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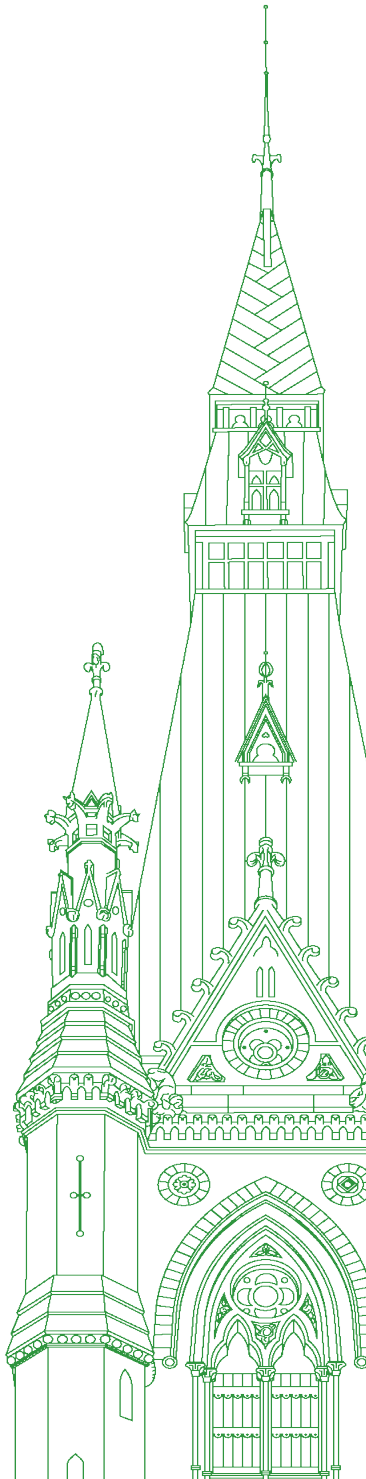

Chair: Mr. Francis Scarpaleggia

Standing Committee on Environment and Sustainable Development

Thursday, February 8, 2024

● (1530)

[*English*]

The Chair (Mr. Francis Scarpaleggia (Lac-Saint-Louis, Lib.)): Colleagues and witnesses, good afternoon.

I would like to welcome the Hon. Helena Jaczek, who is here today as a guest, a substitute—

Mr. Dan Mazier (Dauphin—Swan River—Neepawa, CPC): Mr. Chair, is there any word on the Dubai expenses yet?

The Chair: No, I have no word on the Dubai expenses. I will take the opportunity to maybe buttonhole one of the staff members to ask. Let me write that down.

The sound tests have been conducted, and everything is good.

We have a very interesting meeting today. We will be discussing, in large part, water technologies and the water technology industry.

We have our first panel ready to go. We have Professor Oliver Brandes from the University of Victoria; Alan Shapiro from the BC Net Zero Innovation Network; and, from the Canadian Water Quality Association, we have Shelley Peters and Jason Jackson.

[*Translation*]

Also with us is Ms. Patricia Gomez, from the Centre des technologies de l'eau.

Mr. Brandes, you have five minutes for your address.

[*English*]

Mr. Oliver Brandes (Co-Director, POLIS Project on Ecological Governance, Centre for Global Studies, University of Victoria, As an Individual): Thank you very much.

Water will define the century and the decades ahead. By that, I mean water and how we manage and govern it will decide whether we are a wealthy and prosperous nation or slump into mediocrity and missed opportunity. As we all know—and you know the facts better than I, after many months of submissions and testimonies—the simple fact is that the climate crisis is a water crisis.

I'm Oliver Brandes, as introduced. I am here on behalf of the POLIS project at the University of Victoria Centre for Global Studies, and also the Forum for Leadership on Water. I bring you greetings from Canada's far west and Vancouver Island, in the territory of the Lekwungen speaking peoples.

I am not a technology person; I am a carry-over from a previous event. However, fortunately, all the issues of the day, whether it's technology, food security, housing, prosperity, health, economic development, community, quality of life, salmon and other species—the list goes on—connect to water. The notion of water and watershed security is absolutely fundamental. In fact, watersheds are part of our health infrastructure, and fundamentally about material security and a sense of agency and future for communities and businesses.

Water affects issues, such that 90% of natural disasters are water-related. By 2025, climate impacts and disasters will slow down Canada's economic growth by $25 billion annually, the equivalent of 50% of the projected GDP growth.

I spent much of my day today already talking to media, because in B.C., we like to talk about the four horsemen of the water apocalypse—drought, fire, flood, water contamination. Historic mega droughts, record wildfires and atmospheric rivers have hit B.C. hard in the last couple of years. This is real, and it affects people in a real way; and the federal government have largely been absent. The many promises to build back better remain unrealized. This brings me to you here today.

What we need is for the federal government simply to do its job. Now, it's important to realize that that job has changed over the years. Government can't make it rain, but it sure as heck can help communities prepare for the trouble ahead and make sure everyone is doing their part.

It's easy to say that we don't need government and just get government out of the way. In the water context, this is wrong, wrong, wrong. It requires communities, mayors, chiefs, farmers, ranchers, businesses and community leaders to work together, to co-operate, to collaborate. Water is fundamentally a shared resource.

The federal government has a critical role in this. Managing water well is about planning, knowing what to expect and being prepared for the unexpected, but also knowing how we will share and how we will work together to be good neighbours.

When the water does not come or when it all comes at once, or when the watershed is on fire, we need to do this work well in advance. The federal government has been absent too long, and there are numerous opportunities or elements to help us deal with this.

The Canada water agency and the Canada Water Act renewal are two such opportunities. The Canada water agency is the first. It is how the federal government can and should show up, and how they can show up effectively. It provides a mechanism of governance that allows for efficiency, national and global leadership and certainly co-operative federalism across Canada. It will ensure that water investment is done pragmatically, efficiently and urgently with maximum local impact. It is how they show up to be effective, and that helps people in place.

The other piece of the puzzle will be, number one, a renewed Canada Water Act. This is an opportunity. There are five elements to building a 21st-century water act. Enable, enhance and require the ability to predict and respond to water problems. This will help protect people, communities and infrastructure from a changing hydrology.

Number two is advanced reconciliation. This is fundamental. It is consistent with the TRC and UNDRIP . It is fundamental for impact and process—for example, employing a co-drafting process.

Number three is integrated river basin planning and management that protects, restores and maintains the ecological integrity of the nation's waters.

● (1535)

Number four is a 21st century transboundary water management institution, and number five is designating a national water fund.

B.C. offers us a good model in its watershed security fund. It manages water for the well-being and prosperity of current and future generations.

The Chair: Thank you very much.

We'll go now to Mr. Shapiro for five minutes.

Mr. Alan Shapiro (Strategic Advisor, BC Net Zero Innovation Network, As an Individual): Good afternoon, Mr. Chair and committee members. Thank you for the opportunity to speak with you today.

My name is Alan Shapiro, and I am joining you from the traditional, unceded territories of the Musqueam, Squamish and Tseil-Waututh nations in Vancouver. I hold a number of water-technology and business-focused roles, including as an environmental consultant and strategic adviser for Foresight Cleantech Accelerator's BC net zero innovation network.

Today I am asking the committee to consider three recommendations in its final report: first, that freshwater priorities be directly aligned with other environmental and economic focus areas; second, that water technology be embedded in federal freshwater discussions, including the Canada water agency and the freshwater action plan; and third, that more effective mechanisms be considered to deploy water solutions across Canadian communities and sectors.

I'd like to start by defining the landscape of water technology and blue economy in Canada. As the committee has already heard, water cuts across most of Canada's major sectors, from mining to agriculture, with significant intersections between water and climate. Water technology refers to products and services that support water quality, quantity, supply and stewardship across the water cycle. This includes water treatment technologies, such as ultraviolet disinfection and sensors to detect emerging contaminants in the environment; irrigation systems to reduce agricultural water usage; and platforms to help water facilities reduce energy and chemical consumption. All of these are examples of successful water solutions developed in Canada today.

“Blue economy” refers to the sustainable use and conservation of ocean and freshwater resources to support jobs and economic growth. Despite Canada's established brand as a global water leader, Fisheries and Oceans Canada's blue economy strategy has been framed as “an opportunity to harness [Canada's] ocean growth potential”. This oceans-only blue economy definition sidelines fresh water, a massive omission given that the Great Lakes alone generate more than 1.5 million jobs and $60 billion in annual wages across Canada and the U.S. Plastic pollution is a good illustration of this breakdown. While plastic is a major issue facing the world's oceans, most of the eight million tonnes of plastic that end up in the oceans every year are contributed by rivers.

