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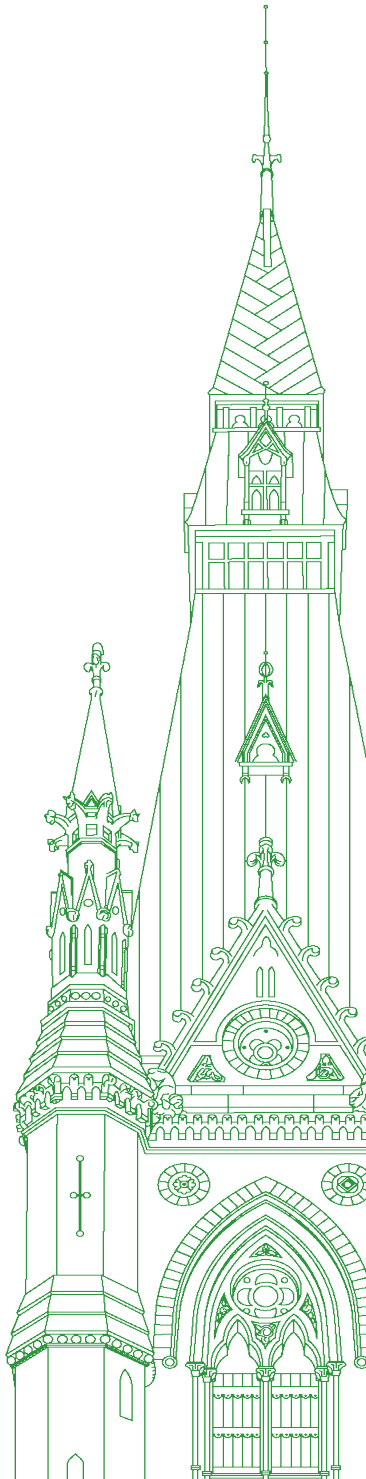

Chair: Ms. Valerie Bradford

Standing Committee on Science and Research

Thursday, September 26, 2024

● (1535)

[*English*]

The Chair (Ms. Valerie Bradford (Kitchener South—Hespeler, Lib.)): We're going to get started. It's Thursday afternoon, and I know that some people have flights later—and not that much later. In the interest of being timely, we're going to get started.

I call this meeting to order. Welcome to meeting number 98 of the House of Commons Standing Committee on Science and Research.

Today's meeting is taking place in a hybrid format. All witnesses have completed the required connection tests in advance of the meeting.

I'd like to remind all members of the following points.

Please wait until I recognize you by name before speaking. All comments are to be directed through the chair. Please raise your hand, members, if you wish to speak, whether participating in person or via Zoom. The clerk and I will manage the speaking order as best we can.

For those participating by video conference, click on the microphone icon to activate your mic, and please mute yourself when you are not speaking. There is interpretation for those on Zoom. You have the choice, at the bottom of your screen, of the floor, English or French. Thank you all for your co-operation.

I want to welcome MP Coteau, who is on the screen. He is taking the first hour for MP Diab. Thank you for covering for us.

Pursuant to Standing Order 108(3)(i) and the motion adopted by the committee on Thursday, May 23, 2024, the committee resumes its study of innovation, science and research in recycling plastics.

It's now my pleasure to welcome, as an individual, Dr. Benoît Lessard, professor and Canada research chair, from the University of Ottawa; from Dow Canada, W. Scott Thurlow, senior adviser, government affairs; and by video conference, from Nova Chemicals Corporation, Sarah Marshall, vice-president, polyethylene marketing.

Up to five minutes will be given to each of our witnesses for opening remarks, after which we'll proceed with rounds of questions.

Dr. Lessard, I invite you to make an opening statement of up to five minutes. The floor is yours.

Professor Benoit Lessard (Professor and Canada Research Chair, University of Ottawa, As an Individual): Thank you for the invitation and the opportunity to speak today.

Polymers, which make up plastics, can be modified, tuned and functionalized to provide improved mechanical strength, better adhesion or even impart electrical conductivity. The research in the developing of new polymers has the potential to improve the lives of all Canadians while also providing an economic advantage to Canadian industry.

[*Translation*]

For example, we can build more fuel-efficient airplanes using lighter polymer composites, reduce packaging size using thinner but more durable polymers, and manufacture safer electric vehicle batteries using polymer electrolytes.

New polymers are an important area of research for current and next generation products.

[*English*]

However, with new polymers come new challenges. Seemingly small changes in the polymer structure can influence how this polymer will degrade in our environment and how it needs to be recycled as well as how the breakdown products will affect human health and how the corresponding microplastics will engage with our environment. Without simultaneously developing new strategies to protect our society, these new materials can become a significant problem that we don't even see coming.

[*Translation*]

When new polymers are developed, we usually produce them on an industrial scale and then throw them away, so they end up in the environment. Only afterwards do we discover how toxic they are.

[*English*]

This is the problem we are now facing with polyfluoroalkyl substances, like PFAS, which are breakdown products from Teflon and other fluorinated products. It's important for polymer scientists and polymer manufacturing to engage with toxicologists at the design phase, not when it's already everywhere in our environment.

For example, at the University of Ottawa, we are rolling out a program that brings together toxicology experts and polymer experts, biologists, chemists and engineers to develop more sustainable polymers from the start. We are developing new high-throughput toxicology assessment tools to reduce the time needed to evaluate toxic components of polymers, which, in some cases, can hopefully replace the need for animal testing and speed up the process.

[*Translation*]

The goal is to develop new polymers for new applications deemed non-toxic from the start.

We're just one research group, but we hope our work inspires similar initiatives across the country and the world. Universities are focused on shaping future industry leaders and the way they think. I haven't met a student who isn't worried about plastic pollution and doesn't want to work on solving this problem.

[*English*]

We provide opportunities for these growing minds to do research and develop solutions for problems we face now and will face in the future. The strength of academic research is the freedom to explore and develop new approaches and new directions where the only focus is understanding the world around us and what makes it better. Academic research is the canary in the mine, providing early warning for things to come while also working on possible solutions.

[*Translation*]

Universities are developing new materials, technologies, systems and processes that sometimes go against established standards but could open up new opportunities.

[*English*]

It is from academia that true disruptive change will originate, because we are not in the business of selling products or pleasing shareholders but of simply developing better alternatives. We often work with Canadian industry to help them innovate and solve problems, but we also spin off our own companies when solutions don't fit existing industries.

[*Translation*]

The role of academia is to look to the future. We shape the leaders of tomorrow, we anticipate social problems that could arise and we come up with disruptive solutions with the potential to change the path we're on.

[*English*]

We aim to solve the problems of today and those of tomorrow.

Thank you.

The Chair: Thank you very much.

We now turn to Mr. Scott Thurlow for five minutes, for his opening statement.

Mr. W. Scott Thurlow (Senior Adviser, Government Affairs, Dow Canada): Good afternoon, Madam Chair. I'm proud to speak to the committee today about Dow Canada.

Our main product in Alberta, polyethylene, is sold to customers across Canada and worldwide to make durable industrial goods as well as packaging and consumer products. We also supply industry in the region with other petrochemical derivatives. Dow announced a multi-billion dollar expansion and decarbonization of our Fort Saskatchewan facility, and I am pleased to discuss that during the question and answer session. In Ontario we have two manufacturing facilities—one in Scarborough and one in Sarnia. These facilities produce emulsions and specialty plastic resins, respectively.

This committee is undertaking a massive project, and it's very important work. I provided the committee with information about the work that Dow has done around the world to recover plastic waste and return it to the economy and, as you can see from our materials, I can personally attest to how London, Ontario, plastic was transformed into my lawn furniture. I am happy to talk to the committee about other advents in that technology, including our low-carbon and bio-based Crocs, which are a very comfortable potential market for recovered plastic.

The enormity of the challenges are so broad that it's difficult to distill into a five-minute presentation, so we will focus on three recommendations for the committee to consider as it contemplates this very important work.

First, we need to create demand for this recycled content. In April, Dow CEO Jim Fitterling publicly stated that our company is in favour of a recycled content mandate for plastic packaging. The right way to do this is to ensure that it is both ambitious and achievable over time. Recycled content mandates send clear economic signals that incentivize investments and circularity. In creating mandates, however, we recommend that policy-makers think about the unintended consequences of regulatory decisions. We need policy signals that recognize that plastic recovery allows us to displace virgin resources and reuse materials that have already been extracted. This is a mechanism to reduce our scope 3 GHGs.

Our second recommendation is for the creation of an accelerated capital cost allowance tax credit that would allow for the rapid depreciation of any investments made by the private sector to collect, treat and transform plastic waste and return it to the economy. I provided the committee with a chart that details the "materials ecosystem" for plastic production—a road map through which science and economics break down the unwanted materials and reconstitute them into the basic building blocks for plastic production and then reassemble them into something useful once again. It details each point in the process where infrastructure can be improved to recapture plastic waste. The stages—and it truly is a circle—start with the final product, then include the application itself—collecting, sorting, cleaning, mechanical separation, biowaste designs for circularity—and then return the resin to the manufacturing process to the "final product".

A key challenge for growing the circular economy is that, often, recycled materials are much more expensive than those made from virgin resin. A tax credit that can shrink the delta between the price of virgin resin and the costs associated with the recovery and transformation of post-consumer resin would be welcome. I provided the clerk with a copy of our pre-budget submission that focuses on the need for this tax credit. Ultimately, the committee and the government need to recognize that governments themselves are spending money in dealing with this waste, so any investment that private industry makes will ultimately reduce the capital that the municipalities spend on that waste management.

Our third recommendation is to be as open-minded as possible when looking at the possible markets for these post-consumer plastics. The various permutations of the concept of mass balancing gives many in industry heartache. We should not be looking to limit the markets that these recovered materials could be entering, but instead supporting policies that help drive investment in technologies that can recycle more material to a higher quality, and these include chemicals recycling.

We should not place artificial barriers in any resulting policy. We urge this committee to recommend to the Government of Canada that recycled content mandates remain technology-neutral, and to ensure that the focus of any recycled content mandate is to maintain the value of these resources and prevent fugitive plastic waste from entering the environment. By returning waste plastic into the economy, we are solving two environmental problems at the exact same time.

I welcome any questions that the committee members may have.

