HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Environment and Sustainable Development

ENVI • NUMBER 153 • 1st SESSION • 42nd PARLIAMENT

EVIDENCE

Wednesday, May 1, 2019

Chair

Mr. John Aldag

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● (1535)

[*English*]

The Chair (Mr. John Aldag (Cloverdale—Langley City, Lib.)): Good afternoon, everybody. I'm sorry for the slightly delayed beginning to our proceedings today.

We are continuing our plastics pollution study. I believe this is our fourth session hearing witnesses. We have two more to go in our very mini-study on plastics pollution.

Today we have Chelsea Rochman, assistant professor at the University of Toronto, who is appearing as an individual. Also appearing as an individual is Calvin Sandborn, legal director at the Environmental Law Centre, University of Victoria.

Those two guests will be by video conference. Our practice is generally to go with the video conference guests first while we have the technology working. Then we'll come to our guests in person.

From Dow, we have Michael Burt, vice-president, and Mr. Thurlow, senior advisor.

Mr. Thurlow, we've seen you here before.

From the Smart Prosperity Institute, we've heard from Mr. Usman Valiante previously by phone. That didn't work well, so we're delighted to have him here in person with us today.

For our presenters and our guests, we also have Mr. Lloyd and Ms. Boucher joining us as guests and Mr. Badawey on the Liberal side.

Welcome.

We use a card system, so when you get down to one minute remaining in your time, I'll give you a yellow card. When you get to the end of your allotted time, I'll give you a red card. Don't stop mid-sentence, but wind up your thoughts so we can move on to the next person. That way everybody will get a chance to participate in the discussion today.

Each of the presenters has 10 minutes for an opening statement.

I'll turn to Ms. Rochman for an opening statement. You have 10 minutes.

Ms. Chelsea Rochman (Assistant Professor, University of Toronto, As an Individual): Thank you, Mr. Chair.

Thank you, everyone, for inviting me to speak. Also, thank you for the time you are giving to this issue and for your leadership.

I am Dr. Chelsea Rochman, a professor in ecology and evolutionary biology at the University of Toronto.

I've been researching the issue of plastic in our oceans and our environment for more than 10 years. I'm thrilled to have the opportunity to share my expertise with you on this important issue and to help facilitate the use of science and evidence in informing policy.

My work in this field began in the middle of the oceans, aboard the first scientific expedition to the great Pacific garbage patch. Every four hours we dropped our net in the water to quantify plastic at the surface, and 24 hours a day we had observers on the deck of a ship looking for large plastic debris. Day after day we were not seeing much by way of an island of plastic in the middle of the ocean, but on the fourth day, the observers called us all up to the bow for assistance.

On the bow of the ship were two rulers that were being used to count the debris as it went by. Here and there they counted a buoy, a drink tray, a fishing net, but all of a sudden there were too many pieces of plastic to count, and the two observers needed the eyes of many. Looking over the bow of the ship, we saw hundreds, thousands of smaller plastic pieces, smaller than your pencil eraser. This was not a garbage patch. This was a soup of microplastic. At that moment, I knew that this small plastic material could infiltrate every level of the food chain. I also knew this was not an issue of cleanup but of prevention.

Coming back to land, after going through those samples, we found plastic in every single one. We demonstrated a need to shift the conversation in how we were thinking about mitigation. We also demonstrated a need for more science.

Since this expedition about 10 years ago, I have witnessed our scientific field grow globally and expand from the oceans into fresh water, and then, of course, onto land. We've learned that microplastics are not just an ocean contaminant, but also a global contaminant. We've learned that they are found in the stomachs of animals big and small, and that this contamination extends beyond our environment into our seafood, our sea salt and our drinking water.

I have watched the scientific community expand in Canada, and we are finding that we are not immune to this widespread contamination. We find plastic debris on our shorelines, relatively large concentrations in our Great Lakes—sometimes finding more than 100 pieces of plastic per individual fish—and microplastics in the surface water, sediments and zooplankton in our Arctic.

Recently I was in Iqaluit teaching a class at the Arctic College. I walked a city block and counted hundreds of pieces of plastic littered on the roadside. Moreover, when I turn on the tap in my lab, I find microplastics in our water.

What about the effects of this plastic pollution on wildlife and humans?

Large plastic debris entangles and smothers animals and ecosystems, leading to the mortality of individual animals and changes in populations and communities of species. In my own research, I've demonstrated that microplastic can be a source of hazardous chemicals to fish and that this exposure can lead to physiological effects. Other researchers have demonstrated that microplastics can interfere with the reproductive system and lead to changes in behaviour.

Today we tend to ask questions about how microplastics in the environment impact ecosystems and how microplastics in our air, our water and our food impact human health.

A few months ago I participated in a science symposium in Ottawa hosted by CIHR and ECCC. We discussed what we know about plastic pollution and what questions we would still like to answer. Understanding the sources of plastic in our environment, where it goes when it gets there and its impact on wildlife and humans is critical. I want to stress the importance of this and the need for resources for collaborative research. This collaboration should be across Canada, but also abroad to both keep on top of the latest innovations and keep our work locally relevant here at home.

I also really want to stress that while we need more scientists—and I'm a scientist, so I will always say that—I do believe that we have enough evidence to begin to mitigate its effects now. I'll spend the rest of my time speaking about this.

Last year I co-led a paper in the journal Proceedings of the National Academy of Sciences entitled “Why we need an international agreement on marine plastic pollution”. Indeed, like many other contaminants, plastic is not constrained by borders. It migrates via the air, via water currents and in and out of parts of the ocean that are beyond our national jurisdiction. Because plastic pollution does not observe borders, I do not believe the policy should either.

● (1540)

At this time, there are no international agreements for plastic pollution. I do recognize that the clean seas initiative is a great first step, as well as the new initiative signed at UNEA in March this year, but I think it's time to move to something a bit more similar to the Paris Agreement, and at a faster pace. To measurably reduce emissions of plastic pollution, we need defined reduction targets, signatories, methods of reporting progress, and a global fund.

I envision an agreement whereby countries sign on as signatories with a defined reduction target. For example, in Canada we might agree to reduce 25% of our emissions by 2025. To meet these targets, we would need to come up with strategies to do it, and as we know, there is no one-size-fits-all strategy. Each country may take on its own set of unique solutions to reach its own target.

In Canada, we might adopt container deposit schemes to improve recycling rates, eliminate the use of some of the single-use plastic items that are unnecessary and not practically recyclable, improve waste collection and management infrastructure and agree to market only plastics that are recyclable or reusable in our region.

For some countries, particularly in the developing world, aid is necessary to build new infrastructure for waste, and I know that Canada has been part of contributing to this. I think it would be useful to set up a global fund similar to the Green Climate Fund. To build this, we could have some sort of extended producer responsibility or a plastic tax. For example, if we pulled in one penny on every pound of plastic produced, we would produce a fund of more than $6.8 billion per year, and growing.

Aside from international policy, what can we do right here in Canada? I think we need solutions implemented at every scale of governance, with a foundation of support for the provinces and municipalities from the federal government. This may be initiated by reclassifying plastic in the environment under CEPA to trigger new policies, maybe by considering a standard for products to have a defined percentage of post-consumer recycled content, to increase the value of recycled plastics over virgin materials. It might also mean harmonizing materials management across the country to simplify what, as you know, is currently a very complex and diverse system. Finally, although policies that mitigate large plastic debris reduce microplastics, we need to make sure that we consider microplastics when we consider all of the policy options for plastic pollution.

Policies specific to microplastics might include, but are not limited to, emissions standards for microplastics such as from washing machines, waste water or stormwater; filters on washing machines to trap microfibres; bioretention cells on storm drains; or increasing participation in Operation Clean Sweep, which might be extended to the textile industry.

With more than a decade of experience researching plastic pollution, I have a vast knowledge base on the issue. I have published many papers about the sources in the environment, where it goes once it gets there and how it impacts wildlife. I have also spent a lot of time advising managers and policy-makers in several countries. I presented at the U.S. Department of State and in front of the UN General Assembly, and I would be more than happy to stay in contact to discuss the state of the science and how it may inform policy around this view here at home and internationally.

In closing, I hope my words have expressed to you that this issue is large and urgent. The issue is also complex. The sources of plastics in the environment are diverse. The types of plastics we produce, sell and find in nature are diverse. The ecosystems and organisms this pollution contaminates are also diverse.

As a consequence, the solutions need to be diverse. There is no one-size-fits-all solution. Instead, we need a toolbox of solutions that includes plastic reduction, building a circular economy, and improved materials waste management systems, in addition to education and outreach. We also need everyone working together from multiple stakeholders.

I would like to thank you for your leadership, and I hope we continue to ride this wave of motivation and urgency—

Am I out of time?

● (1545)

The Chair: No. Finish up.

Ms. Chelsea Rochman: —to be able to claim Canada as a leader in not just recognizing the issue but helping stem the tide of plastic pollution to protect the environment, the people and our economy.

Thank you for this opportunity to speak. I would be very happy to answer questions later today as well as in the future.

The Chair: Good timing.

Thank you so much for your opening comments and the work you've been doing on what is a obviously a very important issue. I look forward to the conversation that we'll have with you as we get into the questions and answers.

We'll now move to Mr. Sandborn. I neglected to introduce Andrea Lesperance, who is with you today.