While no direct export data exists for water-related technologies and services, Statistics Canada reported nearly $18 billion of environmental and clean-technology exports in 2021, including in a number of water-related categories. Investments in water research, innovation, infrastructure and stewardship not only translate into public and non-profit sector jobs but also drive private sector growth, supporting high-paying jobs in technology development, manufacturing, skilled trades and business.

While Canada has strong foundations in water research and innovation, domestic technology adoption continues to be a major challenge. Studies identify risk aversion, conservative procurement processes, and poor environmental and economic incentives as barriers. Under current conditions, Canadian technology frequently needs to find an export market in order to be tested and deployed. A lack of local adoption opportunities limits the environmental and economic potential of these solutions. Local governments in particular are significantly under-resourced for making water-related investments.

There are a number of emerging initiatives across Canada that support water-tech adoption, such as Foresight Canada's clean-tech adoption platform and BC net zero innovation network.

I'd like to leave the committee with three recommendations.

First, given that water cuts across most of Canada's major sectors, it is critical to align freshwater priorities and investments with other environmental and economic focus areas, including workforce development, infrastructure planning and climate change.

Second, water technology must be embedded in federal freshwater discussions, including the Canada water agency and the freshwater action plan. Canada's established strength in applied water research and technology development are of limited value when not integrated into broader water policy and funding priorities. It is also critical that fresh water receives sustainable, long-term funding, including the federal government fulfilling its commitment to invest $1 billion in the freshwater action plan.

Finally, we need more effective mechanisms to demonstrate and deploy water technologies across Canadian communities and industries, including economic incentives, environmental regulations, and procurement processes. This is particularly important in regions and sectors facing acute water scarcity and climate impacts.

I thank the committee for studying this critical topic, and I look forward to answering any questions you may have.

● (1540)

The Chair: Thank you, Mr. Shapiro.

We'll go now to Ms. Peters from the Canadian Water Quality Association.

Ms. Shelley Peters (Executive Director, Canadian Water Quality Association): Thank you, Mr. Chairman, vice-chairs and all the members of the committee, for the opportunity to address the importance of fresh water in Canada.

My name is Shelley Peters, and I have had the opportunity to work in the water quality industry for over 30 years.

I'm appearing before the committee today in my role as executive director of the Canadian Water Quality Association, or CWQA. With me today is Jason Jackson, professor, licensed tradesperson and CWQA education consultant. We would like to thank the committee for inviting us, and to thank those members of the committee whom we have spoken with in the past for their time.

The Canadian Water Quality Association is the national voice for the residential, industrial, commercial and institutional water treatment industry throughout Canada. Since our founding in 1956, we have grown to represent over 200 small and medium-sized businesses. We train, certify and advocate for over 1,000 companies in the industry nationwide. These businesses are water quality dealers, retailers, installers, plumbers, small drinking water system providers, wholesale distributors and manufacturers of water quality systems and components, and in total we contribute an estimated $1.2 billion of economic activity in Canada. We believe that safe, healthy water should be available to all Canadians.

Our members are often at the forefront when a Canadian citizen has a question about the water coming out of their taps. They work directly with homeowners, building managers, municipalities, first nation communities and small towns in rural and remote settings to find solutions for local water quality problems. Like for many other industries, it is becoming more challenging to fulfill our customers' needs with respect to water.

Today, new water quality and quantity concerns are becoming prevalent as droughts, floods and wildfires are changing our landscapes and affecting surface and groundwater sources. Another problem facing our industry is that consumer education around water remains low, and recruiting and retaining water quality specialists is a barrier to providing better services to more Canadians.

As our population, economy and communities grow, we put greater and greater pressure on the ecosystems and the sources of water we use for drinking, washing, cooking, recreation and industrial processes such as mining. Fresh water is simultaneously Canada's most important natural resource, and the one we take most for granted.

The water quality industry will play an increasingly important role in preserving freshwater quality over the years and decades ahead. New contaminants like PFOA and PFOS, and emerging contaminants like arsenic, pathogens and even microplastics threaten the health of Canadians. These new realities mean that communities will need new and updated water treatment facilities and processes, and families will need the expertise of water quality professionals to provide treatment options to promote health and quality of life.

Filtration, water softeners, reverse osmosis, ultraviolet and other technologies are important tools to treat water that comes from all sources, including wells, municipal utilities, and lakes and rivers. In some cases, droughts can reduce the quantity of water, and flooding caused by atmospheric rivers or more intense storms can cause water sources to surge, overwhelming municipal treatment facilities and leaving residents with unsafe, untreated water.

These challenges come as no surprise to people residing in communities that have not had access to clean, safe drinking water for years. Where central community-wide water treatment solutions have been ineffective, household point-of-entry and point-of-use alternatives, appropriately installed and serviced, may provide a valuable solution to clean drinking water needs.

Providing more options for household water treatment will be an important consideration moving forward. We have urged the federal government to invest in the creation of a national, accessible water quality map that can provide better information about water contaminants to governments, businesses and mainly consumers. Such a map would also provide water quality specialists who have a depth of experience in providing solutions with more accurate data to suggest solutions for homeowners, residents and business owners to make informed choices about their water treatment needs.

With knowledgeable consumers and water treatment professionals, selecting water treatment technologies can improve water quality, provide more efficient technologies and help to better understand how to mitigate potential issues with quality and quantity by building efficient, sustainable and resilient systems that are affordable to all Canadians.

I appreciate the opportunity to speak about these issues, and we look forward to answering the committee's questions.

● (1545)

[*Translation*]

The Chair: Thank you, Ms. Peters.

Ms. Gomez, you have the floor now for five minutes.

Ms. Patricia Gomez (Scientific Coordinator, Co-Founder of Clean Nature, Centre des technologies de l'eau): Hello Mr. Chair and members of the committee.

Thank you for the opportunity to appear before you as part of this key study on fresh water.

I'm representing Cteau today, a non-profit organization and one of the only technology accelerators specializing in water. I'd like to share my experience as an entrepreneur and co-founder of Clean Nature—a clean tech startup—to shed light on the technological innovation landscape.

I've always been passionate about protecting water, and my personal and professional paths have given me the opportunity to look at water issues from many angles, both in science and research and in the industrial, municipal and private sectors. As a Canadian born in Colombia, when I first arrived, I was amazed by Canada's many fresh water resources and, at the same time, frightened by the false sense of security around its accessibility and sustainability. Since water is our most precious natural resource, Canada must develop an effective strategy to protect it. That means supporting the water technology sector so it can deliver innovative solutions.

So today I'm going to talk about three things in particular: the need to accelerate the development of technological solutions, the severe shortage of support for promising and innovative ideas, and the need to support the technology acceleration and transfer ecosystem.

Firstly, we need to accelerate the development of technological solutions, because freshwater protection issues are constantly changing, requiring innovative solutions. A few examples are contamination, pollution, climate change and resource use. Traditional methods will likely no longer be enough to address these issues. It's therefore crucial that we bolster technological development and innovation in Canada.

With 20% of the world's freshwater resources, Canada must be a leader in developing clean technologies for water. This requires support for innovative solutions, emerging companies and technology accelerators so that these solutions can move from idea to market and contribute to protecting water and growing the economy.

Secondly, there is a severe shortage of support for promising and innovative ideas. Although there are programs to support technological development, there's still a shortage of appropriate financial support for companies in early development stages. Every new technology must go through ideation, prototyping and validation before launching.

As an example, I'm going to tell you about Clean Nature, a start-up I founded with two colleagues in the water sector. It's based around an innovative new technology that got a lot of attention from the market, the media and Innovation Canada. Despite that, four years later, we still don't have the financial and technological backing we need to fully commit to launching our idea. I have no doubt that many start-ups are facing the same barriers.

While it's easier for medium and large companies to access financial resources, there aren't enough technology acceleration resources for Canada to become a leader in the water sector and use the best technologies to protect this resource. The risk is that Canada will lose out on promising ideas and technologies.

Thirdly, we need to support the technology acceleration and transfer ecosystem, because innovative companies need both financial resources and technological support. To guarantee their success, access to technology accelerators like Cteau and business accelerators like AquaAction is crucial. They're vital to developing clean technologies in Canada.

There's a desperate need. For example, over the past four years, Cteau saw a 400% growth in both revenue and number of projects involving technical assistance, validation and solution scaling.

● (1550)

Sadly, despite all this growth, lack of public funding is limiting our ability to fully meet the needs of innovative companies in a market that is becoming increasingly aware of how important water is.

The Chair: Thank you very much for your testimony.

I'm now giving the floor to Mr. Deltell.

