HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

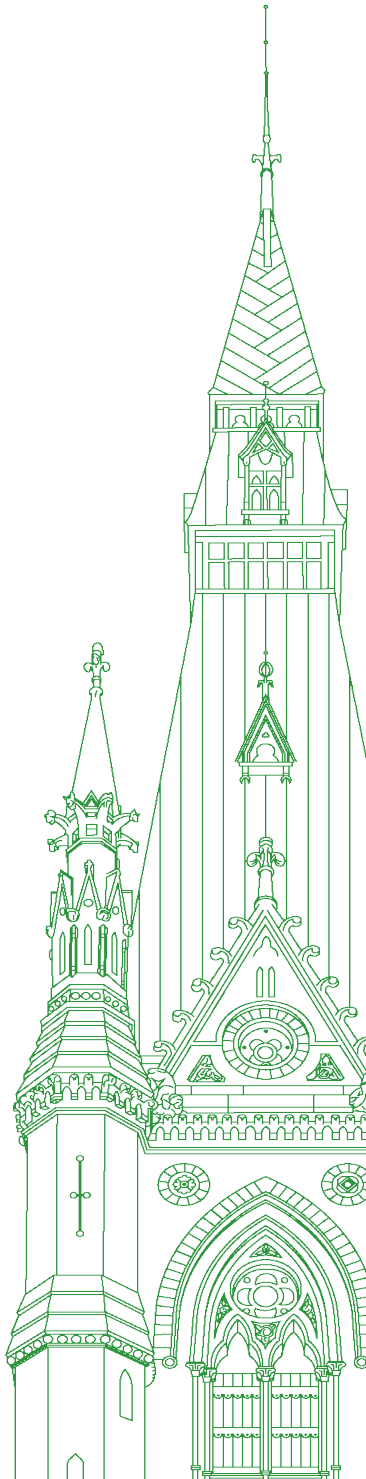
44th PARLIAMENT, 1st SESSION

# Standing Committee on Environment and Sustainable Development

EVIDENCE

**NUMBER 104**

Thursday, April 18, 2024



Chair: Mr. Francis Scarpaleggia

# Standing Committee on Environment and Sustainable Development

**Thursday, April 18, 2024**

● (1530)

[*Translation*]

**The Chair (Mr. Francis Scarpaleggia (Lac-Saint-Louis, Lib.)):** I call the meeting to order.

Good afternoon, colleagues.

I also want to welcome the witnesses, who are all online today, I believe. We have two panels.

For the first hour, we're pleased to have with us Martin Bureau, vice-president of innovation and head of the PFAS Center of Excellence at ALTRA. I think we've spoken before. From the Okanagan Basin Water Board, we have executive director Anna Warwick Sears. From the Prairie Provinces Water Board, we have chair Nadine Stiller.

Each witness will have five minutes for their opening remarks.

Mr. Bureau, the floor is yours.

**Mr. Martin Bureau (Vice-President, Innovation and Head of the PFAS Center of Excellence, ALTRA):** I'm honoured to be with you today.

My name is Martin Bureau, and I'm with ALTRA SANEXEN. I'm going to do my presentation in English from Seattle, where I'm—

[*English*]

**Mr. Lloyd Longfield (Guelph, Lib.):** I have a point of order. The interpreters are having trouble hearing.

[*Translation*]

**The Chair:** It seems that the interpreters are having trouble hearing you, Mr. Bureau. Is the volume too low on your end? We know the sound test was carried out successfully.

**Mr. Martin Bureau:** Yes, absolutely, and my signal is perfect.

Is the sound quality okay?

**The Chair:** Is the sound better for the interpreters now?

Mr. Bureau, perhaps you could tell us a little bit about where you are and how the weather is in Seattle.

**Mr. Martin Bureau:** I'm in Seattle, and the weather is beautiful. It's about 10 or 12 degrees. I'm at the Waste Connections landfill management meeting. Waste Connections is number three in North America for landfill sites, and it's adopted our technologies to treat PFAS, or per- and polyfluoroalkyl substances.

**The Chair:** Mr. Bureau, the situation is no better. So we'll try to fix the sound problems, and then we'll come back to you after the other two witnesses have presented.

Ms. Warwick Sears, you have the floor for five minutes.

[*English*]

**Dr. Anna Warwick Sears (Executive Director, Okanagan Basin Water Board):** Thank you.

I'm coming to you from the Okanagan Basin Water Board. We are a local government agency, a partnership of Okanagan local governments, and we have had a mandate since 1970 to take leadership on valley-wide water issues. We're one of the fastest growing regions in Canada, and we're one of the most water-stressed regions in Canada. While it's really good to see the federal investments in housing, we're going to need good drinking water to supply those homes.

I want to talk to you about two really urgent issues that require timely investment by the Government of Canada right now to avert massive costs and suffering in the near future.

The first is the impacts of extreme weather on fresh water. We had catastrophic flooding in 2017 and 2018. Last year, in addition to destroying almost 300 homes, the big West Kelowna wildfire came very close to destroying our multi-million dollar Rose Valley water treatment plant. This summer, we're worried about the Duteau plateau, which is where all of our reservoirs are on the east side of the Okanagan Valley. These reservoirs provide water for 90,000-plus residents and represent hundreds of millions of dollars of agricultural production.

Today, right now, B.C. snowpacks are at historic lows, so we're going from a drought last year into a drought this year. Water utilities are, right now, meeting to plan how to avert conflicts between drinking water for residents, farmers' irrigation and fisheries needs.

I'm here to ask the Government of Canada to further invest in disaster mitigation and adaptation funding to expand efforts to prevent damage from the floods, the droughts and the wildfires, as well as to expand water storage, upgrade irrigation systems and fund drinking water infrastructure. The time for this investment is now. It takes a while for the funding to flow, and recovery is vastly more expensive than proactive mitigation.

The second thing I want to talk about is the invasive mussels that threaten our lakes. The Government of Canada is investing heavily in managing aquatic invasive species in the Great Lakes, but right now, zero dollars are being invested to prevent the invasion of zebra and quagga mussels into western Canada. These invasive mussels are typically brought in by mussel-fouled boats. Most of these mussel-fouled boats are coming from eastern Canada, which means it's an interprovincial issue and merits federal involvement.

The Columbia, Kootenay, Okanagan and Fraser basins are all at risk from these mussels because of our water chemistry. There are projections that the invasive mussels will cause B.C. more than $139 million annually. The CBSA must also be involved because invasive mussels have just been detected in the Snake River, which is also part of the Columbia basin. Federal resources are urgently needed right now for the B.C. invasive mussel defence program.

In summary, local governments in B.C. are facing intense threats to fresh water from the extreme weather events and from these invasive aquatic species. The costs of prevention and proactive mitigation are small compared to the extreme costs of repairing or even managing the damage. These are national-scale challenges that can't simply be transferred to the provinces or local communities. We're risking losing our local ecosystems, our salmon runs, our quality of life and our cultural values, and we're risking severely impacting local communities.

We're asking the government to invest in local government flood, drought and wildfire mitigation. We're also asking that the federal government provide equivalent resources to western Canada as are given to eastern Canada so that we can prevent aquatic invasive species, particularly invasive mussels, from coming to our area. We also request that the federal government fully implement the recommendations of the report on aquatic invasive species by then commissioner Julie Gelfand. I believe this came out in 2019.

Thank you very much.

● (1535)

**The Chair:** Thank you very much, Dr. Warwick Sears.

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

**Ms. Nadine Stiller (Chair, Prairie Provinces Water Board):** Mr. Chair, my name is Nadine Stiller, and I have been chair of the Prairie Provinces Water Board since 2018. I'm also the executive director with the new Canada water agency branch within Environment and Climate Change Canada.

Today I'm representing the Prairie Provinces Water Board.

I'm honoured to be joining you from Treaty 1 territory, the traditional lands of the Anishinabe, Ininew, Oji-Cree, Dene and Dakota peoples and homeland of the Métis nation.

Water management in Canada is a shared responsibility between all levels of government, and the legal framework for water management is complex. In summary, the provinces hold primary responsibility for water quality, water use and allocation within their borders, including drinking water and waste-water services. The federal government is responsible for fresh water generally through national regulations and monitoring programs. Both levels of government deliver programs to promote healthy aquatic ecosystems.

In the Prairies, water generally flows eastward from the Rockies in Alberta through Saskatchewan to Manitoba before draining into Lake Winnipeg and Hudson Bay. Managing water effectively across the Prairies is critical for both economic prosperity and the well-being of its residents, including a significant indigenous population. This unique system relies heavily on snow-melt runoff, so precipitation variability makes the region highly susceptible to extreme conditions like droughts and floods. Droughts that are long lasting after multiple years pose the greatest challenge. Climate change is intensifying these variations, making strong interjurisdictional collaboration essential.

The Prairie Provinces Water Board was established in 1948 by the three provinces and the federal government. However, by the 1960s, the growing water demands from provinces indicated the need for a more robust system. In 1969, the master agreement on apportionment was established, and the board focused on the equitable sharing of transboundary waters in the Prairies. While it has no enforcement mechanism, the agreement is a powerful instrument that fosters co-operation, enables dispute resolution between provinces and has proven its function for over 50 years.

Schedules A and B of the agreement establish a fifty-fifty formula for annual natural flows between adjacent provinces. Each province uses and/or receives 50% of the natural flow. The board determines the natural flow computation methodology and calculates apportionment balances. Schedule E, introduced in 1992, specifically addresses water quality for 12 transboundary water bodies. The federal government performs water quality monitoring that supports a five-year cycle review of water quality objectives. Additionally, a new schedule F for co-operation on groundwater and aquifer management is in the process of being added to the master agreement.

There are three key factors that contribute to the board's success.

First, the master agreement on apportionment commits provinces to a fair portioning of water, protecting both water quantity and quality. Provinces benefit from long-term planning certainty through knowing their water allocation and responsibilities.

Second, consensus-based decision-making allows issues to be addressed before they escalate into conflicts.

Third, the board, comprised of senior water resource officials, fosters collaboration across similar mandates and shared goals with equal decision-making power.

The board is supported by a secretariat and four permanent committees that include hydrology, flow forecasting, water quality and groundwater. The board is cost shared equally between federal and provincial governments. Environment and Climate Change Canada funds and conducts water monitoring activities at the transboundary locations. The board's strength lies in its commitment to consensus by involving all parties, which fosters a spirit of co-operation and mutual respect amongst provincial governments, the primary water regulators. The collaborative approach has ensured consistent compliance with the master agreement.

Thank you on behalf of the Prairie Provinces Water Board for this opportunity.

● (1540)

**The Chair:** Thank you very much.

That was very interesting.

[*Translation*]

Mr. Bureau, we'll go back to you. If everything is working, the floor is yours.

**Mr. Martin Bureau:** That's perfect.

I'm pleased to address you again. Can you confirm that the sound is good?

**The Chair:** Yes, it is.

**Mr. Martin Bureau:** Thank you.

● (1545)

[*English*]

In 2001, our company, ALTRA, had already started to treat PFAS. We were contracted to remediate soil and groundwater that had been contaminated by AFFF, which is aqueous film-forming foam that is full of PFAS, because of a leaking tank on a Canadian military base. We treated 4.5 million litres of groundwater using a combination of our own technology at the time—foam fractionation and media filtration—achieving removal efficiency of 99%.

Another major project was completed in 2013 after the terrible Lac-Mégantic accident, where we treated all the water that was used to put out the fire after those 72 railcars blew up. The petroleum fire was extinguished in two days using nearly 1,000 litres of concentrated AFFF and more than 64 million litres of water. ALTRA treated all that hydrocarbon- and AFFF-contaminated fire water, achieving 99.6% removal.