Welcome to both of you. I'll turn it over to you for your 10 minutes of opening statements.

Mr. Calvin Sandborn (Legal Director, Environmental Law Centre, University of Victoria , As an Individual): You'll see behind me the Strait of Georgia, the Haro Strait, which contains an amazing amount of plastic. The latest studies show that any cubic metre of sea water out of that strait typically has over 3,000 particles of microplastic.

I understand that in Ottawa today, you have rising waters there too. As you'll discover shortly, there is a connection between those waters behind you and next to you that are rising and the plastic crisis that we face.

The Environmental Law Centre at the University of Victoria has been working for a couple of years on the plastic issue because it's rising to the magnitude of climate change and is very directly related to climate change. We know that internationally there's a tsunami of plastic, eight to 20 million tonnes of plastic every year going into the oceans. It's plastic bottles and bottle caps, plastic bags, straws and stirrers, styrofoam cups, food containers and food wrappers, plastic microfibres and balloons, fishing gear—a very important thing, plastic fishing gear—and strapping bands from shipping.

This plastic is having the impacts that many people have heard about. We know that over a million seabirds a year die. You may have seen the tragic documentary *ALBATROSS* about the albatross in the middle of the Pacific that are dying because their stomachs are full of plastics. We know that every year there are 100,000 mammals —seals, sea lions, dolphins and whales—that are dying from plastic pollution, and countless fish.

We know the stories about the turtles that mistake plastic bags for jellyfish, eat them, and die. We know about the herons and gulls that are strangled by six-pack rings of plastic. We know about the seals and dolphins that get entangled in plastic bags and drowned. We've all read the stories about the whales that have pound after pound of plastic in their systems, and about whales actually dying as their guts burst from the plastic load in their guts.

For those of us Canadians in cities, however, there's a more subtle problem, referred to by the previous witness, which is the microplastic problem, the large amounts of microfibres in the Great Lakes; the fact that most bottled water that gets tested has microplastics in it, the fact that an international study of sea salt found that there was only one sample that didn't have microplastics in the sea salt. As I mentioned about the Strait of Georgia behind me, Haro Strait, there are 3,000 particles of plastic in every cubic metre, and over 7,000 particles of microplastics up in Queen Charlotte Sound, at the north end of Vancouver Island.

This all strikes home when we look at the recent studies that have been done on Vancouver Island, where every shellfish that was tested in a recent study had microplastic particles in the shellfish, which are being consumed by Canadians. The average, in one study, showed eight particles of microplastic in the average shellfish in British Columbia.

So it's a problem, and it's a problem that is going to get worse if parliamentarians do not do their job.

We know that it's a problem that is increasing; that the production of plastic has doubled in the world in the last 20 years and is projected to double again. There's been a Royal Society study that projects that by 2050 there will be more plastic in the ocean than fish.

Perhaps the most concerning issue is the issue that I mentioned about the floods that are outside the doors of Parliament, the drought on the campus here at UVic, and the wildfires that happened in the last two summers consecutively in British Columbia, where it was kind of like an apocalyptic movie to live in Vancouver or Victoria, as extensive wildfires created a scene where you could not see the sun because of the smoke, and people's health was severely compromised because of climate change.

Eight per cent of oil and gas production in the world goes to plastic production, and 20% of global oil production will be devoted to plastics by 2050. All for what?

● (1550)

Ninety-five percent of plastic value is used for a few minutes, and then disposed of. When the Government of France moved to limit plastic tableware and disposable plastics, they made the statement that it doesn't make sense to use an item for a few minutes and then wait for centuries for it to break down.

We have this throw-away society that we need to address. We're digging up the oil sands and causing a lot of environmental destruction there in order to produce disposable cups and plastic straws. Millions of plastic straws a day are disposed of in North America by McDonald's. Somebody uses a straw for maybe 15 minutes, and then it goes into the environment or landfill. Plastic is also used at Starbucks, where instead of having a reusable cup, people have a cup with a plastic lid that they use even when they're having coffee “For here." Look around at Starbucks the next time you go there. It's filled with people who are using plastic lids that are totally unnecessary.

In your offices, look at the Keurig machine and the mountains of these little Keurig coffee pods that are used and wasted every day.

There are solutions to this, and we've laid out the solutions in our papers, which have been supplied to the committee. There are seven reforms to address marine plastic pollution, and there is a blueprint for federal action on plastics. The solutions are basically to ban certain types of single-use plastics, to follow the example of the European Union, France, the states of California and New York, and the City of San Francisco, and to start banning things like plastic bags, plastic straws, plastic water bottles, styrofoam cups and disposable cutlery.

Deposit refund systems can be used. University cafeterias already use them. People have plates that they pay a deposit on. They use the plate, and instead of having a disposable plate, they take it back and get a refund. Deposit refund systems have worked well for pop bottles.

Regulation of stormwater outfalls has to happen. We should look at the U.S. Clean Water Act, where they've set “zero” limits on plastic in stormwater flows, and places like Los Angeles that require that companies put in attachment inserts to ensure that the plastic that gets disposed of on land doesn't flow into the ocean, because that's the route; all this terrestrial garbage eventually finds its way to the ocean.

We need to regulate microplastics as the government has already done with microbeads. Another very important thing is that the plastic fishing nets create ghost fishing gear that endlessly kills and wastes fish, so you have all these fishing nets and old crab traps that are still in the water out there. They're designed to kill. They kill the fish and the crabs, and it's wasted. Nobody ever consumes it. In Washington State, in Puget Sound, just south of us here, they've had great programs giving federal money to indigenous groups to recover those nets and get that plastic removed that's doing damage in the oceans.

More fundamentally, we have to do things to deal with the problems of extended producer responsibility to make sure that manufacturers of plastic take responsibility for their plastic. Manufacturers of plastic should be paying for some of these measures like stormwater modifications. Costco should take back the packaging and deal with it, instead of having taxpayers pay for it.

The much more fundamental thing is that we have to look at what's happening in the European Union with the circular economy initiatives, and we have to start developing our own plan for a circular economy, a new plastics economy, that is focused more on reduction and reuse than recycling. I say so because I know that the plastics industry people are going to come to you and say, “Well, we'll enhance recycling programs,” but recycling doesn't generally work that well. Less than 10% of all the plastic produced ever gets recycled. You have situations where Keurig coffee says they have coffee pods that are recyclable now. It gives consumers an excuse to use more of the these Keurig coffee pods.

● (1555)

I commend to you the Toronto solid waste department's report on how that's causing great damage to the Toronto solid waste recycling program, because the things are not recyclable, because they're contaminating the plastic stream. You have a company saying that this is recyclable so people will feel okay about purchasing this product, yet it's not working. There are numerous examples of recycling not working.

How much time do I have, Mr. Chairman?

The Chair: We're out of time for the opening comments.

Mr. Calvin Sandborn: Okay, that's great.

I have some [*Technical difficulty—Editor*]

The Chair: Sure. There will be opportunities for further discussion. Thank you very much.

I will say thank you for the two opening statements so far. I am enjoying my glass of water much less now than I was at the start of the meeting today, but I'll carry on with having some water.

We'll move over to our guests from Dow, and we'll give you 10 minutes for your opening statement.

Mr. Michael Burt (Vice-President, Dow): Thank you for the opportunity to express the views of the new Dow as the committee considers its study on plastic waste.

My name is Michael Burt. I'm the vice-president and global director for climate and energy policy. I'm joined by my colleague Scott Thurlow, who is an expert on the Canadian Environmental Protection Act.

Dow is one of the world's leading resin producers, so our interest in the committee work is obvious. Dow takes its responsibility as a leading plastics producer very seriously, which is why we are actively leading and engaged in several plastics sustainability initiatives around the world.

In Canada, Dow manufactures the building blocks for advanced polymers and plastic materials. Our sites in Alberta draw from hydrocarbons to make ethylene, polyethylene, electricity, ethylene glycol and ethylene oxide. We have just over 1,000 employees across the country and over 40,000 employees worldwide.

Plastics have helped improve living standards, hygiene and nutrition around the world, especially in developing countries. Rapid increases in income and prosperity have brought many of the conveniences of modern life. It is also worth noting that most recent advances in medicine, avionics and aerospace are due to advanced plastics. They are literally saving our lives.

Plastic disposal has become a global environmental challenge, but it isn't the only environmental challenge. In fact, plastics are a solution to other challenges that we continue to face. As the Prime Minister said just last week, the environmental challenges are deeply interwoven with one another.

Moving away from plastics to alternative materials increases energy consumption by at least two times, GHG emissions by at least three times, and overall environmental costs by four times, and that is before considering food wastage, which carries the heaviest social cost and carbon footprint. As an example, the reason why cucumbers are wrapped in plastic is that they last five times as long on the store shelf. Without the plastic, we are going to have a lot more food wastage.

Our global CEO, Jim Fitterling, has been an instrumental leader in a new industry-wide effort called the Alliance to End Plastic Waste. This, with Dow as a founding member, launched in January of this year. The alliance is a not-for-profit organization partnering with the finance community, government and civil society, including environmental and economic development NGOs.

We're working to make the dream of a world without plastic waste a reality. We have a strong team composed of the world's top minds from across the entire plastics value chain. The non-profit currently has 35 members, but we see it expanding to over 300 members. The alliance has already committed more than $1.5 billion over the next five years towards attacking plastic pollution from a variety of angles, from waste cleanup to investing in technologies, technological advances and recycling and recovery.