Mr. Gérard Deltell (Louis-Saint-Laurent, CPC): Thank you very much, Mr. Chair

Good afternoon to my colleagues.

Ladies and gentlemen, welcome to your House of Commons.

Ms. Gomez, I'd like to hear more about your company and your experience with it.

First of all, what' s your company called and what technology are you developing?

Let's start with that, and we can then look more closely at the problems you will have to address.

Ms. Patricia Gomez: Okay.

Clean Nature is a start-up company working on developing artificial intelligence based technologies to optimize de-icing salt dispersal. This road salt is very harmful and affects water quality. my colleagues and I began to work on the idea four years ago. We were three female students who met at university. As masters and doctoral students, we developed a concept and got involved in various innovation challenges, like the AquaHacking Challenge. Our solution, which uses artificial intelligence, showed a lot of potential.

I' m going to explain the problem faced by start-ups. When you're at university and you come up with a promising idea, there is mentoring, and it's possible to obtain support as a university researcher, for example. However, once you leave university, it's hard to get funding. Financial support is available to more highly developed companies, but a company has to have existed for two or three years and have a certain number of full-time employees, which is very difficult for a start-up.

So I would say that the first barrier is finding the support needed to be able to spend all our time and resources on growing the company. For Clean Nature, there were just the three of us, with only one managing to obtain a postdoctoral fellowship. As a result, she was able to work on the company's technological development.

Technological development is not the only hurdle. A business model also has to be developed. We have a good understanding of this model, and we've worked on it. However, if we had adequate support and resources, we clearly could have made much more progress on its technological development.

Mr. Gérard Deltell: You mentioned using artificial intelligence to manage road salt dispersal. That's not a narrow niche. Your product would be of interest to lots of people. Everyone needs to do some de-icing, whether on house laneways and walkways, access roads to parks or even municipal sidewalks and streets. You have hundreds of thousands of potential clients. From coast to coast, that would be millions of potential clients, not to mention those in northern countries.

Without giving away any secrets, how come you never got any support from a city?

Ms. Patricia Gomez: I can give you a few more details. We had a lot of support, particularly from organizations like AquaAction. They made it possible for us to launch a pilot project. Getting to that stage involves another barrier, and it's likely very important to give it some thought.

Apart from economic considerations, and the time and resources needed to develop the technologies, there are regulatory hurdles. With municipal by-laws, people are always afraid of change. We went and met municipal representatives to tell them that our solution would reduce their use of salt for de-icing by 40% to 50%. The authorities told us that they'd rather spread more salt than take a safety risk. We understand this argument. However, if we are to validate our solution, tests are needed. Fortunately, we succeeded in launching a pilot project that is still under way in the city of L'Assomption.

It's thanks to support from accelerators like AquaAction and IVEO that we succeeded in getting through to the municipalities. However, we needed intermediaries for them to listen to us. We received numerous calls from potential individuals and clients who were interested in the technology, but who in the end found that it was not yet as highly developed as they would like. We can understand that, but to develop the technology, we need support, mentoring and deployment opportunities.

I also do entrepreneurial work, for Cteau among others. I look at innovative companies trying to develop new technologies, and see that they encounter the same challenges.

● (1555)

Mr. Gérard Deltell: Lots of mayors would like to talk to you. I think that Ms. Pauzé, who happens to be from the city of L'Assomption, would be keen to hear about it. She seems to be well aware of things, of course, because that city is in her riding.

If the city of L'Assomption said yes, then I find it hard to believe that other cities wouldn't be prepared to support you.

What do you have to say about that?

Ms. Patricia Gomez: Some cities are interested in the project, but as I said earlier in my address, even though your algorithm and your technology are working, the technological development requires several phases.

We can carry out tests and run pilot projects, but to get to the point at which we can market our product and say that we're ready to deploy the technology across Canada, a lot of time and dedication are required. It takes time to find the resources needed to successfully develop fully functional technology that can be successful both economically and environmentally.

I think that we are making progress, but very slowly, even though the market and municipalities are interested.

The Chair: You have about 15 seconds left, Mr. Deltell.

Mr. Gérard Deltell: Ms. Gomez, I would just like to wish you every success. I think that your testimony might well be disseminated elsewhere. I'm sure that some of the mayors will want to talk to you. There seems to be significant interest in this technology. As long as we keep having winters, we're going to need you. It's a reality that affects all Quebeckers and all Canadians.

Thank you, Ms. Gomez.

The Chair: Thank you, Mr. Deltell.

Ms. Taylor Roy, please go ahead.

[*English*]

Ms. Leah Taylor Roy (Aurora—Oak Ridges—Richmond Hill, Lib.): Thank you very much, Mr. Chair.

Thank you to all of the witnesses. Your collective experience and passion for this area are appreciated. We also appreciate your being here.

There are so many different areas, but I want to focus on water technology.

The Government of Canada has many different sources of funding for developing clean technology and helping at different stages of that development.

Shelley and Patricia, I think you've both been working in different areas of this.

Have you had interaction with the government through the National Research Council, Sustainable Development and Technology Canada, or Innovation, Science and Economic Development Canada regarding any of the programs they provide? What have your experiences been?

Ms. Patricia Gomez: Perfect.

[*Translation*]

I should point out that Cteau is a type of organization that's called a technology accelerator.

We know about the various sources of government funding. Indeed, there is some funding from the federal government and the provincial government, but these funds are often inadequate.

Technology acceleration centres like Cteau receive support from Quebec's ministère de l'Économie, de l'Innovation et de l'Énergie. However, this support is inadequate, even for financial resources.

I mentioned earlier that we experienced 400% growth over the past four years, but the base for administration costs has remained the same. At the outset, there were eight members of our team. There are now approximately 50, and yet the resources available haven't changed. They don't even cover 9% of our research operating expenses.

We need this kind of support for organizations. It's true that there are funds and programs. Cteau receives support from the Natural Sciences and Engineering Research Council, NSERC, which provides some research funding. As we are a college centre for technology transfer, we have access to research funds under the ARD, the applied research and development grants program, which provides support to companies for certain projects.

If a company consults us to deal with a problem, or because it wishes to further develop its technology, we can suggest that they apply for funds through Cteau. We are entitled to a maximum of $150,000 per year. Given the operating costs, that's not enough to develop the technology.

Not only that, but not all companies are eligible for these grants, whether from the federal government or provincial governments. As I mentioned before, if a company has a brilliant idea, but the owner is the only person in charge of the project, it's not eligible for these funds.

I agree that there are funds, but the problem lies with eligibility.

● (1600)

[*English*]

Ms. Leah Taylor Roy: Do you see a way that the Canada water agency could help with developing clean tech in the water sector?

Ms. Patricia Gomez: For sure.

[*Translation*]

I think that the Canadian Water Agency could play an important role, particularly if its strategy were aligned with technological development needs. The fact that water is also an ecosystem has to be kept in mind. There's more to it than just protecting the ecosystem, and while I'm not saying that doing so isn't important, familiarity with the ecosystem's problems is also essential.

It's important to be familiar with water-related challenges. Science and basic research are extremely important, but technological development is too. In my view, the Canadian Water Agency can play a role in how water protection resources are managed, and in how to develop technologies appropriate to constantly growing needs.

We've probably only seen the tip of the iceberg. Many other problems will arise, such as the rising number of emerging contaminants. It's already in evidence. We are familiar with climate change problems and everything that stems from them.

What's going to be important is the framework for the diverse strategies introduced and the various resources that will be devoted to water protection.

[*English*]

Ms. Leah Taylor Roy: Thank you.

The Chair: Thank you very much, Ms. Taylor Roy.

We'll go to Madame Pauzé.

[*Translation*]

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

Thanks to all of the witnesses here today. We won't be able to ask all of them questions.

I commend Ms. Gomez. In passing, I'd like to point out that the municipality of L'Assomption is a member of the Réseau Environnement. Greetings also to Mr. Brandes. I believe we met in Toronto at a symposium held in the fall.

But my questions will be for Mr. Shapiro.

Mr. Shapiro, in your speaking notes—although you didn't mention it in your address—you described Canada's brand as a global water leader. I was wondering what's involved in this reputation as a global leader. I would imagine that it's not hard to see Canada as having a wealth of water. That's the case because of its enormous freshwater reserves. Nevertheless, I wouldn't consider Canada a global leader in water protection, either in terms of sustainability or accessibility. I'll give you some examples.

In Alberta, there was a toxic waste leak at the Kearl mine. Leaks into watercourses from the oil and mining sectors are having disastrous impacts on the environment and health.

