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Chair

Mr. John Aldag

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● (1535)

[*English*]

The Chair (Mr. John Aldag (Cloverdale—Langley City, Lib.)): Good afternoon, everyone. Welcome to everyone who has joined us today.

We have some guests: Mr. Carrie, Mr. Fragiskatos and Mr. Simms. We welcome them to the environment committee.

The way we're going to run this is that we will have five presentations of 10 minutes each for introductory comments, and then an hour and 10 minutes for questions and answers.

Presenters, we use a handy card system here. When you have one minute left in the presentation, I'll give you the yellow card. When you're out of time, I'll give you the red card. You don't have to stop mid-sentence, but you can wind it up and then we'll go to the next presenter or get into the next round of questions.

With that, we have a presentation all queued up here. I believe it's from FPInnovations.

Mr. Stéphane Renou (President and Chief Executive Officer, FPInnovations): Yes.

The Chair: We'll start with you, if you're ready. We'll give you 10 minutes.

Mr. Stéphane Renou: Thank you.

[*Translation*]

Good afternoon, Mr. Chair and committee members. Thank you for inviting us to present FPInnovations' view on the contribution of the forestry sector and of innovation, as part of your study on clean growth and climate change in Canada.

My name is Stéphane Renou. I am President and Chief Executive Officer of FPInnovations. I am accompanied by my colleague Jean-Pierre Martel, our Vice-President of Strategic Partnerships.

[*English*]

FPInnovations is a non-profit organization that has a unique private-public partnership dedicated to improving the competitiveness, diversification and transformation of the industry in Canada.

This partnership is supported and equally funded by the industry and the provincial and federal governments. We have about 430 employees in Canada from coast to coast, from B.C. to Quebec, covering expertise and technical support in the entire sector value chain—from seed to markets, as we like to say—including forestry operations, transportation, technical manufacturing and bioproduct development.

FPInnovations is playing a key role in accelerating innovation, development and the deployment of solutions to create a real socio-economic impact. That's our mission.

The Canadian forest sector, with its renewable forest, employs directly probably 230,000 Canadians in over 600 forestry-dependent communities across the country.

Canada is the world leader in forest certification, with over 40% of all certified forests. This context makes the Canadian forest sector a prime candidate to build on its current activity and to diversify its products to enhance its role in a vibrant low-carbon economy. Innovation plays a key role in developing low-carbon technology and products that can replace the footprint of higher-carbon alternatives.

I'd like to take a few minutes to illustrate how the forest sector will play a key role in moving Canada towards meeting its GHG targets.

[*Translation*]

The forest carbon cycle is the basis of the Canadian forestry sector's position as a solution to climate change. In very simple terms, a forest is a well that, through photosynthesis, absorbs carbon dioxide, CO2, from the air and stores it in trees and the soil in the form of carbon. The trees are harvested and regenerated using the principles of sustainable forestry. The trees are taken to mills to be processed into products with a long life cycle, like wooden buildings, or a short life cycle, like bioenergy. All these materials either capture and store carbon or provide a viable solution to replace products made from fossil fuels.

[*English*]

Wood in general can be a substitute for construction materials with a higher carbon footprint, such as steel and concrete. On average, one cubic metre of wood in construction will store one tonne of CO2.

In recent years, FPInnovations has been leading the development of construction materials such as cross-laminated timber, or CLT, and building systems that allow the wood to be used in traditional markets such as single-family and multi-family buildings. Much more importantly, it can be used in new markets such as infrastructure and bridges and in mid-rise and tall wood buildings.

We have two examples on the slide we have here. We have the 18-storey Brock Commons on the UBC campus and the 13-storey Origine building in Quebec City, all made out of wood and CLT.

[*Translation*]

To support these markets, FPInnovations has produced a number of technical guides and studies, including life-cycle analyses that compare different construction systems. As an industry, we believe that wood, whether it is used alone or in combination with other materials, should be considered and encouraged in many types of construction. Wood is one of those rare materials with a small carbon footprint, meaning that it helps to reduce emissions and to capture carbon.

All materials have a role to play in construction, but if we consider the building standards for security, durability, energy efficiency and overall environmental footprint, wood certainly has an important role to play. The most important thing to remember is that, in construction, wood sequesters carbon and, in the forest, helps to increase carbon reservoirs.

In other words, the forest allows us a complete carbon cycle. Carbon is captured inside the wood and

[*English*]

and the forest is used as a sink for carbon.

[*Translation*]

If you consider the bioenergy side,

[*English*]

crude oil, in general, is nothing but trees and plants that have decomposed and been compressed over thousands of years under the soil. With today's technology, we can actually go directly from the tree to oil and petrochemical products. That's what we call biorefining. All those scientific advances allow us to basically obtain the same chemicals as we could from oil. We are using that technology today to supply fuels and chemicals that have traditionally come from the petrochemical industry.

That's the path we're on: bioenergy using residual biomass from manufacturing plants, biomass from harvesting areas, and wood waste from construction sites and demolition. We can use all the biomass that is left out there and convert it to fuels.

FPInnovations is currently involved in a major project in La Tuque that involves key government and industrial partners—such as the Finnish company Neste, the largest producer of renewable diesel—in testing technologies to transform residual forest biomass into biodiesel. If we're successful, this technology could be replicated in other regions where we have large access to residuals in the forest. Fuel produced at this facility can be blended into the current fuel supply to reduce the carbon footprint.

We can also break down wood into extremely simple components. If you look at a tree, at the base, a tree is made of two main things. One is cellulose, which is the vegetable cells, and the other is lignin, which is the glue between the cells that form the tree. With regard to cellulose, we can use an enzymatic process to create sugars. Those sugars can be transformed into a series of biochemicals. There's a series of scientific names that I could drop: lactic acid, succinic acid, and a bunch of others. All those chemicals are actually the basis for producing bioplastics. You go directly from the tree, from the cellulose in the tree, from a biochemical, through an enzymatic process to create chemicals that are the precursors to plastic. Past research in bioplastics shows that emissions from these products are reduced by approximately 80% compared to conventional polypropylene plastics. It's a way to create plastic that will generate less emissions.

I talked about the cellulose, and there's also the lignin. Lignin is the binder, the glue, between the cells. That component is a bit more complex. It can be used to develop glues. It can be mixed in asphalt, used in biocomposites or even used in animal feed as a binder for the different components of animal feed. It can be used everywhere. A plant is currently being built in Thunder Bay, Ontario to test this process from chips to biochemicals, and we're currently developing applications for the end-user as well. This is a $21-million project that is supported by the industry, the end-users, and the federal, provincial, regional and municipal governments. We're creating jobs in Thunder Bay in the biotech sector with this project.

● (1540)

[*Translation*]

At FPInnovations, we are also working to break down wood fibre into cellulose fibre and nanocrystalline cellulose. What is nanocrystalline cellulose? It is just small crystals found in cellulose at nano scale, in the form of certain types of very concentrated sugars. They have fantastic properties. With them, we can create new materials for use in textiles, paints, varnishes and cosmetics. They can be used as dispersants, binding agents, and a series of other functions as a result of their properties at nano scale. Cellulose fibres can also be used in concrete as a reinforcing agent, in biocomposites, and in a whole series of materials.

When we think about it, we can consider using fibres everywhere traditional materials are used. Traditional materials can be replaced by wood fibres. We can even think of using wood fibres in aircraft or automobile parts.

We have received a letter of intent from officials in the Ford company, which is very interested in working with us in using those materials in the automobile industry. So they would prefer solutions that are better for the environment. Those solutions offer the advantage of using light plastic material in automobiles, since wood fibre is much lighter than glass fibre. So there is a inherent advantage. It would be beneficial for the environment and lighter cars would, very simply, translate into savings on fuel.

[*English*]

In summary, the forest sector has the potential to significantly enhance its role in a low-carbon economy by improving competitiveness and diversification. Programs to support accelerated innovation development and deployment in the forest sector are key to success.

Thank you for letting me present today. I'm looking forward to all your questions.

The Chair: Thank you for your opening comments.

Next, we're going to the Wood Pellet Association of Canada and Mr. Murray.

Mr. Gordon Murray (Executive Director, Wood Pellet Association of Canada): I put a presentation together, but unfortunately I didn't get it translated into French in time so I'm not going to be able to have many visuals to show you. And I apologize in advance; I have a bit of asthma, so I have a tendency to cough a bit.

I am just going to give you an overview of the wood pellet sector. I'll tell you a little bit about what wood pellets are, give you some of the Canadian and global statistics, and talk about repurposing coal power plants and some opportunities in Canada with domestic heating.

Wood pellets are basically a renewable fuel made from pure compressed wood fibre. They use the lignin in the wood. It's heated up when the wood fibre is compressed, and then when the pellets are cooled they form into a solid pellet. There is no other external binding or adhesive or anything. It's just absolutely pure wood.

As our raw material, we use wood that's unwanted by the other forest sectors. We pretty much started in the mid-1990s, when British Columbia started to close its beehive burners and there was no other use for the wood residue, particularly when they were a long distance from pulp mills. We started using sawdust and shavings, and then moved into the forests and started using logging residues. This is material that would formerly have been burned in beehive burners or just simply slash-burned in the forest.

Unfortunately, there is still a lot of slash burning that's going on. We've been advocating with provincial governments to stop the slash burning. We're not having any success there.

We use a limited amount of the harvest residuals, but there is a real struggle between us and the primary forest tenure holders, who still prefer to burn their fibre in a lot of cases.

About 5% of wood pellets are used as absorbent, but the bulk of wood pellets are used for power generation, split roughly evenly between being used purely as a fuel and being used to replace coal in pulverized coal power plants. We will convert existing power plants that have often been operating for many years, and we can convert them with very little capital upgrades. Essentially, pellets are turned into a powder and blown into a boiler. Water is heated, and then the hot water creates steam, which creates pressure and turns a turbine, and you get electricity.