In 2022, we executed the largest PFAS remediation project in Canada at the Canadian Forces Base Borden. We dealt with 10 million litres of highly contaminated AFFF- and hydrocarbon-contaminated groundwater as well.

After many pilots and testing of over 10,000 PFAS samples in our lab in Montreal, we have developed an expertise that we're spreading throughout North America. Now we are operating the first of its kind “clean water as a service” PFAS treatment plant, which aims at achieving a guaranteed level of PFAS removal in contaminated leachates at Waste Connections'—which is the third-largest landfill management company in North America—landfills in Rosemount and Rich Valley, Minnesota.

As you well know, PFAS, the forever chemicals, are everywhere and they vary from site to site. They end up in our surface water, groundwater, leachates and effluents from whatever sources they origin from—industries, contaminated sites, landfills, airports, military bases and so on—which we then have to treat downstream at drinking water treatment plants or waste-water treatment plants. At that stage, the concentration turns out to be very low. It's too high for our health, but it's still very diluted.

We have seen just recently in La Presse that a Sainte-Cécile-de-Milton aquifer was contaminated by PFAS from a well-suspected, close by, upstream source. Treatment costs at that level become extremely high. A large, publicly owned treatment plant could easily spend, on a daily basis, half a million dollars to treat PFAS, for consumables only.

This is not the solution. PFAS needs to be treated, addressed, captured or eliminated at its source. First and foremost, we need to eliminate its use in manufacturing processes and in manufactured goods. We also need to eliminate emissions from the various sources, wherever they are—whether they are solid, liquid or gaseous, especially focusing on liquids because this is the most urgent and most important type of emission to deal with right now. That's what ALTRA is dedicated to doing.

The bottom line is that our water resources face escalating strain and demand urgent action. Current efforts have proven insufficient in integrating resilience into our strategies for safeguarding and conserving water resources.

Canada must act promptly. We propose the following actions.

The use of PFAS must be strictly prohibited across a range of applications in Canada. We also need to include comprehensive declaration of their content, to ensure transparency and safety for consumers and the environment whenever they are used.

We also need clear and robust regulatory actions. It is vital to enact the draft objectives for PFAS in Canadian drinking water before the end of 2024. From these drinking water criteria, we can then derive surface water, groundwater and soil criteria and so on, and then act.

It is imperative that the federal government, through its key agencies, expedite the issuance of much-anticipated RFPs for comprehensive PFAS decontamination across the country. This includes orphan sites, airports, military bases and brownfields under the federal jurisdiction.

Financial support must also be provided to other levels of government in Canada to address PFAS contamination resulting from federal sites, like we have seen in aquifers downstream of military bases and airport sites throughout the country and especially in Quebec last fall.

Finally, it is essential to allocate specific funding to support the demonstration and implementation of innovative, made-in-Canada solutions for PFAS decontamination. This strategic investment will not only advance the effectiveness of remediation efforts, but it will also spotlight Canada's capability to innovate and lead in the environmental seat on the global stage.

Thank you very much.

[*Translation*]

**The Chair:** Thank you, Mr. Bureau. That was very interesting.

We'll now go to questions from members.

Mr. Kram, you have the floor for six minutes.

● (1550)

[*English*]

**Mr. Michael Kram (Regina—Wascana, CPC):** Thank you very much, Mr. Chair.

Thank you to all the witnesses for joining us today.

There is a lot to cover, so it's a shame that I have only six minutes, Mr. Chair.

Let's start with Monsieur Bureau.

First of all, thank you for all of the work you do on PFAS decontamination. I am wondering if you can share with the committee where PFAS comes from. When you suggest that PFAS should be strictly prohibited, what would be some of the implications of prohibiting PFAS?

**Mr. Martin Bureau:** PFAS are useful chemical compounds that have been used for a lot of applications in our world, whether for Gore-Tex, for Teflon anti-stick pans or to put out fires. They have this inherent property of not being affected by the environment—the extreme environment in particular—so that turns into a burn-resistant, stain-resistant or friction-resistant component.

As a result, they end up in almost everything we fabricate, including the textiles around us—if someone is wearing polyester—and the varnishes on our tables. They're also in all those sites where hydrocarbon fires have been put out or where we have tested foams for their quality of putting out fires of hydrocarbons.

Firemen have tested new foams by essentially digging a hole, putting in some diesel, using the foam and then leaving the foam to put out the fire. The result is that this has sunk into the ground and into the aquifer. That's one of the very important sources of PFAS in our community, and they are also linked with military bases and airports.

We then have the industries that use them. Then there are landfills that, as a result of all of our uses, end up with those PFAS, which then up in their leachate or their emissions. As a result, we have PFAS in our blood. I have PFAS in my blood. There's, in fact, no blood sample that does not contain PFAS in general. I have never tested a sample for suspected PFAS that did not have PFAS in it.

**Mr. Michael Kram:** Are there readily available alternatives to PFAS that could be used, or are they necessary for that particular type of firefighting foam or for other uses?

I understand we don't want PFAS in our bloodstreams and PFAS in our waterways, but at the same time if they're necessary to put out fires, there certainly are some benefits as well.

**Mr. Martin Bureau:** The simple answer is, yes, there are alternatives, and they work.

The thing is that this is a family of products that have proven performance. As a result, and because our regulations are done in a certain way, this molecule is being banned or this other molecule is being banned. However, we chemists are very clever at adding new branches to the molecules. That changes the name and then it's a whole new molecule. We need to ban the whole family of fluorine-based compounds for all those non-essential uses.

There are a few exceptions. If there were only exceptions, we wouldn't be in the position we are in now. Yes, alternatives exist.

**Mr. Michael Kram:** Thank you, Mr. Bureau.

I would like to switch gears now to Ms. Stiller.

Ms. Stiller, you spoke in your opening statement about the new schedule F for the co-operation on groundwater and aquifer management.

How can this schedule be implemented while we are, at the same time, respecting the rights of farmers, ranchers and other landowners?

**Ms. Nadine Stiller:** The schedule is not yet added to the master agreement. It's in process. We're waiting for one of the provincial governments to complete its order in council.

There is the committee of the Prairie Provinces Water Board on groundwater, at which all the provincial regulators and federal experts come together to determine areas that need to be studied or analyzed and to recommend preventative action. The work is done from a compliance perspective with the Master Agreement on Apportionment, but all of the partners, all of the members of the board, are very clearly vested in the Prairies and understand the importance of the relationship with the agricultural community, so we don't engage necessarily directly. It's also very early days in terms of how schedule F will be implemented.

There are many other non-governmental organizations across the Prairies that engage directly with the agricultural sector to promote and implement best practices to prevent and mitigate pollution in both surface water and subsurface aquifers.

● (1555)

**Mr. Michael Kram:** This committee has also heard several times about the economic and environmental benefits of irrigation projects. Can you share your thoughts on how the Canada water agency could play a positive role? Also, what is the best way to move forward with major irrigation projects?

**The Chair:** We only have about 20 seconds. You could also try to work that in somehow later on in an answer to a question, but go ahead, Ms. Stiller.

**Ms. Nadine Stiller:** The provinces are fundamentally the regulators of irrigation development within their borders. The board I'm representing today really serves a monitoring and compliance function to make sure that the water quality and quantity parameters accorded in the master agreement are met.

**The Chair:** Thank you.

We'll go now to Mr. Ali, for six minutes.

**Mr. Shafqat Ali (Brampton Centre, Lib.):** Thank you, Chair.

Thank you to the witnesses for being here today to share their experience, expertise and insights.

My first question is for Ms. Stiller from the Prairie Provinces Water Board.

The 1987 federal water policy recommended further use of "mechanisms like the Prairie Provinces Water Board...to address potential...water conflicts" between provinces and territories.

Could you please suggest what best management practices and lessons learned from the Prairie Provinces Water Board could be applied more broadly to interjurisdictional water co-operation in Canada, such as through the Canada water agency?

**Ms. Nadine Stiller:** Canada has several mechanisms that are intergovernmental boards. The Mackenzie River Basin Board comes to mind. In that agreement, there are requirements for bilateral agreements between adjacent and neighbouring provinces.

These boards give a more regionally based perspective in terms of water management considerations. They function to prevent conflict, and they also function as information forums where concerns are brought forward by neighbouring provinces with the intention of finding consensus and finding a resolution to any particular concern.

I chair both of the domestic water boards. They represent a significant portion of the drainage that occurs in Canada. The Mackenzie River drains 20% of our land base. I would suggest that the bilateral agreements embedded in that master agreement function to resolve, prevent and manage across provincial and territorial boundaries.

**Mr. Shafqat Ali:** Thank you.

My second question is for Ms. Sears.

Does the Okanagan Basin Water Board have any enforcement abilities?

**Dr. Anna Warwick Sears:** No, we do not. We are an organization of local governments. The local governments have some bylaw authority, but all that enforcement really comes from the provincial government.

**Mr. Shafqat Ali:** What are the board's current challenges?

**Dr. Anna Warwick Sears:** The board's current challenges involve dealing with climate change-related extreme weather events, as I was discussing. There is also the issue of invasive mussels. This is why I brought both of these issues forward to you. These issues are the local governments' greatest concerns. There are always some water quality challenges and challenges in communicating generally with the public, but primarily we are interested in maintaining and upgrading our infrastructure for water and protecting the quality of the lakes and streams in the valley.

● (1600)

**Mr. Shafqat Ali:** Thank you.

Is there a role for the federal government to play in working more closely with the Okanagan Basin Water Board?

**Dr. Anna Warwick Sears:** The federal government has been involved in recent years primarily through the Department of Fisheries and Oceans. It is supporting this massive salmon restoration project that's happening in the Okanagan: 80% of the Columbia River sockeye salmon and a significant number of endangered chinook salmon are reared in the Okanagan, and then they swim south down into the U.S. and out the Columbia River into the Pacific.

We are working with the Okanagan Nation Alliance to support that restoration and to do the water science necessary to improve the habitats. DFO has been involved in that.

Otherwise, the federal government is not super engaged in any of the other Okanagan water issues. We do have some meteorologists around, and we do some work with the Water Survey of Canada, which has a certain number of hydrometric monitoring stations here. We work with them to expand the hydrometric monitoring network.

**Mr. Shafqat Ali:** Thank you.

My next question is for Mr. Bureau and Ms. Savoy from ALTRA. Given that there are over 4,700 PFAS, the Environmental Law Association recommends the promotion of "management and regulation of PFAS as a class, with the objective of working towards zero discharge and virtual elimination", rather than addressing PFAS one by one.

First, are you satisfied with the Government of Canada's progress in risk assessment of PFAS under the Canadian Environmental Assessment Act, 1999?

**Mr. Martin Bureau:** First of all, we are happy that this risk assessment has been made. After looking at it, we can witness that it's extremely proactive and advanced in terms of regulation compared to other bodies in the world. However, it does not go fast enough. The EPA in the States has already stated their drinking water limits, and they were enforced as of last week.

**The Chair:** Thank you. We'll have to stop there, unfortunately. We've gone over time a little bit.

Madam Pauzé.

[*Translation*]

**Ms. Monique Pauzé (Repentigny, BQ):** Thank you, Mr. Chair.

I was going to ask the same question as Mr. Ali, but before I go any further, I want to thank all the witnesses for being with us today.

Mr. Bureau, I will give you time to finish your answer to Mr. Ali's very interesting question.

**Mr. Martin Bureau:** Things are not moving fast enough in Canada. The U.S. Environmental Protection Agency already started enforcing its rules last week, and we're still wondering when we're going to implement ours. We feel that we're definitely a few years behind the United States, which is a rarity in this area. However, we can catch up quickly, because the technology has evolved so much.