Canada has also given the green light to a radioactive waste facility in Chalk River. It's on the banks of a river that flows to near where I live, which draws water from the St. Lawrence River. Approval came in spite of recommendations stemming from consultations and the United Nations Declaration on the Rights of Indigenous Peoples. Water is not given consideration and I believe that examples like these are only the tip of the iceberg.

From this standpoint, I don't see how Canada can be considered a global leader.

Not only that, but our country is incapable of providing drinking water to thousands of first nations members. Canada has all kinds of opportunities to take action to protect our water reserves, the health of ecosystems, and services being provided. And yet nothing currently shows that there has been any change in direction in terms of dealing with the problems I've just raised.

Several witnesses have told us that there is a dearth of knowledge and access to crucial data that would make it possible to do a better job of planning the work that needs to be done. Last week, for example, a witness told us that the other G20 countries already had detailed databases on the various ways water is being used, but that this is not the case in Canada. According to this witness, there are few watercourses being monitored for water quality and even fewer for toxic waste in farming communities.

What could be done to allow for enhanced planning of what's needed to preserve and protect this resource?

Would you be in favour of the federal government prioritizing resource preservation investments?

● (1605)

[*English*]

Mr. Alan Shapiro: Thank you for the question, Madame Pauzé. I could not agree with you more.

The context in which I would consider Canada as a leader would be in applied water research and technology development. Internationally, we've got a very strong reputation as a water solutions country for the world. This has been borne out by the Trade Commissioner Service, which has done a really phenomenal job of connecting Canadian solutions to challenges in other countries.

Where we fall completely flat, as you've brought up, is to develop those solutions and apply them at home. We're seeing a lot of lagging technology options at home. We're struggling to finance watersheds adequately at home. We're struggling to provide economic and environmental incentives to get creative with some of our policies, and to get creative with some of our innovation. We need boots on the ground.

Yes, there's absolutely a disconnect between our leadership on a world stage with the kinds of technologies that we're exporting, and our ability to actually tackle water issues at home. It's really interesting to me to work with many water technology companies across Canada and hearing the consistent story that even though their technology was developed to tackle a problem in Canada, they have not yet worked in Canada.

Of the 100-plus water and ocean—

[*Translation*]

Ms. Monique Pauzé: These ideas are certainly not acted upon in Canada.

I'm also wondering about something else.

The committee welcomes many private sector representatives—that's particularly so today. For example, the organization you represent, the BC Net Zero Innovation Network, was established by Foresight Canada. The Foresight Canada representatives are in the second group of witnesses.

I have trouble distinguishing lobbying from actual knowledge. We would like those who work in the water sector to have the required knowledge and skills, but personally, what I want to see is results. You just pointed out that Canada may have lots of good ideas, but that it doesn't apply them at home.

How do we go about managing all that?

The Chair: Unfortunately, Ms. Pauzé, you've run out of speaking time.

Ms. Monique Pauzé: Mr. Chair, the interpretation…

The Chair: Yes, you're right Ms. Pauzé. I'll give you another 10 or 15 seconds to get an answer to your question.

[*English*]

Go ahead and take about 15 to 20 seconds.

Mr. Alan Shapiro: Foresight is a non-profit organization and my colleague, Heather Crochetiere, will speak this afternoon.

Absolutely. Federal funding is being put into research and innovation, but not enough federal funding is being put into technology adoption and policy work on the ground.

[*Translation*]

The Chair: Thank you, Mr. Shapiro.

The purpose of today's meeting is also to focus on the problem and find solutions, because we are lagging behind in adopting our own technologies here in Canada.

[*English*]

Ms. Collins.

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

I want to thank all the witnesses for being here today.

My questions are for Dr. Brandes.

You talked about the impacts of the climate crisis and those four horsemen—drought, wildfire, flood and contamination. It really feels like my home province of British Columbia has been hit hard by this. We've seen a federal government that's been really reactive rather than proactive.

The last thing you mentioned in your opening statement was designating a designated water fund. My New Democrat colleagues from B.C. and I have been pushing the government for a $1-billion watershed security fund.

I'm just curious. What difference would this make if the federal government were to partner with the Government of British Columbia and designate this fund?

● (1610)

Mr. Oliver Brandes: Thank you so much, Ms. Collins. That's a fabulous question.

I'm going to just summarize in three simple points.

Investing locally creates solutions, innovation and gets you a payback in the range of seven to one, to 10 to one. They've demonstrated that in numerous places. I draw the attention of this fine committee to the healthy watersheds initiative as one example.

The second piece is that a lot of the work has to happen locally. That's partnering with provinces that are seeing the sort of challenge ahead in dealing with the four horsemen kind of approach. That means building up natural infrastructure like wetlands, aquifer protection and healthy riparian areas.

These are the cheapest and best forms of infrastructure, but you need the funds to flow through those key partners—those people on the ground who can leverage it—so every dollar spent, because you have local expertise, local capacity and first nation engagement, is very high.

Therefore, the federal government needs to invest in those working models that exist all across the country. B.C. is the leading example.

The third point is that this model that British Columbia is undertaking with the watershed security fund is worth replicating. It's not only worth replicating federally, but it's worth investing in for a number of different pockets and different regions, including the north, the Prairies, the central and the east coast.

B.C. will show us how to do it because they have a leg up. It's partially because we faced some big challenges and partially because we saw some very creative investments post-COVID that have really yielded not only good ecological outcomes, but really significant business and community outcomes that have demonstrated, when the storms hit, that we have a bigger buffer, we have less impact, we lose less infrastructure and we avoid future costs.

Ms. Laurel Collins: Thank you so much for that.

I think the point...especially about keeping natural infrastructure healthy and how that can help absorb or soak up some of the impacts when we have extreme flooding and atmospheric rivers.

You also mentioned a number of other recommendations for the federal government.

Can you just expand a little bit on what the federal government can do? What useful role can it play when it comes to watershed management and water management generally?

How can the federal government help Canadians prepare for the intense challenges that we know are ahead of us?

Mr. Oliver Brandes: I've heard a few. I've listened to a number of the former presentations, and I hear a theme wherein we get this sort of tension, and some folks think that we just need government to get out of the way.

I think that it is an inaccurate approach, because, when we talk about water, it requires collaboration. Water doesn't know boundaries; it doesn't know jurisdictions. It moves. We have to find ways to get along.

There are three ways that the federal government can play a very active role. Ms. Collins, you will know well that we've had a very disastrous number of years in British Columbia, yet there has been almost no effective presence of the federal government. That is a real lack. It's a missed opportunity, and it slows the build back component.

There are those kinds of infrastructure we talked about like the wetlands. We all benefit by enabling, investing and working with local community groups to ensure that plans are working and that there is a connection between the mayors, the chiefs, the business leaders and the industry champions. That is one obvious bundle.

There are also very complicated transboundary issues. We talk about transboundary not only within British Columbia. Take the Mackenzie basin as an example. It crosses half a dozen provincial and territorial lines. It needs coordination. It needs governance systems so that we can make decisions in real time in a really functional way. There's a really critical role.

Then, of course, there are international boundaries. Think of the Columbia, think of the Yukon, and think of the Great Lakes basins. These are places where the federal government has been a bit more active, but I think they are lagging. There is a real opportunity. These are very complex because of the many types of boundaries that we are talking about.

Then there is the final kind of boundary, which most Canadians don't think about very often. We also have indigenous nations, indigenous governments, authorities and laws that we have to reconcile with when we deal with that.

Again, these are very active spheres where the federal government should be involved and support those local initiatives. There are a number of simple pieces: the planning, with rules and implications; protecting and ensuring environmental flow, which has really significant implications for fish and has a very significant role for the federal government; and, of course, water quality and the quantity component.

● (1615)

The Chair: Thank you.

Ms. Laurel Collins: I only have 10 seconds left. I just want to give you a heads-up. I'll be asking about the UN Declaration on the Rights of Indigenous Peoples next and the disappointment on hearing that the federal government hasn't been investing in B.C. the way it should.

The Chair: For the second round, I'm going to reduce it by 25 per cent, just so we don't go too much over. We'll have four and two minutes instead of five and two and a half minutes.

We'll start with Mr. Leslie.

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

I appreciate this panel and your all being here. It's been a meeting about technology. I think it's common sense to focus on technology, not taxes.

I'll start with Ms. Peters.

You mentioned a water quality map. Does anything like that exist in Canada or around the world that we could try to emulate so that consumers have a better understanding of where some of those contaminants may be in their own area?

Ms. Shelley Peters: Yes, we have a very good example done by the Water Quality Research Foundation in the States and through our sister association. They have many different points, but they predominantly show where arsenic contaminant is within the United States. That is something we think would be extremely helpful in Canada.