● (1540)

The Chair: Thank you very much, Mr. Thurlow.

We now turn to Ms. Marshall, on screen, for her opening statement of five minutes.

Ms. Sarah Marshall (Vice-President, Polyethylene Marketing, NOVA Chemicals Corporation): Good afternoon. My name is Sarah Marshall, and I'm the vice-president of polyethylene marketing for Nova Chemicals.

[*Translation*]

Madam Chair, thank you for inviting me to appear before the committee.

[*English*]

By way of background, Nova Chemicals is Canada's largest petrochemical company, employing 2,500 people in high-value jobs. From our headquarters and western Canadian research facilities in Calgary to our large manufacturing operations in both Ontario and Alberta, our teams work diligently to reshape plastics for a better and more sustainable future.

Our multi-billion dollar investments in Canada over the past decade include a recent $3-billion Canadian expansion in Ontario, which started up this year, providing high-performing polyethylene resins that enable lighter-weight monomaterial packaging for our customers in Canada and around the world.

We fully agree that plastic—an essential material for modern life—does not belong in the environment but in the economy. We strongly advocate for greater levels of investment in recycling infrastructure, education and innovation, matched with effective policy, to achieve the circularity and elimination of plastic waste we all seek.

Nova occupies an important role in the work we do to help our customers design for circularity from the beginning. Our material science innovations allow brand owners to create monomaterial packaging that can be recycled in many existing municipal systems. From stand-up pouches to bread bags, the benefits of designing for circularity are significant, as it delivers product safety and functional performance and enables recycling to ensure plastic stays in the economy.

As many of the committee members will know, there are two forms of recycling, mechanical and advanced—or sometimes called chemical recycling—and both technologies are required. Mechanical recycling is a "here today" technology, ready to be deployed quickly. We invested in Merlin Plastics in British Columbia to improve recycled plastics for demanding packaging applications and, in Indiana, we are in the late stages of construction of our first-ever Nova recycling facility to reclaim stretch films and produce over 100 million pounds of recycled polyethylene a year. We are actively looking to build more facilities like the one in Indiana as we grow high-quality recycled products that are in demand from brand owners.

Nova is an active collaborator on plastics recycling in Canada. We are knowledge partners in the Canada Plastic Pact and founding members of reciChain in Canada, a plastic recycling traceability initiative. Earlier this year Nova announced our new centre of excellence for plastics recycling. We envision this as a hub for knowledge exchange and technology development for the circular economy of plastics. We received over 50 submissions from prominent Canadian universities to our first request for project proposals, and several projects are currently in the early stages of development.

We suggest the following three things to accelerate Canada's path to circularity. First, build up both volume and quality of recycled feedstock through harmonized extended producer responsibility and accelerate the build-out of recycling infrastructure, including feedstock sortation. The Canada Infrastructure Bank could help to fulfill this need.

Second, work together with the provinces to ensure clear and harmonized labelling of products for recyclability so consumers can make educated choices on purchases and enhance the consistency of feedstock for recycling.

Third, grow the Canadian expertise and leadership on plastic recycling R and D. Federally, this could be done through a SR and ED “super credit”, for example, which doubles the credit for plastic recycling R and D. Additionally, join us in growing the network of scientists working on recyclability across Canada at various academic institutions, as Nova is doing today with our centre of excellence.

Chair and members of the committee, during my career and in my different roles with the company I have seen this industry evolve. I'm an engineer by training, and I worked for many years in research and development before my recent roles in sustainability and, now, marketing. We are in a period of recycling innovation like nothing I've seen before. Industry is ready, investing and able to be part of solving the challenges of recycling.

Thank you for taking the time to study this important work. We remain committed to assisting you in accelerating Canada's opportunities to build up the recycling industry, grow our innovation and collaborate on the path to circularity.

● (1545)

Thank you.

The Chair: Thank you. You're right on the button.

All of our witnesses were very timely this afternoon, so thank you for that.

I'll now open the floor to members for questions. Be sure to indicate to whom your questions are directed.

We'll kick this off with MP Tochor for six minutes, please.

Mr. Corey Tochor (Saskatoon—University, CPC): Thank you, Chair.

Thank you to our witnesses.

Mr. Thurlow, I have introduced a private member's bill that would amend the Canadian Environmental Protection Act.

Do you have any views on this private member's bill?

Mr. W. Scott Thurlow: Certainly.

Going back as far as 2019, Dow and I, personally, have told committees like this one that the use of the CEPA to regulate plastics is the wrong statute, used the wrong way, to solve the wrong problem. I would urge members to support your private member's bill.

We have a decidedly different approach on that, and it's both carrot and stick. While there is an appropriate use for regulations, we don't think that the criminal law power is the right one. This is something we have said several times to committees like this one.

● (1550)

Mr. Corey Tochor: You mentioned waste plastics, and I believe you talked about bio-Crocs.

What are some other products that we could consider or that the industry is considering, so that we can repurpose some of the waste we have?

Mr. W. Scott Thurlow: My feet don't care where the resin comes from. It's comfortable. When I'm sitting on a dock, all I care about is the comfort and the fact that I have this product.

We have an entire division that's dedicated to performance materials and finding those new applications for recovered content. We have a bio-based technology called Ecolibrium, which is enabling polymers for footwear applications and other performance materials. It is both looking at recovery of the plastics and also a lower carbon footprint. We're very proud to partner with Crocs, the first footwear brand that we're aware of to go to market with this new type of recovered technology. This technology is good also for improving the recyclability of the product so that it's not going to incineration or to a landfill.

Mr. Corey Tochor: In your presentation, you talked also about.... I believe you're expanding into Alberta, or you're currently in Alberta. Tell us a bit about what the impacts of that are for our economy and for Alberta and the company itself.

Mr. W. Scott Thurlow: Sure.

In 2021, we announced that we were going to be tripling the size of our production facility in Fort Saskatchewan. It is a very large investment. At the same time, we are going to be reducing our carbon emissions at that site to zero. We're tripling our capacity and making our product zero emission.

That presents many challenges. There's technology that has to be adopted. We have several partners that are going to be part of that. It's partly through CCUS. There is a strong Alberta system for carbon capture, utilization and storage there. Obviously, certain tax credits are very helpful for investing—CCUS and the hydrogen tax credits. We have a plan to return to operation by the end of 2029, so it's an enormous amount of work.

Mr. Corey Tochor: Pun intended, but I'll let you unpack a little comment you made earlier about the CEO of your company regarding recycled content mandates for plastic packaging.

Mr. W. Scott Thurlow: At what was known as the INC-4 meeting in Ottawa, a United Nations meeting on plastic and plastic waste, our CEO was very direct in saying that we support a plastics recycled-content mandate.

I would tell you that, like other regulated mandates, you have to have both the carrot and the stick. That's actually one of the beauties of what was then known as the renewable fuel standard, as designed by Prime Minister Harper's government. You had both the incentive side to increase ethanol production and also the mandate side that would create the market demand for that.

When you have a reasonable and achievable recycled content standard, it is a really strong signal to the financial sector to say that these are investments that these companies are making, and we can rely on those regulatory signals to lend them money and make sure that these investments can be capitalized on. It's a very important part to any type of a regulatory mandate.

Mr. Corey Tochor: Speaking about financial instruments, you talked a bit about accelerating the capital cost of recovery on new investments.

Has it worked in the past? What are some examples? Is it something that we should consider in the study?

Mr. W. Scott Thurlow: The carbon capture, utilization and storage tax credit that we've seen pass through federal budgets and the hydrogen tax credit are absolutely proof positive that these types of capital-intensive projects can be supported by tax credit work.

What you do when you accelerate the depreciation is allow for the recovery of sunk capital to be recaptured faster. Tax credits only work when you make money. When you make money and you have a tax obligation, you can then subrogate that tax obligation against the taxes that you owe. It encourages people to invest capital in a very specific way to achieve a public policy objective.

Mr. Corey Tochor: I have only 30 seconds left.

It's probably in the written brief. For you and for the other witnesses, if there's any additional information, you can always submit it in a written brief for the study.

Can you, as in the written brief, talk a bit more about the mass balancing and how it has challenged other companies in other countries? Unpack that as well, if you would.

● (1555)

Mr. W. Scott Thurlow: I would be happy to.

In the two or three seconds we have left, I want to say “technology-neutral”. Make sure in your recommendations that you tell the Government of Canada that anything that calculates the percentage of recycled plastic that goes into a succeeding product is done so in a technology-neutral way and we're not excluding markets for these polymers.

Mr. Corey Tochor: Thank you.

The Chair: Thank you. You're right on the button.

We'll now give the next six minutes to MP Jaczek.

Hon. Helena Jaczek (Markham—Stouffville, Lib.): Thank you so much, Chair.

Thank you to all our witnesses.

My first question is for Mr. Thurlow.

You heard Professor Lessard talk about his approach and what he's doing in terms of his research in making sure that the breakdown of polymers does not result in toxic substances.

Could you explain to us how Dow in fact adopts, I presume, these sorts of practices within their facilities to ensure there is no toxicity in new products?

Mr. W. Scott Thurlow: In Canada, we are the beneficiaries of the Canadian chemicals management plan, which is arguably the most arduous one around the world, depending on your perspective.

There are different rules that are required before any new activity is undertaken. In the case of a material that is not on the domestic substances list, you are required to file what's known as a new substance notification. The new substance notification would require both efficacy and toxicological data. An onus is placed on industry to prove that something is in fact safe to be used in this particular application.

Canada has an incredibly robust chemicals management system. If you could refer to the testimony on Bill S-5, you'd see that ENGOs and industry agree that Canada's system is one of the most rigorous in the world for that particular application.

Now, do we take that one step further? Absolutely, we do. Dow is at the forefront, as is Nova, and I'm sure Ms. Marshall can add to this. It's the responsible care ethic. The responsible care ethic is one that has been recognized in over 60 countries and on the floor of the United Nations. It has a United Nations certification for the work we do to ensure that the communities in which we operate have the information they need to make an informed decision about what's happening.

Hon. Helena Jaczek: Thank you.

Professor Lessard, having heard Mr. Thurlow, would you agree that Canada's regulatory system in this area is very robust and successful?

Prof. Benoit Lessard: Yes, Canada is definitely a leader in the world, for sure.