We're urging everyone in industry to start investing in technologies around chemical recycling, which is different from traditional mechanical recycling that grinds down plastic bottles into materials, typically flaked, for reuse. Certainly, where a product can be used a second or third time, we encourage that.

Not all products have the same use more than once. For those products, we turn to chemical recycling. Chemical recycling uses chemistry to turn previously unrecyclable plastics into feedstocks and fuels to be used again in the production of clothing, bottles and everyday products.

Our CEO has been clear: “If we can do chemical recycling back to feedstocks and [eventually] back to plastics” instead of tapping another oil and gas well, “that opens up a whole range of impacts on climate possibilities that people haven't thought about.”

Our mission is to end plastic waste. We need to focus these resources to have the greatest impact. It is through increasing the scale of that alliance that we can better focus all our resources. We need to focus governments on the circular economy investments. Canada has many programs in place that can be focused on these types of sustainable investments. For example, Export Development Canada, the Business Development Bank, Sustainable Development Technology Canada and others can see this circularity embedded into their mandates.

What is Dow doing to tackle these problems directly?

In December, you heard from my colleague about the company-wide initiative that helps collect, sort and reduce the amount of hard-to-recycle plastics going to landfills and gets them into the natural environment: the Hefty EnergyBag program founded by Dow. This program is emblematic of what is needed to make it work—partners. We need partners in place who can support industry-led initiatives. We intend to launch an EnergyBag initiative in Canada this year.

Another company example is that Dow has constructed two private roads in Texas using over 2,700 kilograms of recovered plastic. In other words, that is the equivalent of 120,000 grocery bags. We solved one environmental problem by locking that used plastic into a different use. We have helped other jurisdictions accomplish similar results.

● (1600)

Dow is also a founding member of the Sustainable Packaging Coalition, which collaborates with packaging converters and brand owners to increase production of stand-up pouches that can be recycled through existing polyethylene film recycling streams. Dow's “RecycleReady” technology enables manufacturers to develop packaging that can be qualified for the Sustainable Packaging Coalition's “How2Recycle” label. This increases demand for more recyclable package options. Packages made from RecycleReady technology can be recycled via polyethylene recycling streams such as the grocery store drop-off system in the United States.

As another step, Dow is also driving the development of new commercial recycling business models and growth strategies to monetize plastic waste recycling streams globally.

Finally, we have also invested into the $100 million endowment for Circulate Capital. This incubator will finance companies and infrastructure to help capture and recapture the value of plastics. This is a key role for private industry to create the very partners we need to deal with the actual problem: increasing the amount of product that is recaptured and subsequently returned to the economy.

Dow recently announced a partnership, driven by the World Economic Forum and called the Global Plastic Action Partnership, to bring experts together to collaborate on solving plastic pollution. This partnership is initially funded by the Governments of Canada and the U.K., along with Dow and several global brands, with the objective to have investable localized solutions in place by 2020. It is our sincere hope that these local solutions can be adapted and implemented in other countries. The first project is a collaboration with the Government of Indonesia.

In conclusion, let me state a few things clearly for the record. We do not believe that any plastics should be released into the environment. We are strong supporters of improved plastic waste collection. We see the waste of plastic as a loss of resource. The very future that makes plastic so attractive for packaging and the so-called single-use plastics is the very future that leads to its disposal: it is inexpensive.

As far as recommendations go, first and foremost, we urge the committee to not finalize its recommendations till the CCME has completed its work. This issue is one that requires multiple levels of governments to agree on a path forward. For example, haphazard plastic bans will most directly affect the poorest Canadians, who will see the price of food increase due to waste, spoilage and increased fuel costs arising from more trips to carry the amount of food or heavier loads.

Second, we need to see the value of these plastics and treat used plastics as a resource instead of a waste. This is how we can get plastics out of the environment. It will prevent all global citizens from tossing away these valuable substances. Recycling targets for new content are one way to assist in this goal. As you have heard from the CIAC, the Chemistry Industry Association of Canada, it has already made pledges in this regard. Ultimately, the world needs to continue to benefit from these plastics while limiting the environmental downside of these materials.

Finally, we recommend that this committee follow its own recommendations from the review of CEPA tabled two years ago. The committee recommended “that Environment and Climate Change Canada and Health Canada adopt a life-cycle approach to assessing and managing substances under CEPA.”

In conclusion, projections are that plastic packaging is expected to quadruple in use by 2050. We believe that something else beyond just mechanical recycling needs to be utilized in order to have any chance to reach the new aggressive zero-waste goals. Mechanical recycling alone will not get you to 100% diversion of plastics from landfill, and it will not get us to full circularity of plastics. We believe that this “something else” is chemical recycling via energy recovery conversion technologies.

I thank you for the opportunity to speak today. I would welcome any questions later.

● (1605)

The Chair: Thank you for those opening comments.

Now we'll move to Mr. Valiante for his opening 10-minute statement.

Mr. Usman Valiante (Senior Policy Analyst, Corporate Policy Group, Smart Prosperity Institute): Thanks for allowing me to appear today.

I'm going to be speaking on and basically delivering a précis of some work that I did for the Smart Prosperity Institute here in Ottawa, called “A Vision for a Circular Economy for Plastics in Canada”. That work itself was precipitated by the work that my colleagues and I did for the Canadian Council of Ministers of the Environment in looking at the barriers to a circular economy for plastics.

Just to provide some context today, we generate in Canada about 3.3 million metric tons of waste plastic. These are 2016 numbers. Of that, we recycle nine per cent. The remaining 91% is either sent to landfills or is burned in energy from waste. About one per cent, or 29,000 metric tons, is discharged into the environment as litter. That's the context for what we're talking about.

It's an enormous amount of material, and that material, effectively, is congealed hydrocarbons. It's what we use to make plastics today. As pointed out by Michael, plastic is cheap. One of its advantages is that it's cheap to make, so we use it in a wide range of applications. It's highly flexible in its use and it delivers a lot of value, but that lack of price associated with it means that it's much cheaper to go and extract more raw materials and make more plastic than it is to recover plastic and recycle it in a meaningful way. We have this fundamental disconnect in economics between virgin plastics and plastics that end up as waste and recovering those plastics.

Why is plastic so cheap? Some of that is due to direct subsidies that we give for fossil resources. The plastics manufacturing sector is very large and it has large-scale efficiencies. It's integrated into the oil and gas sector and it's part of the petrochemical sector.

To give you some idea of scale.... Again, these are numbers that came from Deloitte and recent Deloitte work in addition to the numbers I stated earlier. This is all from analysis done by Deloitte. The virgin plastics production sector is 30 times the size of the recycling industry in Canada today. That will give you an idea of the scale efficiencies that exist for the production of virgin plastics. Then we have disposal, which is unpriced, so today you can dump plastics into the landfill and there's very little cost for disposing of them or sending them to energy from waste.

We talk of trying to aspire to a circular economy as a sort of aspiration to where we want to get to with plastics. A circular economy for plastics, in its end state or optimal state, would be about capturing carbon dioxide and using solar hydrogen to produce ethylene and to produce plastic.

We could use carbon capture. I live in Squamish, British Columbia. We have a company there called Carbon Engineering, which recently got a lot of investment, and it's doing carbon capture. It can produce diesel fuel from carbon dioxide captured from the atmosphere. With our chemistry today, and given existing chemistries, we could produce ethylene through a set of chemistries that would utilize that carbon dioxide and solar hydrogen.

Now you've locked carbon dioxide into plastic, and then, as pointed out by Michael, there are recycling technologies on the other end when you're done with it. These are mechanical recycling, which grinds up plastic and makes it available for the next cycle of production, and chemical recycling, which is nascent in Canada. There are a lot of emerging players in the chemical recycling industry that use various chemical processes to break plastics down into their building-block hydrocarbons—what are called monomers—and then re-form those monomers to create polymers again. They're going from plastic to plastic using chemical recycling.

The chemical recycling is not yet at commercial scale, and the chemical recycling industry suffers from not having enough of a clean supply of plastics from collection and not enough demand. Again, demand is driven by the value of plastic once it's recycled, against the price of plastic as a virgin resource, so we have an economic disconnect. Recycled plastic is generally more expensive than virgin resources, so that is a hurdle that we're going to have to overcome.

The benefit of a circular economy for plastics is manifest. You generate between three to five metric tons of greenhouse gases for every ton of polyethylene you produce. That varies across the world depending on energy inputs and manufacturing practices. When you recycle plastic, you can avoid 70% of those greenhouse gases even though the plastic was made from fossil resources. A tremendous amount of greenhouse gases and greenhouse gas emissions can be avoided through polymer recycling or through mechanical recycling.

● (1610)

The other opportunities are purely economic. If we were to recycle 90% of this resource that's being wasted today, Deloitte estimates an avoided-waste-disposal cost of about $500 million a year, avoided greenhouse gases of 1.8 million metric tons associated with recycling 90% of the waste plastic that I identified, and a recycled value of about $10 billion Canadian. They estimate there would be 17,000 direct incremental jobs and 25,000 indirect jobs.