We're selling those all over the world for that purpose. Ironically, we have a lot of coal power here in Canada, but we can't get any of the power companies here in Canada interested in what we're doing.

Just to put our industry in perspective, within the entire forest industry, total log harvest is somewhere in the order of 130 million tonnes a year in Canada, and our whole industry uses perhaps five million tonnes, so around 4% of the total harvest. Again, it's just the waste portion. If you look at the total revenue from the forest product sector—pulp and paper, boards, lumber, everything—it's around $60 billion a year. Our industry, depending on the price of pellets, is somewhere between $300 million and $500 million a year, so less than 0.5% of the total forest revenue.

We have pellet plants across the country, in pretty well every province except in the Northwest Territories, the Yukon and Nunavut. About 77% of the production capacity is in the west, mainly in British Columbia and Alberta. About 15% of the capacity is in central Canada, and 8% of the capacity is in Atlantic Canada. Altogether, Canada produces around four million tonnes a year.

● (1545)

If you look at the growth of the pellet market globally, we started at zero in the 1990s, and it's grown at about 14% per year. It's pretty remarkable for any industry to maintain that level of growth. We're up over 32 million tonnes a year now in total, globally. Canada accounts for somewhere around three million tonnes.

If you look at world production, Europe produces about 56%, more than half of global pellets, followed by the U.S., which is about a quarter, and Canada is just a little less than 10% of global wood pellet production. One of the big importing countries is the U.K., where pellets are used to generate power. In fact, the Canadian pellets produce about 6% of U.K. power. If you think about that figure, it's pretty remarkable: 6% of all the electricity in the U.K. comes from Canadian wood pellets. Denmark would be next. Again, it's power and industrial-scale CHP. They take the heat from power plants, run it through pipes in the streets and put it through heat exchangers. They heat the homes with wood pellets in cities like Copenhagen. South Korea is another huge consumer of power. Italy has a large domestic heating market, and Belgium is another huge power market.

Since 2014, Canadian exports have increased by 50%. Our market is growing very rapidly. We ship both to Asia and Europe. Our main markets are the U.K., Japan, the United States, Belgium, South Korea and Italy.

In Canada, the domestic market, unfortunately, is very tiny for a number of reasons. The first would be that we can't seem to get the attention of the Canadian coal power utilities. Another large barrier to using wood pellets in the heating sector in Canada is the incompatibility between European and Canadian boiler pressure standards. In Europe, there's very advanced technology. You can fill up a bunker maybe once or twice a year, and these devices run completely automatically with very little maintenance, just like a gas boiler or an oil boiler. But the pressure standards in Canada are incompatible, and we're working to try to get that situation changed. There are no North American biomass boiler manufacturers.

The beauty of wood pellets in the power sector is that you can use these large power stations. Globally, all countries want to get off coal, and so you're left with these large power stations with billions of dollars of capital investment that are potentially stranded assets. The countries we're dealing with have converted them. All you need to do is put a bit of covered storage at the front end so your pellets don't get wet, and then you have to connect them with some conveyors, and essentially all the rest of the power plant can be used as is. We do have that ability here in Canada, but unfortunately not the willingness to do it.

You have a product that reacts very much like coal, but it's clean, renewable and sustainable, and it produces much less greenhouse gas than coal.

In Canada, we're set to phase out coal in Alberta, Saskatchewan, New Brunswick and Nova Scotia by 2030. The whole country is going to phase out coal power, but those are the four provinces that are using it. In Alberta, 55% of the power comes from coal; in Saskatchewan it's 44%. New Brunswick is 13% and Nova Scotia is 60%. All those coal power plants, when they're done, will be stranded assets unless they're converted to another purpose.

● (1550)

So far, we haven't been able to convince any of the power companies to use wood pellets. There is a notable exception, which is Ontario Power Generation—

Okay, I'm done.

The Chair: If you have a quick concluding comment, I'll give you a few seconds there to tidy up.

Mr. Gordon Murray: I have about three or four more slides.

A voice: You can get it in during questions.

Mr. Gordon Murray: Okay, sure.

The Chair: Thank you for that.

Ms. Wood-Bohm, if you'd like to go next, we'd love to hear your comments.

● (1555)

Dr. Susan Wood-Bohm (As an Individual): Thank you so much. I do appreciate the opportunity to share some thoughts with you that I hope will prove helpful in your assessment of the biological opportunity to address climate change and clean growth.

The intersection of innovation and biological management of carbon has been the focus of my entire professional career. My reflections today represent not only my own work, of course, but also learnings accrued through my work at Queen's University; the BIOCAP Canada Foundation, which was a national, federally funded, not-for-profit research organization that operated in this specific space from 1998 to 2006; Alberta Innovates-BioSolutions; the Climate Change and Emissions Management Corporation, which is also in Alberta; Bioindustrial Innovation Canada, which is a current, not-for-profit, federally funded innovation investment organization; Genome Canada; and my own consulting company, as well as through consultation and collaboration with another consultant, Jamie Stephen of TorchLight Bioresources.

Rather than doing a PowerPoint presentation, I'm going to burden you with reading, after the fact. I've shared some things with your clerk.

Let me begin by saying that Canada is a vast country. It grows more biomass per capita in its forests and agricultural lands than does any other country on earth. This biomass comes in the form of trees and crop plants, composed of carbon molecules. As you've heard, biomass can be converted into virtually any product that may be manufactured from fossil fuels. But unlike those things that are derived from fossil resources, biomass is renewable. It extracts carbon from our overloaded, overheated atmosphere and it converts it into biological forms through photosynthesis, which you learned about in grade three.

The natural growth cycles of forests and farmlands provide ample opportunities for carbon management, both through the plants themselves—which, if managed well, will enhance their level of carbon sequestration—and also through the management of soils, which represent a more significant pool than does terrestrial carbon, the carbon that you can actually harvest and manage from forests and agricultural resources, so that below-ground carbon is very important.

In a recent paper that I wrote for the Canadian Agri-Food Policy Institute, I was able to show that Canadian agricultural soils have the potential to restore all of the carbon lost through tillage and intensive crop production by fairly simple management practices and, particularly, attention to the microbial health in the soils.

Lands in western Canada that have been managed, for example, through reduced tillage or no tillage—which you may have heard about—have become net sinks of carbon over the past 15 years, and other regions across the country have similar potential. More than half a megatonne of CO2 equivalent could be added in 10 years by this management strategy alone, and additional carbon could be stored below ground through the addition of stabilized biocarbons such as biochar—which you may have heard about—through the process of biological carbon sequestration.

The cost for this type of management is relatively low, and it could be incented through carbon markets such as those that exist in Alberta or through support for the tools that are needed by agricultural producers to make it happen. Of course, the business of agriculture is to grow commodity crops and livestock to meet domestic and foreign markets, and of course forestry, as you've already heard, is largely focused on the production of dimensional lumber and pulp, so much of the biomass that's produced in Canada is already committed to ongoing economic enterprises.

If we consider only the residues from the production of forest biomass and agricultural commodities, along with urban waste streams, there remains a remarkable supply of biomass resources with which we can do some of these innovative things. In a 2003 Industry Canada report, we were able to show that waste streams alone—not touching the forests in any other way—could provide about 20% of Canada's energy needs, while drastically reducing the emissions from non-renewable resources.

So how can we best use the resources that are distributed across the country? You've heard that it's a mile wide and an inch thick, and that's not a bad analogy. We need to meet those twin goals of reducing greenhouse gases and stimulating the economy. I'm certain that you're very well versed on this committee with Canada's greenhouse gas emissions profile. Canada has a unique character. We're vast, we're cold and we have a resource-based economy. It results in a greenhouse gas emissions profile that demonstrates the largest and fastest-growing emissions in three areas: transportation, space heating, and process energy for natural resource extraction, recovery and processing. Biomass has the unique capability of being able to be used in each of these areas to reduce Canada's overall emissions.

● (1600)

We have a light-duty transportation sector with our cars and our SUVs. We're already moving well down the path towards electrification, although that particular approach is more difficult for the heavy-duty diesel-powered transportation fleet for industrial engines and for the aviation sector. We have a pre-commercial research and development area in both of those sectors, in the diesel fleet and in aviation fuels, and biofuels could have a significant role for both of these in reducing tailpipe emissions. A policy push from government in this direction would create the market tools needed to build out this approach. It's very important to focus on the need for Canadian-developed biofuels to prevent simple importation from other sectors such as Brazil or the U.S.

The second area I mentioned was space heating based on solid biomass fuels. You just heard a lot about the pellet industry. That is just one area of solid biomass fuels, but it does offer a very significant opportunity. The technologies are mature. They're extremely well proven around the world. They're appropriate for rural and remote communities, which need them to get off diesel fuel, and they're often sited in the midst of unused forest resources. They serve to secure good-quality jobs and economic development wherever they're deployed.

A study released just this week in Ontario focused on Ontario's potential to use solid fuel heating through distributed heat systems to address both the forest industry decline, in which more than 36,000 jobs have been lost since the economic downturn, and the need to reduce greenhouse gas emissions in the province. This strategy could bolster forest health by removing over-age trees and stimulating better carbon sequestration in the growing forest. It could make a reduction in Ontario's net emissions that is quite significant.

Although it's a little bit cheeky, I would like to wrap up my comments by offering you a bit of advice. Given the huge urgency to address greenhouse gas emission reduction goals, it is important not to let perfection be the enemy of the good. Much of the bio clean-tech technology we have available to us to use is mature, and it's in use in other places around the world. There will always be room to improve technology through research and further development, but we don't actually need to make huge investments beyond the deployment investments. Gordon mentioned the challenge with getting the boilers that are being used extensively in other places in the world certified for use in Canada. That would be the typical sort of thing I'm talking about.