What I was referring to is the development of new plastics and, depending on the application or depending on the material, the level of rigour that is needed to get these out. If we could reduce that, we could maybe get these materials out faster, or if we can do a more thorough analysis.

We're trying to develop ways to speed up the process and to get better information on the toxicology of these new materials as they're being made. Instead of making them and then finding out that they're toxic, if we're designing them with toxicology in mind, we can speed up the process and help the manufacturing of better materials faster.

Hon. Helena Jaczek: Thank you.

Mr. Thurlow, I was happy to hear you acknowledge that there are certain federal policies that have been essential to attracting investment by Dow, presumably with some of your projects. Could you elaborate a bit on some of those particular policies that you've found useful?

Mr. W. Scott Thurlow: In the last federal budget, we saw the implementation legislation for the CCUS legislation, which is the carbon capture, utilization and storage tax credit. That's something our partners will be taking advantage of as they sequester the carbon that is released through the chemical process to create polyethylene.

The second thing that was very important was the creation of the hydrogen tax credit. The hydrogen tax credit is one that our partners will use to create the hydrogen infrastructure to fuel this facility in a GHG-free way or a GHG-sequestered and -reduced way.

These particular tax credits are very useful. There are obviously many other federal, provincial and municipal programs that add to that. I think the advice I would give to this committee is to recognize that we don't just live in Canada. We live in a world, and that world is fierce in competition for attracting this type of investment. We should be creating these types of incentives to invest in Canada, because the investments we're talking about are generational. They're going to be there for 50, 60 or 70 years. The very small investments at the front end of those will pay a dividend over time.

● (1600)

Hon. Helena Jaczek: Do you have any comments on the price on carbon and how that affects your business?

Mr. W. Scott Thurlow: Absolutely. In our 2021 announcement, and to this day, our CEO has been very clear that the price on carbon is actually one of the reasons we are investing in Canada.

That decarbonization delta is important to ensuring that we can best monetize the investments we make to reduce these GHG emissions. A market-based system for the trading of carbon credits is one that has been internationally recognized by many different types of economists, and I say “types of economists” very deliberately, because it's not just The Wall Street Journal. It's colleagues, like the one to my right, who recognize that carbon is itself an asset.

Now, are there different models for reducing GHGs? Absolutely, there are. In Alberta, we benefit from the Alberta TIER system, which is integrated into the industrial carbon market.

Hon. Helena Jaczek: Do I have time left?

The Chair: You have 13 seconds.

Hon. Helena Jaczek: I will give that up.

Thank you.

Mr. W. Scott Thurlow: I'm sorry. That was my fault.

The Chair: They were great questions, though.

Next in line, we have MP Blanchette-Joncas for six minutes.

[*Translation*]

Mr. Maxime Blanchette-Joncas (Rimouski-Neigette—Témiscouata—Les Basques, BQ): Thank you, Madam Chair. I will happily take my fellow member's 13 seconds.

Mr. Thurlow, thank you for being with us today.

I see that Dow Canada is one of the biggest plastics producers in the world. When you're making all that plastic, do you think about the inevitable stage when the products made from your plastic reach the end of their life cycle? One of the many products you sell is low-density polyethylene resin, a nightmare for recycling plants because of how difficult it is to recycle. How do you justify using a product that ultimately has zero capacity to be recycled?

[*English*]

Mr. W. Scott Thurlow: You raise several very important points simultaneously.

[*Translation*]

Forgive me, but I can't answer your question in French given the technical component.

[*English*]

I would say two things. The first is that the example you gave of mixed recycling is actually the best example of why we need to consider advanced recycling and chemical recycling, because those advanced and chemical recycling mechanisms are able to best break down those polymers into something that can be easily reused.

What we do there is create a building block, and when you are able to distill these very complex mixtures of molecules back down into the original ethylene, or whatever the other polymers and monomers may be, you can then redeploy them.

How do we do that simply and easily? That's a multi-million dollar question that we're working on and we continue to work on. We still believe that the primary driver for that is improvements in the materials ecosystem that I referred to in my presentation.

There are many different areas where we can make investments to improve the recapture of these products, because—let's be honest—this is valuable material that we are just throwing away. We should be able to reposition and reinvest into these materials, and that would preclude the need for us to have virgin resources coming out of the ground.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you for those details.

I'll give you a second to put your earpiece back in, so you can hear what I'm saying in my mother tongue, one of the country's two official languages.

Do we have that chemical recycling infrastructure in Canada? We're hearing about all kinds of solutions, some of which you just mentioned, but the infrastructure is missing.

[*English*]

Mr. W. Scott Thurlow: We don't have them yet. I would tell you that in 10 different provinces, we have 10 different systems. In some provinces, we have 100 different systems based on the municipalities, and that's not great news. I will tell Mr. Cannings that British Columbia has the best of the 10.

What we would tell you is that, if we could get that material collected in a much higher, much safer and much more thorough capacity, it would be easier for companies like Dow and Nova to deploy chemical recycling technologies into very specific places to take advantage of the critical mass of waste resources.

● (1605)

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you.

Please put your earpiece in, so you can hear me. It's important that you are here today, so I want to ask you the right questions, which is part of my job.

What I take from your comments is that we're behind on innovative solutions. I see there's some willingness on the part of your company, or even the industry, when it comes to chemicals. Can you give me an idea of how much is invested in R and D as a percentage of revenue?

[*English*]

Mr. W. Scott Thurlow: Again, that's a very good question.

We live in a global economy and we are part of the Alliance to End Plastic Waste, which has, I believe, a $400-million endowment. Sarah might be able to correct me on that if she has the numbers handy in front of her.

We do our own investments into these recovered products because there is a developing market for these products. Some of our customers are looking for a higher recycled-content resin, but I don't think there is a hard and fast number.

Again, I think the investment side needs to start from the municipalities and the provinces. They're the ones that are at odds with our ability to partner with them from time to time, because across the street from Guelph you have a completely different system in Hamilton. We need to streamline those, and I think Ms. Marshall said the exact same thing. The better we can do at ensuring they work together, the easier it would be for us to invest.

[*Translation*]

Mr. Maxime Blanchette-Joncas: I take it, then, you don't really have any numbers for the share of revenue or amounts you invest in R and D to foster innovation.

[*English*]

Mr. W. Scott Thurlow: I'm sorry. I did misunderstand that.

I don't have the number in front of me, but I can absolutely endeavour to provide an answer in writing to the committee.

[*Translation*]

Mr. Maxime Blanchette-Joncas: What are you looking for from the federal government?

The role we have is to regulate informed by science and evidence. I'm trying to figure out how you can do your fair share.

You're at about 3% or 4% of your revenue—$56 billion to use a round number, or $56.9 billion to be specific. Are you looking to get funding support to help you invest more in R and D? Is that what you're looking for, specifically?

[*English*]

Mr. W. Scott Thurlow: I will reiterate the recommendation we made, which is to have an accelerated capital cost tax credit that would allow us to get much more out of the investments that we would make in Canada. I would remind you that we're not just investing in Canada. We're investing everywhere around the world, and if we get a good idea somewhere else, we're going to import it into Canada.

I would remind the committee that, on the investments we're making for Saskatchewan, this is the first of our fleet of polyethylene facilities that we are going to update around the world. The work we do in Canada is going to resonate into other jurisdictions.

The Chair: That's our time. I didn't want to cut you off because that was exciting.

Thank you.

Now we'll turn to MP Cannings for six minutes.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thank you.

Thank you to the witnesses here today.

This is always very interesting, and I wish I had more time. I'm just going to start with Mr. Lessard.

You talked about your work in creating new polymers and all the various things that we can benefit from there, but it seems to be going counter to a need for recycling, because one of the problems with recycling is that we have this wide array of polymers, whether it's polyethylene, polypropylene, polyvinyl chloride or whatever.

Can you talk about when you create a new polymer? How easy is that polymer then disassembled and made into a new plastic? Where is the toxicity? Is it in the monomers that come from the breakdown? I have a whole bunch of questions, but for this study we're doing, can you can talk about how you square your work to create a higher diversity of plastics with how do we up the recycling?

Prof. Benoit Lessard: There were a lot of questions in there.

I'll start by saying that in developing new materials or new plastics there's often a goal in mind. You want to make a material stronger so that you need less of it to reduce the weight of your vehicle, for example. There's a lot of research in aerospace in trying to make lighter planes, or in safer batteries by making polymers so that you can have polymer electrolytes. There are a lot of examples of developing new materials, but yes, unfortunately, even the smallest change in the polymer structure can change not only its mechanical properties or its application but its toxicology and how easily it can be broken down.

When I think of recycling, we wouldn't talk about recycling paper and metal in the same sentence. Some of these polymers can be completely different, and they have to be handled completely differently. The addition of one extra carbon can make it water soluble or such that it needs to be heated to a hundred degrees hotter to be handled. The small changes can have huge implications.

In terms of where the toxicology comes from, it can come from a lot of different places. It could come from, for example, the catalysts or unreacted monomers in manufacturing if there are impurities left over, or it could be from the actual polymer as it starts to degrade, is being worn down and enters our environment as a microplastic or other things like that. The toxicology can come from different aspects.

● (1610)

Mr. Richard Cannings: I'll turn to Mr. Thurlow.

Again, when we're talking about recycling and when you're suggesting mandates, I assume that, before we bring in mandates, we'd want to make sure that there is the material there to meet those mandates. That comes back to incentives for people to recycle things, with the sorting to create the volume of material that Dow or anybody else would use.

Where do we begin on that? It seems like we have to work on the whole circle all at the same time. I'm just wondering how your company and how the government can ensure that happens as quickly as possible. We're supposed to get down to 75% by 2030. How are we going to do that?

Mr. W. Scott Thurlow: We have to make sure that our targets are achievable, for starters, and it's one step at a time. I made reference to the Canadian renewable fuel standard earlier. It was a good departure point. The reason it was a good departure point is that they took a lot of time, through Natural Resources Canada, to study the issue, to understand what was possible and what could be blended into the fuel mix, to learn how it was going to be produced, to see where it would come from and to see what the long-term GHG implications of that would be. That is work that is under way right now, and it's under way in many different parts of the world.

I think what I would tell this committee is that every part of the materials ecosystem can be improved. Therefore, we start working on the things we have in front of us, and when we have a recycled content mandate, you will see people who take long-lead financial decisions to upgrade their operations, but it has to be in law.