The circular economy has an economic promise to it. Certainly when recycling gets to scale, the same companies that are producing virgin plastics today will more than likely be in the recycled plastics business because it will be a money-maker. It will deliver the same value that we get today from virgin plastics but without the waste.

For this last segment, I want to talk about the policy mechanisms to overcome the barriers that I have identified.

We've heard of extended producer responsibility. That is the idea that you make manufacturers of products or users of packaging responsible for the collection and recycling of those products and packaging. I'm talking about a wide range of products. We typically think of plastics embedded in packaging, but I'm talking about end-of-life vehicles, appliances, electronics. Plastics are ubiquitous. They are used throughout our economy. We need to create performance standards to have those plastics collected and recycled.

Today, a lot of those plastics are not recyclable. We have stringent performance standards for recycling. We will get what's called technological forcing. Some of these new approaches to recycling will become viable. Innovation will occur in trying to reach these recycling targets. What isn't recyclable today will become recyclable both through innovation in recycling technologies and in the reformulation of packaging or in how plastics are used, how they are bonded and laminated together, and how they are mixed with other materials. We'll get product and packaging design when we start to push stringent standards under extended producer responsibility.

EPR, as it's called, will also ensure that materials are collected in a way that they can be recycled. We've heard of deposit-return systems. We have curbside recycling systems and recycling in the industrial, commercial and institutional sectors. How we collect materials will determine how we can recycle those materials. EPR tends to be a supply chain exercise. It will start to reform how we engage in our recycling practices today.

You've also heard from the other speakers on recycled content. If we have extended producer responsibility creating a supply of plastics, recycled content mandates will now create demand for that recycled plastic to be incorporated into products and packaging. When we start looking at different products in the economy, we can set performance standards for 30%, 40%, or 50% recycled-content requirements that then require manufacturers to draw in that recycled plastic. The combination of extended producer responsibility and recycled content standards now starts to create scale efficiencies. You now have a pull for that and demand for that recycled plastic.

Government procurement is a very, very powerful tool. Governments across Canada at all three levels are large consumers of plastic products and services that use plastics. The recycled-content standards or renewable-chemistry-plastic standards that get written into government procurement will start to create demand for recycled plastics as well. Policies around green procurement or procurement of low-carbon plastics will definitely have an impact.

I think a critical thing that needs to happen if we're going to get these large-scale supply chains under extended producer responsibility is that the rules for extended producer responsibility need to be consistent across the country. When we as Canadians think of recycling systems, we think of our blue box at the corner, and we recycle typically at the municipal level. Recycling needs to go up to provincial and even regional levels to create the supply chains with scale efficiencies. That is going to require these policies to be harmonized at a national level so the rules are the same across provinces.

That's my time.

● (1615)

The Chair: Okay. That's excellent.

Thanks to each of you for those opening comments. I thank each of you for being here today.

I think it's a very timely conversation. We're hearing many municipalities and Canadians in general starting to have discussions about single-use-plastic bans, although I would also indicate that we may be years if not decades late in starting this conversation about plastic and plastic pollution.

I'm interested in the economics. Last night I watched stories featured on two news channels about plastics being collected and landfilled because there's nowhere to sell them since virgin materials are cheaper to access. So there's lots to think about.

I don't get to ask any questions, so I'll turn it over to my colleagues, who are taking us through their lists of questions.

First up for six minutes we have Mr. Amos.

Mr. William Amos (Pontiac, Lib.): Thank you to such a distinguished panel.

This really is a tremendous group of plastics experts. I really appreciate it.

I'll disclose off the bat that I've had past professional dealings and great opportunities to collaborate with Mr. Sandborn, and I have a great respect for the environmental law clinic that UVic operates. Also, in the past, I've worked a little bit with Mr. Valiante on extended producer responsibility related to electronic waste.

I have long understood your expertise on this, Mr. Valiante, and I appreciate your contributions here.

I want to go to you first. I've heard clearly your call for federal performance standards around recycling. What's the magic number? Does it vary for specific types of plastics? What are the ballpark figures that we're looking at? I've heard 80%, 85%. The objective here is to establish a national standard, I presume, and then push the provinces to meet it.

Mr. Usman Valiante: People balk at high numbers for performance targets, but you're not going to get the innovation and the scale shooting for low numbers like 30%. So, the European Union has gone for a 70% recycling rate for all plastics and a 90% rate for plastic beverage containers.

Those sorts of high performance standards are going to require investments in systems to collect that material. You're not going to get that at low standards, so stringency in all public policies is an important element if you're going to get the desired outcome. I think we should be looking at the jurisdictions that have set stringent standards. Within this country, we certainly have all of the technological capability and know-how, and because we have a petrochemical sector, we also have a lot of expertise on how to recycle plastics.

I think Canada has a head start in many ways with regard to recycling, and we shouldn't be afraid of stringent performance standards.

Mr. William Amos: I have a question for our friends at Dow.

Mr. Burt, you mentioned that Dow's preference would be for there to be an intergovernmental process flowing through the Canadian Council of Ministers of the Environment. What I took from your suggestion was that this process really shouldn't move forward in the absence of some broader pan-Canadian agreement on how to approach things.

I would put to you, though—and I would ask you for your response—that Canadians aren't interested in waiting for governmental collaboration. I think there are probably a few governments in this country that are quite happy to not regulate more stringently, that are not looking to be tough on plastics pollution, and that are quite happy to sit back and not do very much, and I think they're probably Conservative governments.

If the average constituent of mine says, “Get going on plastics pollution,” what do you have to say to those individuals who want action regardless of whether the provinces agree or don't agree on specific numbers, particularly on things like, say, performance standards?

● (1620)

Mr. Michael Burt: Well, it's always easier if you have a national standard that you can work towards. Right now, recycling is basically at the municipal level. Provinces do get involved. P.E.I. and Newfoundland have brought bans into place. The reality is that it always comes down to economics. I think that has been brought up several times by me, as well as by Usman.

The reality is that we can move forward, and I think the economics will change. Once you monetize plastic waste, you'll be able to make it no longer a waste. You can make it a resource. It's always nice if you can get coordination between the provinces and municipalities and the federal government. The reality is that I don't think we need to wait until all of that is aligned. There are things moving forward now.

Mr. William Amos: I'm really glad to hear that.

I would like to ask a question of our legal experts out at UVic.

There are opportunities to regulate plastics pollution more stringently under the Canadian Environmental Protection Act, 1999, but I wonder if that is the ideal legal mechanism to achieve this. It has been used for microbeads, so we know that a precedent has been set. However, as our committee considers legal options, including existing legal options, do you recommend that CEPA be the vehicle for further regulation for plastics pollution, or is there an alternative that we need to be considering?

Mr. Calvin Sandborn: I think there are a number of alternatives, many of which are canvassed in the report that was submitted to the committee, “A Blueprint for Federal Action”. CEPA is one tool. We're also looking at things like to what extent can you argue there's a federal role here because of the national concern test on the plastics problem? To what extent can the criminal law power of the federal government be used with new legislation?

There are arguments like that of the academic Chalifour, who has argued that just as federal government has jurisdiction to set national targets for greenhouse gas reductions, similarly, it government would have jurisdiction to set national targets for plastic pollution reduction. We've called for the federal government to take the lead and issue a binding national target of reducing marine plastic pollution by 80% by 2030, for instance.

There are numerous tools, and I don't think I have time to go into all of them, but they're canvassed pretty thoroughly in this report.

The Chair: Excellent, thank you.

You're out of time, Mr. Amos.

The report that's been referenced was received by the committee yesterday. It's going to translation and we'll circulate it to our committee members once it is translated.

You don't have it in front of you today, but it is coming.

With that, we'll go over to Mr. Lloyd, for six minutes.

Mr. Dane Lloyd (Sturgeon River—Parkland, CPC): I appreciate the comments today.

I want to note that the Liberal government has just invested $49 million in a state-of-the-art polypropylene facility in my riding, the Canada Kuwait Petrochemical Corporation and Pembina Pipeline Corporation facility. Obviously, our Liberal government knows that Canada produces some of the highest-quality polypropylene and plastic products in the world. I'm very proud to support that industry.

Dow Chemical, my cousin's farm in fact overlooks your facility in Fort Saskatchewan—really great neighbours—and I appreciate all you're doing to help diversity our economy in Alberta. We need that economic diversification.

I've been talking to city and town councils around Alberta, and there was a unanimous resolution put forward for Alberta to adopt extended producer responsibility.

For Dow Chemical or perhaps Mr. Valiante, I am wondering why the Alberta NDP government was the only government not to sign on to the EPR. Nobody has been able to answer that question for me.

Mr. Michael Burt: I don't think I can either. I don't know if I can speak on behalf of the NDP government in Alberta.

Extended producer responsibility is something that Dow has looked at quite a bit. We think there's an opportunity to monetize some of the waste plastic around using such a concept. As they always say, the devil is in the details, so at what level is the fee you would pay on a pound of plastic that's been produced, or on raw resin? It is a mechanism that we're utilizing. There's a team within Dow that's looking at how to monetize waste plastic.

We think that with the new technologies going forward from a recycling standpoint, you can get to revenue neutral and even revenue positive, based on some of the costs with landfilling some of the harder to recycle plastics.

● (1625)

Mr. Usman Valiante: I sit on the Alberta Beverage Container Management Board, which oversees the deposit return system. Alberta enjoys the highest plastic bottle collection rate in Canada, at 82.3%—if I'm rhyming my latest numbers off—with an overall recovery rate of 85.5% for all beverage containers.