I started working on PFAS four years ago, and we're now at the marketing stage with our technologies. We can solve the real problems today. Four years ago, I wouldn't have said that. Furthermore, we're not alone. There's healthy competition in the industry, and there are many solutions to complementary problems. So there's a way to catch up very quickly.

**Ms. Monique Pauzé:** You talk about competition. Call me naive, but when it comes to health, I always think that we should favour co-operation over competition.

**Mr. Martin Bureau:** You're quite right.

**Ms. Monique Pauzé:** Thank you.

You've been in the environmental industry for 15 years, in a variety of leadership positions. Prior to that, you held a number of leadership roles at the National Research Council. So you're a very capable individual.

A few weeks ago, the committee heard from Professor Sébastien Sauvé, whom you probably know. He talked about technologies and equipment that could identify the presence of PFAS so that we could destroy as many of them as we can as soon as possible.

I always talk about prevention and reduction at the source. Your company, ALTRA, is being called upon to act in several sectors of the Canadian economy when it comes to water treatment. Could you tell us what role detecting and destroying forever chemicals play in your company?

● (1605)

**Mr. Martin Bureau:** I know Professor Sauvé very well. He's an eminent chemist. When we talk about characterization, identification or detection, that's his area of expertise, and he may be the best in the world.

We're involved in PFAS remediation, problem solving, treatment, concentration and destruction. These technologies are effective, especially since the concentrations are high. Our place in the chain is more at the source of PFAS than where they get out. The idea is to address PFAS at the source through efficient and cost-effective means of concentration, and in doing so, reduce the problem downstream.

Because of the dilution factor, remediation costs are through the roof, to put it mildly. In response to a recent call for tenders from the City of Saguenay, the specifications estimated that remediation of three drinking water wells would cost $11 million over five years. We're talking about $2 million per well per year. If you do the math, you'll see that's not a cost-effective solution. You can't invest $2 million per well every five years in all water wells across Canada.

Instead, we have to find the source of the contamination upstream, which is very easy to identify, and then remediate the site. In the case I just cited, the federal government recognized that the source, at least in part, is the Bagotville military base.

**Ms. Monique Pauzé:** With respect to what happened in Saguenay, you're quite right, yes. I think we're on the same page. Basically, you're still referring to addressing the problem at the source, and therefore focusing on prevention.

That almost answers my second question. From a financial perspective, I wanted to ask you how much it would cost to have facilities able to detect safe thresholds for PFAS. Given that it takes $11 million to remediate three wells, we're talking about astronomical figures, I guess.

**Mr. Martin Bureau:** If I may say so, detection is not that costly; remediation is.

I'll give you an example. If we know the source of a water system, it generally costs $1 million to $2 million a year, depending on market rates, to remediate that place and solve the problem at the source.

If we're talking about continuous water generated by a landfill, it's per year. If it's a remediation, you take the soil, clean it up or burn it, and then you solve the water problem, and there's no more PFAS. In general, that would cost $1 million to $2 million. However, if we act downstream, for an extended water system it can cost at least $1 million a day, in general. So that's $1 million a year on a one-time basis versus $1 million a day downstream.

These figures could be applied to the water treatment plant in Montreal, for example. Not a lot of industries use PFAS on the Island of Montreal, but some landfills have used them in the past. We're treating at the source, as opposed to at the Jean-R.-Marcotte treatment plant for $1 million a day. I did the math.

Don't take me at my word, because that's an image, but we are probably in that ballpark.

**The Chair:** That's perfect. Thank you, Mr. Bureau and Ms. Pauzé.

I now give the floor to Ms. Collins.

[*English*]

**Ms. Laurel Collins (Victoria, NDP):** Thank you, Mr. Chair.

I think there is a theme here around how, if we fund and invest in the mitigation efforts up front, we can prevent some of the more extreme costs.

I want to start with Ms. Warwick Sears, but I also have some questions for Monsieur Bureau.

I heard you talk about the gap in disaster mitigation funding. At committee this past fall, we pushed for and passed a motion calling on the federal government to establish a $1-billion freshwater security fund for British Columbia, in partnership with the B.C. government and private partners. Unfortunately, the security fund was missing in this week's budget.

Can you talk a little bit about what a freshwater security fund for B.C. would mean for your organization and your region?

● (1610)

**Dr. Anna Warwick Sears:** Yes.

Let's use the fire risk on the Duteau plateau as an example. This is going to take maybe $5 million a year for a number of years to do the wildfire mitigation work. It involves cutting down non-market timber, so the forestry companies who do it have to be compensated.

The current size of the B.C. provincial watershed security fund is $100 million, which would provide $5 million a year for the entire province. On one project in the Okanagan, we could use up the entire amount of current provincial funding. The funding for this type of work back in the 1990s, in the days of the B.C. forest renewal program, adjusted for inflation, was about $60 million every year.

We're just not able to do the work. It's very expensive. The impacts are coming from the extreme weather, which is coming collectively from the rest of Canada and globally, and the costs are just astronomical to keep up with this after years of just ignoring the problem.

**Ms. Laurel Collins:** You also mentioned the discrepancy from east to west. We have seen some significant funds for the eastern provinces. The number you mentioned, especially when it comes to invasive mussels, was zero dollars for British Columbia. That's pretty striking.

When it comes to disaster mitigation funding, B.C. has been the hardest hit. We have had extreme flooding and evacuations from wildfires. We've had heat domes that have killed hundreds of people. I feel like B.C. in particular is in desperate need of this kind of funding.

Can you talk a little bit about that discrepancy?

**Dr. Anna Warwick Sears:** I don't want to say anything bad about the Canada water agency, but most of the funding for their freshwater fund is going to the Great Lakes and eastern Canada. I think there is some funding earmarked for the Fraser River basin. One of our arguments for the federal government to get more involved in prevention of invasive mussels is that there seems to be no recognition of the fact that the Fraser River basin, which is one of their priority watersheds, is also at super-high risk of invasive mussels.

The balance of the population in Canada is in eastern Canada, but most of the resources are coming from western Canada. I think, yes, it could be a lot more equitable. By having more resources up front, as Mr. Bureau was talking about, we can save the federal government billions of dollars in having to send us disaster response funds to repair all the damage that happens with the massive impacts to local infrastructure from these extreme weather events.

**Ms. Laurel Collins:** Thank you so much.

I feel like the lesson is that, for every dollar we spend up front on building climate resilience, the amount we save is astronomical.

Maybe we'll just start with a bit on the PFAS.

This week I tabled a motion in the House calling on the federal government to treat PFAS as a class to regulate under the Canadian Environmental Protection Act, to combat some of the misinformation that the industry has put forward around PFAS and to ensure that PFAS are phased out of firefighting turnout gear as quickly as possible, but also to fast-track the process to list PFAS as a class on part 1 of schedule 1 in the Canadian Environmental Protection Act.

I'll have another two minutes, so we'll probably get an answer in that time, but I'd love to hear a bit more about how we can align with the European Union and the U.S. in establishing a timeline for phasing out PFAS in products, and especially that European road map for phasing out PFAS.

● (1615)

**Mr. Martin Bureau:** I'm not an expert on all those laws in Europe and the United States. However, I know quite a bit.

The Europeans have taken a long time to deal with PFAS. As a matter of fact, they still don't have criteria for their treatment as of now. However, they have taken a very interesting way to address the issue. They have started surveying all suspected sites of PFAS throughout Europe. It's not all countries, but Switzerland, Holland, Belgium, France, etc., are doing that, so they're gathering data. This is a very rapid process. It started last year—

[*Translation*]

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

Unfortunately, time is up. I gave you a few extra minutes. We will have a second round of questions, and you may have a chance to expand on that.

[*English*]

We'll go to the second round. It's going to be a little truncated because of time. We'll do three minutes, three minutes, one and a half minutes, one and a half minutes, three minutes and three minutes.

We go now to Mr. Mazier.

**Mr. Dan Mazier (Dauphin—Swan River—Neepawa, CPC):** Thank you, Chair.

I want to follow up with Ms. Warwick Sears.

Why do you think the federal government's resources are not going to western Canada?

**Dr. Anna Warwick Sears:** You guys are in the House of Commons. I don't know. I don't understand it. It doesn't seem logical. It doesn't seem fair. It's been this way for a long time.

I think I would ask your committee to look into it. Really, it seems like our costs, the costs of the damage, will ultimately go to the feet of the federal government with big federal government disaster funding. Frankly, the mitigation from the invasive mussels is going to be a huge cost as well. I don't know why the federal government wouldn't want to provide funding up front and lower the cost to all Canadian taxpayers in the future.

**Mr. Dan Mazier:** I think you're kind of in agreement that you want a more proactive or conservation type of approach.

**Dr. Anna Warwick Sears:** Yes, absolutely. This is true for all manner of water issues. I think all of the panellists here would agree on that.

**Mr. Dan Mazier:** Thank you.

Ms. Stiller, how is the Prairie Provinces Water Board dealing with falling water volumes, basically drought, and does this stress the water sharing model?

**Ms. Nadine Stiller:** A couple of years ago, the Prairie Provinces Water Board did a drought simulation exercise to evaluate the resiliency of the master agreements. That was an excellent learning opportunity for the provincial regulators to take away considerations in a real situation. Fundamentally, the board doesn't take action directly towards managing drought, but through augmented hydrometric monitoring, we are able to provide additional data to help the provincial regulators better anticipate the implications of drought.

I would just close by adding that the Prairies naturally experience drought on a cyclical basis and, indeed, that is exacerbated by the effects of climate change. The Prairie Provinces Water Board presents a forum to help collaborate across the jurisdictions to address those challenges more effectively.

I'll close by saying that the master agreement, regardless of the cyclical variability that happens in the Prairies, has always been complied with, so we have been able to maintain equitable sharing thus far.

**The Chair:** Thank you.

Mr. van Koeverden, you have the floor for three minutes.

**Mr. Adam van Koeverden (Milton, Lib.):** Thank you very much, Mr. Chair.

It's clear to most people that we need to do more to limit the release of potentially harmful and toxic chemicals like per- and polyfluoroalkyl substances, or PFAS, that go into our environment, particularly as they are biomagnifying in our bodies and bloodstreams. This has been described.

Human beings almost waited too long to act on chlorofluorocarbons. Our ozone is finally starting to repair itself, but we've definitely waited too long to fully appreciate the warming impacts of excessive carbon dioxide emissions. We need to do more, not less, to limit the manufacture, use, import, export and release of these harmful chemicals.

There are a lot of stakeholders asking for PFAS to be fully classed as a toxic chemical under the Canadian Environmental Protection Act, which we'll tie to our study. However, at the same time, big plastic, which is a large group of multinational oil and gas companies that convert oil and gas to plastic in order to produce items like single-use plastic bags, straws and packaging, much of which contain harmful PFAS, seems to have gotten to some Conservative members.

Conservative MP from Saskatchewan Corey Tochor has used his private member's bill to try to amend the Canadian Environmental Protection Act to remove all plastic manufactured items from the list of toxic substances in schedule 1 of that act. Conservative MP Tochor trivializes the importance of having a comprehensive list of class A toxic chemicals, saying that he's bringing back the plastic straw.

My question is for Mr. Bureau.

It's clear to me that the Conservatives opposite are also supportive of this legislation, and they'd love to see more PFAS and more plastic pollution in our waterways and in our bodies. That's great. It's not limited to straws, but anyway.

Mr. Bureau, would eliminating the legislative basis for underpinning the regulatory ability to prevent plastic and PFAS pollution undermine action to prevent further contamination of our waterways, environments and bodies?