Mr. Richard Cannings: In terms of that volume, does it help if we have a whole bunch of product that's just polyethylene of some sort? Then we can sort that and handle it as polyethylene to make Crocs, or whatever you're making your Crocs from.

Mr. W. Scott Thurlow: There are a lot of different ways of answering your question. Material sorting is a challenge. A lot of the material sorting challenges have more to do with the colour of the plastic than they do with the functionality of it or with its durability.

We can definitely have improvements on that side too. Again, I am not fussy about where we start. We have to start in all the places at the same time. Where I'm fussy is when we might make very arbitrary limitations on what would constitute a recycling process or a recovery process. I think, if we're taking waste plastic out of the waste stream and putting it back into the economy, that's a check mark.

Mr. Richard Cannings: How much...?

The Chair: You have 10 seconds.

Mr. Richard Cannings: Okay. I was going to turn to Ms. Marshall, but....

The Chair: In the next round.... I don't know if we'll have a next round.

Mr. Richard Cannings: Yes.

The Chair: Are you done?

Mr. Richard Cannings: Apparently.

The Chair: Thank you.

Now we will have our second round for five minutes.

MP Tochor is going to take this.

● (1615)

Mr. Corey Tochor: Thank you, Chair.

Thank you, again, to our witnesses.

Along with Mr. Cannings, I'm going to shift my questions to Ms. Marshall.

Ms. Marshall, we have heard how we're lacking in infrastructure and supports from the government. I'm thinking of the Canada Infrastructure Bank, which you would think is ideally suited for this because it addresses the lack of infrastructure in this sector.

Have you, or has any company or association, tried to access any government funding through the Canada Infrastructure Bank?

Ms. Sarah Marshall: Thank you for the question.

Yes, while we have spoken to the Canada Infrastructure Bank, as Nova Chemicals, we understand that the mandate does not properly include recycling plastics today. In the government's prior mandate, there was the announcement of a circular plastics recycling fund of $100 million. The industry did advocate for that, and we would certainly support looking at the CIB or at that plastics fund as opportunities to increase the infrastructure funding for collecting and processing recycled materials into plastics feedstocks.

Mr. Corey Tochor: Is that a different promise from, I believe, in 2021 when they promised $100 million for, I think, scale-up and commercialization of made-in-Canada technology? Is this a different fund or the same fund that the Liberals have not funded or set up yet?

Ms. Sarah Marshall: I believe that's the circular plastics innovation and infrastructure fund. That fund, to my knowledge, has not been set up.

Mr. Corey Tochor: That's $200 million in total of infrastructure dollars promised by the Liberals and never delivered to the industry. Is that correct?

Ms. Sarah Marshall: My understanding was that it was $100 million pledged to the industry for the circular plastics innovation fund.

Mr. Corey Tochor: Okay.

What does Nova want the federal government to do to grow recycling innovation in Canada? We know they won't fund it through the infrastructure programs they put forward, for whatever reason. If you got one wish with these guys, what would help Nova in improving the recycling of plastics in Canada?

Ms. Sarah Marshall: We do our research on plastics recycling in Canada. Over 50% of our R and D budget is aimed at sustainability initiatives, including plastics recycling. For us, it's important to stimulate the innovation ecosystem in Canada. We certainly would welcome the government joining the centre of excellence for plastics recycling that we have started with Canadian universities across Canada.

In addition to that, the SR and ED program is helpful to stimulate research and development across all levels of companies in the country, and we would support looking at increased credit. I suggested in my remarks a doubling of the SR and ED credit for work on plastics recycling.

In addition, as these facilities scale, I would certainly support Mr. Thurlow's suggestion of an accelerated capital cost allowance for both pilot and commercial facilities.

Mr. Corey Tochor: At Nova Canada, how many good-quality paycheques do you guys provide Canadians?

Ms. Sarah Marshall: We have about 2,000 of our 2,500 employees in Canada.

Mr. Corey Tochor: I have just a quick yes-or-no question. I think I'm running out of time.

Are plastics toxic, yes or no?

Ms. Sarah Marshall: Plastics in Canada is not considered.... We do not consider that toxic and we do not believe it should be on the CEPA schedule 1.

Mr. Corey Tochor: Thank you.

Along those lines, have you heard of my private member's bill? Do you have a view on removing the label, inasmuch as we've just heard that you're against the label the Liberals have used, and the courts have ruled that the way they've tried to ban plastic is against the science and against our Constitution?

What's your view on that private member's bill?

Ms. Sarah Marshall: We are aligned that the process the federal government used to list plastic manufactured items on CEPA schedule 1 wasn't appropriate. As well, I think Mr. Thurlow summed that up well. We do support the approach that the federal government could take to relook at that issue.

Of course, on the remaining matter that the RPUC group, including Nova Chemicals, has before the court, I can't comment any further.

● (1620)

Mr. Corey Tochor: Thank you so much for your testimony today.

The Chair: Thank you.

Now we will turn to MP Longfield for five minutes, please.

Mr. Lloyd Longfield (Guelph, Lib.): Thank you, Chair.

Thank you to the witnesses for being here and offering your expertise. I was involved with the CEPA discussions in the environment committee, and I know that we did get contributions on where we've landed in terms of the definition of “toxic”.

In terms of science, I really am interested in how we engage with our science community.

Ms. Marshall, you've piqued my interest there.

We had the University of Guelph at our last meeting. They were talking about what they've done in terms of bioscience in developing new resin and also in using filler. They didn't specify, but they're things like leftover stalks from grain fields as filler to substitute for plastic polymer.

I'm wondering about the vertical. I know that Nova Chemicals or Dow has a specific vertical. The ownership of Nova being with the Mubadala Investment Company in Abu Dhabi, I'm guessing there isn't a lot of cornstalk in the vertical.

Could you comment on how you would work with universities that don't have products in your vertical?

Ms. Sarah Marshall: We're certainly interested in working with Canadian universities on innovations in plastics recycling. We've committed to growing our plastics recycling business at Nova Chemicals. We're starting discussions with four different universities across Canada now to work on the innovation necessary both to scale and to improve economies and to improve environmental outcomes and improve costs for mechanical and advanced recycling.

Mr. Lloyd Longfield: I just have to plug the Bioproducts Discovery and Development Centre in Guelph. They have developed new carbon black through nanotechnology using carbene. Good technology is being developed, but my concern is that it isn't at a scale that would help with recycling components or keeping the polychains in sustainable ways.

Could you comment on that?

Ms. Sarah Marshall: There are two different streams of recycling that we talked about. Mechanical recycling is here now, and you can recycle materials that are similar to one another. In our Indiana recycling facility, we'll be using polyethylene film and convert it into recycled polyethylene that can be used in films again.

Advanced recycling is key to the other materials and mixed materials you're speaking of.

Mr. Lloyd Longfield: You're leading to my next line of questions, and thank you for that, because it was that design of the advanced recycling, the chemical—or otherwise known as advanced.

Dr. Lessard, at the University of Ottawa, I'm very interested in the work you're doing in biocomposites for conductors.

When we look at the challenges of advanced recycling being high cost, high energy, can polymers or are polymers being developed that would be designed specifically for recycling using advanced recycling methods? I mean things that are easier to break down, in other words.

Prof. Benoit Lessard: Thank you for that.

This is where the research is focused. This is where I, personally, in my group, develop next-generation electronic materials based on polymers. One of our interests is more sustainable polymers or polymers that can be, let's say, biodegradable. The idea is, if we're building some smart sensors for packaging, for example, that could detect different compounds that come off decaying meat, it could tell you whether or not your food is spoiling. These packages are going to end up being recycled or degraded.

We're trying to develop new materials or electronic materials from biodegradable materials so that, hopefully, we can make non-toxic materials that will degrade when we put them in the environment. That is the goal.

Mr. Lloyd Longfield: It seems to me we're focusing on the chemical breakdown and using that part of the process versus, earlier in the stream, asking what could be compatible with the existing processes. Is that where you're heading?

● (1625)

Prof. Benoit Lessard: Yes, it's designing the material for end of use or end of life.

Mr. Lloyd Longfield: Thank you very much.

Thank you, Chair.

The Chair: We now will turn to MP Blanchette-Joncas for two and a half minutes, please.

[*Translation*]

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

Mr. Lessard, it's time to do some science-based myth busting around plastic toxicity, and I need your help. When plastic decomposes in the environment, can it be toxic?

Prof. Benoit Lessard: Yes, it depends on the polymer.

Mr. Maxime Blanchette-Joncas: Thank you. Can you give us more information? As I understand it, there are different types of polymers, but I'd like to know whether heat, toxic fumes, carbon monoxide or dioxins, for instance, can be toxic to people or nature when released into the environment.

Prof. Benoit Lessard: Many polymer elements can be toxic. It depends on how the polymer is destroyed or recycled. As you said, the vapour that's released can be toxic, and if the product itself breaks apart, it can end up in the environment and be toxic to animals if they absorb it.

Mr. Maxime Blanchette-Joncas: I see. From a scientific standpoint, is there any other information about the toxicity of decomposing plastics you'd like to share with the committee?

Prof. Benoit Lessard: At the University of Ottawa, one of the areas we would like to move towards, or have started moving towards, is figuring out which components are toxic and which ones aren't. The idea is to start with non-toxic components to make the polymers or plastics we use. We have to think about the end of a polymer's life cycle from the beginning, before it's made.

Mr. Maxime Blanchette-Joncas: Thank you.

When it comes to the toxicity of decomposing plastics—microplastics, in particular—I can sum things up this way: They end up in the environment, they are ingested and they wind up in our brains, to say nothing of the additives. Therefore, producing more plastic will do more harm to the environment and human health. It will have a toxic impact.

Prof. Benoit Lessard: Yes, more plastic increases the likelihood of that happening.

Mr. Maxime Blanchette-Joncas: All right. Thank you.

[*English*]

The Chair: That's great. Thank you very much.

Now we will turn to MP Cannings for two and a half minutes.

Mr. Richard Cannings: Thank you, and I will now turn to Ms. Marshall.

