, and maybe I can simultaneously rescue my answer to Mr. Falk.

I really think that the focus here is on what you've referred to as a carbon test in your discussion. You've heard that, I think, from many of the experts who have come to you in committee. The focus would be on what is the performance target. When we have performance-based objectives, we set the target and we allow ourselves to find our own way there. It's not comparing one material to another, like a wood beam compared to a steel beam. When I say that it's not of interest, it's because it's out of context. We need to have it at the level of the finished product—the whole building or the stretch of roadway or whatever it is that we're working on. It really comes down to what your mechanism is for applying that test, and have you put together a robust, fair, transparent system to do that testing? That would be my answer to your question.

● (0935)

Mr. Richard Cannings: Okay. Thank you.

I'll move on to Mr. Auer. We have a couple of jurisdictions in Canada that do have “wood first” or *charte du bois* policies. I'm just wondering if you could comment first on how those policies might have affected the cement industry in those areas. Do you have any indication of the direct effect? You talked about the effect of foreign competition within the concrete industry, but how might those wood first policies have affected your industry?

Mr. Adam Auer: There are two impacts. One is the direct market impact in terms of projects that may switch over to wood. I can't say we've seen an enormous amount of that happening yet, but it's still pretty early, despite the fact that this policy has been around for a while. Our other speaker from the wood industry talked about the educational catch-up component of a lot of these proposals. I think we're just starting to see an industry now that is a little bit more capable in the area of wood construction. We would expect to see some direct market impacts from a “wood first” policy that requires wood over other materials.

I think the more important impact is that we think it takes some of the sophistication out of the conversation around reducing carbon from the built environment. There is now this message out there that wood is by default the optimum choice if you're worried about climate change.

We contest that notion on a number of bases. Our product is moving very quickly in the area of low-carbon innovation. I firmly believe that in my lifetime we will have carbon-neutral concrete. We don't want to do anything to disrupt that, and we want people to understand that it's a process that's going on. We also want people to understand that it's not simply a matter of materials; it's a matter of materials, design, and all sorts of considerations that have to work together to give you the optimum carbon outcome. That might look different depending on whether you're building a house, a multi-

residential facility, a commercial facility, an industrial facility, a school, or a hospital. A whole bunch of things need to be considered. To try to turn this into a black-and-white issue is a real disservice to the broader effort that we're trying to build. We really need to build a low-carbon and climate-resilient built environment. It's complicated. It's not as simple as material choice.

Mr. Richard Cannings: I might come back to you on that, but I'm going to make sure I can talk to Mr. Beaulieu.

You talked—and Mr. Auer just mentioned it—about the problem that, in universities and colleges' engineering and architectural schools, wood isn't taught as a structural material. That's one thing that your group does. Can you comment on how things are changing in Quebec because of these *charte du bois* policies and maybe perhaps in British Columbia and elsewhere in the world about how that might be changing and whether...

One of the reasons I brought this bill forward is to make people consider wood. Do you see that changing?

[Translation]

Mr. Gérald Beaulieu: You are right. Thank you for the question, Mr. Cannings.

The Wood Charter is very important to help change the thinking of the construction sector. Now, when the government invests in building projects, it asks that the choice of wood be considered. It's not about giving priority to wood over any other material. The government is only asking to consider the possibility of using wood and to document the decision of choosing or not choosing wood.

The idea is not to say that we no longer want steel or concrete. We want the local resource, which is produced in Quebec and creates jobs for us, to be considered in construction, in compliance with all the changes that have been made to the National Building Code. The message is very clear: wood must not be favoured, but it must be considered. That's very important. The message is also clear to professionals: if they want to work on public projects, they will have to learn more about how to integrate wood.

Universities do not teach it. Only a few have started making it mandatory in their courses. This includes Université du Québec à Chicoutimi and Laval University, which offers a wood engineering program. I will not comment on the overall situation in Canada, but the other civil engineering faculties in Quebec do not provide compulsory training on wood as a material.