● (1620)

**Mr. Martin Bureau:** I don't do politics. I'm a scientist, and I'll start by doing that.

The key to success in remediation and impactful measures has a few arms, one of which is regulatory constraints. That's the wind that makes the boat move. That's the most important thing. If regulatory constraints are not in place, and in a meaningful or addressable way—because it could go too far too—then there's simply no action.

If the CEPA bans PFAS and calls PFAS hazardous substances wherever they are, including at federal sites, the industry will stop doing anything. It's going to go to court, and it's going to last for 10 years. That's an example of going too far, and there are examples of doing too little. It's clear that we need to divulge the PFAS presence in components that we manufacture.

[*Translation*]

**The Chair:** Thank you.

Ms. Pauzé, you have a minute and a half, enough time to ask a question.

**Ms. Monique Pauzé:** Okay.

My question is for any of the witnesses.

We always get the impression that, water-wise, everything is going well here in Canada, particularly in Quebec. We have millions of lakes and so on. However, we blithely use that water and have a false perception of its abundance and quality. It's as if we're ignoring PFAS, invasive species, plastic pollution, the polyester in our clothing and droughts.

Do any of the witnesses have any thoughts on what role the federal government could play in combatting this false perception of water?

[*English*]

**Mr. Martin Bureau:** Dr. Sears or Ms. Stiller, you're better placed than I am to answer.

**Dr. Anna Warwick Sears:** What can the federal government do to change the perception of water in Canada? It's hard to say. It's a really deeply embedded misperception that is down at the level of the public. It is an issue, because we're rightly proud of our water. When water issues occur they tend to occur relatively locally, I'd say, with the exception, perhaps, of the prairie provinces, where they are experiencing a multi-year deep drought.

I think the federal government is more engaged in water and more at the forefront of talking about water, and this is something that the Canada water agency could potentially do, by reaching out and publicizing more information about water.

● (1625)

[*Translation*]

**Ms. Monique Pauzé:** I'm going to stop you with regard to the Canada Water Agency, especially if we want to respect the jurisdiction of Quebec and the provinces.

[*English*]

**The Chair:** Thank you.

We'll have to move on to Ms. Collins.

That's what we're trying to do on this committee with this study: to be at the forefront of a new level of engagement, policy-wise, on water.

Ms. Collins.

**Ms. Laurel Collins:** I just want to give Mr. Bureau the opportunity to explain a little bit about that road map, the mapping out of sites in some of those European countries and what we could have as lessons learned.

**Mr. Martin Bureau:** Europe and the States now with "Plan 15"—I don't have time to explain, but you can refer to it—are listing all the sources of PFAS and putting a number onto each of those. Then there will be a plan for action, and the road map is very clear with dates like 2025 and 2026 being the moment when those remediations start, depending on the types of sources, with landfill being at the forefront of that list.

As a class, Canada has still not listed PFAS as a class. We're right now looking at the sum of 28 or 18, depending, on the list. The States has done the same—still with individual PFAS, but not the class—whereas in Europe they're looking at action on the full class of PFAS, which is definitely the way to go.

I heard that the drinking water guidelines might include a class, but as far as I know it has not been done so far. Among thousands and thousands, 28 PFAS is really nothing—let's face it.

**Ms. Laurel Collins:** Thank you so much.

**The Chair:** Mr. Leslie, you have three minutes, please.

**Mr. Branden Leslie (Portage—Lisgar, CPC):** Thank you, Mr. Chair.

I'll start with Ms. Warwick Sears.

You mentioned wine. Obviously, the Okanagan is notable for producing some great wine. I'm just kind of curious. Is there a lot of reliance on irrigation in that area? What is the usage compared to other users?

Secondarily, I know that internationally there's a bit of a shift towards dry farming, which is the idea of using less water, so the roots go deeper and create a more flavourful grape. Is that being adopted within the region as a means of reducing the amount of water use?

**Dr. Anna Warwick Sears:** Yes, definitely the wine industry is one of the more progressive of all the agricultural industries that are here in the valley. Most of them have moved to highly efficient drip irrigation and are definitely managing water for grape quality. Our wine has an emphasis on high quality, rather than volume.

Right now, we are struggling because 90% of the grape vines were killed this last winter when an extreme cold event happened right after an extreme warming event and the plants couldn't take it. There's a big replant program going on. We anticipate that the irrigation systems will be further upgraded with that replant program.

With respect to irrigation in general, many of the farmers of the other perennial crops, like cherries, peaches and apples, still need to upgrade their irrigation systems. I mention it to you because a lot of that funding historically has come from Agriculture Canada to help the farmers replace their systems. By helping the farmers, we help maintain food security in British Columbia and Canada.

**Mr. Branden Leslie:** Thank you for that.

Switching gears a little bit, one of the first things the Liberal government did when it came to power was to cancel the recreational fisheries conservation partnerships program, which supported habitat restoration across the country and worked with recreational and angling groups.

In your neck of the woods, do you feel the federal government is doing enough to support those on-the-ground groups that are trying to enhance fisheries populations?

**Dr. Anna Warwick Sears:** I don't work one on one with those groups and their specific things. We have a close relationship with the B.C. Wildlife Federation.

In general, most water things are underfunded here in British Columbia, whether it's wetland restoration or.... There's quite a bit of work and some funding, actually, from the U.S. to restore our salmon fishery. That funding goes to the Okanagan Nation Alliance and its work on the sockeye fishery.

Yes, we would very much welcome more federal involvement in fresh water in the interior of B.C.

● (1630)

[*Translation*]

**The Chair:** Mr. Longfield, you have the floor for three minutes.

[*English*]

**Mr. Lloyd Longfield:** Thank you, Mr. Chair.

Thank you to the witnesses.

Mr. Bureau, I met with Guelph's Local 467 of the International Association of Fire Fighters this week. They were talking about PFAS in terms of firefighting equipment, the foam that's being used and the health impacts on firefighters across Canada.

They're asking for a full class of PFAS chemicals under CEPA part 1 of schedule 1. They're asking for a ban on the use of PFAS, support for the reclamation and safe disposal of firefighting gear and foams containing PFAS, assistance for fire departments and municipalities with the costs of transition to PFAS-free protective gear, and the monitoring of the health of firefighters exposed to PFAS in their workplaces.

One of those items they're asking us to pay attention to is the reclamation and safe disposal of firefighting gear. They described to me how after a fire, when the gear is soaked with foam, that builds up over time. I had an image in my mind of a hockey bag. Sometimes you don't want to put that equipment on.

Is there a way of recovering equipment that's been contaminated with PFAS? Is there technology available that the federal government could be supporting?

**Mr. Martin Bureau:** Absolutely. There are many ways of dealing economically with contaminated gear. It depends on what it is exactly and the level that needs to be reached, depending on the exposure of the workers, or firemen in this case.

I would be cautious about textiles because it's not as easy to decontaminate those. Probably those should go to safe, secure landfills or be incinerated. However, for much of the other gear, it's totally doable and possible to do so.

**Mr. Lloyd Longfield:** Great. Thank you very much.

Ms. Stiller, I'd like to think about the prairie provinces. I'm also originally from Treaty 1.

I'm thinking of the tensions between the hydro developments off Lake Winnipeg, the Nelson and Churchill rivers, and the Jenpeg generating station that's used to control the lake level in taking hydro power from the lake, and how they impact the indigenous communities of St. Laurent on Lake Manitoba or Norway House on Lake Winnipeg.

Could you comment on how allocations could be used to strike a balance between hydro power needs and the needs of the people living on the lakes?

**Ms. Nadine Stiller:** I'm limited to saying that the apportionment calculations are really at the provincial intersect. It's the provincial boundary between Saskatchewan and Manitoba in this example. What Manitoba Hydro does in terms of regulation is really within Manitoba's jurisdiction. The board functions at the provincial boundary intersection.

[*Translation*]

**The Chair:** Thank you.

That concludes the second round. I'd like to thank the witnesses for this fascinating discussion and for being available to us. I hope to see you next time.

We'll take a short break for a few minutes to bring in the next panel.

The meeting is suspended.

**Mr. Martin Bureau:** It was a pleasure. Thank you.

● (1630)

_____(Pause)_____

● (1635)

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

I'd like to welcome our second panel of witnesses.

First, we have two guests appearing as individuals: Roy Brouwer, professor and director of the Water Institute at the University of Waterloo, and Frédéric Lasserre, full professor at Université Laval.

Then we'll hear from the Canadian Nuclear Safety Commission.

Professor Lasserre, since Professor Brouwer is not here at the moment, we will turn to you. You have the floor for five minutes.

**Mr. Fréderic Lasserre (Full Professor, Université Laval, As an Individual):** Good afternoon, everyone.

It's a pleasure to be able to share a few thoughts with you on water governance dynamics.

As has been mentioned in previous testimony, there's been a lot of emphasis in Canada for quite some time on the need to improve water quality. However, everything was happening as if the quantitative problems didn't really apply to the governance of this resource in Canada. In fact, there was a widespread perception that the great abundance of water in Canada made it impossible to think about the need to better manage this resource, and that perception wasn't completely unfounded. It's true that we're blessed in Canada, because we have such great resources. That's not to say we don't need to think about how we manage the amount of water we use.

In terms of quality, what can we already see? First of all, we still have this scandal about very poor water quality in most indigenous communities, even though they have been insisting for decades on the perfectly legitimate need to improve water quality. Even though we live in a developed country, a number of indigenous communities don't have drinking water resources, which is quite scandalous and ironic.

In addition, in the rest of the country, water quality has significantly improved in the major rivers and the Great Lakes as a result of a lot of awareness campaigns and government action at both the federal and provincial levels.

Despite this improvement in quality, we're also seeing persistent pollution problems, mainly caused by agriculture. This type of pollution, also known as diffuse pollution, is harder to deal with than pollution at a very clearly identified point of origin. Many regions in Quebec and the rest of Canada are grappling with the issue of agricultural non-point source pollution.

We're also seeing increasing tensions related to water sharing in many regions. I'm hearing about Alberta, British Columbia, Saskatchewan, but also Quebec. This is very surprising to a large segment of the population who, as I said earlier, are not used to the idea that water governance needs to be thought of in quantitative terms.

The farming sector also faces high financial vulnerability, and farmers are increasingly turning to irrigation, even though biologically, it's not necessary per se, since agriculture is largely rain-fed. Eastern Canada is increasingly irrigated, resulting in increased quantities mobilized, harvested and consumed.

At the same time, we're seeing anincrease in the reurbanization phenomenon, and as a result, more and more cities and towns are encroaching on farmland. That changes the flow regime and destroys wetlands, which in turn affects water flow and aquifer fulfillment.

When agriculture contributes to increased water withdrawals of this kind, it sometimes causes more conflicts, like those observed in the Eastern Townships, Beauce, Alberta as mentioned and British Columbia.

Add to that the impact of climate change, and we don't yet know exactly how that will play out. We will only be able to see it through alteration of the precipitation regime. Less snow would accumulate in the mountains because it would come down as rainfall. Temperatures and evapotranspiration could also go up, which would result in a gradual and recurring increase in water deficits during the summer. Obviously, that would change a lot of the water governance dynamics.

For the time being, it's illegal to export water to the United States. We know that it's a matter of intense public debate, given the great fear it's striking in the hearts of Canadians. It's not a hot topic at the moment, but it should be noted that people are still concerned about it, especially since the southern United States is increasingly facing water governance issues in light of the climate change observed there as well.

Thank you very much.

● (1640)

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

Since Mr. Brouwer is now with us, I'll give him the floor for five minutes for his opening remarks.