You mentioned that Nova had invested in Merlin Plastics in British Columbia and also mentioned that we need to really upgrade the volume and quality of the recycled plastic stock that a company like Merlin would use. What do you think are the major challenges there? I know there are a number, but where could we really focus our efforts to really get that volume and sorting quality up to make sure that companies like Merlin can thrive?

Ms. Sarah Marshall: Our recommendations are to support the EPR legislation across the provinces in Canada and help to scale those in terms of the quantity of plastics and then the quality of those sorted plastics that are available in Canada. Once those plastics can be scaled and sorted, there are recycling technologies that exist today and that can continue to be improved tomorrow to process those into recycled plastic that can be used again. Our challenge is in the infrastructure and collecting that plastic that can be used in recycling again.

Mr. Richard Cannings: Is this one of the continuing challenges Canada has in terms of getting all the provinces online doing the same thing, so a company that wants to work across the country is working with the same materials, the same volumes, the same mandates?

Ms. Sarah Marshall: Harmonize.

Mr. Richard Cannings: Where is the regulatory effort that needs to happen to make it easier for everybody to do the right thing?

Ms. Sarah Marshall: This is a co-operative effort that needs to happen across the federal government and the provinces to work towards harmonization on the collection of plastic that can be used in recycling again, on how it is labelled, on how it is calculated in terms of its content in the recycled product, and ultimately on how it's scaled for recycling technologies. It is a co-operative effort.

● (1630)

Mr. Richard Cannings: Is it a coincidence that Merlin is based in British Columbia because of the volume of recycled plastic that's available there, or is it because of what British Columbia has been doing?

Ms. Sarah Marshall: Merlin Plastics has been in British Columbia for a long time and has successfully run a recycling business for a long time. They were a natural partner for Nova Chemicals to start our journey in recycling and to work with them to improve quality and help them bring that product to the market. As a result of that co-operation, we've continued on our recycling journey and are building our own recycling facilities, the next with a partner, and we look forward to scaling that some more and continuing to supply that demand from the marketplace.

Mr. Richard Cannings: Thank you.

The Chair: That's more than our time. Thank you so much.

Thank you to all of the witnesses. You may also submit additional information through the clerk. I'll suspend briefly now to allow the witnesses to leave, and we'll resume with our second panel.

● (1630)

(Pause)

● (1635)

The Chair: Welcome back, everyone.

For those participating via video conference, click on the microphone icon to activate your mic, and please mute yourself when you are not speaking. For interpretation for those on Zoom, you have the choice at the bottom of your screen of floor, English or French.

It's now my pleasure to welcome, from the Calgary Co-operative Association Limited, Rob Morphew, health, safety and environment director. From École de technologie supérieure, we have Dr. Annie Levasseur, professor and scientific director, by video conference. From Leaf Environmental Products Inc., we have Jerry Gao, who is the founder. Welcome to our committee.

Up to five minutes will be given for opening remarks, after which we will proceed with rounds of questions.

Mr. Morphew, the floor is yours for an opening statement of up to five minutes.

Mr. Rob Morphew (Health, Safety and Environment Director, Calgary Co-operative Association Limited): Thank you, Chair.

Good afternoon. Thank you for your time and for allowing me to come and speak with this committee.

As the health, safety and environment director with Calgary Co-op, I was charged with putting this program into place, taking the time to research the product that needed to be there and bringing it forward. I hope this committee will see the benefit and the effort of individuals and businesses in removing plastics where they can find viable alternatives.

Owned by members, Calgary Co-op is now the largest retail co-operative in North America with over 440,000 members, 3,850 employees, assets of $627 million and over $1.2 billion in sales. Our locations in Calgary, Airdrie, Cochrane, High River, Okotoks and Strathmore include food stores; pharmacies; gas bars; car washes; home health care centres; wine, spirits and beer locations; cannabis locations; Community Natural Foods; Beacon Pharmacy; a majority of Care Pharmacies; and Willow Park Wines and Spirits.

When we introduced this fully compostable bag in April 2019 and fully eliminated single-use plastic shopping bags from our lines of business in January 2020, we started down a path to eliminate 33 million plastic bags going to landfills annually, and since then, we've removed over 100 million plastic bags from landfills since we introduced 100% compostable shopping bags in 2019. We did this because we believed strongly that this was the right thing to do for our community and for our planet.

In creating this program, we worked closely with the City of Calgary to ensure our bag design would be compatible with local composting facilities and would break down easily within their 28-day cycle before we introduced them into the community. We continue to work with the City of Calgary to ensure that they still break down in its facilities. Our bag contains a stamp of approval from the City of Calgary as evidence that it will accept them at its facilities.

Following our switch to the fully compostable bags, we were thrilled to hear from our thousands of members that they found multiple second and third uses for our compostable bags. These included bin liners for the household bins, using them for pet and garden waste or bringing stuff back to the store if they needed to do that. There were multiple uses. They weren't just taking them home and throwing them into the recycle bin. It was always our hope that the public would embrace these bags and would find ways to incorporate them into their daily lives, and we're pleased to see Calgarians doing just that. In addition to introducing the compostable bags, we also continue to encourage our members to bring in or to purchase reusable shopping bags to carry their groceries or other purchases in, providing options for our members to take their groceries home.

By all accounts, our transition away from single-use plastics has been a resounding success and has been an example of how innovation can be used to solve some of our most pressing climate challenges, which is why we were shocked to learn that our bags were going to be included in the federal government ban, nationwide, even though they contain no plastics or microplastics. Even more bizarre is the fact that we would still be permitted to sell our compostable bags on shelves in bundles, but not individually at the till. To us, this makes no sense if the government's goal is, as they stated publicly, to eliminate single-use bags from the environment, regardless of their composition or characteristics.

Even after the federal ban took effect, our bags could still be sold to the consumer, who continued to use them in a multitude of ways. What's more, other single-use plastic bags, bin catchers and compostable bags on the market will also remain on store shelves, failing to address the problem that the federal government is claiming it wants to resolve, which is to get rid of plastics.

It is true that not all compostable bags are created equal. Some do contain microplastics and fail to break down quickly in the natural environment, but the solution should not be to issue a blanket ban on all compostables. Instead, we've offered to work with the various levels of government to create a set of universal standards for the composition and the labelling of compostable bags to ensure that only those that meet the most stringent of criteria would be allowed to be in circulation.

This would offer Canadians a choice when it comes to how they reduce their reliance on single-use plastics beyond just the cloth-like reusable bags, which take a significant amount of energy to produce, and it would encourage continued innovation in this space. It defies logic to simply ban compostable options when there can and should be an important effort to eliminate single-use plastics.

Environment and Climate Change Minister Steven Guilbeault has said that his department will not consider providing Calgary Co-op with an exemption to the single-use plastics ban, nor will he work with us to create standards that would allow for the use of the compostable bag options. We view this position as both disappointing and short-sighted. We should be providing Canadians with as many alternatives to single-use plastics as possible, not limiting them to just one and banning all others.

● (1640)

It's only a matter of time before the playing field shifts again and further innovation will be required to keep up. Furthermore, what kind of message does this send to businesses across industry sectors when the government outright rejects new and innovative ideas meant to solve complex problems and improve the lives of Canadians and instead imposes a one-size-fits-all solution that fails to see the forest for the trees?

● (1645)

The Chair: That's your time, sir. You'll have a chance to answer more questions.

Now I would like to turn it over to Mr. Gao for a five-minute opening.

Mr. Jerry Gao (Founder, LEAF Environmental Products Inc.): Thank you.

I'm Jerry Gao. I'm the founder and president of Leaf Environmental Products Inc., a Calgary-based company founded in 2017 with a mission to eliminate single-use plastics through compostable alternatives.

I've been in the industry of plastic reduction since its infancy in Canada. I've served in various roles in my capacity, including as co-chair of the environment, health and safety committee for BOMA, the Building Owners and Managers Association, where, among other things, we provided policy guidance on waste management for about two billion square feet of office space across Canada. My company, Leaf, has also worked very directly with municipalities around Canada, such as the City of Calgary as well as the City of Winnipeg, on the effectiveness of compostable polymers in municipal composting facilities.

My goal here is just to provide a realistic and accurate perspective of the issue for my industry and hopefully help the policy-makers in making responsible policies.

First, I'll discuss the current policies in Canada and their impacts. ECCC has actually done a very good job on the impact assessment. On page 2574 of the Canada Gazette, part II, volume 156, number 13, table 6 tells us that in the next 10 years with this policy, we will eliminate 1.5 million tonnes of plastics from our environment. However, on the next page over, in table 7, we're told that 2.9 million tonnes of additional waste will be generated as a substitute for the plastics that we eliminate. Out of that 2.9 million tonnes, 2.6 million will be paper products, including paper bags as substitutes for plastic shopping bags.

When we compare the numbers, we actually generate double the amount of waste that we seek to eliminate. By the estimates of Environment Canada, we use about 15 billion bags a year in Canada. At about 700 paper bags per tree, you're cutting down 200 million trees in the next 10 years just to make paper bags. We went from paper bags in the seventies to plastic bags, and now we're back to paper bags. We've said that we're going to plant two billion trees by the end of 2031. This is clearly contradictory to what our intents are with the environment.

Since we also conduct business outside of Canada, I want to provide information on other jurisdictions. Out of all the OECD countries, Italy and Germany excel the most at recycling and waste policy. Both have opted to include and use compostable bags as an innovative product to replace these plastics. Since January 2011, Italy was able to eliminate all of its single-use plastic bags, including produce bags at supermarkets, leading to 280 billion plastic bags eliminated from the environment in the last 14 years their policy has been in existence. Not only that; they've also established the western world's leading industry in compostable resins. The industry is growing very quickly every year. With our abundant resources and technology, we can take advantage of that huge explosion in plastics innovation.

Last but not least, I want to provide some reasonable, realistic recommendations for our policy-makers here. First, we recommend that compostable bags be recommended as the substitute to single-use plastic bags instead of paper bags, as their global track record really proves their efficacy.

Second, we recommend that the Government of Canada abolish the term “non-conventional plastic” as a catch-all category for everything that wasn't examined, and perform specific and detailed analysis of current compostable polymers and their applications.

Last but not least, we recommend a dedication of additional resources and research to innovative solutions in the reduction of plastic waste. Before this policy took effect, I worked with the folks at Environment Canada extensively to provide information on compostable polymers. I provided numerous pieces of scientific evidence that there is absolutely no plastic in our products, so I was quite shocked that my products were lumped into this non-conventional plastic category.