If we want to engage in a conversation about the multi-material approach while fully considering environmental performance and greenhouse gases, it is illogical not to have compulsory training on wood as a building material, especially since knowledge and technologies have evolved and now recognize the performance of wood as a building material outside single-family homes.

I hope I have answered your question.

• (0940)

[English]

The Chair: I have to stop you there, Mr. Cannings. I'm sorry.

Mr. Serré, you're going to take us home. I can give you about three and a half minutes maybe.

Mr. Marc Serré (Nickel Belt, Lib.): Thank you so much, witnesses, for coming today.

I'll have a question in French but first, Mr. Auer, you mentioned earlier the benefits that the industry has received from the cap-and-trade system in Ontario. Can you give us a few examples of the benefits and what you've done to look at the innovation and, as you said, in your lifetime, carbon-free concrete? Are there any specific examples showing the benefit?

Mr. Adam Auer: I have a few examples. One is that the Government of Ontario has taken some of the, I think, \$2 billion now that they've raised through cap and trade and directed it to the Ontario Centres of Excellence, which has a program called TargetGHG that is focused on accelerating innovation in reductions of CO2 in industry. As part of that stream, we have received some support to build out capital infrastructure to be able to use lower-carbon fuels.

Another, I think, very significant example in Ontario is that one of our members is involved in a carbon capture technology called Pond Technologies. They are feeding raw flue gas to algae, which absorbs the CO2 and also cleans other air contaminants. The algae grows obviously and can be harvested for use in all sorts of other products including biofuels. It is theoretically possible to take that algae and use it as a direct substitute for coal at the cement facility. You can make bioplastics. You can make food-grade feed for aquaculture. You can make high-value dyes. It's a very exciting and innovative project. That would be another example of what I would consider sort of a potentially game-changing technology that would get us towards that carbon neutrality target.

[Translation]

Mr. Marc Serré: Thank you very much.

Mr. Beaulieu, Ms. O'Connor, could you each take 30 seconds to answer my question?

The bill mentions preferences in the industry. People who have come to testify before the committee have told us that the forestry industry is at a disadvantage. Can you explain how the National Building Code puts your industry at a disadvantage, or provide some specific examples of things that are not really equal at the moment?

Mr. Gérald Beaulieu: A number of examples come to mind, but let me quickly give you two.

When you build a six-storey building, which the Quebec building code now permits, as do codes in other provinces, the staircases must be made of non-combustible materials. As a result, when designers design a building, they have to install steel or concrete staircases. You see, wood is considered a combustible material, no matter the technologies used to make staircases with it. That is the one disadvantage that wood is at, despite our proof that solid timber

complies with fire safety requirements. We are in the process of completing a series of tests along those lines.

In high buildings, although once again we have succeeded in demonstrating the fire-resistant qualities of wood, the requirement is for solid timber to be entirely enclosed in gypsum. The occupants are not happy about that, since they would like to see the wood partially, though not entirely, exposed. After all, they are buying the building for its ecological value, including the ability to enjoy the beauty of wood.

Those are two specific examples. We work with the rest of the sector every day to have the regulations amended. We have lots—

• (0945)

The Chair: Thank you.

[English]

I'm going to have to stop you there.

Mr. Marc Serré: I just wanted to ask what influence Mr. Cannings had on Adam as a teacher and student. I'm really curious about that.

The Chair: We are over time, and I suspect that's a very long answer but a positive one no doubt.

Unfortunately, yes, we are out of time. As you can see, we never have enough time to get all the questions out and get all the answers from you. I just want to say how grateful we are to you for taking the time to join us and be here today and contribute to our discussion.

We will suspend for two minutes. I mean two minutes. Please don't get out of your seats if you don't have to and we can get right into business.

• (0945)

(Pause)

• (0950)

The Chair: Welcome back, everybody.

We are going to do clause-by-clause here, or just "clause".

(On clause 1)

The Chair: I think we have one amendment proposed by Ms. Ng.