[*English*]

**Mr. Roy Brouwer (Professor and Executive Director, Water Institute, University of Waterloo, As an Individual):** Honourable Chair and members of the standing committee, thank you very much for your invitation to participate in this hearing today.

I'm a professor of economics and director of the Water Institute at the University of Waterloo, one of the largest interdisciplinary water research and innovation centres in Canada.

I'm originally from a seemingly similarly water-abundant country. It's just many times smaller than Canada and has a long history of freshwater challenges. I advised the Dutch water ministry as an economist for several years on national and European water policies, particularly the water framework directive. What sets this directive apart is its emphasis on the use of economic principles, methods and policy instruments such as water pricing to achieve the environmental objectives for freshwater bodies.

It's my view that if we want to solve freshwater challenges in Canada, we have to focus more on the necessary behavioural changes to more sustainable water use and management by making better use of the available methods and instruments that behavioural economics has to offer. This includes appropriate water pricing. Water has value, but no price. In Canada, the existing price of water does not reflect the true cost and value of water.

Canadians are among the largest water users in the world, with an average water use per capita that is almost twice the amount consumed in Europe. Only 10% of this water is used for drinking and cooking. Approximately a third of our drinking water is used to flush our toilets and another third is used for bathing. Water-saving technologies are readily available on the market, but are hardly implemented because water is relatively cheap. Hence, there is no financial incentive to save water.

Many Canadians, if not most, take water for granted, except if you live in a community with a drinking water advisory. Public awareness levels of the value of water, generally speaking, are low. Based on public surveys in Ontario, I find, for example, that only 25% of Ontarians know how much they pay for water through their water bill. In terms of water affordability, most Canadians do not spend more than 1% of their annual income on water and waste-water treatment. This is the same in Europe, where consumer spending on water and sanitation is less than 1% of the GDP in most member states.

The same applies to industry. For example, when they apply for a licence to extract groundwater, industries pay an administrative fee that is not in any way related to the value of the groundwater.

Notwithstanding the complexities around trade and the definition of commodities, the federal government should consider how best to use economic principles and instruments to ensure water users pay for the value of water. The current low level of public awareness and the low price of water affect how we use, over-exploit and waste Canada's valuable freshwater resources.

These freshwater systems serve both as a source and a sink. We tend to focus on the extractive use of water and often forget that, after we use water, it's treated and discharged, free of charge, into rivers and lakes. We pay for the costs of waste-water treatment in treatment facilities, but not for the water system's ecological purification service or the impairment of this service, just as we pay for the treatment costs of water for drinking but not for the source itself. This is crucial if we want to raise people's awareness about the value of water and the increasing pressure on freshwater resources due to overextraction and water pollution. Appropriate pricing of Canada's freshwater resources will incentivize households and industry to use water more efficiently, increase investment in water saving and use fewer water-polluting technologies.

A final observation is that we lack key indicators that help us transition to a more sustainable water economy. There are no national data about how much Canadians pay for essential water services. This information would allow us to assess the impact of water pricing on water use and the level of cost recovery for sustainable delivery of these services. The latter is crucial to address the grand challenge of replacing aging infrastructure across Canada. Water rates have been unable to cover the depreciation costs of this infrastructure. In 2021, losses from the water distribution systems due to leaking accounted for 17% of all water produced in Canada. This is 828 million cubic metres of potable water, enough to meet the needs of 10 million Canadians for a whole year.

Similarly, with a growing population and increasing freshwater contamination by emerging chemicals of high concern, the need for more advanced waste-water treatment is growing. Although more than 80% of Canadian households are connected to a municipal sewer system, there is a wide variation in treatment levels across provinces. New sustainable business models are needed, based on sound economic principles, to build back water infrastructure better in the future, manage our freshwater resources in a sustainable way and secure water for all Canadians.

Thank you for your attention.

● (1645)

**The Chair:** Thank you, Professor.

We'll go now to the Canadian Nuclear Safety Commission. Ms. Haidy Tadros, the strategic adviser, will speak to us.

You have five minutes. Thank you.

[*Translation*]

**Ms. Haidy Tadros (Strategic Advisor, Canadian Nuclear Safety Commission):** Thank you, Mr. Chair.

Thank you for the invitation and opportunity to contribute to this committee's freshwater study.

[*English*]

I am a strategic adviser and formerly the director general of the environmental and radiation protection and assessment group at the Canadian Nuclear Safety Commission. With me today is my colleague Melissa Fabian Mendoza, director of environmental risk assessment.

We are joining you from our homes on the traditional unceded territory of the Algonquin Anishinabe people.

The CNSC recognizes and acknowledges the importance and value of fresh water to Canadians and indigenous nations and communities. While our regulatory requirements apply to a breadth of technical topics and all environmental components, for the purposes of this committee, I will highlight how our regulatory framework and processes ensure protection of fresh water from nuclear facilities and activities.

The CNSC’s regulatory framework provides applicants and licensees with clear requirements and guidance to follow, such as our regulatory documents on environmental protection, in conjunction with the Canadian Standards Association's—or CSA's—suite of standards relevant to environmental protection. These documents are found on the CNSC website. The CSA series N288, for example, includes requirements and guidance related to environmental risk assessments and environmental monitoring programs. We incorporate national and international best practices into our regulatory framework.

For any new project, proponents are required to conduct an environmental assessment under applicable legislation. CNSC staff work with other federal departments, such as Environment and Climate Change Canada, Health Canada and the Department of Fisheries and Oceans, to technically evaluate submissions based on the best available science and research.

As part of this evaluation, applicants must provide sufficient baseline data, scenarios and programs to demonstrate that there will not be significant adverse effects from the project on the environment, including fresh water. The duty to consult also sets out the legal obligations related to adverse impacts on potential or established constitutional rights of indigenous peoples that the commission must meet. These potential rights must be assessed, considered and, where appropriate, accommodated by the commission.

For existing projects, CNSC staff use ongoing compliance oversight, including inspections of licensees' environmental protection programs and reviews of cyclical updates to environmental risk assessments and of the environmental monitoring data that must be submitted as per licence requirements.

In addition, the CNSC has an independent environmental monitoring program, or IEMP. This program provides a snapshot of the state of the environment around nuclear facilities. We sample and analyze water, vegetation and air in publicly accessible areas around nuclear facilities. The IEMP sampling plan is also informed by interested indigenous nations to ensure we capture material that is of significance to the community. IEMP results are publicly available on our website, while other data, such as effluent and emissions data reported to the CNSC, can be found on the Open Government portal and the open science and data platform.

Finally, I would like to note that we have a joint initiative with Environment and Climate Change Canada called the regional information and monitoring network for the Ottawa River watershed basin, or RIMNet. The purpose of this initiative is to enhance the availability of publicly accessible environmental monitoring data and indigenous knowledge for the Ottawa River or Kichi Sibi watershed basin.

We recognize the committee's interest in the commission's recent authorization for Canadian Nuclear Laboratories to construct a near surface disposal facility for the disposal of low-level radioactive waste at the Chalk River Laboratories site. Please know that, due to the ongoing judicial review of this decision, we are limited in what we can say in relation to this project. We, as well as the commission, welcome the court's direction on this file.

In conclusion, the CNSC is committed at all times to ensuring there are no unreasonable risks to Canada's freshwater resources from Canadian nuclear facilities and activities.

● (1650)

[*Translation*]

We would be happy to respond to your questions. Thank you.

**The Chair:** Thank you.

We'll now begin the first round of questions.

Mr. Mazier, you have the floor.

[*English*]

**Mr. Dan Mazier:** Thank you, Chair.

My questions this afternoon are for the Canadian Nuclear Safety Commission.

It's around Chalk River, mostly to get some real facts out there. Hopefully, you can clear up the record.

How many years did the Canadian Nuclear Safety Commission spend evaluating the safety and environmental impact of the near surface disposal facility at Chalk River?

**Ms. Haidy Tadros:** Thank you for the question.

I recognize that there's a lot of interest around Chalk River. As I mentioned in my opening statement, there are several judicial reviews in play right now on the decision, through concerned citizens. I can't speak to the file, specifically. All of this information you're seeking—in terms of when we started, how much engagement and consultation happened, and what the state of the Chalk River site is based on the proposal to build the near surface disposal facility—is found in the commission's decision. I welcome the opportunity to perhaps provide the decision to the committee members for your review as you go through your deliberations and discussions on this study.

I don't want to say anything more on the NSDF, because I think the judicial courts will have a lot of information in hand.

**Mr. Dan Mazier:** Can you submit the safety commission's record of decision for the near surface disposal facility in Chalk River?

**Ms. Haidy Tadros:** Absolutely.

**Mr. Dan Mazier:** That would be critical, actually, so the analysts could evaluate that.

I did ask the question, and I don't know if you can answer it or not. How many years did you analyze this? I guess you can't answer that one. Is that correct?

**Ms. Haidy Tadros:** What I can share is that the Chalk River site is not a new site. It's a site that has a lot of characterization, a lot of history and a lot of monitoring data, whether that be for water, air, vegetation, animals or ecological sites. There have been a lot of studies at the Chalk River site. All this is to say that it is a very well categorized site from an environmental perspective, whether that be with respect to animals or to other biota.

With regard to the NSDF, the near surface disposal facility, the application we received was in 2016. We have gone through several reviews of this application and, as I said, a lot of information was found in the commission's decision in 2016. All of the technical analyses that have been done on this project are found in there.

**Mr. Dan Mazier:** The committee heard testimony that the near surface disposal facility at Chalk River will threaten drinking water, and “poison...the Ottawa River”.

Are these statements true? How do you respond to them?

**Ms. Haidy Tadros:** Thank you for that question. Maybe I'll start and then I'll ask my colleague to share her thoughts on this.

Let's maybe put it into context. Radiation and nuclear substances are regulated. They are hazardous substances. They are regulated for that reason. We don't prohibit them, because we recognize there are benefits from them. That's the difference between regulation and prohibition.

In the regulation of nuclear substances or nuclear activities, we have a very robust regulatory framework. As I mentioned, not only do we look at impacts or effects to fresh water or to the environment, but we look at an all hazards analysis. I know this committee is interested also in climate change analysis and all the rest of it, so maybe we can get into that as well.

Coming to your question about the pollution going into the Ottawa River from the near surface disposal facility, any project and all projects need to demonstrate that any risk to exposure is mitigated. There are mitigation measures that start at the environmental assessment stage. It is looked at to determine what programs are needed and what monitoring is needed. If there is a spill, how do we prevent the spill and how do we clean up the spill, to eliminate, mitigate as much as possible, the risks to the environment and to peoples.

Perhaps I'll stop there and see if my colleague would like to add anything more.

● (1655)

**Ms. Melissa Fabian Mendoza (Director, Canadian Nuclear Safety Commission):** Thank you.

I would echo the comments that Ms. Tadros has already provided and elaborate a bit further to say that under the CNSC regulatory framework there really is extensive oversight to ensure the environment is protected. This includes, for example, having an environmental risk assessment that evaluates all potential releases and their pathways, an environmental monitoring program and monitoring data provided to the CNSC on a regular basis, which our specialists also look at in great detail. All that is to say that the overall environmental management system as a whole works together to ensure that the environment is protected, and a very key part of the CNSC mandate is to ensure that is done.

**Mr. Dan Mazier:** From your experience, what were the most common misunderstandings or misconceptions raised by Canadians during the assessment for the disposal at Chalk River?