Again, I later learned that it was a catch-all category for everything that wasn't looked at. It seemed to me that more than a decade of research, data and innovation was written off for the sake of “optics” or “visibility”, which I'd heard repeatedly during my consultations with the department.

However, not all was lost. Our mayor, Mayor Jyoti Gondek, and Minister Rebecca Schulz have both issued letters of support for our compostable bags, as both have used them at home and can attest to their ability to break down into compost.

● (1650)

In conclusion, I want to thank the chair and the rest of the committee for this wonderful opportunity today. Compostable bags are sold across the country in most cities as bin liners. These shopping bags are literally the same as the bags that are allowed in Ottawa's green bin program. I was not able to show a video today, but I do have a time-lapse video of our compostable bags breaking down into biomass as quickly as three days in the bin.

Let's all use science, innovation and reason to solve these problems.

The Chair: That's your time, Mr. Gao.

Mr. Jerry Gao: Let common sense prevail.

Thank you.

The Chair: I'm sorry, but that's your time. You'll have a chance to answer questions.

Now we'll turn to our final witness.

Dr. Levasseur, you have the floor for five minutes.

Thank you.

[*Translation*]

Ms. Annie Levasseur (Professor and Scientific Director, Centre d'études et de recherches intersectorielles en économie circulaire, École de technologie supérieure): Good afternoon and thank you.

I am a professor at the École de technologie supérieure, or ETS for short, and the Canada research chair in measuring the impact of human activities on climate change. My comments today are based on that expertise, which focuses on measuring the environmental impact of human activities and using a systemic approach to guide decision-making.

I'm also the scientific director of the Centre d'études et de recherches intersectorielles en économie circulaire, or CERIEC, based at the ETS. CERIEC works to move the circular economy forward through interdisciplinary scientific research, as well as training, dialogue and knowledge transfer initiatives, in order to maximize the benefits for economic stakeholders, governments and society.

CERIEC's research is conducted primarily through an ecosystem of sector-specific labs to accelerate the transition to the circular economy. Each lab brings together stakeholders across the value chain in a given sector, ranging from research institutions and governments to industry and members of civil society. Through co-creation workshops, they develop a series of collaborative research projects. During the workshops, participants identify the barriers to the circular economy within the sector. They can be technological barriers, of course, but they can also be regulatory, economic and social barriers. That information is then used to come up with potential solutions, which in turn become the focus of research projects, in co-operation with partners on the ground.

Plastic circularity is not possible without taking into account the entire material life cycle, both for plastics and for the alternative materials proposed. The risk of shifting problems is high if that principle isn't adhered to, as recent history has shown. We've seen, for example, that producing certain bioplastics can be more energy-intensive. We know that producing some biosourced materials on a large scale causes other kinds of environmental problems, including deforestation, biodiversity loss and eutrophication in the case of agricultural biomass production.

The concept of plastic circularity extends far beyond recycling. The circular economy is more than just recycling. It's a model whereby production and use are aimed at maximizing resource use at every stage of the product life cycle, in accordance with the principles of a circular economy, in order to reduce the environmental impact.

The circular economy model entails a range of strategies. The focus cannot be on recycling alone. To begin with, it's important to rethink how we make and use products to ensure minimal resource use, regardless of the material chosen. Circular economy strategies include eco-design, responsible sourcing policies and maximized operational efficiency. Also important is implementing strategies that allow products to become more use-intensive, such as the sharing economy, in which goods are shared by many users. Another key principle is extending product longevity as much as possible. That means moving away from single-use materials, and promoting the repair, reuse and refurbishment of all materials. Ultimately, when a material can no longer be reused, its value as a resource should be leveraged through recycling, valorization and symbiotic relationships within the industry.

The barriers to the circularity of plastics are many, so it would certainly be useful to study them using a model similar to that of the CERIEC labs. Some challenges are, of course, technological. Existing processes can't be used to effectively recycle some plastics that have reached the end of their life cycle, so further research is needed to come up with the right processes. In many cases, though, the technology is available but other kinds of barriers exist. This is a major issue, and I've spoken with many in the industry about it. The geographic distribution of plastics at the end of their life cycle is very spread out. They are all over the place, in homes and businesses. In order to be profitable, recycling plants have to operate on a large scale. That means having to ship plastics over long distances, which doesn't make economic sense.

Developing other circular economy strategies beyond recycling is key. If we want to be more disciplined in using resources of any kind, we have to do a better job of designing products. In other words, they need to be made with the right materials in the right place, they need to be reliable and repairable to prolong their longevity, and they need to allow for the separation of component materials so they can be recycled at the end of their life cycle.

Something else that's important is putting the right financial and regulatory incentives in place to help the reuse, refurbishment and recycling sectors develop. As long as landfilling materials is cheaper than recycling them, advancing recycling will be a challenge. Similarly, as long as manufacturers continue to sell products that can't be repaired, people can't be expected to prolong the lives of those products. That applies to plastics and other materials alike. To help the plastic circularity sector develop more quickly and improve the circularity of materials at every stage of the product life cycle, the government should devise a road map. This will not only ensure that efforts are better coordinated, but also foster measures that have a meaningful impact.

● (1655)

Thank you.

[*English*]

The Chair: Thank you very much, Dr. Levasseur.

Thank you, all of you, for your opening remarks.

I'll now open the floor to questions.

Please be sure to indicate to whom your questions are directed.

We'll kick that question round off with MP Tochor for six minutes, please.

Mr. Corey Tochor: Thank you, Chair.

Thank you to our witnesses.

I'm going to start with the Calgary Co-op.

Prior to the bags of the Calgary Co-op being banned, did your members and customers know they were getting a compost bag when they purchased these bags at the till?

Mr. Rob Morphew: Yes, they did. Despite the opinion of the members of Environment and Climate Change Canada that our customers or members weren't informed that they were getting compost bags, they were.

We took a lot of time to ensure that. Many emails were sent to our members, explaining that we were switching to compost bags. As well, our cashiers were trained to ask the customer if they wanted to purchase a compostable bag for 15¢ to take out their groceries. If they answered no, they were then asked what would they like to use, including encouraging them to purchase another reusable bag if they didn't bring one in with them.

We also ensured that our bags were clearly marked as compostable and have the BPI certification criteria identified on them. As you can see on the bag, if you can't tell that it's compostable.... I don't know if you can see everything on it, but it's very compostable. It is clearly identified. It is green. There's colour that stands out from everything else that is there. BPI certification meets ASTM 6400 and ISO 17088.

The Bureau de normalisation du Québec also has a compostable plastic standard to ensure that compostable materials will not affect the environment or the compost product.

Mr. Corey Tochor: It sounds like they're aware.

As much as we have one Albertan here, the rest are from Ontario and other places. What was the push-back or the general mood of the city when they found out that it was bad enough that they couldn't use what they were used to, but the replacement one, which was compostable and met all of the requirements the government set forward, was still bad? What were the comments from the public or a typical customer?

Mr. Rob Morphew: Our members were very disappointed. We spent four years getting them ready, getting them into those bags. They grew to love them. They found them very easy to use. It allowed them to purchase three or four or however many they felt they could use in a grocery shopping trip.

When the ban came out, we told them: “Guess what. You can't buy them at the till any more and you're going to have to buy them down on the shelf or wherever.” We got a lot of negative comments. There were a lot of comments on social media about how stupid it was that they were being banned. There was a lot of support for us in terms of getting communication to other people and saying, “Hey, this is stupid. This is something that shouldn't be done.”

Mr. Corey Tochor: Just to confirm, did you say the former mayor of Calgary or the NDP leader in Alberta came out for this?

Mr. Rob Morphew: It was the current mayor. We introduced them with the current mayor.

Mr. Corey Tochor: Why did you make the switch? Was it just a regulation, or was there a motive for the Calgary Co-op?

Mr. Rob Morphew: We wanted to get out of giving away plastic bags at the till, and it was the right thing to do. Our members and our customers have the opportunity at an annual general meeting to tell us what they would like to see us do, and environmental conscience and social conscience were always pieces of it. They said, “Hey, we could do something to eliminate the number of plastic bags you're giving out.” We went down that path, found them and did that.

Mr. Corey Tochor: I've seen those bags before, but I didn't see them in person. At the break, I'm going to want to take a little closer look at them.

Our consumers can still buy the bags. They just can't buy them at the till. Is that right? It's not at the convenient time, once you think about it.

Mr. Rob Morphew: They can buy them. Down the aisle, for example, there are rolls of five and 10. They can buy them, take them home and do whatever they want with them.

Yes, they can still get them. They just can't get them with our cashiers putting groceries in them so that they can go out with them. They have to figure out a different way to carry out their groceries.

● (1700)

Mr. Corey Tochor: It's something when the government forces industry and Canadians to change and makes all these hoops to jump through. You guys go out, find a producer, get it verified that it's compostable and that there's no plastic and you're still shunned. It's the lack of common sense that is so frustrating out here.

What does your board believe the next steps are? What is the Calgary Co-op going to do to, hopefully, keep...? I encourage you to carry on to find a replacement, but what are the next steps?

Mr. Rob Morphew: We're going to continue to sell them to our customers in five-packs and 10-packs. We're hoping that common sense will kick in and remove compostable plastics from this ban.

One of the comments that was made—and I think Jerry alluded to it as well—is that it's the optics: This looks like a till bag and, therefore, it has to be banned because it looks like one. Just because it looks like a truck that could do damage to something, does it get banned? It's one of those things. It shouldn't be banned because it looks like something.

It should be banned if it doesn't meet the criteria, but it's perfectly acceptable in the environment. I do check regularly with both our recycle facility in Calgary and the compost facility to see if there are problems with this bag. For the recycle facility, I've asked them, “Are you getting a lot of these bags coming in there and are they are cluttering up your waste stream?” The comment I got was, “If they were, we'd tell you.” I'm not getting any feedback from them on that side.

On the other piece, the city is not saying, “Hey, you know what? They're cluttering up. It's not getting through the 28 days. We have to keep sending it through to get it to compost.” That information tells me they are breaking down.

Mr. Corey Tochor: It's just signalling. It's similar to other members here who saw that for the first time. When ECCC saw that bag for the first time, did they lose their minds? “Oh, plastic bags are back. You can't have this.”