Just so everybody is aware, because there are two proposed amendments, we're discussing your amendment first. If it's adopted, that negates the ability to talk about amendment number two, so maybe we can formulate that into the discussion quickly.

Ms. Ng.

Ms. Mary Ng (Markham—Thornhill, Lib.): Thank you, everybody.

Thank you, Richard, for putting this forward. I think all of us heard some really worthwhile testimony from many people, and I think what these amendments are intended to do is recognize that a piece of legislation in support of wood is what we have in front of us and what we want to do, but I think we heard a lot from many people that we probably need some other considerations.

What you all have are just some proposed amendments that I hope capture what we've heard and still preserve the intent, which is a piece of legislation that supports wood. I'll read it, perhaps.

In the clause, "in awarding contracts", I propose removing "awarding contracts" and adding "in developing requirements with respect to". The rationale for this change is so that we are respectful of our various international trade agreements on the basis of having a blanket statement with respect to one material. That's the rationale for that change.

Now, Mr. Chair, should I just go through the whole thing and then we can talk?

The Chair: Yes.

Ms. Mary Ng: Okay.

We go on, so that it would read:

(1.1) In developing requirements with respect to the construction, maintenance or repair of public works, federal real property or federal immovables, the Minister shall

This is where the second amendment comes in, removing "give preference to projects that promote" and replace that with "consider any reduction in greenhouse gas emissions and any other environmental benefits that may allow".

I'm proposing this modification, again, to be respectful of our various international trade agreements and to also respect discretion that is afforded to a minister when he or she makes decisions on individual projects. The projects are going to differ across the country, and I think a blanket statement about one material may not help with that particular support. It's also to meet our trade agreements internationally. That is the rationale for the second modification.

I'll just pick up, and it would then read:

the Minister shall consider any reduction in greenhouse gas emissions and any other environmental benefits and may allow the use of wood

This is where the third one is. I propose we remove the rest of that sentence and add, "or any other thing—including a material, product, or sustainable resource—that achieves such benefits".

This third edit is really intended to emphasize the goal of GHG reduction. We've heard throughout a lot of testimony that the benefits of a consideration for wood as a material will accomplish that objective. Again, to the earlier statement of just limiting, it may not work as well, so this is really intended to give us that support, while at the same time ensuring that there are other considerations that also come into play here.

I think with these three edits, the bill has the potential to encourage a whole suite of the next generation of innovations, research, discovery, and usage of green building materials and green innovation to the traditional industries.

●(0955)

The Chair: Thank you.

Are there any questions or discussion?

Richard.

Mr. Richard Cannings: I just want to say that I'm okay with this amendment. The wording around "or any other thing" kind of caught my eye at first, but I passed this by the Forest Products Association, and they're okay with it. They like the fact that the greenhouse gas test is there, and they feel confident that they can be successful there.

Because that whole climate action part was a very important part of the bill for me, I am willing to accept this amendment.

Ms. Mary Ng: Thank you.

The Chair: Does anybody else have questions or comments?

Ms. Stubbs.

Mrs. Shannon Stubbs (Lakeland, CPC): Thank you, Mary, for the presentation of your amendment. We certainly support the language in terms of altering the preferential aspect that was embedded in the original proposal. We, of course, have no problem with the life-cycle emissions consideration of products and information on the face of it. However, given the fact that if this amendment passes it might eliminate an opportunity to discuss our proposal, I just wonder if you would consider an addition to your amendment.

It's our perspective that the broad, comprehensive testimony of the variety of witnesses we've had here in consideration of the bill, regardless of which organization they came from, made forceful arguments that there are a variety of important considerations in terms of the use of building products for federal procurement and infrastructure in federal buildings. We wonder if you would consider even broadening out your proposal, and in so doing reflecting the testimony of the people who participated in discussing the bill. Perhaps you might add a line at the end, or in whatever way works for you, to include a clause that says, "also taking into account aesthetics, availability, cost, performance, and safety characteristics, as well as the environmental impact of the use of the product", or however you might accept the wording. It was pretty clear among the broad base of witnesses that there are a number of important factors that play into the decision-making for procurement and uses of materials.