Both agriculture and forestry are industries that work with very small margins of profitability. They should not be expected to support the greenhouse gas reduction needs of the country without appropriate recognition. I would just like to remind you that there are no low-cost feedstocks. In most cases, the lowest-energy feedstock we have for energy is coal, so if we want to get off coal, we need to recognize that there will be some additional operational costs.

The federal government has an important leadership role to play, and it wouldn't necessarily be that difficult. If I take a look at the greenhouse gas emissions associated with the federal government—emissions from the federal government itself—about half are associated with heating government buildings. Obviously, some are here in Ottawa, but the rest are spread out across the country, largely in military installations that already work on distributed heat. Changing the fuel source would become a very simple way to reduce your emissions by half.

Finally, we need to be absolutely fastidious about the sustainability of both our agricultural lands and our forest resources so that they can continue to provide these kinds of benefits for future generations.

Thank you very much.

The Chair: Excellent. Thank you for those comments. You're pretty much right on the 10-minute mark.

Monsieur Ménard, we'll have you go next.

[*Translation*]

Mr. Karel Ménard (Executive Director, Front commun québécois pour une gestion écologique des déchets): Thank you, Mr. Chair and members of the committee.

First, I must thank you for inviting me, even though I had not much time to prepare. I have been working in the waste management field in Quebec for more than 25 years. During the 1990s, I began work with the Front commun québécois pour une gestion écologique des déchets. I apologise for the long, name, but, at the moment, it is the only one we have.

I am going to talk to you about waste management. I work in a community, not-for-profit organization. So I have nothing to sell you except ideas, that I take this opportunity to share with you, and that I hope you will appreciate. To go straight to the heart of the issue, the greenhouse gas issue, I will say that three main areas cause harmful effects: transportation, consumption, and urban development. In urban development, I include house construction, road construction and even store construction. Everyone wants their lawnmower and their drill so that they can mow the lawn on a Saturday morning and do renovations. It all has a major effect on our environment and on greenhouse gases.

If you take one thing from my presentation—which may be the most boring one you have to hear—it is that we have to stop working in isolation. We cannot just talk about waste management, development, transportation and biomass as separate issues. Everything is linked. I work in waste management, but that is directly linked with consumption and the extraction of natural resources. By the way, extracting natural resources accounts for 20% of the emissions of greenhouse gases, GHGs. GHGs are directly linked to our current consumption in North America.

I am sure that you are all aware of Earth Overshoot Day, which fell on August 1 this year. It was talked about a lot this year. The date means that, on August 1, we had already consumed all the resources produced by the planet. That is to say that, since that date, for about for five months, we have been living on credit. We consume resources that took Earth thousands of years to produce. If the planet as a whole consumed exactly what Canadians consume, we would need three planets. In other words, we really are living beyond our means. As I mentioned, in terms of the environment, we are living on credit.

It means that we really have to shift our paradigms. I don't want to frighten anyone, but continuing to consume natural resources as we are currently doing, and imagining that we can create growth indefinitely, is a fantasy. It's mathematically and physically impossible. We really have to change the way we go about things. That does not mean revolution or choosing what is known as degrowth. There are ways that people will perhaps find simpler and more acceptable.

When I say that we have to move forward intelligently, which is perhaps a little strong, I mean that we have to do so with a real concern for reducing our impact on the environment. For example, to reduce greenhouse gas emissions generated by fossil energy, some are promoting the production of energy from waste, from left-over material. That means producing energy with incinerators. In our view, that makes no sense. To produce energy like that, we would actually be burning plastic, paper and other combustible materials that otherwise would be recyclable and could eventually be reduced. That is not an optimal way of dealing with the material, with the supposed goal of improving the way we do things.

The electric car is a specific example. Some groups, including some environmental groups, are quite hesitant about it. If we are producing energy from coal-fired plants, I am not sure that there are really any environmental gains. We must also understand that, with electric cars, we are only shifting the environmental impact as we extract rare minerals in order to design and build them. Clearly, using them creates much less impact on the environment. They are much more energy-efficient because they require much less energy to move. The fact remains that they are not a panacea. We have to look at all the problems rather more holistically. As I was saying earlier, we have to stop working in isolation.

● (1605)

If we focus strictly on leftover material, on waste, the content of garbage cans, we must work on what happens next. We must make sure that the leftover material we produce causes as little impact as possible on the environment. That is waste management.

However, we certainly also have to work on previous stages, with producers. In our view, producers are responsible for goods not only when they put them on the market, but also when they design them, when they think about putting them on the market, when they produce them, when they are used, and at the end of their life when they have been consumed. Producers therefore should be made responsible

For decades, there have been a lot of voluntary approaches on this planet; they do not work. So we feel that we really have to have what we call “extended responsibilities” on the part of producers. This means that producers are responsible to recover their goods and process them with no impact on the environment, or with the least impact possible. This also means producing goods that we need. Let’s forget disposable goods and goods that we do not need. We have to have consumer goods that include a proportion of recycled material and, eventually, goods that are also re-usable and recyclable.

We must be careful when we say that things are recyclable. That does not mean that they will be recycled. Unfortunately, we have the bad habit of saying that a product is recyclable, even though it is not recycled. We do not actually have the facilities, and, between you and me, everything is recyclable. A nuclear power plant is recyclable. It may take millions of years but eventually nature will recycle it. Our planet Earth does not need to be saved, it will outlive us. Our problem is more about our own survival. So we have to stop having this fantasy belief that, if something is recyclable, it is good for the planet. There are recyclable goods that cause a lot of problems with contamination and even with greenhouse gas emissions.

Once we have worked upstream with producers and with consumer goods, we have to take care of the downstream problems. After the waste, the leftover material, is produced, what do we do with it? If we are talking strictly about greenhouse gases, leftover material actually does produce them. Decomposing material produces methane, a potent greenhouse gas that is found especially in sanitary landfills, or lieux d’enfouissement techniques, as we call them in Quebec.

We absolutely have to divert organic matter from disposal sites so that methane is not produced. We probably have two options. The first would be to move to separate collections, one picking up organic matter, another for green waste, and another for table waste. The second option would be to process it by composting or biomethanization. Both approaches are possible, depending on the region, meaning whether the setting is urban or semi-urban. Both technologies, both methods, are pretty good. The idea is to prevent the production of greenhouse gases.

We must also be careful when we talk about other materials that put greenhouse gases into the environment. As I have said, everything recyclable is not necessarily recycled. We really have to focus on the 3 Rs. As well as recycling, we have to reduce at the source, meaning not consuming or producing goods, and we have to reuse them. For example, in Quebec, we have reusable beer bottles. This is a very good way of avoiding greenhouse gases and of not having to produce a widely used product. That is not just the case in Quebec; I believe that the bottles are recyclable wherever beer is drunk.

The government must also set an example. That means that it has to encourage recycling, and have legislation and incentives, so that companies are required to have a minimum recyclable content. I say that although I dread to do so, because it sounds very preachy, and the last thing that someone working with the environment must do is to preach. However, you were elected and you have enormous influence. You are the decision-makers, in fact.

So, on the table behind me are some recyclable and eventually disposable products, the single-use products for the refreshments. Thank you for them, it is very kind of you. But it is the kind of detail that says, yes, we believe in it and we think about it, but we are not doing anything specific about it that needs to be done. If you want people to believe you and to support you, you have to pay attention to that kind of detail.

● (1610)

I have been working in Québec for 25 years. I am happy to come to Ottawa for discussions. We do not have enough opportunity to exchange views with people in other provinces. We each have our methods and our ways of doing things, especially in waste management, which is in provincial jurisdiction. But we all have the same problem. We would all gain by sharing our experiences and our successes.

On that note, Mr. Chair, I thank you very much.

● (1615)

The Chair: Thank you, Mr. Ménard.

[*English*]

We'll jump for the last 10 minutes of opening statements to Mr. Thurlow.

Mr. W. Scott Thurlow (Senior Advisor, Government Affairs, Dow Chemical Canada Inc.): Thank you very much

Thank you for the opportunity to express the views of the Dow Chemical Company as the committee considers its study on clean growth and climate change in Canada: forestry, agriculture and waste.

Dow is a global company headquartered in Midland, Michigan. Dow has been present in Canada for over 80 years, and our founder Herbert Henry Dow was born here. ln Canada, with our corporate headquarters in Calgary, Dow has facilities in Fort Saskatchewan, in Westhill, Scarborough, and in Varennes. We jointly operate facilities in Prentiss and Fort Saskatchewan, and with the growth of economic opportunities in eastern Canada, we have recently opened a sales office in Toronto. We have just over 1,000 employees in Canada, and over 100,000 employees worldwide.

While I am here today on behalf of Dow Canada, I'm going to talk to you about a company-wide initiative that helps collect, sort and reduce the amount of hard-to-recycle plastics going into landfills and getting into the natural environment: the Hefty EnergyBag program.

Dow is one of the top two polyethylene producers globally. We take our responsibility as a leading plastics producer very seriously. This is why we are actively leading and engaged in several plastics sustainability initiatives around the world.

To be clear, Dow believes that plastics are a valuable resource that needs to be conserved and managed. We believe there are environmental and economic benefits to extending the life cycle of plastics. Data shows that plastic packaging is a smart and sustainable material that provides many environmental advantages during the use phase of its life cycle.

Studies show that moving away from plastics to alternative materials increases energy consumption two times, increases GHG emissions as much as three times, and increases overall environmental costs as much as four times. The real challenge with plastics is that they are not being sufficiently mechanically recycled at their end of life, with approximately 72% of all plastics ending up in landfills for various technical, infrastructure, consumer behaviour, and end-market reasons.

To be clear, the Hefty EnergyBag program is not the silver bullet that will solve all of the plastics end-of-life challenges. However, it is a proven program that will help address many of these challenges and should be used as a model in Canada. lt helps move the plastics industry towards chemical recycling—the concept of making new plastics from old plastics—through the use of conversion technologies. lt should definitely be part of the waste management solution in Canada.