What were their comments like?

Mr. Rob Morphew: We showed them what they were and all of that sort of stuff. I don't think they gave us much of an attitude.

The Chair: That's our time. Thank you.

We're now going to turn to MP Kelloway for six minutes.

Mr. Mike Kelloway (Cape Breton—Canso, Lib.): Thank you, Madam Chair.

To our witnesses here in person, it's great to know you're from Calgary. I went to school in Calgary. I took my master's there—my graduate degree—and taught at the University of Calgary. I'm going to try to get to you in the latter part of my time.

However, I want to go to Dr. Levasseur.

I noticed, here in my notes, that you're the Canada research chair in measuring the impact of human activity on climate change, so I think your testimony to this committee is extremely relevant. Unfortunately, there are still people in society who do not believe that human activity leads to climate change.

Knowing we only have five minutes or so, could you please provide a summary of your most recent findings with regard to how human activity drives climate change?

[*Translation*]

Ms. Annie Levasseur: Yes.

In my research, we talk about climate science. We examine climate models, which show that greenhouse gas emissions have an impact on global temperature. My job is to study the various human activities by sector or product life cycle. Using climate models, we quantify the greenhouse gas emissions those systems produce and their effects on climate change.

Thanks to those tools, we can compare scenarios, for products or product life cycles, and examine entire projects and even sectors. We can look at the scenarios to identify the best ones, those that lower greenhouse gas emissions.

[*English*]

Mr. Mike Kelloway: Thank you for that.

Let's drill down a little deeper.

Based on your education, which is extensive, and your research, can you expand on some of those predictions of how the environment will change if we don't change the way we use plastics in our society?

[*Translation*]

Ms. Annie Levasseur: The problem with plastic is that when it ends up in nature and begins to degrade, it disintegrates into particles—microplastics—and various organisms ingest those particles. There's still a lot of research being done on that, but we know that is a problem specific to plastic.

In addition, it's important to consider the entire plastic life cycle, from production to use. Extracting the raw materials used to make plastics, as well as many other materials, is very energy-intensive, so that is a major consideration. Chemicals are used to extract those raw materials. Just as ore is extracted to manufacture metals, petroleum is extracted to produce plastic. All the forest equipment used to cut the trees is another factor. The chain of production involves a range of energy inputs or chemicals.

No matter which consumer good we look at, we quantify the greenhouse gas emissions as well as the other pollutants, which cause other problems, so we can do our comparisons. Such pollutants are found in the plastic production chain, on top of the microplastics, which can cause problems if ingested at the end of their life. Metals involve other kinds of problems. Obviously, there's a risk of shifting those problems if we aren't careful. The type of problem and extent of the problem depend on which products or systems are being compared.

● (1705)

[*English*]

Mr. Mike Kelloway: We've heard from a few witnesses that effective recycling is not going to cut the mustard. It's not going to be sufficient to curb the evolution of climate change. I'm wondering if you agree with that—whether you do or don't.

If not, what measures or practices for plastic would you recommend to reverse course or mitigate the situation?

[*Translation*]

Ms. Annie Levasseur: There is no single measure that will fix the problem, whether we are talking about recycling plastic or some other material. It's one of the many measures that must be put in place in order to reduce greenhouse gas emissions.

There's no doubt that recycling plastics prevents having to manufacture virgin plastic, thus generating less pollution. Recycling obviously has benefits, but since every activity produces emissions, plastics recycling alone won't get us where we need to go in terms of meeting our ambitious and necessary climate targets. That's why I underscored the importance of transitioning to a circular economy, which means using fewer resources, and maximizing and prolonging product longevity. All of those things are very important.

[*English*]

Mr. Mike Kelloway: Let's stick to that with one minute left.

In terms of your comments around the circular economy, you have three recommendations to make to government, hypothetically. Let's not make it hypothetical. We're here. You have three recommendations to government. What would they be?

[*Translation*]

Ms. Annie Levasseur: First is developing a circular economy road map for the various sectors. We're talking about a comprehensive problem, so every department will have a role to play. The road map needs to set out the main goals and identify the barriers to circularity at every stage of the plastic life cycle. The types of actions also need to be laid out, from restrictive regulations to prohibit certain things to eco-taxation incentives. A wide range of responses or actions are possible, but the key is developing a road map that addresses the problem in a comprehensive way, setting goals and targets that can be monitored, and putting in place the necessary regulatory framework.

[*English*]

Mr. Mike Kelloway: Thank you very much.

The Chair: We'll now turn to MP Blanchette-Joncas for six minutes, please.

[*Translation*]

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

Thank you to our witnesses for the second hour.

Thank you for being here, Ms. Levasseur, and I commend you for your commitment to the well-being and protection of our environment.

In previous meetings, the committee has heard about the pollution that recycling plastics generates. Sometimes fixing one problem creates a new one, and you mentioned that in your remarks. From your perspective as the Canada research chair in measuring the impact of human activity on climate change, could you elaborate on that?

Ms. Annie Levasseur: Are you asking whether recycling can reduce pollution?

Mr. Maxime Blanchette-Joncas: Yes, but as I understand it, there are other solutions that cause new problems.

Ms. Annie Levasseur: Yes, absolutely. It's worth noting.

When we want to solve a problem in good faith, but fail to take into account the life cycle of both types of material—the old plastic products and the new material proposed as a replacement—this can have a ripple effect. We've repeatedly made that mistake in the past. We want to address the issue that arises when a material that harms the environment reaches the end of its life cycle. We then replace the material with something that causes other issues, such as higher energy consumption in a particular location. In Canada, these methods have been increasingly used over the past ten years or so, both to guide the industries and to inspire public policy decision-making.

● (1710)

Mr. Maxime Blanchette-Joncas: Thank you.

I would like to hear your recommendations on the balance between incentives and restrictions. Other countries are more progressive in this area. Norway, for example, has increased its recycling rate by taking the opposite approach. The producers and suppliers strive to comply with recycling systems. This approach encourages people to standardize packaging and containers and also to pursue green design in order to obtain a recycling certificate.

I would like to hear your thoughts on this type of suggestion.

Ms. Annie Levasseur: These are great initiatives. There are indeed many barriers to recycling, such as the dispersal of material all over the place, as I said, or the identification of certain plastics. Single-use plastics are identified, but not the other types, which makes sorting difficult. There are many barriers. If we were to make packaging standard and implement every possible measure to simplify the process, from the user to the recycling facility, we could certainly improve the situation.

Green design helps to mitigate the many effects of a product's life cycle. I touched on a few ideas, such as increasing the use of products to extend their life cycle. Around 80% of environmental effects are identified at the design stage and are difficult to change afterwards. These green design practices are extremely important.

Mr. Maxime Blanchette-Joncas: Thank you.

There are other examples of ecofiscal measures, notably in Norway. We know that many municipalities in Canada—and many in Europe too—have introduced incentive pricing for waste. When people, industries, businesses and institutions dump their waste, they pay a tax based on the polluter pays principle. This encourages them to recycle and compost much more.

Ms. Annie Levasseur: Yes, this is important. As I said, as long as landfilling is inexpensive, it will be the preferred solution. The costs involved in collecting, sorting and transporting products to recycling facilities mean that, ultimately, the secondary material that comes out can be more expensive than the virgin material. This can mean additional costs for people who must dispose of this waste. They'll then end up using landfills. This barrier has been identified in a number of our laboratories. It remains a concern that the environmental damage caused by the final disposal of all types of plastics isn't factored into the cost of landfilling.

Mr. Maxime Blanchette-Joncas: Thank you.

Would you say that Canada is a leader in the development of circular economy models?

Ms. Annie Levasseur: No, Canada isn't one of the leaders. In Europe and some Asian countries, things are more advanced. We're trying as hard as we can to get there, but I wouldn't say that Canada ranks among the most advanced countries in this area.

Mr. Maxime Blanchette-Joncas: Thank you.

Let me give you a more specific example. The largest infrastructure project in Canadian history was the purchase of the Trans Mountain pipeline. This pipeline will transport 890,000 barrels of oil per day. In your opinion, is this a circular economy model? In my opinion, the $34 billion paid out of Canadians' taxes could have been used to implement other innovative initiatives.

Ms. Annie Levasseur: In my opinion, from a climate impact perspective, it certainly isn't the way forward.

Mr. Maxime Blanchette-Joncas: From your scientific perspective, would you say that the decision was based on science or on an economic priority?

Ms. Annie Levasseur: We must reduce energy consumption across the board, throughout our economy. When we look at the curves, we can see that it's only increasing. We're indeed increasing renewable energy production. However, we aren't replacing fossil fuels, because the demand for energy keeps growing quickly. In terms of greenhouse gas emissions, we must use energy more sparingly and make the transition to renewable energy.

Mr. Maxime Blanchette-Joncas: I gather that the federal government is doing the opposite of what science has taught us.

● (1715)

Ms. Annie Levasseur: On that note—

[*English*]

The Chair: That's our time. He'll have another round.

MP Cannings, you have the final six minutes.

Mr. Richard Cannings: Thank you.

Thanks to all of you for being here today.

I'll start with you, Dr. Levasseur, just to try to get some concrete ideas here on what specific things governments, the federal government and provincial governments, need to do. We have a policy now or a target of eliminating 75% of our plastic waste by 2030, I think. We're a long way from that, and there are all sorts of problems. One is getting people to actually recycle the plastic. One is how we sort it when we get it. We have to create enough volume so that the companies that are recycling the plastic can be economical.

Where do we begin? I think Mr. Kelloway tried to get at this as well. We need specific ideas. Do we first have to tackle the harmonization across provinces? Would that be the first thing to do?

We hear that some provinces, I think B.C. and Quebec, are ahead of the game. What are they doing better that other provinces need to get on board with? How we get them on board?

[*Translation*]

Ms. Annie Levasseur: I'm not an expert on the plastics value chain. That said, I know that a number of technologies play a role in recycling plastics, but that barriers often come up in other places.

For example, transportation costs are prohibitive. The plants aren't located close to centres where the material can be recovered. The problem lies in having to opt for large plants for the sake of profitability, rather than for more local loops that prioritize the recovery of material. Moreover, as I said earlier, the lower cost of landfilling provides no incentive to set up more local loops. It would be a good idea to consider a policy that includes these costs in the price of the final disposal of waste material.