Extended producer responsibility is not unknown to Alberta, though it's needed for a broader range of materials, for sure. The call by Alberta municipalities is because of the restrictions on the Asian markets and the need for a made-in-Canada solution to deal with those plastics. I would contend, as I have throughout my talk, that producers are best situated to work with the recyclers to build those supply chains to deal with that problem.

Mr. Dane Lloyd: Is it true that producers are already paying into this fund in Alberta but we're not benefiting from the EPR because we haven't signed on as a province?

Mr. Usman Valiante: Producers fund the operation of the beverage container system, and again, it's highly, highly effective. There was an EPR program for used motor oil containers; those were recycled in a similar fashion.

I don't know of any other fund that producers are paying into currently. I just know the legacy programs, and I'm fortunate to be sitting on the governance of one of them.

Mr. Dane Lloyd: Mr. Thurlow or Mr. Burt, what sorts of things can the government do to incentivize innovation to spur this circular recycling of plastic goods?

Mr. Michael Burt: The big issue when it comes to the new recycling technologies that I've been alluding to—and just as an introduction to chemical recycling—there are basically two predominant technologies. One is gasification and another is pyrolysis. The advantage of these technologies is that they can take basically all plastic, including styrofoam, coloured plastic and multi-laminate. There are no emissions associated with them. It's high heat in a zero-oxygen environment. What you get out of the back end, depending on the technology, is a rough grade diesel methanol or ethanol. That can then be turned back into plastic.

Mr. Dane Lloyd: What can the government do to facilitate that?

Mr. Michael Burt: They always need start-up capital—capex—to get these facilities up and running. That's always the big hurdle and that's what you kind of need to do with government incentives. The Alliance to End Plastic Waste that I referred to—which is a very large fund—is looking at some of these start-up costs, which are really the hurdle to get into break-even economics.

The facilities are not very expensive. Obviously, they're highly scalable, but they're in the $10 million to $20 million range. You can get some of these up and running to handle basically all of the waste plastics in most municipalities. The capital investment is not very much, so the government's strategic innovation fund and other funding mechanisms are perfect opportunities. We'd like to see those expanded and more money put into them because there's a lot of opportunity coming forward.

McKinsey, a large consulting firm, put forward a paper about a year ago now—I can't remember—that talked about the fact that there is a 30—

Mr. Dane Lloyd: I do have one minute and there was one question I wanted to get to.

I was told that one of the biggest problems with plastic recycling is the high level of contaminants in plastics—things such as the labelling and the painting on the labels of margarine containers, for example. What can be done to reduce the amount of contaminants, so that we can increase the level of recycling?

Mr. Michael Burt: On mechanical recycling is it difficult. Most of you may not be aware, but on mechanical recycling, basically most plastic has to be food grade. It all comes into contact with a beverage that you're drinking or it wraps your food. There are others that are not, but it needs to have highly stringent quality control.

When you get recycled flake, it's very difficult to get 100%. That's why a lot of the converters that we work with have to reach recycling content amounts, but the problem is that they sometimes—

Mr. Dane Lloyd: What can be done? Should we just eliminate contaminants in plastic and ban—

Mr. Michael Burt: Chemical recycling will eliminate those contaminants.

Mr. Dane Lloyd: Okay. Chemical recycling is the solution.

Thank you.

The Chair: Mr. Stetski.

Mr. Wayne Stetski (Kootenay—Columbia, NDP): Thank you. We have an absolutely great group of witnesses here today.

Mr. Sandborn, I'd like to start with you. I'm from the Kootenay—Columbia riding in British Columbia. I was involved in managing provincial parks down on the coast for many years.

Have you looked at the source for the plastics currently in Haro Strait behind you? What's the number one thing that can be done to realize a better future? Have you sourced them at all? Do you know where they're coming from?

● (1630)

Mr. Calvin Sandborn: Yes. It's a very wide variety of plastics. The people who are cleaning up the beaches have a list of the common plastics that are on our beaches behind me. Those include things like food wrappers—that's one of the top things—plastic bottle caps, plastic beverage bottles, beverage cans and other plastic and foam. Straws and stirs were number seven, plastic bags were number eight, plastic grocery bags were number 10 and plastic lids were number 11. It's a wide variety of sources of plastic.

Mr. Wayne Stetski: You listed seven ways to realize a better future. In the terms of the strait behind you, which do you think are the most important in realizing a better future there?

Mr. Calvin Sandborn: I think it's this idea of moving to a circular economy and not being mesmerized by this chimera of recycling. Now we have this new chemical recycling that will be the answer so that we can continue to be as wasteful as we have been over the last few decades. The real solution will be if we put a priority here on reduction and reuse as opposed to recycling, which is the standard paradigm. The priorities for responsible waste reduction are to reduce and reuse things before you get to recycling. I'm afraid, if we are captured by this promise of, oh, now we'll move from less than 10% recycling to 100% recycling, and we'll be able to do it with chemicals, that we will continue to sit in Starbucks and have everybody in Starbucks with unnecessary plastic lids on their cups for their “for here” coffee. We will continue to have hundreds of millions of straws used at McDonald's for 10 minutes and then tossed away. We will continue to have our offices filled with Keurig machines that have no real advantage over a Bodum. They're no more convenient. If you wanted to properly recycle them, you'd have to clean out the pods just as you have to clean out the Bodum.

I think we have to fundamentally think about the throwaway society we have and recognize that maybe we should go back to what our grandparents did. My granddad used to take his coffee in a thermos. He used it for years and years. My grandmother had a bag she used over and over again to get groceries. That's where we need to focus. I'm very concerned that we're going to be diverted by corporations that have their own financial interests as their priority and that we'll say, oh, we can continue to live as we are and then we'll recycle at the end; there will be a technological fix for this.

In fact, one of the things the federal government could do that would be the most valuable would be to change the misleading advertising legislation under the Competition Bureau legislation and make sure that all of these companies that are promising to be green are actually telling the truth about their recyclability of products. Test it and make sure that some of these programs are valid as opposed to just providing enough advertising to assuage the conscience of consumers who don't want to buy a non-sustainable product.

Mr. Wayne Stetski: How important is education in changing consumer behaviour, and who should take the lead on that, government or industry?

Mr. Calvin Sandborn: I think government needs to take the lead. In fact, I think the federal government could play a major role in educating people about the crisis we face. I'm increasingly struck by the children who are going on climate strike right now. These issues of climate—this is a climate issue as well—and plastics don't matter a lot to you and me. We'll only have to be around here for a few years to deal with it. My seven-year-old grandson will be dealing with those wildfires. He'll be dealing with the contamination of the Strait of Georgia and the microplastics in the shellfish.

It will get a whole lot worse, so it's very important that the federal government educate the public about the stakes of this and not just get led down the primrose path by corporations that say, oh, yes, it's a problem, but trust us; we've got a new solution.

● (1635)

Mr. Wayne Stetski: Ms. Rochman, you talked about microplastics in the air and microplastics in the water. What is the source of those, and how do we change that going forward?

Ms. Chelsea Rochman: I'll start with water. Here in Toronto, we've been sampling from some local plants. Our water is drawn from the Great Lakes, so the source of the microplastics in that water is simply the microplastics being in the lake. People also have sampled bottled water and have found microplastics in that bottled water. Some of that is actually from the PET cap. In groundwater, people find that there's much less.

I think it just depends on where you're actually getting your water from and where your water is stored. Also, then, we're trying to understand if anything is added during the treatment process.

For air, microplastics are found now to be prevalent in dust. I think some of this is the waste issue we're discussing, but some of it is just the fact that I'm sitting in a room with plastic chairs and plastic-made carpets. If the sun were shining in a window, I could see little dust particles floating around. The reality is that some of those are from the materials in the room. When we look at a certain type of instrument to tell what type of material it is, we see that some of those are microplastics. Because they're getting airborne, they are transporting atmospherically, like other chemicals.

That's why, when we think about solutions, we have to think about this whole circular economy and waste issue. For microplastics, some things are a bit unique, in that some of this just comes from the wear and tear of using the materials. Tire dust is another example of that.

The Chair: Thank you.

We're going to now move over to you, Ms. Dzerowicz, for your six minutes.

Ms. Julie Dzerowicz (Davenport, Lib.): Thanks to everyone for their excellent presentations.

We just came back from two weeks in our constituencies. I talked to a lot of schools. I will tell you that in the high school that I spoke at, there was a grade 12 student whose sister is in grade 9 and was in the library texting the questions to ask me, and they were all about plastic solutions and asking for immediate action on this. It sort of follows on the comment that Mr. Sandborn was making about a seven-year-old—but I'll tell you, this is a top-of-mind issue, particularly for students.

For a lot of my questions, I'm just hoping.... We're all trying to get to recommendations. We'd love to study this for a really long period of time, but we have a very limited number of sittings left. We really want to get to some solutions.

I'll think I'll start with you, Mr. Sandborn. You talked quite a bit about how places such as France and California and the European Union are doing a really great job in terms of limiting single-use plastics. I want to ask you whether or not there's been some data that shows progress and whether there are some underlying principles that drive their decisions around what single-use plastics to avoid. Do you have recommendations for us about where we start? Because I think we're looking to start somewhere, and I wonder if you might start off by answering some of those questions.