We see the disposal of hard-to-recycle plastics, such as candy wrappers, chip bags, flexible food packages, straws, stir sticks, and foam food containers, as a waste of valuable resources. To discard something whose value can be recovered and used again is an affront to Dow's 2025 sustainability goals. These goals continue to drive our innovation, and it is with that in mind that I want to tell you about the Hefty EnergyBag program.

The EnergyBag program is a permanent waste management system currently in 13 communities in the United States, including Omaha, Nebraska; Boise, Idaho; and Cobb County, Georgia, to name a few. Some of these projects have been recognized by Keep America Beautiful program funding, and Dow is a key partner of this not-for-profit organization.

Through November 2018, the program has collected over 376,000 orange energy bags, which are exactly what they sound like—giant garbage bags that are bright orange—and it has diverted approximately 252 tonnes of hard-to-recycle plastics from landfills. This is equivalent to over 200 million chip bags or 1,199 barrels of diesel fuel, if it were all converted to diesel via an energy recovery conversion technology like a pyrolysis system.

We are exploring opportunities to bring this program to Canada in 2019. The purpose of the program is to collect, at the residential curbside, the hard-to-recycle plastics at a quality suitable for an acceptable local end market.

Mechanically recycled end markets are being explored, but the current end market is conversion technologies such as pyrolysis, which typically turns these into low-sulphur diesels, oils and waxes. The goal of the program is to divert hard-to-recycle plastics from landfills and extend their life cycle, as well as advance the acceptance and use of these diversion technologies towards chemical recovery, and ultimately a circular economy.

How does the program work? Communities provide consumers with a roll of the EnergyBag orange bags, which includes instructions of the program about what goes in the bags. Consumer education is key. These are the people who are putting the products in the bags, and it won't work without them.

● (1620)

Once the bag is full, the residents put it in the recycling cart and take it to the curb to be picked up by their regular recycling hauler. This way we use the existing recycling infrastructure. The bags are sent to the local materials recovery facility, or MRF, where they are pulled off at the front end. The orange bags are never opened and never go through the MRF, thereby helping to increase the quality of both their inbound and outbound materials, improving their financial position and the overall efficiency of MRF operations. It's that simple.

Our message for the residents is simple too: If you are able to recycle a plastic—typically, number 1 and number 2 plastics are commonly mechanically recycled—you should continue to do so. If it's a plastic that is not or cannot be mechanically recycled and it ends up going to the landfill, then it should be put in a Hefty EnergyBag orange bag. Some exceptions will apply, depending on the end market being used, but the program tag line is “If you don't bin it, bag it.”

Composition audits of what is being collected by the energy bag program show that the program works, with an average of 88% being acceptable flexible and rigid plastic packaging, and the remaining 12% being other materials, about 6% paper.

Like any complex challenge, collaboration across the value chain is key to the success of the energy bag program. Key collaborators include Reynolds, which makes the bags and owns the trademark Hefty; the community; the local hauler; the MRF; the end markets and the consumers themselves. If additional funding is needed to launch a program, we will also work with corporate partners, brand owners and sponsors.

What do we need in order to support reaching the CCME goals released last week? We have six recommendations.

One, all levels of government need to support programs like EnergyBag to be local models for waste diversion. Supporting them will lead industry to chemical recycling and the circular economy.

Two, we need to recognize energy recovery technologies, particularly conversion technologies of gasification and pyrolysis, as acceptable diversion options, not as disposal. These technologies, although just extending the life of the plastics an extra phase currently, are stepping stones to getting to chemical recycling and ultimately full circularity.

Three, we need to develop sound waste management policies that look holistically at the use of materials. These must be based on sustainable materials management approaches and sound life-cycle thinking. SMM considers all impacts of the packaging across the life cycle, not just its ability to be recycled.

Four, we need to do a better job of getting a harmonized approach and increased communication with residents across the country on how to deal with waste, as my friend just said. Right now, the different work of different cities frustrates innovations and economies of scale. Right now it's hard to process these plastics because consumers don't know which ones go into which bin, and it adds to mechanical sorting costs.

Five, we need to consider a more complete cost curve when it comes to dealing with waste. Investments that divert waste from landfills contribute to reducing the actual costs of tipping fees but they also reduce the long-term environmental costs associated with disposal, which don't necessarily have a dollar figure associated with them.

Six, we need to take a broader view of the life-cycle approach. The federal clean fuel standard aims to approve the efficiency of the fuel that is being used in Canada, but it could be doing so much more to reduce energy use and assist with other environmental issues. Specifically, recognizing energy recovery applications as achieving a carbon reduction can solve other environmental problems at the same time. By way of example only, the federal renewable fuels regulations recognize municipal solid waste as a feedstock to produce ethanol. That principle should be extended to other feedstock sources.

Thank you again for the opportunity to share Dow Chemical's comments on helping reduce the amount of plastic that enters our waste stream. I know the committee will be looking at this again in the winter, and hopefully I will be able to provide you with some additional information then.

With your help and with that of the provinces, municipalities and corporate partners, we can start to realize the CCME's recently pledged goal of seeing zero plastic waste go to landfill. The Hefty EnergyBag is a method to help move toward that goal.

Thank you very much.

● (1625)

The Chair: Thank you, everybody, for staying within the 10 minutes. That was excellent.

Now we're going to get into a number of six-minute rounds of questions, and first up is Mr. Peschisolido.

Mr. Joe Peschisolido (Steveston—Richmond East, Lib.): Mr. Chair, thank you.

I'd like to thank the witnesses for their very helpful testimony, but I must admit that while all of you were talking I was thinking to myself that perhaps I should have taken a few more biology and chemistry classes and maybe read a few more textbooks there.

Mr. Murray, perhaps you can follow up on what you were talking about at the tail end of your presentation, about your desire to convince the processors to take wood pellets and not being able to do that.

Mr. Gordon Murray: There are two areas where we were focusing. One was trying to get the coal-powered plants interested in wood pellets. Quite frankly, we've given up on that. There's huge demand for exports, and it's all we can do to meet the demand overseas. We put quite a bit of effort into it, but at some point you just go with the low-hanging fruit, I suppose.

Mr. Joe Peschisolido: I'm intrigued by your statement somewhere else that wood pellets are carbon-neutral. How would that work? You burn something and there's a chemical reaction—

Mr. Gordon Murray: Simplistically, if you take something like coal or oil, which has been stored, it takes a million years or whatever to create that, and it's stored deep underground so you're taking carbon that's been stored and then you're releasing that into the atmosphere. For that to become coal again, it takes another million years, plus or minus.

With a terrestrial carbon, something that's a crop, whether it's a forest or an agricultural crop, when you burn it and it emits the carbon, the CO2, you recapture that when the forest or the agricultural crop grows again, so it's a cycle. It's not perfectly carbon-neutral, because there are some fossil fuels that are used in processing and transporting to market, but we measure it when we're shipping to our customers overseas, say to power plants in Europe or Asia. In fact, it's been audited, and we figure that even when we account for all the transportation, rail, and all the harvesting, the electricity and the bunker fuel for shipping overseas, it's still 80% better than the fossil fuel alternative.

Mr. Joe Peschisolido: You were talking about certain percentages of European countries—5%, 10%. What's our percentage of use of wood pellets?

Mr. Gordon Murray: Our percentage of use of wood pellets is less than 1%. According to Statistics Canada, only about 50% of the country is actually covered by the natural gas grid, and natural gas is a fairly low emitter compared to fuel oil or coal, but wood pellets are exponentially lower-carbon and are the next lowest-cost option compared to fuel oil, propane or other kinds of options like that.

The barrier to using more wood pellets in Canada is the access to the boiler technology. It's the kind of appliances. In Europe, they're widespread. There are hundreds of European manufacturers. People run them off their smart phones; they're fully automated. It's nothing like filling a fireplace. You start it, and you run it for six months. You clean the ash pan, and then you run it for another six months. If you want more heat, you turn up the thermostat; if you want less, you turn it down. It's totally automated, but we can't use these systems in Canada because of the regulatory standards. If European boiler manufacturers want to sell their products in Canada, they have to redesign them, which is very expensive, or they have to run them as open systems—run them unpressurized, so they run at very low efficiency. Therefore, most of the European boiler manufacturers can't be bothered with Canada.

We're working with the CSA and working through CETA, the European trade agreement, to see if we can overcome these obstacles.

● (1630)

Mr. Joe Peschisolido: Thank you.

Mr. Renou, you were talking about the importance of wood in construction. I'm assuming, then, that brick and mortar isn't as good. Why is that? How can the federal government play a role in getting more wood in houses?

Mr. Stéphane Renou: It's all about standards—enabling, accelerating and creating standards to facilitate the usage of wood, enabling access to it, or even by the private bill that was put in front of the House at some point to favour the usage of wood in government facilities. It could also be standards related to the capture of carbon through wood.

One of the points I've tried to make is that every time you use wood, it's a way to capture carbon. As you were saying, we take CO2 in the air, and we capture it in the trees or in the plants, and every time we keep the wood together, it's capturing it and it's a way to extract the CO2 from the air.

We talk a lot about emissions, but we talk little about the capture of carbon, and that balance is what makes the greenhouse emissions.

Mr. Joe Peschisolido: Ms. Wood-Bohm—

The Chair: You're out of time, Joe.

We'll go to Mr. Lake next.

Hon. Mike Lake (Edmonton—Wetaskiwin, CPC): Thank you, Mr. Chair.

Before we start this, I have a quick point of order question for the chair.

When we invited the minister to come on supplementaries, did we offer up this day? Was this one of the days we offered up?

The Chair: We asked what her availability was, and I think we gave her through to the end. We knew it wouldn't be next week, so it was up until today.