[*English*]

Mr. Richard Cannings: Thank you.

I'll turn to you now, Mr. Gao, and perhaps ask you to reiterate, because you were speaking very quickly in your presentation. I know you had a lot to say. What exactly were the government's concerns about your product that led them to this decision? You obviously think they were in error. Mr. Morphew mentioned the BPI certification, and I was trying to look it up. I think the "P" in there means plastics. Is that a problem when you call something plastics even though it may not be?

Perhaps you could reiterate what the government's concerns are and why your product and the product that Mr. Morphew is using lie outside those concerns.

Mr. Jerry Gao: Thank you for the question, Dr. Cannings. I'm a huge fan, by the way.

I'm very glad you asked that question. I always try to keep my interactions positive, and I try to give information in a positive way. Objectively, we've had many meetings with ECCC, and in the beginning, I think they were quite friendly. ECCC was looking to collect information, so we provided information from peer-reviewed studies on how these products fared in different jurisdictions. We even gave ECCC the local jurisdiction, where the City of Calgary confirmed that these products do degrade and become compost in the facility.

Their first concern was that it doesn't work. It's not that we're claiming something that's not true. We went to the local facility, and we asked, "Why don't you test this?" We've tested it ourselves in independent labs under ISO 17088, which is ASTM D6400. That's the standard for the degradability of compostable plastics or compostable polymers. We proved that, and then they came back to say.... I believe the word they used was "optics", because they told us they were still going to go ahead and do this.

I said, "I'm guessing you have a green bin at home. Do you line it with something?" The answer was, "Yes, I go to the shelf and I buy a compostable Glad bag from Safeway or a supermarket." I said, "These are exactly the same thing. There's not any difference between them." The only difference is that there are handles on ours, which make it easier for the consumer to put them in the little bins. That is why a lot of people in Calgary were quite upset when it was banned. It's because instead of paying 30¢ for a Glad bag off the shelf, people could pay 10¢ at Calgary Co-op or any of our partner stores and grab them for way less and then reuse them as a bin liner at home.

I then try to—

● (1720)

The Chair: I'm sorry. That's the time.

In the interest of being not overly late, because I know some of you have flights, I'm going to shorten the second round. We'll have the first two for three minutes and the second two for one minute.

We'll start with MP Lobb for three minutes.

Mr. Ben Lobb (Huron—Bruce, CPC): I'm going to give my time to Corey.

Mr. Corey Tochor: Thank you, Chair.

Jerry, I think the jig's up. I appreciate your comments to Mr. Cannings, but this is a plastic bag. It feels like a plastic bag. It has handles. It's stretchable. It can foreseeably take a lot of groceries.

You're lying, aren't you? This is plastic.

Mr. Jerry Gao: No. We have very conclusive evidence from when we've engaged third party labs to test for the presence of polyethylene in a spectrogram test, and we passed with flying colours.

This product is supported by our mayor, Jyoti Gondek, as well as our provincial minister of environment, Ms. Rebecca Schulz, because they use them at home.

Mr. Corey Tochor: Someone's misleading somebody then, because if the science proves it doesn't include plastics and you've jumped through every hoop this government has put in front of you, something smells here.

Mr. Jerry Gao: We're a very small company, Corey, so we don't have the lobbying power of a lot of these bigger organizations. When we try to do our work, I can only put my best foot forward and try to give answers that are backed by science.

In my brief, I'll include our reports about our own bags specifically, right here. It looks a little different from Calgary Co-op's bags, but in our bags, there's absolutely no polyethylene. There's no plastic in them whatsoever.

Mr. Corey Tochor: I know I can't apologize on behalf of Parliament, but on behalf of the Conservative caucus, I'll apologize to you, because this lacks common sense and it's a betrayal of the entrepreneurs and innovators of Canada. I'm really sorry that this is the experience you've had with the Government of Canada.

Moving on to the more formal questions I have had prepared for this meeting, you mentioned that the interactions with ECCC involved numerous references to visibility and optics. Even in your answer to the last question Mr. Cannings asked, you talked about optics.

What did you mean by that? What were the comments you heard?

Mr. Jerry Gao: I wasn't sure how to interpret it in a positive way, but I told them, “You guys realize the bin liners you use at home are exactly the same as these bags.”

The Chair: We're not to use props. Actually, the first time it was carted out, it hurt the interpreters. It hit the mic. I think we've seen the bag.

Mr. Jerry Gao: Okay. I apologize.

Mr. Corey Tochor: We still have another minute, though.

Mr. Gao, carry on.

Mr. Jerry Gao: I said, “These are the same.” They said they didn't like the optics of it. I'm just repeating what they said. It's very hard to take that in a positive light, under the circumstances. Again, we're a small company trying to make a change. That's why I'm here.

Mr. Corey Tochor: I'm sorry that was your experience dealing with this government. The next government will be much more open to innovators and entrepreneurs.

A voice: Hear, hear!

The Chair: That's your time.

Now we'll go to MP Chen for three minutes.

● (1725)

Mr. Shaun Chen (Scarborough North, Lib.): Thank you very much, Madam Chair.

Mr. Gao, I really liked what you said about staying positive, so let me ask you this: You mentioned that there's a lot of work being done around the world. Your company is looking to eliminate single-use plastics with compostable products, such as bags. You mentioned that Italy and Germany are leaders in recycling.

Can you talk about what's being done in other areas in terms of having products like compostable bags instead of what has been traditionally used—plastic bags?

Mr. Jerry Gao: Italy is a very good example. Every time they have a meeting about circular economies or waste management in the EU, Italy is one of the case studies they bring up. Back in 2011, they implemented their plastic ban. Instead of referring to paper bags, they said, “We know these compostable bags work.” They've used them as a substitute. In the beginning, they only banned shopping bags. As they saw the efficacy of this replacement product, they included produce bags in the ban as well because, by volume, that's a big item too.

That's what they've done.

Mr. Shaun Chen: One of your recommendations is to have more research and development in this area. Of course, there needs to be a lot of education on this issue. It is an evolving innovation.

Could you speak about what this could help achieve in terms of more research, development and innovation?

Mr. Jerry Gao: Instead of the conventional methods being used.... I really liked it when Dr. Levasseur mentioned that it's a system. It's such a big, pervasive problem. If you look at this room, most of the things have a plastic component to it. It's not just one or two things. We have to look at the infrastructure. We have to look at alternatives. We have to look at labelling laws and how we market and certify these.

A lot of the work has already been done, because this is not a brand-new product. It's been in circulation for almost two decades now. It takes a cocktail of solutions to solve what we're trying to do here.

Mr. Shaun Chen: Excellent.

You've also been developing compostable products other than bags.

Could you speak about some of those other products you've been working on, and what the potential is to drive change with a wide array of different compostable products that can be adopted?

Mr. Jerry Gao: One of our newest innovations is.... I'm pretty lazy. I have two young kids at home. When I'm lazy, I go to Costco or Safeway and buy one of their rotisserie chickens. It used to always be in that black plastic packaging.

We've developed a compostable packaging for hot foods that has a compostable base. It is based in fibre but lined with this film. The film provides a physical barrier so grease and all that stuff doesn't get out.

The Chair: That's your time. Thank you.

We'll now turn to MP Blanchette-Joncas for a minute.

[*Translation*]

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

Ms. Levasseur, I wonder whether you have any recommendations or solutions given that the companies that produce virgin plastic also collect bundles of recycled plastic and resell them.

Ms. Annie Levasseur: The concept of extended producer responsibility is generally sound. In your example, however, you refer to the fact that they resell them to other recycling companies. I don't have an opinion on this, since I'm not familiar with this model.

Mr. Maxime Blanchette-Joncas: That's fine. Thank you.

I'll touch on a much broader but vital topic. Some witnesses and people believe that plastics aren't toxic. I want to hear your views on this, according to your scientific expertise.

Ms. Annie Levasseur: Plastics, especially when they break down into microplastics and become easily ingested by organisms, cause serious issues. Sometimes, certain plastics also contain additives that can be toxic in nature.

Mr. Maxime Blanchette-Joncas: Thank you.

[*English*]

The Chair: Thank you.

The final minute goes to Mr. Cannings.

Mr. Richard Cannings: Thanks.

I'm going to turn back to Mr. Gao again. Following what Monsieur Blanchette-Joncas was commenting about, I read that your bags are made of polylactic acid and polybutylene adipate terephthalate. It's hard to pronounce. The first one sounds okay. Polylactic sounds like it breaks down to lactic acid, which is pretty safe, but the other one sounds scary.

What do your bags break down into, and what chemicals are produced? Is there cause for concern at any stage of the composting process?

● (1730)

Mr. Jerry Gao: It's very simple. The product itself breaks down to biomass, water and CO2.

Mr. Richard Cannings: I'm sorry. What's biomass?

Mr. Jerry Gao: It's just compost because there's starch in there to kick-start the process.

Regarding the toxicity part, with regular compost, at lot of time it's tested, the quality of the compost is tested for heavy metals and for traces of toxins. We haven't seen any negative reports arising from the end product. We can pretty confidently say, from the data we have at least, that they break down to compost.

Mr. Richard Cannings: What about structurally, in terms of microplastics?

Mr. Jerry Gao: There are no microplastics at all.

Dr. Cannings, I have a bunch of bags. I know I'm not supposed to give—

Mr. Richard Cannings: That's okay.

Mr. Jerry Gao: You can use it to line your bin, and within three or four days, you'll see it breaking down into....

The Chair: That's our time.

Thank you so much to our witnesses, Rob Morphew, Dr. Annie Levasseur and Jerry Gao, for your testimonies and participation in the committee's study of innovation, science and research in recycling plastics. You may submit additional information through the clerk.

I did want to take a couple of minutes to bring an update to the committee on the situation with the German delegation. They asked to visit us, so the clerk is working with the German embassy to organize an informal meeting with our German counterparts. The meeting will likely take place on Monday, October 21, after question period. The German delegation consists of eight MPs from various parties. They've provided the clerk with topics they are interested in discussing, which will be shared with the members by email. They're very keen to spend some time with us.

Is it the will of the committee to adjourn the meeting?

Some hon. members: Agreed.

The Chair: Thank you.