Mr. Calvin Sandborn: Sure. A number of these examples that I'm going to give are contained in our report.

California is an interesting example, because a number of local communities in California banned plastic shopping bags. After Napa County did that, they found that it reduced their marine pollution quite significantly. Then San José banned the plastic shopping bags. That worked out for a while and they found that it was reducing the amount of litter in their waterways and stormwater systems. Eventually, the entire state moved and passed the law.

It's pretty easy to just replace plastic shopping bags. We've done it here in Victoria. There's not a lot of real inconvenience. All you have to do is remember to bring your reusable bag to the store. You just put it on your doorknob for when you head out the door. It's just a change of habit.

Also, then, places such as Seattle moved to ban plastic straws, just because the straws are such an obvious waste, with such a short use, and they're thrown away. Seattle did that. Then the United Kingdom worked up to that, and the European Union is moving in that direction on a whole bunch of these single-use plastics in the near future. San Francisco moved to ban styrofoam food ware and that's worked out well.

The one thing that I think is a bit problematic is the reliance in the European Union on allowing so-called compostable plastics to be used. When places such as France banned disposable cutlery, they said that you could have compostable stuff. The technology of that I think has not lived up to the promise in many cases. People in Victoria have analyzed so-called compostable cutlery that is not composting in the composting facilities of the capital regional district.

● (1640)

Ms. Julie Dzerowicz: Thank you so much, Mr. Sandborn. I have a couple of more questions.

There is another thing that really bothers residents in my riding. I hold a lot of events, a lot of public consultations and transmitting of information publicly. They have asked me not to bring any more coffee cups from Tim Hortons, because they're not fully recyclable.

I guess I'll direct my question to Mr. Valiante. I think you were the one who commented that in the U.S. they have very ambitious targets around plastics and recycling of plastics and beverage plastics: 70% for all plastics and 90% for beverage plastics.

Is there something we can do at the national level that will get our companies moving towards producing something that will be recyclable so that I can continue to buy stuff at our local coffee shops that I'd like to support?

Mr. Usman Valiante: If we talk about coffee cups, and you create a regulation that says that coffee cups need to be collected and recycled at a rate of 85% or 90%, then the fast food outlet has a choice to make to meet that target. The coffee cup needs to be redesigned to make it recyclable to meet that recycling target. The system to collect the coffee cups needs to be established. Then at that point, they may look at the cost of that and say, “Well, maybe we need to move to an entirely different way to deliver coffee. Maybe we need to have some kind of reward system for a reusable coffee cup”.

By internalizing these costs today of being able to throw stuff away, you're now changing decisions that might be made. Therefore, I keep coming back to putting the obligation on the producer to collect and recycle their material at a high target. New opportunities will arise as they look at the cost of doing that and decide how they can either optimize what you've asked them to do or do something completely different that avoids the problem in the first place.

Ms. Julie Dzerowicz: Who does that type of incentive work well right now, whether a country or not?

Mr. Usman Valiante: If you look at Canada, the jurisdiction for waste falls with the provinces and the federal government has powers under the Canadian Environmental Protection Act. An analogy would be the European Union, where the European Union gets together and sets these targets for the member states, which then implement those targets through their individual policies.

The European Union is leading right now on these issues. It's gone through the process of ratifying a directive amongst its members that has these targets in it. The member states will then look at their own socio-economic realities and implement nation-state level policies to meet those targets. That will be a dialogue with the plastics manufacturers, the producers of products that use plastics, etc., about what the right regulatory structure is to meet those targets, but those targets are EU-wide. I would suggest that the same kinds of targets and definitions in Canada established at the national level would make producers' lives much easier because they would be able to harmonize their efforts across Canada.

A notional coffee cup recycling target that's established nationally would then have to be met by Tim Hortons in Saint John, Victoria and Nunavut. That would require making that effort to do that.

Ms. Julie Dzerowicz: Okay, perfect. Thank you.

The Chair: We're going to move over to Mr. Fast now for his six minutes of questions.

Hon. Ed Fast (Abbotsford, CPC): I just want to dispel this notion that there are some people, either around this table or in governments in Canada, who are not interested at all in addressing the issue of plastics pollution.

Mr. Amos is quite incorrect. My sense from the governments across Canada, and certainly the people around this table, is that there's a very keen interest in addressing plastics pollution because of the impact it will have on our environment and on our children, grandchildren and future generations of Canadians.

My first question is for Dow Chemical. I haven't heard you take a position on a proposed ban on single-use plastics. I'd be interested to hear your take on that.

● (1645)

Mr. Michael Burt: As a corporation, we don't think that bans are effective. There's been very limited data on the banning of single-use plastics. The definition of single-use plastics isn't universally known. People usually think about it as plastic bottles and cutlery, but there's a car bumper that we manufacture. Dow is one of the world's largest manufacturers of polyethylene. Most of the products that we manufacture are high-value plastic products. We typically don't get into the single-use disposable plastic bags.

We see all plastic as recyclable. I see there has been a lot of discussion around here about recycled plastic. All plastic can be recycled. Some plastics can be recycled substantially more easily than others. We don't see bans as a mechanism going forward; we see an advanced collection and recovery process where plastic is seen as a resource, not a waste.

Hon. Ed Fast: Could I ask either of you to comment on the addition of microbeads to the toxic chemicals list?

Mr. W. Scott Thurlow (Senior Advisor, Government Affairs, Dow): It's been a very interesting discussion about this particular subject because what the House of Commons voted on in 2014 and what the House of Commons got after 2014 are very different. Industry came to the House of Commons and said that they recommended some type of a risk management measure be developed to eliminate microplastics from cosmetic products specifically. The reason for that was that products coming from China had a particular attribute, which had a great deal of those microplastics, but what happened after the motion was voted on in the House of Commons was that Environment Canada and Health Canada didn't define them as microplastics in cosmetic products. They defined them based on their size, which captured every single polymer of a certain size and below, which was not what the House of Commons voted on, was not the intention of Parliament, and was not what was part of that debate.

What it tells us is that there is a need to reform CEPA to be very clear so that we can have targeted, purposeful listings under the toxic substances list based on use and on the attributes that actually pose the risk in question. When we hear about adding plastics or single-use plastics to the list of toxic substances, when I review the act, I don't think those meet the definition of “substances”, which are the molecules that the chemicals management plan was designed to deal with. Now, for an array of reasons Health Canada, Environment Canada and the Department of Justice don't agree that this is something that can happen right now, so we recommended during the CEPA review—and we would recommend again now—that this would be a reason to amend CEPA to create that specific power.

Hon. Ed Fast: Mr. Valiante, will mechanical recycling and chemical recycling, if you consider those two processes together, capture all plastics?

Mr. Usman Valiante: It's not uncommon for recyclers that have traditionally done mechanical recycling to start partnering with innovators in the chemical recycling sector so they can provide a portfolio of approaches to deal with the wide range of plastics that are out there.

Again, these are recycling strategies. As you move up in stringency and say that when you start dismantling a vehicle and you're taking plastic parts out or shredding the vehicle, you have to recycle the plastics, there will be strategies for sorting those plastics so they can be recycled. There will then be mechanical recycling of some of them and there will be chemical recycling, so you'll get a concerted effort through that reverse supply chain of taking that waste plastic and turning it into recycled plastic, and you'll need a tool box of different approaches to sorting and then different types of recycling processes.

Hon. Ed Fast: You're saying those two processes would capture pretty well all plastics, including those that my colleague Mr. Lloyd referred to, which are plastic products with some colouring or paint on them. Those processes will take care of those products?

Mr. Usman Valiante: Sure. If you're gasifying something at high energy and turning it into its molecular building blocks, you can then take out the impurities and then just recover the hydrocarbons and reform them back into plastics, and that's what you're trying to achieve.

It's not perfect today, but with the right incentives there will be innovation to get to the point where we will theoretically be able to handle all the plastics that we put on the market today.

● (1650)

Hon. Ed Fast: I think you mentioned Carbon Engineering. Is that correct?

Mr. Usman Valiante: On carbon engineering, what I was talking —

Hon. Ed Fast: My question was how companies like Carbon Engineering and Merlin Plastics and other companies that are in this space can contribute to actually solving the plastics pollution crisis.

Mr. Usman Valiante: If we as a society say that we want to keep plastics out of the waste stream and out of the environment and we put these policies in place, those companies will respond to the market demand for more recycling by making the investments they need to make. We talked about how to get capital to them. Another thing you can do is to have accelerated depreciation on capital, which is very helpful, and then create demand for what they're producing and create supply by having these EPR systems that produce clean streams of material that can go to these recycling facilities.

If you start to say you want low-carbon plastics and you put a value on those by saying we're going to incentivize the use of renewable plastics as a feedstock, Carbon Engineering will stop producing diesel fuel and will start producing methanol that can be used to produced ethylene.

Again it's about creating demand for recycling activities and for what recycling activities produce.

The Chair: Thank you.

Mr. Peschisolido, you have six minutes.

Mr. Joe Peschisolido (Steveston—Richmond East, Lib.): I, as well, would like to thank the guests for their testimonies.

Mr. Valiante, you talked about creating a different way to give coffee to folks when people are getting their coffee.