Hon. Mike Lake: So she could have come today. I notice that, at this very moment, Seamus O'Regan is appearing before the veterans committee, and Carla Qualtrough is appearing before the government operations committee.

The Chair: Are you talking about the supplementaries?

Hon. Mike Lake: I'm asking on a point of order, just because I want to be clear on what days we.... The minister hasn't appeared. We had Minister Petitpas Taylor appear this morning at the health committee. I just want to get some clarity about what opportunities were offered, because the minister was there today and still wasn't able to make herself available for us, as the committee of the environment, to ask questions about the supplementary estimates.

That's concerning to us on this side. I know it doesn't seem to concern the members on the other side, but that's my question.

The Chair: An invitation went to the minister inviting her, and we weren't able to secure her.

Hon. Mike Lake: But this was the day that was—

The Chair: Then the estimates were reported back, and with the votes yesterday, they are done.

Hon. Mike Lake: Okay. There are these three meetings happening today where ministers are appearing on the estimates. For the committee to consider, maybe we want to broaden and extend the opportunity for her to come and at least talk about her estimates, even if we're not voting on them, at some point in the future.

I will leave that point of order now.

The Chair: Okay. Thank you.

Hon. Mike Lake: On the specific subject matter, it was fantastic listening to everybody here.

Mr. Thurlow, I imagine you will be back again soon, since we're doing a plastics study next. It will be very interesting to—

Mr. W. Scott Thurlow: I will be here to help.

Hon. Mike Lake: You might as well recycle your speech. You might as well just bring it back again, and you will be able to use it again.

On the issue of wood, I'm always interested, just in general, in the issue of our forests as a carbon sink. We've talked about the fact that a third of our greenhouse gas emissions over the last few years—in that neighbourhood or maybe a bit less—have been caused by forest fires.

I would like to hear some of the experts here talk about a comprehensive approach that might include a forest fire management strategy and, at the same time, a use of wood strategy. How can we manage our forests to minimize the chance of fires?

I'm not an expert on this at all, but probably the way we do our foresting can minimize the size of our fires and the ability of fires to spread as much as they do, and at the same time maximize the amount of forests we have for sinks.

Maybe you can talk about the role that a world-class forest management strategy would have in reducing Canada's overall emissions.

● (1635)

Mr. Jean-Pierre Martel (Vice-President, Strategic Partnerships, FPInnovations): It's interesting that you're saying "world-class forest management". We believe that in Canada we have world class. If you look at certification, we're the best in the world in terms of third party certification. We do believe that managed forests are very well managed, and this has been demonstrated through third party certification. That's one thing.

Second, around fires and the role of fires, mainly we manage fire in this country, but it varies from one province to another. North of certain limits, we just let it go, because we cannot manage everything, and there are big fires. South of that line, it's basically focusing on trying to reduce the impact on municipalities, communities, and remote communities. That's the first focus. In some cases, this has been successful, and in some, not that successful.

At FPInnovations, we have a program in Alberta testing equipment but also a FireSmart program in some municipalities and some regions in order to manage vegetation around those settlements, so there's a way of doing it, and—

Hon. Mike Lake: Before you go on to that point.... You say that north of a certain point you just let them go, if they go. I imagine there is a natural impact of fires, and the forest will regenerate and all of those things.

However, if you take into account the greenhouse gas emissions caused by those fires when we just let them go, should that be something we should start paying more attention to?

Mr. Jean-Pierre Martel: That is a very good question.

If you look at the way we do carbon accounting in this country, we have some of the best carbon accounting, and the rules and principles around that are being defined. Currently, I believe there is an ongoing conversation among provinces and also the Canadian Forest Service and Environment Canada, in terms of defining what system we should be using.

There are things we control and others that we don't control, like forest fires that aren't induced by humans or if you have lightning going to the ground, so it is very difficult to manage it, other than doing more protection.

The way we have been approaching it is to reduce the impact on settlements. One of the areas that we also need to be careful about is that, when you do invest in forest management, it's a long-term investment. You get into plantations and silviculture, so there is a real investment in this and we need to make sure that we protect those investments as well.

Currently, it's more focused on settlements, people and municipalities, which is the right thing to do, but we also need to think more about how we protect those forests that we've been managing for a very long time.

Hon. Mike Lake: Karel talked about being smart. I'm an Alberta member of Parliament and when I think about what we're talking about there, management-wise, it's going to take some money to make investments to develop the innovation to tackle some of these big issues. Forest firefighting costs money, obviously.

One of the things that don't seem smart to me is a world where we're buying 750,000 barrels of oil every day from Saudi Arabia, Algeria and Nigeria, then shipping it to Atlantic Canada for use by Canadians, and shipping our money to countries like Saudi Arabia, Algeria and Nigeria, and even to the U.S. and Norway, which we could be using to invest in innovations like this.

Could you speak to the level of investment that would be required to fund those sorts of programs that, again, would save us these hundreds of millions of tonnes of greenhouse gas emissions that are being caused by forest fires? What would that strategy look like, in terms of investment? Does anybody at the table want to tackle that?

Mr. Jean-Pierre Martel: That is an excellent question. I don't have the answer.

I think there is an ongoing conversation with Natural Resources Canada, which is looking at what the potential cost is, but at this point in time, unless some people around this table have some knowledge around this, no—

The Chair: That takes us to the end of the time, unless somebody has a brief comment they can offer.

Thank you.

Mr. Stetski, you're up next.

● (1640)

Mr. Wayne Stetski (Kootenay—Columbia, NDP): Thank you.

Thank you for being here today.

I'll start with Mr. Murray, who comes from Revelstoke, in my riding of Kootenay—Columbia.

To those of you who haven't been there, it's situated in the Selkirk Mountains. It has amazing snowmobiling and the longest downhill ski run in North America, and great mountain biking. Also, in the community, there is an energy system that is quite beneficial.

I wonder if you could tell us a little bit about how you think wood pellet energy can benefit municipalities, from your experience.

Mr. Gordon Murray: Generally speaking, at a community level we can look at very small-scale residential or we can look at a medium or large scale, in institutions and commercially.

Generally with biomass, there are two options: You use either chips or pellets. If you talk to the operators of the boiler systems, chips are less expensive, but it takes more technical know-how to manage and more space to store the fuel; also, it's dirty and so on.

Wood pellets are very homogeneous. They're dry, compact and easy to store. For smaller scale, particularly in Atlantic Canada, where there isn't much natural gas distribution, we found the use of boilers in those kinds of systems very beneficial. You install the boiler, and it is very easy to operate, and at low cost.

I'm not sure I can add much more than that.

Mr. Wayne Stetski: One of the challenges is supply, as you mentioned.

Now, management of forests, of course, is largely provincial in nature. Getting access to a forest company's tenure can be challenging.

Mr. Gordon Murray: It could be.

Mr. Wayne Stetski: I know that's one of the issues.

Do you think there is anything that the federal government can do to help your industry, or is it mostly provincial?

Mr. Gordon Murray: I think the federal government could help us on the regulatory side.

One of the issues is that.... Within CETA, there is the agreement on technical barriers to trade. There's the comprehensive economic trade agreement between Canada and Europe, and there's a provision within the section on technical barriers to trade for mutual recognition of standards.

We want to see the European boiler pressure standards. I won't get into all the numbers and everything like that, but we want those to be recognized in Canada. We've started working with the manufacturers in Austria and Germany to try to coach them to put an application in through CETA, to see if we can get those standards recognized. We're still trying to figure out what the route is and how to do that.

On a separate track, we're working with the Canadian Standards Association in trying to amend the boiler standards there, which refer to the standards by the American Society of Mechanical Engineers. Canadian boiler standards are based on American standards, and we would like the European standards to be added to that. If we can accomplish that, then we have to go to each of the 13 different provincial jurisdictions and get all the boiler inspectors within each of those jurisdictions to then amend their codes to accept that.

It's going to be a long process.

Mr. Wayne Stetski: If there were federal oversight, that would potentially resolve it.

Mr. Gordon Murray: It would certainly help, yes.

Mr. Wayne Stetski: Thank you.

To all of you, we're here to talk about what the federal government can do to make things better in your industries and in your lives. If your presentation didn't have all of it today, feel free to submit something separately to us.

Mr. Ménard, just quickly, I am part of the all-party renewable fuels caucus. Earlier in the week, we met with Renewable Industries Canada, and there was a fair bit of talk out of Quebec. Basically, they thought that the role of government in helping to encourage renewable industries was fairly significant. They talked about, first of all, the standards around e-fuel and increasing the minimum standard in fuel—which is currently around 5% at the gas pump—to a higher amount of ethanol, for example, or other kinds of biofuel in your fuels.

They talked about price on pollution, not in the sense of a tax, but in the sense of the government putting a price on pollution that encourages innovation in the industry to help reduce carbon and GHGs, which I thought was interesting.

Of course, there's the zero green waste policy in Quebec, which says that you're not allowed anymore to put anything that's compostable into a landfill. That is generating new fuel industries in Quebec as well.

Do you have a comment in general on the federal government's role in encouraging renewable fuels?

● (1645)

[*Translation*]

Mr. Karel Ménard: Managing waste material is indeed in provincial jurisdiction. All provinces do it. However, the federal government can and must set an example. Even though Quebec is often held up as an example, when you work in the field, you realize that our green paint can wear quite thin.

There are very good initiatives, such as banning organic matter from disposal sites in 2020, now scheduled for 2022. It was environmental groups like ours that demanded that the government ban organic matter.

I will talk in broader terms about producing ethanol. I have always talked about energy conversion. In Quebec, there is still no legislation about energy conversion, so it has not been regulated. They have been talking about doing so since 2011, but it has not yet been done. Some processes are admittedly interesting, such as gasification or pyrolysis, using certain materials under certain conditions. However, when we talk about energy conversion, about incineration in order to produce energy, we have considerable reservations because that destroys resources.