The Chair: Just so I'm clear, are you moving that subamendment or just asking whether there's willingness to accept it, if moved?

Mrs. Shannon Stubbs: I was just spitballing an initial discussion about it, but if you would like me to move a formal amendment, I'd be happy to do that.

Mr. Nick Whalen: Chair, can I just move for a recess for three minutes, while we discuss what was proposed?

The Chair: We can suspend for three minutes, sure. If we can keep it to three minutes, that would be great.

●(1000)

_____ (Pause) _____

●(1005)

The Chair: We're back.

Ms. Ng, maybe we should hear from you.

Ms. Mary Ng: Thank you for those proposed amendments. I think we'll end up on the same page, and I'll tell you why.

Section 7 is the preceding section to where this amendment comes in. In paragraphs 7(1) (a) to (d), you have there in legislation already considerations that in the course and duty of procurement the minister has to consider cost, performance, availability, and safety. When you read the language in (c), where the minister has to consider and assure the quality of the material, the maintenance, and specifications and standards, that actually encompasses all of those things. So in our view what you're suggesting is already in legislation and it's not necessary. Therefore the amendment that we are putting forward achieves the objective of the legislation, which is to provide a consideration and a support for wood as a material. Also with the amendment, it considers the testimonies we've heard and the argument I laid out earlier around why those amendments would make this a stronger piece of legislation that considers what we've heard.

The Chair: Thank you.

Ms. Kim Rudd (Northumberland—Peterborough South, Lib.): Do you have the existing legislation?

Mr. Nick Whalen: If you look it up on your tablet, it's Department of Public Works and Government Services Act, and it's section 7.

The Chair: Go ahead, Mr. Falk.

Mr. Ted Falk: Thank you, Mr. Chair.

In your motion, the third line from the end, you have “thing—including”. Could you explain to me why you need to have the words “thing—including” and why you wouldn't just go from “other” straight to “material”?

The word “thing” makes it look hokey, unless there's a reason for it. But if you would jump straight, saying “other material, product or...”.

Mr. Nick Whalen: I agree with getting rid of the dashes. I think it actually makes the “ing” in “including” an exclusive inclusion; it's a weird drafting style.

Ms. Mary Ng: We got advice from the legislative counsel in putting this together. The reason it's in there is that, according to the lawyers who put this together, it is the appropriate language. That's my best answer.

Ms. Kim Rudd: There was a lot of back and forth.

•(1010)

Mr. Ted Falk: I just think it would read better.

Ms. Mary Ng: It really is the legislative counsel putting it...and to give it the flexibility and to keep it broad. I think that's the intention. In legal drafting language, where they go back and forth with legislative counsel, that was the advice and it was acceptable from a drafting standpoint to give us that flexibility.

Mr. Ted Falk: I just think it would read better if it would say “... benefits and may allow the use of wood or any other material, product, or sustainable resource...”.

Ms. Mary Ng: Rather than the word “thing”.

Mr. Ted Falk: Well, “thing—” is really not necessary.

Mr. Jamie Schmale (Haliburton—Kawartha Lakes—Brock, CPC): What part are you reading from?

Ms. Mary Ng: It's 7(1) (a) to (d). It's the exercise of powers.

The Chair: I think we're just waiting for them to have a look at that, to see whether it's necessary—

Mr. Ted Falk: They are not even considering my common-sense approach, are they?

The Chair: I remind everybody that we're not in camera.

Mr. Ted Falk: That's fine. I'd love to be quoted as saying there's no common sense on that side of the table.

The Chair: You were looking at your side of the table when you said that, for the record.

Mr. T.J. Harvey (Tobique—Mactaquac, Lib.): Just for the record, I really don't have any problem with anybody knowing that I was sending a text message, either.

Voices: Oh, oh!

The Chair: Mr. Schmale.

Mr. Nick Whalen: [*Inaudible—Editor*]

Mr. T.J. Harvey: Mr. Schmale was first.