Mr. Sandborn, I think you made the statement that encapsulates the discussion or debate on whether our strategy ought to be a reduction and reuse approach versus a recycling approach.

I will open it up to all of the four guests to comment on that discussion. Is it an either-or? Can we do both?

Mr. Valiante can begin, then Mr. Sandborn, and we'll go around the table.

Mr. Usman Valiante: Right now, with disposal of plastic virtually unpriced, there's no incentive to look at any of the R's. When you start to put in requirements to collect and recycle, as I said earlier, at some point you might look at a certain product and say, “Yes, we can collect it and recycle it, but the costs of collecting it in this way are very, very high, despite the fact that we can recycle it. Maybe we can deliver this product in a different way.”

I'll give you an example. In the grocery industry, there has been a move away from single-use cardboard cartons to multi-use plastic totes for produce. The tote is used once, is washed, and then is sent back to the farmer where produce goes in. That tote makes a number of trips. You're amortizing the cost of making that plastic over a number of reuses, just like a refillable beer bottle.

That only becomes economical when you have to pay the full cost of disposing of things and the full cost of making—

Mr. Joe Peschisolido: Is that what you meant when you talked about—I forget how you phrased it—monetizing plastic waste?

Mr. Usman Valiante: Essentially, you're putting a price on disposing of it.

Mr. Joe Peschisolido: Mr. Sandborn, would you like to chime in?

Mr. Calvin Sandborn: I agree with Mr. Valiante that the economics of this are critical. There does need to be a price on plastic that's too cheap and, therefore, gets wasted. In our report, we do talk about the possibility of the federal government's taxing the plastic so that it's not wasted.

I do think that the ideal needs to be reduction and reuse first. Theoretically, we can say that chemical recycling—which to my understanding is not really done at industrial scale right now, as we're kind of at the beginning of thinking about this as a technology that will be useful and is being promised as the solution here—is still going to have the problem of collecting all of the plastic. You could theoretically recycle 100% if you could gather it all, but there's going to be all sorts of plastic that gets thrown away, thrown in the garbage, thrown on the street or wherever.

It also doesn't deal with the climate change impact of doubling our plastic production every 20 years and then moving to 20% of our greenhouse gases coming from the plastic industry.

What I would encourage you to do is think about what Procter & Gamble and some of the toiletry companies are now proposing with the Loop system. It is an ideal kind of reduction and reuse system where they are talking about having toiletries that are sold in bulk in grocery stores put into reusable containers that consumers can fill up, use at home and then go back and fill up again.

That is the key to a successful approach.

● (1655)

Mr. Joe Peschisolido: Mr. Sandborn, if not plastic, what do we use? Mr. Valiante made the point that plastic is cheap. You have economies of scale with the petrochemical industry. So, if not plastic, what else? Where can we evolve?

Mr. Calvin Sandborn: We can use plastic if it's reused. I think that in the Loop system they will probably be using plastic containers, but they will be reusing them. Then there are other materials that can be used that may not have all the negative impacts of plastic.

Mr. Joe Peschisolido: I'd like to talk a little, if I have some time, Mr. Chair, about the microplastic issue. Like the chair, I was also a bit concerned about all the microplastic in our water.

Perhaps we can have Madame Rochman elaborate a little bit on that.

Ms. Chelsea Rochman: On which aspect of microplastic?

Mr. Joe Peschisolido: How do we reduce and eliminate microplastic, or can we? Are we stuck with it? If we're stuck with it, how do we mitigate it?

Ms. Chelsea Rochman: I think it's a good question.

I will say again that I think that anything we do that eliminates plastic waste and plastic pollution will help reduce microplastics. We also should recognize that there will be microplastics going into the environment by the nature of the wear and tear in using the materials. As we drive our tires down the road, our tires break down into little bits. We sometimes find 30 pieces of tire rubber in one litre of stormwater that we collect on the road and microplastics in the dust from our textiles.

When we think about mitigation, the ways that we can reduce the microplastics going into our waterways are bioretention cells on storm drains. We see a 92% reduction in particles with those. Filters on washing machines reduce microfibres by about 90% going into the waste-water treatment plant.

There are strategies that are microplastic specific, in addition to thinking about the plastic waste strategies that also help with microplastics.

The Chair: Now we're going back to Mr. Fast.

If Madame Boucher has any questions as well, feel free to jump in.

Hon. Ed Fast: I believe I heard Mr. Valiante mention the highly integrated nature of both the oil production and plastic production sectors. That implies a conflict of interest if we're looking at reducing the usage of plastic.

Is that how you gentlemen see that? Obviously, a company that produces oil wants to produce more oil. A preference would be to produce virgin plastics rather than recycled plastics.

How does your industry get past that, because you are in the business of making plastic but you are also integrated with the oil production sector?

Mr. Michael Burt: That's a good question.

From Dow's perspective, we take ethane and turn it into polyethylene, so we're fairly agnostic as to where the ethane comes from. However, it is a by-product of natural gas production. In Europe, they crack naphtha, which is a by-product of oil production.

The reality is that with advanced chemical recycling, you have an opportunity to get into a feedstock that is readily available. As I said, we like to see waste plastic not really treated as a waste but as a resource.

The global consumption of plastic exceeds GDP every year. We don't see that waning at all in the future. We're not advocating any major increases in the use of plastic or any major reduction in the use of plastic. That's just the reality of the economics that we have around the globe right now. Most of the plastic growth is in the developing countries.

The attributes that plastic have are that it is inexpensive to produce, long-lasting, highly flexible in its applications and it makes life much easier when it comes to handling products. We don't see that reducing. As to projections that have been commented on by a couple of other speakers, we only see plastic utilization going up.

The way to reconcile that with the impact on the environment is that you're going to have to increase substantially—hopefully, to 100%—the amount of plastic that gets recycled.

I don't really see a catch-22 or a conflict between oil and gas operations and petrochemical operations. As peak oil production stabilizes and begins to reduce, you will probably still have quite a bit of it going to plastic manufacturing. That, in conjunction with the amount of raw material feedstock that you would get from the recycled plastic, whether it's flake from mechanical recycling or the monomers that we get when we do chemical recycling, I think will balance out at the end of the day.

● (1700)

Hon. Ed Fast: Earlier you touched upon extended producer responsibility. You didn't get into it in great detail.

I would be interested in how you, as representatives of industry, see this working out. I sense that there was some passive approval of the concept, but you were concerned how it would be rolled out.

What would be your major concerns as EPR is implemented?

Mr. Michael Burt: Well, the major concern is the price that the producer would have.

My company doesn't make the plastic water bottles; we make resin. We make little plastic pellets that we then sell to converters who turn it into the everyday products that people see around the world.

The reality is that price per tonne is not unknown to Dow or to any of the resin producers around the world. It's talked about everywhere. The EU is actively looking at it.

I indicated earlier that the devil is in the details. What is price per tonne? Is that cost transferred on? Who collects the money? What happens to the money? Does it go into general revenue for the government? Is it used to help enhance some of the recycling that we've talked about from a chemical recycling aspect? Is it paid back to individuals who collect waste plastic bags to be turned over to the mechanical or chemical recycling facilities?

We're in favour of it as long as it's balanced out, in that all of the funds are not going to one entity that's not using it to really tackle the problem at the end of the day.

Hon. Ed Fast: Mr. Valiante, I think it was you who suggested that recycled plastic is more expensive than virgin plastic, which is why recycling doesn't happen at the rate we'd like to see it happen. That's a hurdle that has to be overcome. Do you have any suggestions on how we do that?

Mr. Usman Valiante: Certainly when you start creating high requirements for recycling and the scale starts to increase, your unit costs start to come down, the technologies get more sophisticated and you get more innovation—first in how to recycle it and then in how to bring the cost of recycling down. You're going to get scale efficiencies and you're going to get scale efficiencies in collection.

I think Michael just raised a good point. We shouldn't be taxing plastics and using that to pay someone else to recycle it. Producers should actually operate the collection system so they can optimize that system. They're spending their own money to create organizations that collect this material and then direct it to their recycling partners, which are these recycling facilities. Then they'll start to get the scale that we need. When they start taking three million metric tons and putting it into the recycling system, they'll start to bring those costs down and make them competitive.

There's going to be a hurdle we need to get over. That hurdle really is only going to be overcome when the producers start to reconfigure the recycling system and scale it up.

Hon. Ed Fast: Mr. Burt, do you want to respond to that?

Mr. Michael Burt: No. I agree with what he said.

The Chair: Perfect. Thanks.

Mr. Bossio, you have six minutes.

Mr. Mike Bossio (Hastings—Lennox and Addington, Lib.): Thank you, all, for being here. This has been a very interesting conversation.

I'd like to start with Mr. Burt. Do you believe in the three Rs—the first one being reduce?

Mr. Michael Burt: Of course.

Mr. Mike Bossio: How do you see that reduction working then, if we're not going to seriously tackle some of the Rs? You made some valid points on single-use plastics. There are some that it doesn't make sense to eliminate as long as you can recycle them, but there are some that I think should be banned.

How would you respond to that?

Mr. Michael Burt: That's a good question.

There are some products that are probably over-utilized. You need to look at a real life-cycle analysis. If you want to remove the plastic bags or straws and you're going to replace them with something else, what you're replacing them with can be, and usually is, substantially more energy intensive.