Again, with my history, for the length of time that I've been in this, I have watched some of these contaminants like arsenic suddenly come to the forefront, and some of the others like PFAS and things like that. I get many calls from consumers directly to our association who say, “I've just moved to this area. I have this. What is it? How do I do this?"

We see that the water quality map is something that would be beneficial not only to our members but also to consumers and businesses. We're asked constantly about what's in the water in Manitoba; what's in the water in...? It's very different. We don't need to deal with it in B.C the way we deal with it in Nova Scotia. It's so very different.

Mr. Branden Leslie: Thank you.

You mentioned some of the technologies at home, whether they be for PFAS or any other contaminants and that they would vary on a regional basis. I'm having a quick look online. It looks like a reverse osmosis system at the tap level is going to be cheaper than a larger, commercial variation of that filtration system.

If PFAS, arsenic or any of these other problems are most likely to be dealt with, is that an idea that we need to be looking at from a consumer level, or is it best at a municipal water level? How do you think we would be best able and most affordably to deal with some of these challenges?

Ms. Shelley Peters: I'll give you my point. Then Jason can likely add to it.

At the municipal level, it's certainly being looked at. However, from a cost perspective, it becomes overwhelming.

For PFAS, as an example, the investment to do this at a municipal level would be very large in terms of the resins alone. I was just watching a webinar today in which they were proposing some technology for putting a PFAS meter on people's taps, so they could watch and see whether they have PFAS coming into their home. That technology has to be built—maybe this is a perfect opportunity for Ms. Gomez—but I think it's easier, quicker and perhaps faster to address it in the home right now. We want to make sure the health of Canadians is looked after.

Jason, do you have anything?

Mr. Jason Jackson (Professor and Education Consultant, Canadian Water Quality Association): Yes.

I think a blanket statement that we have to treat all water for PFAS is something that is perhaps not true. We can step back to look at individual sources, applications and consumer choices that say, “This is what is best for my needs and my home ownership.” A water quality map or information required nationally in a resource owned by the water agency—something that's easier for Canadians to access—would be a key component of that. To make a choice to install a reverse osmosis.... For technology, we can make that good choice by understanding those aesthetic parameters: how it tastes, looks and smells. That can help consumers make a choice.

Mr. Branden Leslie: Maybe I'll bring Mr. Shapiro in on this, because he mentioned specific water technologies beyond that—ultraviolet disinfection and sensors to detect some of these emerging contaminants.

Mr. Shapiro, do you have any specific examples of where these are currently being used, whether they even are and where they should or could be used in the future?

● (1620)

The Chair: I'll give you 15 seconds for that, because we're over time.

Mr. Alan Shapiro: There are a lot of very interesting developments on the sensor side in particular. That comes back to the data—knowing what's in our water and the environment.

On the treatment side for emerging contaminants, there's a lot more work to be done still in technology development.

The Chair: Thank you very much.

It looks like we have our first project for the Canada water agency with this map idea.

Mr. van Koeverden.

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

I'm sincerely grateful to all the witnesses here today for providing expert opinions and information. It's not just opinions, certainly. This is data and evidence. I really appreciate you coming all this way or appearing virtually.

My first question is on the Canada water agency and it's for Mr. Brandes.

I read one of your articles in Policy Options regarding implementation. Granted, it was written quite a few years ago. I perked up a bit when you talked about how the water crisis is fundamentally a climate change issue and that the things we put into the air ultimately end up in water systems.

I read the section on data collection. I always reflect on how lucky we are in Ontario to have conservation authorities that gather data and do science locally across our entire province. I think it is a model that could be repeated across the other 12 jurisdictions in Canada, which don't have the same historical benefit. Obviously, hindsight is 20/20, but conservation authorities do good work. When I award funding in my riding to a group that's going to do great environmental science, 99% of the time it's to our great conservation authority.

Out in B.C. and across the country, are there other examples of ways we might be able to stand up—perhaps through the Canada water agency—organizations that could do similar science?

Mr. Oliver Brandes: That's a great question.

I know conservation authorities well, since I grew up in the Ontario area and studied them in quite a bit of detail. What they represent in terms of value is local capacity. That manifests very differently in different parts of the country. I think you're right to recognize that this is how you get to water solutions. You have issues like climate change that feel like a national or broad problem, but it shows up in the water—and in very specific ways.

We talked a lot in today's panel about technology. Well, technology is often to fix a problem that has occurred. It is exponentially cheaper to avoid the problem. To know about avoiding the problem, you have to understand the patient, as it were. We have to understand the water bodies, how they are operating and who's using how much. That kind of science and technology are required, and you have to build them on this foundation of understanding the local conditions, needs and impacts.

You're very correct to say that local bodies are going to be the best ones to do that. It might be conservation authorities, as you understand, but there are many different examples. In B.C., we have a thing called the Cowichan Watershed Board. I can give you a big, long list. You don't need to hear that. The point is that we need this. You need the Canada water agency to tee up to target those investments and maximize them. There are some things that, when learned in one place, can be applied in many. There are other things that we have to fine-tune based on the local conditions and requirements, the aquifer mapping, the environmental flow regime, etc., which are quite distinct.

You have to marry the general knowledge with the very specific to have maximum impact.

Mr. Adam van Koeverden: Thanks very much, Mr. Brandes.

You mentioned that there would be a list of other organizations. In addition to submitting that to the committee for this study's purpose, it would be great if you could also send your wish list on what the Canada water agency ought to do. I know you've been looking into this for a very long time. This committee works very well because we have great experts to rely on for that expertise, so please feel free to submit a wish list, in terms of the list of organizations that might be useful, in addition to the conservation authorities.

Do I have any more time, Mr. Chair?

[*Translation*]

Le président: No. Your speaking time is up.

[*English*]

Mr. Adam van Koeverden: That's all. Thanks very much, Mr. Brandes.

[*Translation*]

The Chair: I am now giving the floor to Ms. Pauzé for two minutes.

Ms. Monique Pauzé: I'm going to ask Ms. Gomez and Mr. Brandes the same question.

Mr. Brandes, as I mentioned earlier, I met you at Massey College in the fall. In your remarks, you said that the Canada Water Agency had some recommendations for dealing with the national climate crisis by identifying vulnerabilities and promoting mitigation and adaptation measures for flooding and droughts, as well as for reducing pollution.

The mandate seems to have been drawn up by the Agency itself, because we, the elected representatives, didn't have any input. Many witnesses have appeared before us and they all want to put their own stamp on what the Canada Water Agency should be doing. That might be an interesting approach. For the time being, many see water as a driver of economic prosperity and job creation. And yet, when you spoke about prevention, it really caught my attention.

Are you unperturbed about the fact that no policy process was implemented to specify the key objectives and principles of the Canada Water Agency prior to its establishment?

● (1625)

The Chair: Please be brief so that you can both answer the question.

[*English*]

Mr. Oliver Brandes: My quick answer is that the federal government has a very distinct and strong role in dealing with water because it cross-cuts all of the many issues we talked about. The Canada water agency is one way to organize.

I believe the way the federal government has organized itself on water is insufficient for the challenges ahead, so I am supportive of organizing themselves to be successful, which means dealing with water as it shows up as a local problem. However, using this top-down and bottom-up approach so that we are....You can't have businesses and technology if the water isn't in a healthy state, and the Canada water agency will be one of the few institutions that can have that national perspective to say, “Where are the priorities? Where do we start?”

[*Translation*]

The Chair: Unfortunately, we've run out of time, even after factoring in the interpretation delay. However, that won't prevent you from answering the question on another occasion, Ms. Gomez.

Ms. Collins, it's over to you for two minutes.

[*English*]

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

To Dr. Brandes, can you talk a bit about how the Canada water agency can implement and recognize indigenous legal systems? B.C. was the first jurisdiction to pass legislation on the United Nations Declaration on the Rights of Indigenous Peoples. I'm curious as to how you see the implementation of this going when it comes to water governance, and what we at the federal level can learn.

Mr. Oliver Brandes: That's a big question for the one or two minutes remaining, but I'm going to summarize it by saying that the way you implement UNDRIP is that you build relationships and trust in an ongoing relationship. The federal government has a role because you need the necessary science and information, and the kinds of processes in which you have not just one decision, one big mind and one big development, but you have many decisions over time. You have to have a process to do that.

British Columbia is taking positive steps, but it's slow.

My big answer is that we can learn. There are many positives—the Koksilah, the Cowichan, for example—and there are a number of examples. We just need to do them at a much faster pace—how about at the pace that the climate is changing? We see it happening very rapidly, and you know that from your very own riding.

The Chair: Thank you for that.

Mr. Kram, go ahead.

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

Thank you to all the witnesses for being here today.