I always say that I would rather avoid problems than try and solve them.

[*English*]

The Chair: Okay, great.

Mr. Fisher, you're next.

Mr. Darren Fisher (Dartmouth—Cole Harbour, Lib.): Thank you very much, Mr. Chair.

Thank you very much, folks, for being here. I appreciate this.

I'll go to Gordon first, just to talk a little about wood pellets. I'm fascinated, first of all, that you have less than 1% of the market in Canada but you're growing and growing and growing. Clearly it's mostly export. What is possible for your industry within Canada using waste alone?

Mr. Gordon Murray: I looked at the potential based on Statistics Canada's data. I have it in my presentation, which I think will eventually get to you. I've looked at the number of gigajoules—a unit of energy—consumed in the 50% of Canada that is not covered by the natural gas grid. If we took 100% of that, which I realize is unrealistic, it accounts for about one trillion gigajoules of energy used each year. If we convert that into wood pellets at an average energy efficiency, that would consume 71 million tonnes of wood pellets.

To put that into perspective, our total production in all of Canada right now is a little under three million tonnes. We could go from three million to 71 million if we could convert all that to wood pellets.

Mr. Darren Fisher: Do we have enough waste in Canada to do that?

Mr. Gordon Murray: We'd be happy with 2% or 3%.

Mr. Darren Fisher: Is anybody growing wood to make pellets with, in any other countries? You're using specifically waste.

Mr. Gordon Murray: At the moment, wood pellets are not made from roundwood. We're strictly a by-product industry. That's true universally. The little bits of roundwood we do use are insect-damaged or rotten or twisted trees that couldn't otherwise be used to make lumber. Otherwise we're using a by-product: sawdust and shavings.

Mr. Darren Fisher: I had a meeting one time in Nova Scotia with a guy who was growing a wood that grows faster than alders and poplar, but it's not like bamboo. He said you could make pellets with it, and four-by-eight sheets of plywood.

● (1650)

Mr. Gordon Murray: We looked at some of those things. Maybe they'll come to pass. Typically with those fast-growing crops, you end up with high amounts of carbon and nitrogen, so you end up with corrosive types of fuels. The faster-growing and the more deciduous, the higher the amount of chlorine. When you combust it, it creates hydrochloric acid and rots the boiler systems.

Mr. Darren Fisher: Stéphane, you were talking about the use of wood to reduce GHGs as an alternative to concrete. We had a very fiery meeting here a couple of years ago when we had wood and concrete at the same table. Some of the members who have been around for several years will remember that.

Are you aware of CarbonCure, and can you compare the use of wood in reducing GHGs with CarbonCure's product, which traps the emissions in the concrete with their process?

Mr. Stéphane Renou: I'm not aware of CarbonCure, but I will say this. It amazes me, actually, that people from concrete and wood would get into a fiery dialogue about trying to get ahead of each other. The real solution is to just put the best material at the right place.

The thing is that there is segmentation of the market that exists currently. I'm just an engineer; I'm not a policy-maker. I can see this building in the future where you have the concrete in the right place, the steel in the right place, and more wood where it needs to be. As we develop the technology to put more wood, the portion of wood does increase.

Wood is never going to replace all concrete, nor all steel, but we're actually limited in wood usage because we're fighting each other instead of finding a solution that fits all.

Mr. Darren Fisher: Thank you.

Mr. Chair, the other day, through various multiple points of order, Mr. Stetski lost his last three-minute slot. I'd love to offer him my last two minutes.

Mr. Wayne Stetski: All right, thank you.

I'll go to Mr. Thurlow for a minute.

I have to tell you that throwing plastic bags away just bugs the heck out of me. I think every Canadian should take all of their plastic bags and continue to put them in recycling bins until municipalities and recycling people get so frustrated they actually decide to do something with it.

Mr. W. Scott Thurlow: Disobedience....

Mr. Wayne Stetski: What's your idea for using plastic bags and getting them recycled? What is Dow's idea around doing that?

Mr. W. Scott Thurlow: That would be a perfect example of something that should go into the EnergyBag. The EnergyBag could be converted into a diesel substitute. It could be converted into a methanol, which could then be turned into any form of plastic. Again, it's going to be up to both policy-makers and consumers to do that very thing.

Now, I would not engage in civil disobedience. That would actually create quite a bit of a problem at the local recycler and have all of the plastic end up in the garbage. The recycling would be cross-contaminated and it would make it more difficult to sort.

That being said, if we were to implement a program like EnergyBag, you'd be able to educate consumers to do the very thing you're trying to do, which is avoid those plastic bags going to waste.

Mr. Wayne Stetski: Last night, my colleague Gord Johns had his motion, M-151, unanimously passed in the House of Commons. Thank you very much to everybody around the table here.

So we will be hearing a fair bit more from you. I'm not quite sure.... Are these orange bags, the Hefty EnergyBag, just storage for now, or are you actually using what's in them?

Mr. W. Scott Thurlow: In the jurisdictions where they are in place—I mentioned Idaho, Nebraska and parts of Atlanta—they are converting them into other feedstocks. In Idaho, they are replacing diesel in the municipal fleets with the product that goes through the EnergyBag.

Again, there is no perfect environmental solution. Obviously, we'd like to get back to the pyrolysis technology so that we can recycle or recover 100% of the molecules used to make plastic, but anything is better than to waste.

Mr. Wayne Stetski: Thank you.

The Chair: Monsieur Godin, go ahead.

[*Translation*]

Mr. Joël Godin (Portneuf—Jacques-Cartier, CPC): Thank you, Mr. Chair.

Let me thank you all for being here today.

We rarely get five witnesses, or groups of witnesses, at the same time. Unfortunately, I have very little time, but I am interested in the five groups and I have questions for them. I am not saying that other witnesses were less interesting but you are very interesting.

I am going to start with the people from FPInnovations.

How long have you been thinking about carbon capture and focusing your research on it?

Mr. Stéphane Renou: I will let Mr. Martel answer that question about the history of the company.

● (1655)

Mr. Jean-Pierre Martel: Just now, we were saying that there is a natural link between forests and the carbon cycle, because carbon moves into forests and forest products, and it is cyclical.

I am a forestry engineer. We have always managed carbon because trees and lumber store carbon.

Mr. Joël Godin: I understand; I know that it is a natural phenomenon.

Mr. Jean-Pierre Martel: Yes.

Mr. Joël Godin: It's the life cycle.

However, since when, at FPInnovations, have you been paying particular attention to it? We are now being made aware of the environment, but since when have you been paying more attention to carbon capture?

That's my question.

Mr. Stéphane Renou: I will answer, Mr. Martel.

Our attention to carbon capture does not focus on developing carbon capture technologies.

Mr. Joël Godin: Okay.

Mr. Stéphane Renou: Our attention is focused on analysis to find the best way to maximize carbon capture using the natural cycle.

Mr. Joël Godin: Okay.

Earlier, you mentioned that the industry had invested $21 million in a project. I am interested to hear that the industry should take the initiative and innovate because it is sensitive to the environmental footprint.

Do you have the technologies and processes to replace the toxic products?

Mr. Renou, you presented the fact that you could separate the membranes from the wood to make different products. Can you provide that process to Dow Chemical Canada?

What I just said is very simplistic, but you understand the principle.

Mr. Stéphane Renou: We can talk about it.

Dow Chemical Canada has a level of expertise in chemistry that is absolutely phenomenal and I'm not even going to pretend to seek them out, but I am reaching out to them. I believe that Dow Chemical Canada's teams must be increasingly matched with teams in the bioproducts area so that things can come together more easily.

Let's talk about composites. If you replace all the glass fibre by wood fibre in composites, you reduce the weight of the plastics by 30%. By so doing, you reduce the fuel consumption of automobiles and trains correspondingly. To do that successfully, we need the people from Dow Chemical Canada and the wood industry. We need this co-operation to create a product that moves us forward.

Ms. Wood-Bohm said that perfection is our worst enemy. That's where we are at. We must succeed in making those links. Plastic will never completely disappear. You have to bring plastic from A to H, so to speak.

Mr. Joël Godin: I'm going to ask you a very specific question. After processing those composites, is there still carbon capture? Do they still have that property?

Mr. Stéphane Renou: Absolutely.

Mr. Joël Godin: Okay, thank you.

Mr. Renou talked about working with Dow Chemical Canada. That's exactly what you mentioned earlier, Mr. Ménard. Instead of working in isolation, we should work together in the common interest. Is that what you meant by that?

Mr. Karel Ménard: That's right, yes.

Mr. Joël Godin: Thank you very much.

I'll now turn to you, Mr. Murray. I fell off my chair when you said that the provinces and industry would rather burn the residue than send it to you. Did I understand what you said in your presentation correctly?

[*English*]

Mr. Gordon Murray: Yes. It's hard to believe.

[*Translation*]

Mr. Joël Godin: It sure is.

[*English*]

Mr. Gordon Murray: I'm sorry I can't respond in French. You'd go home with a headache if I did.

In areas that are very close to pellet plants, we find we can get access to residues, but as we go further out it becomes challenging. We've worked with primary forest companies, and they've charged us for picking up their waste out of the forest. They tell us we have to pay them $10 a tonne, and if we don't they're going to burn it. We can't afford to pay that amount. We've put all the investment in plant and equipment, and we're making a low-value product with low margins. Therefore, because the tenure holders are the ones who control the fibre, we're not in a bargaining position, so we essentially have to pay whatever amount they say.

There would need to be a ban on slash burning, with exceptions, say, if you could prove there was no other use for it or something—in that case, there could be some limited burning. We're dealing from a position of no bargaining power against....

● (1700)

[*Translation*]

Mr. Joël Godin: Thank you very much.

As I understand it, the federal government could pass legislation to prevent the provinces and the industry from doing that.