**Ms. Haidy Tadros:** There was a wealth of interventions that came, both for the project and against the project. CNSC staff's approach to this was very much down the middle. We were looking at the safety case. We were looking at the information presented, and that information was the basis of our technical evaluation. Again, a lot of that evaluation and information about how the commission came to its decision is found in the record of decision and the rationale—

**Mr. Dan Mazier:** I'm sorry, but I don't know if you got the question, though. From your experience, what are the most common misconceptions? The Canadian public needs to understand. It's complicated. It is a new science that's going on in Canada, but what is the best way? What is the most common thing and how do we turn that narrative around?

**The Chair:** We have time only for the most common thing. We can get into the “turning it around” in the next question, but I guess what Mr. Mazier is asking is what fear comes up the most.

Go ahead, Ms. Tadros or Ms. Mendoza.

**Ms. Haidy Tadros:** In general, it's a fear from understanding radiation, a fear from understanding the health impacts of radiation and a fear of its being too close to water bodies and areas where people can get exposed to it. I think that comes up regularly.

**The Chair:** Thank you.

We'll go to Madame Chatel now.

[*Translation*]

**Mrs. Sophie Chatel (Pontiac, Lib.):** Thank you very much, Mr. Chair.

I'd like to thank the witnesses for being with us today.

I have some questions for the Canadian Nuclear Safety Commission as well.

As you know, my riding borders the Ottawa River. Sheenboro is practically across from Chalk River, so this is a very important issue for me. No one likes the idea of having radioactive waste near our beloved river, certainly myself. I visited the site, and my understanding is that the waste is there on the river bank, exposed to extreme weather events right now. So there is cause for concern.

I would also like to talk about the near surface disposal facility, or NSDF. First, I'd like you to confirm what waste will actually be stored. Second, will it improve the current situation, which is that the waste is there, in the form of a 1970s building, on the banks of the river? My understanding is that it will be destroyed because it was contaminated, and that these materials will be the ones to be stored more safely. Will this project improve the current situation on the site?

● (1700)

**Ms. Monique Pauzé:** I have a point of order, Mr. Chair.

**The Chair:** Yes, Ms. Pauzé?

**Ms. Monique Pauzé:** I told myself I wasn't going to get into the NSDF because of the judicial review—

**Mrs. Sophie Chatel:** Excuse me—

**Ms. Monique Pauzé:** Let me finish, Mrs. Chatel.

If we were to talk about this subject, I would have pages and pages of questions about it.

**The Chair:** What's your point of order, Ms. Pauzé?

**Ms. Monique Pauzé:** Yes. I don't think we can—

**Mrs. Sophie Chatel:** That's not a point of order.

**The Chair:** I want to see what it is, Mrs. Chatel. I didn't quite follow what Ms. Pauzé was saying.

Ms. Pauzé, could you repeat it? I've stopped the clock.

**Ms. Monique Pauzé:** Since we started, the questions have all been on the NSDF. I didn't think we could talk about it, given that there is a judicial review of this case. That's why I'm a little surprised.

**The Chair:** I guess the question can be asked, but I also assume that if we can't talk about it, the witnesses—

**Mrs. Sophie Chatel:** A point of order, Mr. Chair.

**The Chair:** —won't answer.

Go ahead, Mrs. Chatel.

**Mrs. Sophie Chatel:** The legal challenge is about consultation, not facts about Chalk River, so I don't understand what my colleague is trying to get at. Is she trying to stop me from talking about a project that's important to my riding?

**Ms. Monique Pauzé:** It's an important project for all of Quebec.

**Mrs. Sophie Chatel:** It's important for my Quebec in particular.

**The Chair:** We're going to move on.

As I said, the witnesses have the right not to answer if they believe that we're getting close to something we shouldn't be discussing.

Go on, Mrs. Chatel.

**Mrs. Sophie Chatel:** As I was saying earlier, my question is about the near surface disposal facility, or NSDF. Will this proposed facility make the situation safer when it comes to storing the waste that's currently on the banks of the river?

**Ms. Haidy Tadros:** Thank you for the question.

I'll answer in English to make sure I use the right terminology, the terminology we work with.

[*English*]

As for the discussion that you've just had, we will not be able to speak to specifics on the near surface disposal facility, not just because of the consultation aspect but because the commission's decision speaks for itself. There's a wealth of information in the record of decision on every aspect that you're looking for in terms of what CNL is proposing, how CNSC staff did their technical evaluation and, in the end, the rationale the commission used to make its decision. In general, though, we can definitely go through how CNSC staff do their work.

Coming back to your question with regard to what is currently at the Chalk River site, effectively, you are right: There is low-level radioactive waste everywhere. It is in different areas and it is currently managed safely on site. It is part of CNL's requirement to have a radioactive waste management program that manages waste no matter where it is, whether it be in a disposal facility, in bags or in buildings. The radioactive waste that is currently at the Chalk River site is being managed safely.

Is there an opportunity to do better? I think that's what all of our licensees should be looking for. I'll stop there and see if there are any other questions.

[*Translation*]

**Mrs. Sophie Chatel:** Thank you.

Hypothetically speaking, if Ms. Pauzé wanted to transport this radioactive waste to her riding, to Repentigny, how many trips does the commission think it would take? It would apparently take 47,000 trips of radioactive waste for it to be transported to Repentigny, for example.

Was that in the commission's decision?

**Ms. Haidy Tadros:** Thank you again for the question.

[*English*]

The quantities of low-level radioactive waste that were discussed for this file are indeed within the commission's rationale for a decision, and that's part of the background and the context in which CNSC staff did their work as well as what the commission had to look at to rationalize its decision.

[*Translation*]

**Mrs. Sophie Chatel:** Thank you very much.

**The Chair:** Ms. Pauzé, you have the floor.

**Ms. Monique Pauzé:** Thank you, Mr. Chair.

I have questions for the Nuclear Safety Commission as well, but it won't take long.

Ladies, I would like to begin by saying that I read in your speaking notes that you are on the unceded traditional territory of the Algonquin Anishinabe people. When I read that sentence, I immediately thought of the community of Kebaowek, an Algonquin first nation that is calling for meaningful consultation on the nuclear waste disposal project at Chalk River. You're declaring that you're on their traditional unceded territory, but I think your organization could start by being more sensitive to them. That would be more credible. I won't belabour the point.

There are a lot of things I want to get clarification on. In particular, I'd like you to send the committee a written response on the independent environmental monitoring program, or IEMP, that you mentioned in your remarks. Since you say that the program is independent, I'd like you to explain to us in writing how it is independent, how it works and to whom it reports. You also say that indigenous people will be involved in this independent environmental monitoring program, but will they really be?

Ms. Tadros, in your opening remarks, you said that you incorporate national and international best practices into your regulatory framework. If cabinet asked the International Atomic Energy Agency to conduct an ARTEMIS review, would you welcome that approach? I'm asking you to answer only yes or no, because I have other questions to ask, this time for Mr. Lasserre.

● (1705)

**Ms. Haidy Tadros:** Yes.

**Ms. Monique Pauzé:** Excellent. We will work on that.

Mr. Lasserre, you're a member of CentrEau. You focused your research on the geopolitics of water in particular, a theme that I think we haven't talked much about in our meetings. If I were to ask you what would merit the attention of the Government of Canada on water as a strategic issue, what would you say?

**Mr. Frédéric Lasserre:** That's a very relevant question, and I thank you for it.

I touched on it very quickly, in that it's part of an ongoing debate in Canada. We've been wondering for several decades whether there's indeed pressure from our American neighbours to buy up part of Canada's freshwater resource.

I think that these fears are largely fuelled by reports that are circulating and that have been echoed in the media. It's also true that there were consultations and reflections from American states, professional organizations such as the National Association of Conservation Districts, but also engineering companies, which obviously saw an interest in promoting this idea.

In short, several players helped fuel the idea that there might be a demand from the Americans to improve their more critical water supply situation by turning to Canada, a country where this myth of water abundance prevails. Instead of imposing restrictions and better governance of the resource, which requires effort, the Americans could say to themselves that they need only look to Canada. As I was saying, this debate has been going on for decades.

However, to my knowledge, there has never been a formal request by any U.S. government to try to buy water from Canada. However, this concern has led to bills to try to improve water governance and limit the possibility of exporting water from Canada to the United States. However, this is a dynamic issue in that, as I mentioned, the United States is also facing the effects of climate change and the relative scarcity of the resource.

That said, the opportunity to look to another source—essentially Canada—always arises in the public debate, especially in the western United States. I'm not saying that there's any danger of this happening. I'm just saying that it's still part of the public debate in the western United States.

**Ms. Monique Pauzé:** Do you see this resource as a source of geopolitical tensions in the short or medium term? We're not able to predict climate cycles. As we know, floods and droughts are more severe and more frequent, and the impacts are different.

I'd like to ask you whether that's the case between Canada and the United States, but you have so much experience that we could also talk about what's happening elsewhere in the world.

**Mr. Frédéric Lasserre:** I could go on and on about the geopolitical tensions associated with the water resource. It's certainly a factor that contributes to geopolitical tensions elsewhere in the world, particularly in the Middle East, the Nile basin and central Asia.

I could go on and on with examples where tensions arising from the sharing of water resources contribute to the deterioration of relations between states, even if those tensions aren't the only factor involved. Even within societies, this sometimes fuels extremely serious social tensions. Take, for example, the Cauvery river basin in southern India, where there are regular riots that claim victims every summer.

We're lucky in Canada and the U.S.—

● (1710)

**Ms. Monique Pauzé:** Since everything is going to be much more serious in the future, do you think this could generate geopolitical tensions between Canada and the United States?

**Mr. Frédéric Lasserre:** Yes. That's a possibility, as I said a moment ago, but I wouldn't want to sound alarmist. I'm not telling you that it will happen, contrary to what may have been announced in the public debate in previous years. I'm simply saying to keep that possibility in mind.

It would depend a lot on the speed at which climate change is taking place, especially in the western United States. In other words, given the current structure of use in the United States, where about 80% of the water is consumed by the agricultural sector, and the speed of climate change, to what extent will governments and economic agents, mainly the agricultural sector, be able to have time to adapt and change their practices to take this new reality into account?

**The Chair:** Thank you, Mr. Lasserre. We'll have to leave it there.

Ms. Collins now has the floor.

[*English*]

**Ms. Laurel Collins:** Thank you, Mr. Chair.

Thanks to the witnesses for being here.

I will open it up with the CNSC.

The determination for Chalk River that the CNSC put forward was that the CNL adequately consulted and accommodated indigenous groups, yet 10 out of the 11 federally recognized Algonquin communities have objected to the project for years. In our parliamentary study on nuclear waste, we heard testimony about this, yet the project was approved in January. It really begs the question of how the Canadian Nuclear Safety Commission is complying with the United Nations Declaration on the Rights of Indigenous Peoples and how these communities are going to have free, prior and informed consent around projects.

I understand that you probably can't speak too much to this, but if you have a very brief comment, please go ahead.

**Ms. Haidy Tadros:** Thank you for the question. You're right. I don't mean to be—

**The Chair:** Excuse me. There is a point of order.

**Mr. Dan Mazier:** Mr. Chair, on that, I don't know why the witness can't speak freely.

We're trying to get to the bottom of what the risk is to the water and what the risk is to those people, and you keep on telling us to refer to the document. I don't know. I just hope you become a bit more open with what your testimony is actually saying.

**The Chair:** From my limited experience, I don't think that's a point of order. Anyway, the point has been made, even though it may not be a point of order.

Go ahead, Ms. Collins.

**Ms. Laurel Collins:** I want to ask a few other questions of the other witnesses.

In particular, I have concerns about water privatization and the commodification of water, especially when I think about everyday Canadians but also people around the world who have these deep concerns. One of the things you mentioned that struck me was that, in Ontario, the bottling industry pays around just $500 for every 1,000 cubic metres of groundwater it extracts. That seems appalling.