Let's start with the Canadian Water Quality Association. Ms. Peters, in your opening statement you referred to how “recruiting and retaining water quality specialists is a barrier to providing better services to more Canadians.” I wonder, could you elaborate on how one becomes a water quality specialist? Does one go to university or a technical college, and is there a certification or a governing body? If you could elaborate, that would be very helpful.

Ms. Shelley Peters: Sure. Actually, I'm going to defer it to my education consultant.

Mr. Jason Jackson: Again, I'm a professor, but I also teach tradespeople in apprenticeships across Canada.

With the way the education is structured, there isn't really a network set up for a water treatment specialist, particularly on the residential side in Canada. There are a lot of corporations and companies that have people who have, by virtue of time spent, become very good at what they do, but who don't have the specific licence. I say that with a bit of malice, because I actually have every licence sourced to tap and water across Canada. I purposely went out and got that. Water treatment isn't one of those that are specifically defined.

Now, within the Canadian Water Quality Association, we have an education platform that serves our members and anyone else who's interested in understanding water in terms of a residential or commercial and industrial resource. It's available both online and in person for competencies. Getting that to be recognized nationally has been an ongoing discussion for more than the 20 years that I have been in the industry.

Having a national concept of education with respect to having people certified so that people would understand that when someone came to their door and told them they needed a water softener, they could have confidence in the data and would be able to make a proper choice as a consumer would lead to having efficiency, protecting the resource and getting the best benefit for that consumer.

● (1630)

Mr. Michael Kram: Okay, just so I'm clear, would you be in favour of a national standard for a professional designation?

Mr. Jason Jackson: Absolutely.

Mr. Michael Kram: Okay.

We've heard many times at this committee that, for better or for worse, watershed boundaries do not match up with international boundaries. I wonder if you could speak to some of the challenges or some of the benefits of standardizing freshwater policies with those of the United States.

Ms. Shelley Peters: Sure. Thank you for that.

I think one of the biggest things, obviously, is that we, as an association, quite often try to work on that cross-boundary with other associations, but similarly right now we're waiting to hear what level of PFAS is going to be acceptable for us to treat in Canada. They've had it in the States, and they've even lowered it there. It is also very prevalent where it's been given a limit in Europe and things like that, but we seem to be sort of lagging behind when it comes to having that emerging contaminant quantified for us within Canada.

Mr. Jason Jackson: Also—and I'll use Ontario as an example—looking back at regulation 903, which is a wells regulation, we haven't really talked about or the committee hasn't heard a lot about groundwater other than yesterday or the day before when there was a very good witness on that. I think looking at some of the data that can come from that would help take away some of those watershed boundaries for groundwater and surface waters, which could be tested and managed, and then that data could be made available on both sides of, say, the national borders and it would go from there. At that point, we could all make good evidence-based choices using that data and make sure that we have the right choice for people as we go through. So, looking back at that, the resources could be there, but we're not quite there yet.

Mr. Michael Kram: Very quickly, could you speak to some of the challenges in water quality for urban versus rural Canadians?

Mr. Jason Jackson: Yes, sure.

Again, for the information around resource or source information, I'll use an Ontario example as well.

I'm a class 4 well technician working on groundwater wells. We have to fill out what is called a "wells record". In that wells record, we put down the geology, the aquifer. Water quality is actually part of the concept, but rarely is that water quality piece filled out. We gather data from the frontline people—those who are drilling the well or testing the water or installing the treatment system, they gather that data from them so when treatment technology for consumers are applied, they're done properly and efficiently.

The Chair: Mr. Longfield, go ahead.

Mr. Lloyd Longfield (Guelph, Lib.): Thank you to the witnesses.

Funnily enough, I was going to ask about groundwater, so maybe you're leading into that.

We had a witness here, Dr. Parker, who was talking about groundwater. I wasn't able to get too far into geothermal or some of the heat loads on groundwater and whether those are a risk, or fracking or mining, or risks for groundwater that are below the surface and that aren't being monitored. Could you talk about the need for quality management service for groundwater in anything that could happen in our report here? Could you be fairly brief, if that's possible?

Mr. Jason Jackson: When we look at groundwater resources and regulations across Canada, they do differ in different components. The people who construct those wells have to be put place. Then there are ultimately the ones doing the work mechanically on the wells.

For geothermal—I'll use that as an example—in a lot of provinces and territories a well has to be constructed in a very specific and defined way in order to protect the resource, which is the public resource, and to protect the future of that resource. However, when we look at the regulation or the component of the people installing it for a specific use—for example, geothermal—there really isn't a lot of regulation around that geothermal component while it's being talked about and developed.

Again, I come back to this idea of national training or certification or understanding with regard to the use of geothermal, and then identifying that thermal load, the effect on the geology, and then potentially neighbours' wells if they are not using them for that thermal load. So I think there has to be a bigger discussion around how that's occurring and who is qualified to do that.

Mr. Lloyd Longfield: That's terrific. I think that in terms of timing, when we're talking about geothermal as a climate change solution, we need to know the implications of that.

● (1635)

Mr. Jason Jackson: It's a great opportunity for net zero, and a great opportunity for energy efficiency by using a resource in a way that's a little bit different. We still have to have the same respect for it.

Mr. Lloyd Longfield: A few years back, I was part of a discussion with the grand chiefs in Ontario and chiefs looking at boil water advisories, and looking at the standards around water and what does a clean water standard look like for different communities?

We had the Walkerton standard that was advanced in Ontario. It's not a national standard. Indigenous peoples said, "Well, we want our own standard. We don't want you to impose a standard. We would like to work together on a standard."

When we talk about training and what standards we're training to, knowing that we have indigenous and 13 other jurisdictions around water, could you give us a sense of how we could coordinate with that, in terms of the Canada water agency?

Mr. Jason Jackson: I am also one of the trainers for the Walkerton Clean Water Centre in Ontario. You saw that on my profile.

Actually, in April, we'll be speaking at the first nations symposium that is coming up in Sault Ste. Marie. We'll be doing training for those communities. Oftentimes, the communities want to be involved and apply a technology, so that it's repeatable and sustainable, yet affordable for those communities, as well.

When we look back at whether it's a first nations community or a regular remote community, they still have to have proper access to that technology and ensure that it's repeatable for them to use.

Mr. Lloyd Longfield: In the limited time left, we've asked other witnesses for a wish list for the Canada water agency. Could you submit that—and Ms. Gomez, as well—so we could consider that in our report and then make it public and help the agency as it gets going? That would be appreciated.

Thank you.

[*Translation*]

The Chair: That's the end of the meeting with the first group of witnesses. I would like to thank them for this excellent discussion, in the course of which they suggested many good ideas.

We will now take a short break to allow the second group of witnesses to be seated.

I'd like to thank you all once again.

● (1635)

_____(Pause)_____

● (1640)

[*English*]

The Chair: We'll get started with our second panel. The time is moving on.

We have with us Soula Chronopoulos, president of AquaAction. From the city of Montreal, we have Maja Vodanoc, mayor of the borough of Lachine, and the executive committee member responsible for consultation with boroughs and for waterworks. We have online, from Foresight Canada, Heather Crochetiere, director, industry innovation.

[*Translation*]

The sound test has been carried out with Ms. Crochetiere, who is attending the meeting virtually.

We are also welcoming Mr. Mathieu Laneuville, the President and Chief Executive Officer of Réseau Environnement.

We'll begin with Ms. Chronopoulos.

Ms. Chronopoulos, you have five minutes for your presentation.

[*English*]

Ms. Soula Chronopoulos (President, AquaAction): Mr. Chair, and committee members, I'm honoured to join you today on behalf of the Montreal-based water accelerator, AquaAction.

AquaAction's recommendations speak to Canada's strategic national interests at the confluence of fresh water and economic security.

In our view, these practical and common sense suggestions belong in every party's platform. It's time to treat Canada's freshwater protection as both an economic and environmental issue.

Let me be blunt: Canada's water-tech sector must be treated as a core component of our freshwater protection strategy. Right now it's not.

Due to a lack of focus and specific federal support for water technology to address the water crisis, Canada's water innovators are being lured south and abroad by more enticing jurisdictions, along with their start-ups, IP and jobs.

We appreciate the government's important net-zero investments, but we would argue that these measures position Canada for a low-emission economy without adequately positioning us for a water-constrained economy. It's important to remember that the climate crisis is a water crisis. We hear this over and over.

The Canada water agency's coordination mandate and its data and science strategy are important to freshwater protection, but also for it to lead and deliver water security results it needs to be coordinating a whole-of-government approach around Canada water innovation.

What can be done?