Very quickly, I have one last question for you, Ms. Wood-Bohm.

I found it interesting that you proposed a solution. You said that the government should lead by example. To reduce its environmental footprint, you suggested that half of the energy needed to heat government buildings should come from biomass or another technology. That would be one solution. I like the fact that you have solutions.

[*English*]

The Chair: Quickly, please.

Dr. Susan Wood-Bohm: I'm not sure I got an actual question out of that. I know you're asking me whether I think the federal government should take a leadership position in making use of biomass for heating purposes. I believe that space heating is a particularly easy opportunity because, as I mentioned, the military bases largely work on distributed energy. It would be a matter of changing the fuel source, so that's a particularly simple opportunity. We've just done an analysis of Gagetown. In fact, the most cost-effective method of heating Gagetown is using wood biomass. I have that report, and I can share it with you.

The Chair: Thank you.

Mr. Simms, you have the floor.

Mr. Scott Simms (Coast of Bays—Central—Notre Dame, Lib.): Thank you, everyone. I don't have a lot of time, so I'll quickly jump into it.

About eight or nine years ago in Newfoundland there was a program based on the idea that wood pellets were now the way to go and the way to heat your home. They put in an incentive whereby if you bought a pellet stove, you would get a subsidy from the government. You would send in your receipt, and they'd give you 10% or 20% of it back.

We haven't had a lot of pellet stoves since then, so I always wonder. At the time it was going on, someone told me that if you're looking at it as a cost alternative, strictly that, whether to burning oil or to hydroelectricity, unless you can buy the wood pellets by the tonne, it's not worth it. Going down to Canadian Tire and buying a bag this big, you're not going to get the efficiencies you're looking for. I don't know if he was right or not, but I suspect he might be.

That's part of our problem, isn't it? We just don't have the size of market.

Mr. Gordon Murray: I think the economics have changed. Wood pellets are clearly.... If you look at the hierarchy of costs, generally speaking, across Canada, the lowest-cost heating fuel is natural gas; second-lowest is wood pellets; third-lowest is oil and fourth would be propane. Of course, if you can go and cut firewood and you're willing to put the sweat in, you can get that for free if you can find it in the right places.

Mr. Scott Simms: Okay, but how does this compare now to hydroelectricity on a cost basis? Do you have any numbers for that?

Mr. Gordon Murray: Against hydroelectricity, it is cheaper, except in Quebec, where there's some particularly low-cost electricity.

Mr. Scott Simms: That's a good point.

It's a good point about the by-products, strictly on a by-product level, for wood pellets. I didn't realize that. I had a question about the concept of silviculture, which is now a provincial jurisdiction. I don't even know if it's jurisdictional. I don't know if the feds have ever invested into a silviculture program. It is expensive; I understand that. Are we planting trees anymore? I did it as a Boy Scout, and then it ended there.

Obviously, you mentioned the trees here, but that's probably not a good way to go, is it? We should stick strictly to the by-product level.

Mr. Gordon Murray: Absolutely. With these products that my colleagues from FPInnovations are talking about, anything that can be stored for the long term—if you can make a product and have it stored in solid wood or in some sort of carbon form or whatever—the longer you can store the carbon for, the better the greenhouse gas impact is.

As far as silviculture goes, again, Canada has fantastic silviculture programs across the country. We have leading forest management, the most certified forests of any county in the world, by far—

Mr. Scott Simms: Sorry to interrupt, but I don't have a lot of time. Are the provinces specifically investing, or are some provinces much lower than others?

Mr. Gordon Murray: Generally speaking, the legislation is different in every province. It's provincially managed, but it's usually up to the forest companies to do the reforestation.

● (1705)

Mr. Scott Simms: Okay, that was my question. Thank you very much for that.

I was over in London, England recently, and they had a big sign in the tube that said the station was now supported by wood-burning heat. It's as if they were bragging.

Mr. Gordon Murray: It's the same at Heathrow Airport.

Mr. Scott Simms: Oh, is it? Well, there you go.

It's quite something, because now we're starting a plant in Newfoundland on the Northern Peninsula, and we're hoping to get another one in central Newfoundland because the demand is so high. However, shipping must be a big part of this, obviously, if Europe is the primary market.

Mr. Gordon Murray: It's all economies of scale.

Mr. Scott Simms: Sure.

Mr. Gordon Murray: In Newfoundland, I know there have been some ups and downs with wood pellets. There was one previously in the Northern Peninsula that didn't work. I think the challenge in Newfoundland has been the scale. You don't have a large enough sawmill industry, so there aren't enough residuals.

Mr. Scott Simms: That's exactly right. I understand it now since you've been here, because you talked about the by-product level and not using trees.

I hope I have some time.

The Chair: You have a minute and a half.

Mr. Scott Simms: Okay.

Mr. Thurlow, it's good to see you again, sir.

On fire bags, you outlined the jurisdictions where these bags are feeding into the penstock. This is interesting in many respects, because the big story now in the fisheries area is about plastic getting into our oceans. How does this fit in? I know there are plastics, and from a terrestrial standpoint I see that you put it in the fire bag instead of putting it out, and you convert it and it goes to the penstock.

Can you offer a solution for those of us...? I'm co-chair of the oceans caucus, so I'm looking for an answer. Tell me you have wonderful things to tell me and we're going to save the oceans.

Mr. W. Scott Thurlow: I would tell you that by reducing the amount of plastic we use as consumers, we are contributing to saving the oceans, but—

Mr. Scott Simms: Now it's your turn. Let's say we don't.

Mr. W. Scott Thurlow: To the best of our knowledge.... I have not seen something about recovering fisheries technology in a way that pencils out, but certainly that's something we could look into.

Mr. Scott Simms: Obviously, this program is important, or it's working in these jurisdictions. Let's say now I'm, God forbid, the Premier of Ontario for some odd reason. Sell me on the fire bag. What's the most essential thing? If I say to you, "I don't have a lot of time right now, so tell me"—

Mr. W. Scott Thurlow: If you were the Premier of Ontario, I'd say you're going to save a lot of money because the tipping fee coming out of Toronto is $117 or $118 a tonne. We're going to be reducing the amount of waste that's going into the landfill, and we're going to be getting a secondary economic value out of it, whether that's reduced fuel costs or whether that's a brand new virgin plastic.

Mr. Scott Simms: Describe for me the penstock that you're feeding into.

Mr. W. Scott Thurlow: It will depend on what markets are available. If you're close to a refinery—

Mr. Scott Simms: Give me an example in the U.S.

Mr. W. Scott Thurlow: In the U.S., in Idaho, they're—

The Chair: We're out of time on this one. Somebody else may want to pick it up.

Mr. Scott Simms: Could he just answer the question?

The Chair: Okay, quickly.

Mr. W. Scott Thurlow: In Idaho, they are converting it into a raw crude diesel, and they're putting it right back into their municipal fleets.

The Chair: Thank you.

Mr. Carrie, you're next.

Mr. Colin Carrie (Oshawa, CPC): Thank you very much.

We have great witnesses today. I'm going to bounce right into it.

Mr. Murray, I'm going to ask you three questions. If you can get to them, that would be awesome. I'll ask you all the questions now, because I want to shut up and let you talk.

First, what do you think the reason is that Canada won't recognize European standards for these boilers? Is there a safety issue? Is there some other thing going on?

Second, you mentioned Ontario Hydro One or the Ontario hydro pilot project. I was wondering if you could elaborate.

The third one is with regard to subsidies. You managed to put these wood chips on a train or a truck, take them to Vancouver, ship them around and put them into the U.K., and it's still a cost-effective way of heating and providing energy. My understanding is that Europe does have subsidies or something like that. If the subsidies go away, is that still going to be cost-effective?

Mr. Gordon Murray: Quickly, with regard to the boiler standards and why the Canadians won't accept them, I don't have a good answer for that. For a long time, boilers have been made to ASME standards, which work perfectly well for fossil fuels.

Biomass fuels are relatively new, and the boiler manufacturers in North America haven't made these boilers. In Europe, they have. They have different standards there. It's a matter of convincing all of these different jurisdictions to adopt what the Europeans are doing.

● (1710)

Mr. Colin Carrie: There's no safety issue or anything like that. It's just—

Mr. Gordon Murray: It is a safety issue because there are pressure standards.

Mr. Colin Carrie: Oh, for sure.

Mr. Gordon Murray: That's why it's a safety issue, so they're being cautious. They have to be educated. We're going through that process. They're perfectly safe in Europe. There have been no issues, but we have to convince the regulators here, the engineers and everybody. They have to understand it and accept it. That's the process that we're going through right now.

As for the second question, I'm not sure what that was. I think I mentioned Ontario Power Generation, so that was the first company. Ontario was actually the first province to phase out coal, and then Ontario Power Generation converted two power stations up in the Thunder Bay area. One of them had to shut down lately because it had a very severe boiler problem that couldn't be resolved. The one at Atikokan runs as a peaking plant in an area that mostly has hydroelectricity, so it only runs about 20% of the time, but it runs very successfully.

I think your third question was about subsidies. Wood pellets are more expensive than coal. Every country that has used them has put policy in place to try to incent them. There are either mandates.... In South Korea, there's a mandate that you must produce a certain amount of renewable electricity. In the U.K., they have contracts for difference, so there are long-term agreements between the government and the power companies that essentially they'll cap up the difference in the cost. There's enough confidence from the power industry, which has invested billions of dollars in converting all of these units, so obviously the investment community is convinced enough to make the investment. These subsidies run until 2027. We're anticipating by that point that everything will be depreciated and that we'll be able to run subsidy-free after that point.

I should point out that there is no Canadian subsidy on wood pellets.

Mr. Colin Carrie: All right. Thank you very much.

I'll skip over to Mr. Thurlow.