Mr. Nick Whalen: I just wanted to get on the list.

Mr. Jamie Schmale: Go first, then.

The Chair: No, no, Mr. Schmale, you have the floor.

Mr. T.J. Harvey: Not literally—but you can speak.

Voices: Oh, oh!

Mr. Jamie Schmale: Thank you, T.J., I appreciate that—the new chair.

Thank you, Chair.

We're still having discussions regarding safety. We think that is something that needs to be in there. At this point, we're quite adamant that it be included in that amendment, which we're just working on now. We're trying to say that if it is already in there, it shouldn't be a problem that it be in this amendment. It just reinforces the need to keep our firefighters safe, to keep the residents safe, to keep the construction workers safe.

I don't see how ensuring that safety is a very strong consideration would be an impediment to making this bill stronger.

The Chair: Mr. Whalen.

Mr. Nick Whalen: I guess in order for us to have time to consult with legislative counsel on how those two proposed changes would work....

The first one, proposed by Mr. Falk, would be to delete the words “staying—including a”, and then add a comma after “resource”, or maybe not add a comma after “resource”, depending on what legislative counsel tells us; and then where could be an appropriate place to add words something like, “shall also consider safety impacts of wood or any such other thing or material”, or whatever is the appropriate way to draft those two changes.

I think Tuesday is open in the schedule, so we can come back on Tuesday to discuss this. From my personal perspective, I sort of agree with Mr. Falk about the drafting style in that third-last line and the change, but I'd like to hear the rationale from legislative counsel on that.

In terms of the other one, we did hear a lot of stuff about safety. My own view is that paragraph 7(1)(c) of the act already includes the necessary fettering of the minister's discretion around safety. The standards and specifications, as we heard from the testimony, include things like the national building code, which impacts safety. I'm confident that the minister's discretion is already so fettered with respect to safety and that, if we read section 7 as a whole, we're fine.

But I'm also prepared to meet on Tuesday so that we get the answers. I want the legislation to be as good as it can be.

The Chair: Thank you.

Are you agreeable to that?

Mrs. Shannon Stubbs: Yes, I think we're agreeable to revisiting the discussion.

There's one thing I would say in response. If the contention is that the way the legislation as drafted originally already includes these aspects that we would like to include in your amendment, that section doesn't include safety, though, as we just read. It doesn't make an explicit recommendation. But if your argument is that given the original legislation, this concept as well as the others we would like explicitly noted are already dealt with in the original legislation, then I think it follows to make the argument that the consideration of wood as a building product in itself is already embedded and under the discretion and the consideration of the original legislation, which calls into question what exactly we're doing with this legislation at all.

●(1015)

Mr. Nick Whalen: No, it's the greenhouse gas portion. Its benefits as a GHG-reducing material is what we determined to be the new element.

The Chair: Ms. Ng.

Ms. Mary Ng: I have one last point on that.

I'm also mindful of having an amendment read together with the rest of the legislation. There's already a fettered check on the minister in terms of consideration for things like specifications in building codes, etc. I think we should look at it, for sure, but I certainly don't want to add more red tape into a piece of legislation. I think we should get the answers, because I think from a practical application, that's what happens.

But we should totally look at it. We hear you.

Mrs. Shannon Stubbs: Okay. That's really good.

Thanks.

The Chair: So where we are, then, is we're inching towards agreement.

Voices: Oh, oh!

The Chair: We'll adjourn until Tuesday. In the meantime, we'll work on some mutually agreeable language.

Mr. T.J. Harvey: So we'll have a meeting, you guys can have a meeting, and then we'll come back and we can have another meeting. How does that sound?

Voices: Oh, oh!

An hon. member: Have your people talk to our people.

The Chair: We have Thursday as well, if need be.

Mr. T.J. Harvey: I liked the old way of doing things, when we just hashed it out and it was done with.

The Chair: Unless there's anything else, I'll adjourn the meeting.

I will see you Tuesday.

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