First, we recommend that the government must synchronize ISED's clean-tech initiatives with the Canada water agency's watershed protection efforts. Currently, the agency lacks the necessary mandate and resources, which fall under ISED's remit through programs like IRAP, the clean growth hub, SDTC and SIF. It's crucial to align the CWA's science and data strategy on fresh water with ISED's tech programs. It would help if Minister Champagne and Minister Guilbeault issued that direction to their officials.

Part of this challenge is that ISED's clean-tech programs don't specifically focus on water tech, and they should, especially considering Canada's growing water scarcity and related environmental challenges.

On the same point, establishing a partnership between the National Research Council, which is also under ISED, and the CWA would enhance collaboration in water-tech research and industrial innovation.

We suggest that the NRC develop or upgrade its R and D facility specifically for water technology. Accessible, state-of-the-art facilities would enable innovators to conduct testing and validation of their technologies.

Second, we recommend increasing direct support for water-tech accelerators at both the federal and provincial levels. Establish targeted performance-based grant programs for enablers like AquaAction, Cteau, and Foresight across Canada.

We are better positioned to effectively de-risk and allocate resources in line with regional water innovation needs and to demonstrate tangible impact. AquaAction has proven this model in Quebec. The AquaEntrepreneur program, supported by the ministry of economy, innovation and energy, has led to successful adoption of new technologies at the municipal level and industries across Quebec, positively impacting the environment and generating well over $100 million in annual revenue for the economy to address this water crisis. By matching federal support to such provincial investments, Canada can significantly amplify the success of its water tech sector.

Third, we recommend recognizing the importance of local municipalities and the crucial role of the Federation of Canadian Municipalities in building climate and water resilience at the city level. The federal government must find ways to incentivize water-tech projects with cities to facilitate young innovators' access to real-world test sites in our own towns and cities. You just heard this from Patricia.

This would allow for quicker market entry and, by extension, our freshwater protection. On this point I would urge this committee to recommend that Canada expand the scope of the green municipal fund to include pilot projects related to water technologies. If budget constraints make it difficult to increase GMF funding, then reallocate funding within the GMF envelope and empower the Canada water agency to facilitate these changes.

Finally, we recommend that Canada expand fiscal measures, like the investment tax credit for clean technology manufacturing to specifically include water-tech investment. It does not.

The recently announced fiscal measures should be designed by Finance Canada to ensure broader applicability beyond clean energy or carbon capture or emissions-reducing technology. Targeted fiscal support is crucial for competitiveness. I see this starkly in the Great Lakes region, where AquaAction operates.

To summarize, it's time to treat Canada's freshwater protection as both an economic and environmental issue. Technology is the execution piece we have been ignoring.

● (1645)

Technology is the execution piece we have been ignoring. Without focused programming and fiscal supports for water tech innovation, Canada, water start-ups will keep leaving Canada, along with their IP and jobs. We just heard about this.

Our recommendations will enhance Canada's fresh water protection, nurture innovation and build our competitiveness in a water-constrained economy—

[*Translation*]

The Chair: Thank you very much.

[*English*]

Ms. Soula Chronopoulos: They belong in every party's platform.

Thank you very much. I welcome your questions.

[*Translation*]

The Chair: Thank you.

Over to you, Ms. Vodanovic.

[*English*]

Ms. Maja Vodanovic (Mayor of the Borough of Lachine, Executive Committee Member, Responsible for Consultation with the Boroughs and for Waterworks, City of Montréal): Thank you.

First of all, I want to start by thanking the Liberals and the Conservatives, all of the last governments, because they have created something for municipalities that we really appreciate, which is stable, predictable and long-term funding for water infrastructure.

I am with the Great Lakes and St. Lawrence cities initiative, which takes me to Ontario and to visit cities in the States. I see that they do not have this kind of funding. It is a lot harder for them, so I thank you for investing in our water infrastructure. Being responsible for water in the metropolis of Montreal, I can say “thank you”, but it's not enough.

I guess you know everyone always asks for more, but that is not the point here.

The reason I have come here is to talk to you about the technological innovations of the City of Montreal that we've done at the Jean-R. Marcotte sewer plant. Our sewer plant is the third-largest in the world. It filters 45% of our province's water.

When it was built in the 1980s, that plant was built to disinfect the water with chlorine. Even in the eighties, that was deemed a no go. You cannot do that. It is bad for our environment, so we had to figure out how else we were going to disinfect the water. In about 2005, we decided to do it with ozone—not with ultraviolet, but with ozone—because with ozone, once the system is built, we will be able to kill 99.9% of bacteria, 96% of viruses and 75% to 90% of emerging contaminants. That is huge. We are almost there.

You have to know that in 2009, when we sealed the agreement with the federal government to partner with us on this huge, beneficial project.... It's not really beneficial for Montreal, because it's at the tip of our island, but it is good for the St. Lawrence River and for all the cities that are downstream from us. We're doing this for the common good.

The government said it was going to give us $324 million. That was the deal. The project was estimated not too long ago to be $600 million.

There are huge challenges. We have to apply this new technology to ancient infrastructure. It's old. We have to do a retrofit. That was very hard. There were a lot of challenges. I will spare you everything we had to go through, but we are almost there. Certain parts still need to be connected. It will be functioning in a few years.

Right now, its estimated worth is $1 billion, and we only have $300 million. We only get 8¢ per dollar. Our municipalities have very little money, and we're doing this huge project.

This is to say we would like to see it capped. When we do a big, innovative project, maybe you could be our partner and re-evaluate the money you give in the long run. That is our first ask.

The second thing we do at the sewer plant is have four huge incinerators that burn 800 tonnes of pooh every day. We call it sludge. That is something that is done every day, and it creates 40% of the greenhouse gas effect for Montreal. That's 40% done by this. Now we have to change them. They're at their end of life.

We need to do studies for this. We need to study how we can change it. We know, as initial prefeasibility studies are saying, we could reduce this greenhouse gas effect to zero if we did biomethanization, which digests it and produces natural gas. However, we don't have millions of dollars to do this, and the government doesn't fund us to do this research. You fund us just when we do the project.

Cities cannot be in a deficit. We have only a limited operational budget. This is something we need.

People were talking about PFAS. We checked PFAS for Montreal, and we're at the limit. Let's say that the water all of a sudden becomes more concentrated because somebody takes our water away, or climate change...let's say the situation changes and we have too much PFAS in our water. It's almost impossible for the City of Montreal to invest in changing our filtration plant. Right now, we would need 45 tonnes of active carbon a day to take the PFAS out.

● (1650)

I'll say one last thing: It's better not to pollute than to make cities pay to depollute, because it's a huge cost. We spent $700 million in investment in infrastructure. We would need to spend $1.2 billion for the next 10 years and we do not have it.

Thank you.

The Chair: Thank you very much.

We'll go now to Ms. Crochetiere, who is online.

Ms. Heather Crochetiere (Director, Industry Innovation, Foresight Canada): Thank you, Mr. Chair, and thank you to the committee for the opportunity to be here today.

I am joining from Toronto, which is the traditional territory of many nations, including the Mississaugas of the Credit, the Anishinabe, the Chippewa, the Haudenosaunee and the Wendat peoples.

My name is Heather Crochetiere and I am the director of industry innovation at Foresight Canada. I oversee programs that support both the supply and demand side of clean-tech solutions in Canada, including our sector-specific programming around water.

Prior to my time at Foresight, I spent almost a decade working in freshwater conservation in Canada, so this is a subject near to my heart.

Foresight is Canada's largest clean-tech innovation and adoption accelerator. Our audacious goal is for Canada to be the first G7 country to reach net zero, while helping our industries remain competitive, and our food, energy and water security be sustained.

Since inception, we have made enormous strides in strategy development, ecosystem mapping and partnership-building to position Canada as a global leader in clean-tech innovation. We have supported over 1,100 clean-tech ventures, built relationships with over 300 investors through our access-to-capital programs, and engaged with over 2,000 stakeholders from around the world to secure almost $1.7 billion in capital and support the creation of over 8,000 high-paying jobs for Canadians.

WaterNEXT is Canada's water technology network. It is part of a series of sectoral streams. Through WaterNEXT, we work across multiple water sectors, from resources to utilities, and bring together stakeholders from across the ecosystem to accelerate the commercialization and adoption of innovative technologies to serve the world's most pressing water challenges.

What does Canada's water technology sector look like today?

With a strong track record of innovation, such as the development of ultraviolet disinfection and membrane filtration technology, and with a wide network of organizations, research institutions and supportive governments, Canada is recognized globally for its expertise in the water sector. The importance of water tech is rising as an effective solution and a method of reducing the emissions intensity of water and waste-water treatment processes, as we increasingly feel the effects of climate change.