Can you speak a bit about how we can hold these kinds of industries more accountable, and what is required to make sure they aren't extracting water to the detriment of communities?

**Mr. Roy Brouwer:** Foremost, what is needed is that we value the resource itself, because what they're paying for is an administrative fee that is not related in any way to the water they are extracting. It used to be $3.72, or something like that, per 1,000 cubic metres. That's almost a million litres.

They just added $500 to that after they had a two- or three-year moratorium here in Ontario, I believe, on issuing any further permits to the bottling industry. It is completely unclear to me, from the outside, where that $500 comes from. It's still very low. I pay five times more for a litre of water in Kitchener-Waterloo, where 80% of my drinking water is groundwater.

● (1715)

**Ms. Laurel Collins:** Thank you so much.

Dr. Lasserre, I'm just curious whether you have any comments around the privatization of water and also around industry's impact on groundwater and bodies of water.

[*Translation*]

**Mr. Frédéric Lasserre:** This debate on the appropriateness of pricing water rather than privatizing it, in order to conserve and better manage the resource, is relatively old. It's true that many studies and, in particular, many water governance initiatives, particularly in Europe, include water pricing, not only because water is privatized, but also because it's a lever for changing behaviour and making users pay for the cost of the resource. This is the user-pay and polluter-pay idea.

From a strictly economic point of view, it has been relatively well demonstrated that, when you pay for the resource at variable costs, that is to say in proportion to the quantity consumed, and not according to the current fee structure, which is generally a fixed rate, you do indeed see changes in behaviour. I know there are places where rates are set in proportion to the volume consumed, but, contrary to an idea that is widely held in many regions of Canada, there's a fixed rate in most places, including many municipalities in Quebec. People pay because it's included in their municipal taxes, but they often don't know it, so there's no impact on consumption related to water pricing.

So there is a whole debate about the political relevance of implementing this pricing. A frequent association in public debate is that the introduction of pricing could be a first step towards privatization, which is frightening. In fact, there have been a lot of reports on the excesses of privatization as carried out in Europe over the past two decades. However, this association between pricing, which may well be practised by public authorities, and privatization, where resource governance is effectively delegated to the private sector, isn't necessarily justified. We know that the aim of a private company is to make a profit, which is perfectly legitimate, and this means that we sometimes lose control of the pricing structure.

[*English*]

**Ms. Laurel Collins:** Thank you.

One of the things that I'm really concerned about is the low snowfall and the impacts of reduced snowpacks. In particular, B.C. and the western provinces are experiencing multi-year droughts.

Can you talk a little bit about some of your research around how this is impacting Canada and what the government needs to do to address it?

[*Translation*]

**Mr. Frédéric Lasserre:** That's another vast question. In the mountains of both Canada and the United States, we are indeed seeing not necessarily a major decrease in precipitation over the whole year but a change in precipitation patterns. Before the advent of climate change two or three decades ago, when it started to become very noticeable, a high proportion of winter precipitation fell as snow. This meant that a reservoir of snow accumulated throughout the winter, and gradually melted from spring and summer onwards. This made it possible to have a relatively substantial flow rate in rivers that descended from the mountain ranges, providing water precisely when it was needed, that is, during the summer period, essentially for irrigation.

What we are seeing more and more is that the overall amount of drinking water that falls during the year doesn't decrease that much, but falls more and more in the form of rain in the winter, which has a number of consequences. First of all, the accumulation of snow cover is much less. As a result, in spring and summer, there will be a lot less snow melting and feeding the flow of the rivers—

**The Chair:** We're going to have to leave it there, unfortunately, because we're out of time.

We're going to move to the second round. We're going to reduce the time for each committee member from five minutes to three minutes so that we can finish more or less on time.

Mr. Leslie, you have the floor.

[*English*]

**Mr. Branden Leslie:** I'll use my time to move a motion that was put on notice last Friday.

**The Chair:** Could you just stop for a second? I have to take down the....

Go ahead, Mr. Leslie.

**Mr. Branden Leslie:** Thank you, Mr. Chair.

I'm referring to the motion that "The committee report to the House its recommendation that the Liberal Government abolish the consumer carbon levy, more commonly referred to as the carbon tax."

Premiers and leaders of all political backgrounds have come out opposed to the Prime Minister's 23% carbon tax hike, and there is clearly momentum and a growing groundswell of support to scrap—

● (1720)

**Mrs. Sophie Chatel:** I have a point of order.

It's just on the terminology. I don't think it is a tax, according to the Supreme Court, when the money is put back into the pockets of families.

**The Chair:** Well, I know this is a point of debate.

**Mr. Adam van Koeverden:** Using proper terminology is important.

**The Chair:** Yes, it's important. However, people will debate it until kingdom come.

**Mrs. Sophie Chatel:** The Supreme Court ruled that when you take a levy and it's paid back to people, it's not a tax.

**The Chair:** I understand.

Go ahead, Mr. Leslie.

**Mr. Branden Leslie:** I will be sure to correct it when Liberal ministers screw up in the House of Commons and accidentally call it a carbon tax instead of a price on pollution. I will call them out on it, absolutely.

**Mrs. Sophie Chatel:** No, you can't. It's a Supreme Court decision.

**The Chair:** Mr. Leslie has the floor.

Go ahead, Mr. Leslie.

**Mr. Branden Leslie:** Thank you, Mr. Chair.

As I was saying, there is clearly momentum and a groundswell of support to scrap the carbon tax once and for all. From Liberals to NDPers to Conservatives, there is now an emerging consensus that the Prime Minister's 23% carbon tax hike was wrong and is punishing hard-working everyday Canadians across this country.

While the rural member from Milton likes to accuse anyone who disagrees with him of being a climate change denier, I don't think he would say that about the Liberal premier from Newfoundland and Labrador, and I hope he wouldn't accuse the over 130 first nations in Ontario that are taking the government to court over the carbon tax of that. He seems to save that vitriol for Conservative MPs, who are proudly standing up for their constituents and their views.

That's not to say that the Liberal government hasn't attacked the Liberal premier from Newfoundland and Labrador. The premier actually just came out publicly stating that the—

**Ms. Leah Taylor Roy (Aurora—Oak Ridges—Richmond Hill, Lib.):** I have a point of order.

I'm just wondering, given our time constraints, what the relevance of these comments are to the motion he's putting forward. They seem to be very politically motivated, and he was putting forth a motion on the carbon tax—or the price on pollution, rather, as there is no carbon tax.

**The Chair:** Yes, I would agree that it's politically motivated.

**Mr. Branden Leslie:** I'm sorry. You're saying, of course, it's not a carbon tax. Isn't that right?

**Ms. Leah Taylor Roy:** No, it's not. It's a price on pollution—

**The Chair:** Order. Colleagues, we have guests today—

**Ms. Leah Taylor Roy:** Your motion refers to it as such, but you're right. It is not, and I'm glad you acknowledged that.

**Mr. Branden Leslie:** Absolutely.

**The Chair:** Colleagues, we have guests, and we want to be on our best behaviour.

That wasn't a point of order.

Go ahead, Mr. Leslie.

**Mr. Branden Leslie:** Thank you, Mr. Chair.

I was just saying that the Premier of Newfoundland just publicly stated that the "prime minister has tried to bait [him] with certain ad hominems and name-calling". I don't think the Liberal members on this committee would call the NDP Premier of Manitoba names for opposing the carbon tax, nor the Saskatchewan NDP leader.

Therefore, instead of....

**The Chair:** Have you read your motion yet?

**Mr. Branden Leslie:** It was on notice, so I just read the summary of it. I could happily read it into the record, if you'd like, but I just wanted—

**The Chair:** No, it's all right.

**Ms. Leah Taylor Roy:** Mr. Chairman, can I ask this question?

**The Chair:** Yes.

**Ms. Leah Taylor Roy:** What is the relevance of this debate to the motion? That's what I'm trying to establish here, and maybe it's not a point of order. I'm not sure what it is, but this debate is not relevant to the motion.

**The Chair:** I don't have the motion in front of me. Is it long?

**Mr. Branden Leslie:** It's not that long. It reads:

> Given that,
>
> a. On April 1st, the Liberal Government increased the consumer carbon tax by 23%;
>
> b. 70% of Canadians and 70% of Provincial Premiers are opposed to the latest carbon tax increase; and
>
> c. The NDP Premier of Manitoba recently came up against the carbon tax and plans to put forward a proposal to exempt the province from the carbon tax.
>
> The committee report to the House its recommendation that the Liberal Government abolish the consumer carbon levy, more commonly referred to as the carbon tax.

It seems very relevant.

**The Chair:** Go ahead. Thank you for reading that.

**Mr. Branden Leslie:** Thank you, Mr. Chair.

My point in all of this is that Conservatives are not alone. There are multiple people from multiple parties across Canada who now firmly disagree with the carbon tax.

My Liberal colleagues and their environment minister clearly don't care what their constituents are telling them. I know that Ms. Taylor Roy, Mr. Longfield and Mr. Ali are clearly hearing from their constituents. Unlike the parliamentary secretary, who, as is tradition, must support his government, we have an opportunity to have the freedom of Liberal MPs coming forward to stop supporting a proud, socialist, radical activist environment minister, who was previously best known for his arrests for scaling the CN Tower and climbing onto the roof of Alberta premier Ralph Klein's house.

Instead of shutting down debate, I would encourage my colleagues across the way to explain how many constituents have emailed or called their offices and said that they do not support the carbon tax. I'm willing to bet it is a hefty number.

We were all elected to help our constituents, and I think it's important that we listen to them. Despite the fact that we may all disagree on a number of policies, I think there's a real opportunity, after three weeks of the 23% hike being in place in this country, and angry Canadians from coast to coast, to stand up to the Prime Minister.

I'd be remiss not to mention my colleague from Victoria, who said a few days ago that the carbon tax is not “the be-all and end-all of climate policy”.

● (1725)

**Ms. Laurel Collins:** I have a point of order, Mr. Chair.

He just misquoted me, so I would like to correct the record.

**The Chair:** You want to correct the record. What did you say?

**Ms. Laurel Collins:** I said that the Liberals have been treating the consumer carbon price like the be-all and end-all of climate policy, like a silver bullet, and that it is one tool in our tool box to fight the climate crisis.

**The Chair:** That's on the record.

Go ahead, Mr. Leslie.

**Mr. Branden Leslie:** I was going to agree with you, because I think you're right that there are many various ways to help reduce carbon emissions that don't involve taxing moms taking their kids to school, to hockey practice or to a tournament on the weekend, a senior driving to the town next door to get groceries or to fill their prescription, or a farmer in Milton drying his corn at the end of harvest.

**Ms. Leah Taylor Roy:** On a point of order, he once again is referring to this as a tax, which is not what it is. He's telling a half-truth about what it is. Like Ms. Collins corrected the record, I would like to correct the record that this is not a tax. It's a levy, and that's all returned to the consumer.

Thank you.

**The Chair:** Thank you.

**Mr. Branden Leslie:** I would urge the member opposite, in fact, all members, to come and door-knock in my riding. Come to Winkler, Altona, Elm Creek or Carman and try to tell my constituents that this is not a tax and that they are, in fact, better off, and see what the response is. I will happily come to any of your ridings and do the same, or we can collectively as a committee go across this country and door-knock—

**The Chair:** Mr. Leslie, speak through the chair, please.

**Mr. Branden Leslie:** I think it would be very enlightening because—

**The Chair:** Speak through the chair.

**Mr. Branden Leslie:** Through you, Mr. Chair, my colleague Ms. Taylor Roy—

**Mrs. Sophie Chatel:** I have a point of order, Mr. Chair.

**The Chair:** I will go to the points of order, and we'll get back to Mr. Leslie. Let's do this in an orderly fashion.

Go ahead, Ms. Chatel.