You have to reuse a nylon bag—which, incidentally, is made of plastic as well—1,000 times to equal the same environmental footprint as one single-use plastic bag. There has to be a balance in place. I mean, if you—

● (1705)

Mr. Mike Bossio: If you're looking to change behaviour and how some people act.... I can't remember the last time I drank out of a plastic bottle. I can't remember the last time I used a paper cup, a plastic lid or a plastic straw. There are ways to get around using those particular products, but if you don't put a ban in place to change people's behaviour and try to address how they consume, then you're never going to solve that particular problem.

I'd like to give Chelsea Rochman an opportunity to comment on that. I'm not someone who is totally opposed to extended producer responsibility and trying to maximize the amount of plastics that we're recycling and all the rest of it, but the first R is reduce. The second one is reuse. The third one shouldn't be recycle; it should be upcycle. We need to think about these things differently.

I'd like to give you an opportunity to comment on that.

Ms. Chelsea Rochman: We have an outreach program where we go out in the community and do cleanups on the coastline or at the mouths of rivers. The majority of what we see—the top items—are a lot of the items that you just said you can't remember the last time you used them. These items are being used and then somehow making their way to being some of the top items that we see in nature.

I agree with you one hundred per cent about the three Rs and the hierarchy. I think that there are products that we wouldn't need to replace. We could just reduce them and have people get used to this idea that they don't need them.

Of course there are situations where there is a need for a straw, but you only have them when there's a need and you're still reducing a large amount of what we use. I completely agree with you. I think by reducing a lot of those materials we could clean up a lot of the litter we see on our coastlines.

Mr. Mike Bossio: I'd like to give Mr. Sandborn and Mr. Valiante an opportunity. Mr. Valiante—since you're here—I know that the circular economy is definitely an important aspect of this, but once again, would you agree that we have to focus on the hierarchy of the three Rs?

Actually, I would like to see a change to reduce, repair, reuse and upcycle, rather than the way we currently think about them.

Mr. Usman Valiante: Certainly all of those Rs are legitimate strategies to address the problem. As a first step, I'd like to get the parties responsible for that to pay the full cost so they can pick the right R for the right solution. Maybe I should reuse this. Maybe I shouldn't use this plastic at all. Maybe I should redesign the product.

These Rs become a strategy once you've said you can't pollute for free anymore. You can't just dispose of this stuff; you have to take it back and recycle it. That poses a cost, and that cost then induces a decision-making process. I've seen it happen: Where I want to avoid this cost, I think I might have to redesign this, change it or something else.

Mr. Mike Bossio: But just as we see in dealing with other areas, you need to combine a number of measures. There's no silver bullet that's going to solve the issue completely.

Mr. Sandborn, could you comment as well?

I don't know how much time I have left.

The Chair: You have just over a minute.

Mr. Calvin Sandborn: In the gun that we need is the question of price. Currently what happens is that plastics are too cheap. It's been mentioned so often that these are cheap, and that's why they proliferate. Why are they cheap? Part of it is the multi-billions of dollars of government subsidies that go to the oil and gas industry. In the next week our centre, the Environmental Law Centre, is publishing a report daylighting the billions of dollars the oil and gas industry receive. That's one thing: We should eliminate those subsidies.

The second thing that gives you that distorted price signal, where it's so cheap that everybody wastes it, is that we haven't applied the polluter pays principle. People have been able to produce these products, make billions of dollars in profits from them, and then not take responsibility. It's been the taxpayer who's been dealing with the waste. It's been Mother Nature that's paid the cost of that waste being disposed of. We need to get rid of the subsidies. In our paper we talk about how the federal government can play a role in changing the price and giving a proper price signal here.

● (1710)

Mr. Mike Bossio: I'd like to give you an opportunity to speak about greenwashing and the need to eliminate it, which you mentioned earlier. Do you have any solutions in mind to deal with that specifically?

Mr. Calvin Sandborn: I think the Competition Act needs to be reconsidered and include very strong prohibitions on misleading advertising about the environmental qualities of products. I think that is happening across the board with products. Corporations have figured out that consumers are reluctant to buy things they think might be environmentally harmful, and yet you have corporations that are selling products that oftentimes are inherently environmentally harmful, and so they fudge the truth. The Competition Act needs to be changed so that when a corporation does that, the Competition Bureau steps in and says, "Wait a minute, we're going to make you retract that misleading advertising that is causing people to waste"—in this case plastics—"and create all these destructive wastes".

Mr. Mike Bossio: Thank you so much.

Thank you all.

The Chair: We have one last round of questions from Mr. Stetski to finish the planned rounds we have.

It's over to you, Mr. Stetski, for your wrap-up set of questions.

Mr. Wayne Stetski: My is for Mr. Valiante, and potentially Mr. Burt.

The "one size doesn't necessarily fit all" approach is one of the statements we've heard when it comes to plastic pollution. I'm interested in your perspective. When you're looking at reduce, reuse, recycle and recovery, does it make sense to set legislated timelines by sector—for the electronic sector, the textile sector and single-use plastics, sector by sector? Does it make more sense to set an overall goal for plastics in general for reuse, reduction, and recycling, doing it by industry and letting industry figure out how to reach those targets? Which do you think is more effective at getting results in the end?

Mr. Usman Valiante: Theoretically, you could set a national plastics recycling target, and different sectors would engage in strategies. One recycles more than the other, and they could trade their recycling credits. That sounds good in theory, but I prefer looking at sectors and saying, "We use this much plastic in the manufacturing of vehicles. We need to have a strategy to recycle plastics in vehicles." It's the same with electronics. When we regulate producer responsibility today, that's how we look at it. We look at tranches of products that are in the market. We just don't have very stringent plastics recycling targets associated with it, and we don't really even track where the plastics go once we recycle those plastics. I prefer looking at the portfolio of durable products that we have, what we're calling single-use products or short-lived products in the market, and then developing targets that are specific to the uses of those materials.

Mr. Wayne Stetski: But I mean targets for all three Rs—not just for recycling, but also reducing and reusing—

Mr. Usman Valiante: A lot of questions have been asked about reduction, and I think you have to ask yourself what problem you're solving. If you're reducing plastics because they're going into the marine environment and they're a problem, that's a specific issue you're dealing with. It may be that you ban plastic bags because they're going into the environment and causing harm, recognizing that there's a trade-off that you're making with whatever the substitutes are in the short term. That's a public policy decision to protect the marine environment, so you need to be conscious of that.

That's a legitimate policy tool. For the broader scale of materials, if we're dealing with this 9% recycling rate—and that's going to waste and all of the embodied energy and greenhouse gases in it—we want to recoup that. That really does require looking at the different segments of the economy and saying, "Where are we using plastics? Where can we intervene with policy tools to change the flow of that plastic?"

Though not applied sector by sector in exactly the same way, EPR as a policy concept—if it's applied stringently, and I keep saying that—can be highly effective.

Mr. Wayne Stetski: Mr. Burt, here's the same question. Do legislative targets for the three Rs make more sense by sector or by industry as a whole, potentially?

Mr. Michael Burt: It's a good question. It's equivalent to what we're discussing when it comes to carbon as well. The reality is that there are some sectors that can reduce substantially easier than others, whereas some have a substantially more difficult time. Setting a federal target will basically force companies to kind of hit that target.

There are usually some sort of sectoral differences. I guess my personal preference would probably be to move to some sort of sectoral target that the federal government could potentially implement, taking into consideration the type of industry that you're dealing with, who can hit a target easier than others.

What you really don't want is to set a target that's unrealistic, that nobody's ever going to be able to hit. It will spur innovation, but it also sometimes spurs companies leaving one jurisdiction to go manufacture in another. You always have to be careful about capital—capital risk, capital flight.

● (1715)

The Chair: Okay, that takes us to the end of the planned rounds. We do have a few minutes left on the clock, and with the agreement of the committee we could go with three minutes for each side if there's interest. We would normally go Liberal, Conservative, NDP.

If we're okay with that, I'll go over to this side for three minutes, if anybody wants to take it. Whoever wants to jump in can do so, because we're going to start the clock.

Mr. William Amos: I'd like to jump in.

A Voice: Be nice, William.

Mr. William Amos: Of course.

Maybe I'll start with Mr. Valiante and move through the witnesses.

Are you aware of any particular reforms to render more stringent plastics regulation any time after 2005?

Mr. Usman Valiante: Am I aware of any reforms?

Mr. William Amos: Yes, or were there any specific new measures undertaken—whether they're sort of policies or programs—that really got to the issue of plastics pollution?

Mr. Usman Valiante: I think—

The Chair: Sorry, we've just heard the bells ring for a vote. Once the bells start, I need the unanimous consent of the group to continue, and we would probably wind it up now anyway.

It looks as if we won't able to get a response. Sorry I had to cut you off there.

Thank you to each of the witnesses for joining us today. It's been a very good discussion. If anybody does have anything further that you would like to submit, we encourage written briefs in conclusion. We ask that you try to limit them to 10 pages just for translation purposes. If there are things coming out of the discussion today that you think would be useful for us to know, please send in your additional briefs to the clerk.

We're hoping to conclude our gathering of information by next Wednesday, which will give our analyst time to develop a report by the end of May. That will allow us to table it in the House before we rise sometime in June.

Thank you so much for being here. It's been a wonderful panel. Sorry to have to cut it off like this.

Now we're adjourned.