It's good to see you again. You mentioned a term that I wasn't aware of: pyrolysis. I'm just curious if you could expand on that. Are there any plants in Canada that can take these plastics and turn them into diesel? If not, why not?

Mr. W. Scott Thurlow: To my understanding, there is one just outside of Halifax. I'm not sure whether it's operational or not. It's either right ready to start or it's just starting up. The issue with pyrolysis is getting the material to the facility. Halifax is far away from Toronto, so that will add a very significant cost.

Pyrolysis plants, for the most part, are actually very affordable, by comparison. A pyrolysis plant that would deal with 4,000 tonnes of garbage a year costs less than $5 million. It's not difficult; it's just about finding the critical mass to have all of the appropriate pieces in place to make it make sense economically and to have a willing municipality. I can't emphasize enough the importance of having a MRF that is willing to participate in this process. If they're not willing to help out, all the economics fly out the window.

Mr. Colin Carrie: How much would a gallon or a litre of diesel coming out of there cost? Is it cost-competitive with the traditional sources?

Mr. W. Scott Thurlow: It goes back to what I said in my presentation, that a lot of environmental costs don't have dollar values associated with them. Right now there are significant costs associated with the collection and disposal of garbage, but these are costs that don't factor into the business decisions. They are costs that are borne by the taxpayer. We need to take a better look or a different look at how we do a full life-cycle accounting associated with this type of energy recovery.

The Chair: Thank you.

It's over to you, Mr. Amos.

Mr. William Amos (Pontiac, Lib.): Thank you, Chair.

Thank you to our range of witnesses. This has been a really broad discussion. I'm interested in a bunch of different angles.

First, to our friends at FPInnovations, we have a project proposal in our region around the conversion of woody biomass into sugars for industrial and other uses. It's very exciting technology. I had the opportunity to go to PaperWeek in Quebec and learn more and more about this. I'm personally very excited by the future that you're presenting to us.

I am looking for a brief answer on whether or not you foresee a near-term future where projects like this can be done without massive government subsidies. I understand that these are exciting projects. I would love them to land in my region. I'm sure many other MPs would as well. But when tens and sometimes hundreds of millions of dollars of public funds are in question, it can be very challenging. Taxpayers rightly ask tough questions.

How do we get to the point where we can start really taking advantage of our biomass without asking the taxpayer to do so much work?

● (1715)

Mr. Stéphane Renou: I think the honest answer is that it will take a few to get there. Every member of the industry has certain capital decisions to make: either to invest in transformation or to invest elsewhere. It's that simple. Transformation is costly. It's risky. In terms of help from the government, it helps us and them to de-risk the technology, to show its feasibility, and quite frankly to catch up with what the competition is doing in Brazil and in Finland.

That's where we are today. It's sad to say, but we're in a catch-up mode in the technology to transfer forest biomass to bioproduct. Why and how? It is what it is. Help is needed to get over the hump, to get to the stage where you've gone from the lab to the real plant, which is a pilot plant.

I think pilot plants are a fantastic tool that the government has. It's not at full scale. It's not $300 million but $20 million or $30 million. A real plant would be $300 million, even half a billion. If you want a real biofuel plant that's large-scale, welcome to the billion-dollar world. We need those $20-million or $30-million ones just to prove the concept. Then the risk reduction and capital investment make sense. You don't manage a 30% risk; you manage a 10% risk. That helps you get there.

Mr. William Amos: I understand what you're saying. I also understand that our government has invested significant sums through the IFIT program, particularly in the wake of the softwood lumber dispute, in order to enable such projects to move forward. The National Research Council is very involved. There has been all sorts of support. It's just that when tens of millions of dollars are involved, it can be a very big lift. That doesn't mean I'm any less hopeful. I just wanted your thoughts on that.

I want to go to you, Mr. Thurlow, on plastics. I thought Mr. Stetski's question was a good one, about how this Hefty bag program deals with plastic bags. I would like to spin the question a bit differently. I appreciate that the proposal you are providing offers the redeeming feature of helping deal with some of the plastics that are now going straight into waste disposal or otherwise going into our oceans and causing significant damage to our ecosystems.

Particularly on plastic bags, though, why not move to the reduce before moving to the recycle? Would Dow not agree that there is a strong case to be made that we simply reduce the number of plastic bags?

Mr. W. Scott Thurlow: First and foremost, that is up to the consumer. It's up to the consumer to determine whether or not they want to make those types of choices. Our family does. I'm sure many other families do, but if you're implying some kind of a product ban, I don't think product bans work. I think there's quite a bit of evidence that shows that, in some cases, they actually have the opposite effect of the environmental goal they are pursuing.

Ultimately, I think the best mechanism is to have some type of recovery, where we make sure that if we use a plastic, we will continue to use that plastic through the environment. We can find ways for consumers to make those choices themselves, about what decisions they want to make in their day-to-day lives.

Mr. William Amos: I understand that, and Dow had the same position in relation to cosmetic pesticides many years ago. I think history has shown that.... Bans on cosmetic pesticides, arguably, could have been in the hands of the consumer, but government took hold of that issue and delivered a public interest result that I think was appreciated by many Canadians in many, though not all, jurisdictions.

Herein lies the challenge. The consumer, through the mechanism of our constituency offices, is clearly indicating, through petitions and letters, that they want change to be made. I don't know that leaving it to the great mass of consumers is the right path forward. Clearly, Dow doesn't agree with that.

● (1720)

Mr. W. Scott Thurlow: I think we have to look at the actual problems we're trying to solve. As I said in my presentation, we don't believe that any plastic should ever be thrown out. If we could find a way to recover it, we would absolutely recover it. Consumer behaviour, unfortunately, doesn't always work that way.

The other issue—and this needs to be recognized very clearly—is that the global plastic waste phenomenon is not necessarily a Canadian-driven phenomenon. We have a lot of waste management practices that we should aggressively export into Southeast Asia, to prevent those plastics from getting into the natural environment.

The Chair: Your time is up.

For the last three minutes, we will turn it over to Mr. Stetski.

Mr. Wayne Stetski: Thank you.

I wanted to give each of you a quick opportunity. What's the number one thing the federal government can do to help you and your industry reduce GHGs? I'll just go down the row. We can start at this end if you like. I have only three minutes in total.

What would you like to see our government do?

Mr. Stéphane Renou: If we're talking about policy—and for an engineer that's going to be a new thing—the amount of regulation, the intersection between federal and provincial regulations that limit access to fibre in the industry, is probably one of the things that would block us the most going forward.

We're talking about using the forests. Canada is one of the places with the best usage of forests. It's a renewable resource. Managing the forest better and expanding the usage of forests is a path to reducing GHG, if you consider the forest as a sink for carbon. More usage of forests is better.

Mr. Wayne Stetski: Gordon, go ahead.

Mr. Gordon Murray: I won't belabour the two things I talked about—slash burning and pressure standards—but I would like to take one second to talk about something the federal government is doing well. We work with the trade commission offices overseas, and also with Natural Resources Canada's expanding market opportunities program.

I'm always fearful that at some point those programs are going to go away. I want to assure you that our industry has taken full benefit. When you look at the growth in our exports, for the small investment the government has put in, plus all the help we get from.... We're very enthusiastic. People in the embassies and people here in Ottawa who work within those programs.... I just urge the government to keep those programs going.

Mr. Wayne Stetski: Thank you. We like to hear what's working well, as well.

Susan, go ahead.

Dr. Susan Wood-Bohm: I would like to see the federal government acknowledge the potential for biosequestration on agricultural lands, and support farmers in their efforts to sequester more carbon on agricultural soils.

This aligns very nicely with some of the work that came out of the Paris climate accord. The French initiated a program called “4 per 1000”, which says that if agricultural soils could sequester an additional 0.4% of carbon each year, we would have no further need to address other strategies. I would like to see federal government support for that.

Mr. Wayne Stetski: Karel, go ahead.

[*Translation*]

Mr. Karel Ménard: A number of measures could be taken, but in the current context, a real strategy should be developed to ban single-use consumer goods. A number of factors could be included in that. I don't think consumers always have a choice. They buy products mainly based on their price. If the environmental and social costs of an object that is purchased were included, consumers' choices would be more informed. Right now, that is not what we are seeing, and it is unfortunate.

I would like to make one last point. Earlier, I briefly mentioned EPR, extended producer responsibility. Producers should be truly responsible. Having programs and then assigning responsibility and cost management to municipalities is good, but it might also be good for producers to take charge of those products. They might realize that placing a disposable product on the market is not a desirable option.

● (1725)

[*English*]

Mr. Wayne Stetski: Is there time for Scott?

The Chair: Yes, let's hear the last answer, and then we're done.

Mr. W. Scott Thurlow: If you care about global emissions going down, you should encourage as much investment in Canada as you possibly can because the standards that our industry has in this country are unparalleled compared to the rest of the world. Take methanol, for example, the market for which is growing at 6% to 7% every year like clockwork. If you made it out of coal, it would be six to eight times more energy-intensive than the methanol that's made in Canada.

If you care about reducing Canadian GHGs, we should be looking at the individual users of fuels. Insulation, energy efficiency, helping consumers retrofit their homes with styrofoam, or any of the other potential energy efficiency options will reduce fuel use significantly. Rather than cleaning the fuel that we have, we should be reducing the fuel that we use when it's literally just radiating off the top of roofs.

Mr. Wayne Stetski: Thank you.

The Chair: That takes us pretty much to the end of the time we have today.

Thank you to each of our guests. It has been a very full panel, with lots of really good information and discussion. If anyone has additional thoughts arising from the discussion today that they would like to send in, we invite additional submissions in writing of up to 10 pages. That way, it keeps it manageable for translation and distribution. If there are questions that you wanted to elaborate on, feel free to do that and send it in to our clerk. Thank you very much.

To all of my colleagues, have a great weekend. We'll see you back here next week.

The meeting is adjourned.