**Mrs. Sophie Chatel:** I think on the door knocking, inviting us to door-knock when they door-knocked the last election in favour of a carbon pricing—

**The Chair:** That's not a point of order, Ms. Chatel.

**Mrs. Sophie Chatel:** What was the answer then when you wanted to have carbon pricing? Did they do door knocking then? I don't know.

[*Translation*]

**The Chair:** Mrs. Chatel, that's not a point of order.

[*English*]

Mr. Leslie, go ahead, please. Please stick to the motion and not so much the canvassing.

**Mr. Branden Leslie:** I look forward to us all door knocking and hearing from Canadians on their views.

My point is that the carbon tax is making it more expensive to heat your home, to eat and to put a roof over your head.

I know that you, Mr. Chair, made some comments in the previous meeting. I respect you, and I don't want to bring up the fact that there seems to be a real lack of evidence, but that's the flip side of the entirety of this problem.

**The Chair:** I have a point of order on that, but anyways.

**Mr. Branden Leslie:** I didn't try to quote you there.

**The Chair:** Go ahead.

**Mr. Branden Leslie:** My point is that the fact that this government... I look forward to seeing our motion from last meeting, in terms of the modelling and assumptions, come forward to see what the emissions being reduced from this are.

My hope is that we don't just adjourn debate and that we don't just disregard the views of the first nation chiefs across Ontario, the Liberal premier from Newfoundland and Labrador and, frankly, my constituents, because that's my job, to come here and defend them. They are adamantly opposed to the carbon tax.

Simply put, it's time we axe the tax for everyone, on everything and for good.

Thank you, Mr. Chair.

**The Chair:** Go ahead, Mr. van Koeverden.

**Mr. Adam van Koeverden:** Thank you, Mr. Chair.

First of all, to the witnesses, this happens all the time in these meetings now. I'm sorry that your time is being wasted. You are valuable experts. Your expertise and your testimony is important to our work.

**Mr. Dan Mazier:** I have a point of order.

**Mr. Adam van Koeverden:** Am I not entitled to speak now?

**The Chair:** We'll get back to you in a second.

**Mr. Dan Mazier:** What's the relevance to the motion?

**Mr. Adam van Koeverden:** The relevance to the motion is that the motion has been raised during a committee meeting, not during business, not during a neutral opportunity. Again, the Conservatives want to hijack this meeting for their own partisan desires.

When the Conservatives blame the cost of living crisis on carbon pricing, a proven emissions reduction strategy, just as 200 economists across the country have validated it, I welcome them to bring testimony from even one economist that suggests that carbon pricing isn't an effective way to reduce emissions. They're still only serving the greedy corporate interests of billionaire oil and gas executives.

● (1730)

There's no rebate on the provincial gas tax that Danielle Smith jacked up on Albertans on April 1. There is no rebate on the summer fuel surcharge or on excessive oil and gas profits. However, the Canada carbon rebate does have four quarterly repayments as an incentive to use a little less gas and get a little bit more tax-free cash in one's account four times a year.

The Conservatives still don't have a plan for affordability. They don't have a plan for the environment. They don't believe in climate change. They consistently prioritize the corporate interests of their greedy oil and gas masters over the needs of everyday Canadians.

For that reason, Mr. Chair—and I hope I haven't taken too long—I move that we adjourn debate on this motion for now, so that we can continue with our witnesses, out of respect for them.

**The Chair:** We have to go to a vote.

[*Translation*]

We'll go to a vote. Then we'll go back, I hope, to hearing from our witnesses.

[*English*]

(Motion agreed to: yeas 7; nays 4)

**The Chair:** We'll go to Ms. Taylor Roy, for three minutes, please.

**Ms. Leah Taylor Roy:** Thank you very much, Mr. Chair.

Thank you to the witnesses.

Once again, I'd like to apologize for that interruption as well, especially when we have experts on behavioural economics and behavioural change in the room.

Mr. Brouwer, I'd actually like to direct my questions to you because this is our final meeting with expert witnesses on this subject, and we've had these interruptions throughout.

We've heard from Professor Lasserre that climate change is exacerbating the problems of drought and flooding. It has so much to do with water management, and you have mentioned water pricing as a way to control that.

Given that the member opposite has brought up the pollution pricing program we have in place, could you comment on how important you think it is to put in these pricing incentives to get Canadians to change their behaviour and reduce greenhouse gas emissions? As well, do you think that putting a price on pollution is a policy that works?

**Mr. Roy Brouwer:** I think there are sectors in the economy that speak the language of money, so I strongly believe in raising awareness. When I was a kid, I was taught to brush my teeth and not leave the tap water running. I also gave that message to my children, and I think it's an effective way of communicating that water is valuable and that you shouldn't spill it.

At the same time, I also believe that we currently don't pay anything for the water that we're using. We're paying for the treatment of the water, and that's not only an issue globally but also here in Canada. There is technology readily available that we can use, but we're not using it because there is no financial incentive to do so.

Where I come from, my house already had a grey-water tank to flush my toilets. It's crystal-clear water. We don't need drinking-quality water, which is very valuable and very costly, to flush our toilets, for example. We're not using that kind of technology because there is no incentive. It's too cheap to—

**Ms. Leah Taylor Roy:** I have just a minute, so I want to ask you this: Would this same behavioural economics change also apply to pollution pricing, so that consumers faced with a price on pollution would change their behaviour just as they would when there is a price on water?

**Mr. Roy Brouwer:** Generally speaking, you would. I cannot speak to carbon.

I can speak a little bit to organic farming. You see that there is still a huge discrepancy in the amount of organic food that we're buying versus conventional food. We're not internalizing the externalities associated with conventional farming in our food products. The food is offered very cheap, and there is no chance for organic farming. For 20 or 30 years already, the market share, at least in Europe—I don't know in Canada—is—

**Ms. Leah Taylor Roy:** Thank you.

You're saying that these pricing signals do work to change consumer behaviour, and that we need to internalize the externalities, as with organic foods.

**Mr. Roy Brouwer:** We also need to have patience. It takes time because it's highly dependent on the baseline price that we pay. The reason farmers don't respond right away if you introduce a price on water is that they hardly pay for it. If they already pay a very high price and then you start increasing the price, they will feel it more and more, so they will start reducing their water use or invest in more efficient irrigation—

● (1735)

**Ms. Leah Taylor Roy:** A 23% increase in the price on pollution makes sense in that context.

Thank you.

**The Chair:** We have to stop there.

We'll go to Madame Pauzé for a minute and a half.

[*Translation*]

**Ms. Monique Pauzé:** Mr. Lasserre, we know that the north is melting. There are no borders in the north per se, and our neighbours aren't the friendliest. Have you studied this issue at all?

**Mr. Frédéric Lasserre:** Do you want to discuss the Northwest Passage issue?

**Ms. Monique Pauzé:** Yes.

**Mr. Frédéric Lasserre:** Yes, that passage happens to be in the sea, in the water. It's not at all the same dynamic as the freshwater we've been talking about, though.

That said, there's the whole issue of Canadian sovereignty over the Northwest Passage, an issue I would like to explore at this time. The United States agrees with Canada that it doesn't agree on this sovereignty, so it's not a defence priority.

Let me explain. Since the signing of the Arctic co-operation agreement between Canada and the United States in 1988, our two countries have agreed to disagree. In other words, Washington respects Canada's position but says it disagrees every time Canada asserts its sovereignty. For its part, Canada respects the American position. So there's a kind of agreement that there's disagreement, without seeking to resolve the issue or force the other party to take another position.

**Ms. Monique Pauzé:** With the melting of the north, I was thinking of other, less friendly neighbours, such as Russia or any other state around the north.

Unfortunately, my time is up. Did you intend to send us a supplementary brief? I invite you to do so, because I think this is a very important topic. However, the committee has its restrictions: A brief mustn't exceed 10 pages.

**The Chair:** Thank you, Ms. Pauzé.

Mr. Lasserre, we'd appreciate it if you could send that documentation to the clerk of the committee.

[*English*]

Ms. Collins, you have a minute and a half.

**Ms. Laurel Collins:** Thank you, Mr. Chair.

Actually, for my last question, I'm going to ask Mr. Brouwer.

B.C. and Alberta have been facing these multi-year droughts. The water allocation system in Alberta is under scrutiny.

Given the likelihood of more dry summers, wildfires and people being worried about access to water, can you shed light on some of the water economic issues as these increasing climate-related stresses happen in communities? How do we protect people's essential uses of water—like drinking water—if we're talking about water markets?

**Mr. Roy Brouwer:** That's a very complicated question.

What I know from research is that, if you start introducing economic criteria in the allocation of the water, you will reduce losses. We had a speaker in the previous session who was talking about wildfires and the need for prevention, instead of treating the results or the damage costs afterwards. I think it's a matter of a cost-benefit analysis and identifying preventive measures in water allocation for specific essential sectors or water uses. What are the benefits? In the case of wildfire, it's avoiding damage costs.

You can do that for every sector. You can identify how much it costs if we pump the water in one direction and not in the other, and what benefits are involved. I think there is a need for more of that kind of economic analysis in the allocation of water.

**The Chair:** Thank you.

We'll go to Mr. Kram now for three minutes.

**Mr. Michael Kram:** Thank you, Mr. Chair.

I would like to circle back to our witnesses from the Canadian Nuclear Safety Commission.

Ms. Tadros, I believe it was you who said there is still low-level radioactive waste at Chalk River.

For the benefit of people who don't know the backstory, why is there low-level radioactive waste at Chalk River and what exactly went wrong there in the 1950s?

**Ms. Haidy Tadros:** Thank you for the question.

Chalk River, as you noted, has been on site for a wealth of years now—from the very beginning in terms of the Cold War and working through different research. The low-level radioactive waste currently being overseen at Chalk River—we have site inspectors doing regular walkabouts to ensure radioactive waste management and monitoring programs are adhered to—is in things like overalls, cleaning supplies and mopheads. Those make up the bulk of the low-level radioactive waste found at Chalk River. Again, why are they there? When you work with radioactive material, you need to clean things up, so other things get contaminated.

We have a classification system we've identified in our regulatory documents to better understand the difference between low-level, intermediate-level and high-level waste and tailings, because we have uranium mines here in Canada as well.

I hope that answers your question.

I don't know if Ms. Fabian Mendoza has anything further to add on the low-level waste inventory at Chalk River.

● (1740)

**Ms. Melissa Fabian Mendoza:** I have nothing to add. Thank you.

**Mr. Michael Kram:** All right, but this is all stemming from those couple of accidents that happened in the 1950s. There are no new ongoing problems separate from the 1950s accidents. Is that correct?

**Ms. Haidy Tadros:** It's not only a question of problems. There is currently research being done at Chalk River. They undergo research and they use radioactive substances. Any time there is anything that touches radioactive substances, there is going to be a transfer. That could be on paper, lab benches or things they use—gloves that they wear—in hot cells. There could be equipment...so it is there. It's not just from the early days when these spills occurred.

**The Chair:** I think we're out of time, Mr. Kram.

I mention to everyone that President Jimmy Carter, when he was—I think—in the navy as a nuclear physicist, came and got us out of trouble in the 1950s during a particularly difficult moment.

Thank you to the witnesses.

[*Translation*]

Mr. Lasserre, I remember reading one of your texts in Policy Options, entitled “Transferts massifs d'eau au Canada: entre mythe et réalité”. I'm going to go back and read your article. Thank you for being with us.

[*English*]

Thank you to the members. I wish everyone a good weekend.

The meeting is adjourned.