Water tech is critical in the practical sense, but also has the potential to be positioned as a lucrative opportunity as climate change rises in priority among investment and impact portfolios.

I'll quickly highlight a few key opportunities for the federal government to support Canada's water sector.

We have a major problem with adoption in Canada. The Canadian market is known to be slow to embrace novel solutions. Often, Canadian technology needs to find an export market in order to be developed. To strengthen the sector, we need more local adoption to generate reference cases that can be used to support export efforts. Ultimately, delays in adoption risk both Canada's infrastructure and its ability to be an economic leader in water technology.

The federal government should support initiatives that de-risk novel technologies and lower barriers to adoption.

This includes supporting programs that provide innovators with access to facilities to test and demonstrate emerging technologies for customers, such as the pan-Canadian water innovation network we are building in collaboration with Aqua Action and the Ontario Water Consortium.

End-users of water technologies, like municipalities and utilities, are rightfully very risk averse when it comes to new technologies. With a network of pilot facilities across the country, this initiative will increase local access for both innovators and end-users to participate in innovation. It will bridge gaps in ecosystem coordination, technology development and adoption to drive the commercialization and export of innovative water technologies.

Support from the federal government could look like direct program funding or flexible funding programs for municipal, utility and industrial end-users to participate in these pilots.

Beyond supporting access to testing and pilots, the federal government should provide clear definitions for water priorities and work to streamline and coordinate procurement and policy in support of these priorities.

In parallel, the government should support capacity-building initiatives for local governments and other water technology adopters to move towards those priorities.

We've heard from end-users that they are often given sustainability and climate targets for their facilities without any additional resources. Simply put, they are told what they need to do without any support for how they can get there. Capacity-building programs, such as Foresight's clean-tech adoption program, can help bridge this gap and enable the “how”.

Our platform will provide services such as a database of pilots, specifications, solutions and services; technology mapping and business case studies; networking and training modules for end-users; guidance on funding programs; and sustainability metrics, tracking and reporting. In supporting initiatives such as this, the government will lower barriers for asset managers to deliver climate and performance results.

I want to thank the committee for taking the time to study such an important discussion. I look forward to answering any questions you may have.

● (1655)

[*Translation*]

The Chair: Thank you.

Mr. Laneuville, you have the floor.

Mr. Mathieu Laneuville (President and Chief Executive Officer, Réseau Environnement): Thank you, Mr. Chair.

It is a privilege to be with you today.

My name is Mathieu Laneuville. I am the president and chief executive officer of Réseau Environnement. We are proud to represent the largest association of environmental experts in Quebec. The City of Montreal and AquaAction are also members of Réseau Environnement.

We would like to address three major points today: underfunding of water infrastructure, water treatment, and the Canada Water Agency.

First, the underfunding of water infrastructure, to which Ms. Vodanovic has already referred, is not limited to Montreal; it affects all municipalities in Canada. This lack of funding is a major problem. I don't know whether people realize this, but municipal water infrastructure in Canada is one of our greatest collective assets. In Quebec alone, its replacement value is said to amount to over $200 billion.

Unfortunately, there has been a shortage of love for this infrastructure in recent decades, which means that today, the maintenance deficit for these assets represents almost 20% of their value. I should point out that there is an asset maintenance deficit when assets are in poor or very poor condition. Municipal employees in Montreal, Repentigny, Quebec City or Lac-Saint-Louis are working miracles with obsolete infrastructure that is constantly on the verge of breaking down.

We know that water is an essential service. We want water to be top quality at all times, but we are using drinking water to put out fires. There is a huge risk that there will not be enough water if a water main bursts, for example. There are also our hospitals, where many people go for dialysis treatment. If there is no more water, those people will die.

We have to think not only about the quality of our drinking water, but also about how important water infrastructure is for public services. That is why it is important for more to be invested and this asset maintenance deficit eliminated.

At Réseau Environnement, we are also proud to have partnered with HEC Montréal to demonstrate that investments in our water infrastructure are not only desirable, but also profitable. We have shown that for each dollar invested in water there is a return on investment of $1.72, taking into account all benefits for human health. For the young generations, IQ is falling by two to three points per decade because of new endocrine disruptors. We are seeing endocrine disruptors in our fish, but also in the new generations of human beings, like mine, and even in earlier ones. We are seeing how human beings, as well as fish, are finding it harder and harder to reproduce. So underfunding of our municipal water infrastructure has real world consequences.

The second point concerns water treatment, which Ms. Vodanovic talked about. At present, a lot of primary treatment is done in Canada. These wastewater treatment facilities were built 40 years ago. I would point out that 40 years ago, wastewater was not being treated. It was being dumped directly into watercourses. Then primary treatment of this water was started. That is fine, but today, given new technologies, which Ms. Chronopoulos talked about, and given emerging new contaminants, we have to proved public health and the health of our ecosystems better. That is why, at Réseau Environnement, we advocate treatment 2.0. Let's not keep using 40-year old technology. We have to adopt new standards. We could follow the example of Switzerland, for example, which has succeeded in treating 80% of emerging contaminants, unlike Canada, where we do a lot of primary water treatment.

Ms. Vodanovic spoke just now about ozonizing. In Repentigny, at present, primary treatment of wastewater is still being done. A lot of endocrine disruptors are being left in our watercourses. I am also thinking about the terrible floods on the Assomption River. I could also talk to Mr. Deltell about the Saint-Charles River, where there is flooding.

In anticipation of the upheavals caused by climate change, we have to invest massively in these collective assets.

The final point concerns the Canada Water Agency. Earlier, during the meeting with the first group of witnesses, there was talk about reduction at source. That is the best way to eliminate contaminants. We could tell you about good technologies, and the possibility of adding filters at the tap. However, the best solution is not to add filters, it is to eliminate the contamination at the source. We don't need perfluoroalkyl and polyfluoroalkyl substances, or PFAS, and we can regulate them. I think the Government of Canada is demonstrated good leadership in this regard. We have to continue our efforts, but we also have to do this for other families of compounds.

We have to succeed in creating this Canadian agency. Réseau Environnement, as a member of the Coalition québécoise pour des eaux saines and the Canadian Coalition for Healthy Waters, had recommended that this agency be created, and we are pleased with the progress made. However, we now need to back up our ambitions with resources. Réseau Environnement advocates an investment of $1 billion over five years for the Great Lakes and the St. Lawrence, and revision of the Canada Water Act. We will be paying close attention to the situation over the next few months.

● (1700)

The Chair: Thank you.

Mr. Deltell, the floor is yours.

Mr. Gérard Deltell: Thank you, Mr. Chair.

Welcome to your Canadian Parliament, ladies and gentlemen.

Mr. Laneuville, you mentioned the Saint-Charles River. I come from Château-d'Eau. I was brought up about 500 feet from the Saint-Charles River. I know the place very well, and I know that floods have been happening there for a long time and it is getting worse. Thank you for talking about that region, which I am very familiar with. I will soon be 60 years old, and I have spent my entire life in that area.

You may have heard the testimony given by Ms. Gomez just now, when she talked about her work with the city of L'Assomption on a project involving the use of salt to de-ice roads. That collaboration has been fruitful and fertile for the last four years, but while I don't want to be making jokes in bad taste, let's say that it seems to be running out of gas. It is not getting enough support.

What are your thoughts about a project like this? It really looks good. We are talking about de-icing, which is not unique to this region. This project can be applied everywhere in Canada, in thousands of towns, or even in the hundreds of thousands of driveways where people sometimes spread salt, although that is happening less and less, and that is a good thing.

Why is it that a project like this, which is very attractive and has potential for pretty spectacular expansion, since it could be applied everywhere in Canada, has not managed to be adopted more widely?

Mr. Mathieu Laneuville: It shows that the Government of Canada needs to demonstrate leadership, for one thing. I am glad you mentioned that you have lived near the Saint-Charles River for almost 60 years, because, while I may look young, Réseau Environnement itself has celebrated its sixtieth anniversary. So it was also there at the time.

Regarding initiatives like the one you refer to, in Réseau Environnement, as in other associations, we definitely want to showcase them, but funding is crucial. Whether we are talking about initiatives relating to salt for de-icing or numerous other initiatives, like the ozonizing that Ms. Vodanovic talked about, we can see that experts from one end of Canada to the other know about the solutions.

What you are talking about is known, but putting large-scale projects into effect calls for funding, and cities already have trouble maintaining their obsolete infrastructure. There are major delays in maintaining that infrastructure, and cities do not have time to think about improving things. They already have trouble plugging the leaks in their own systems.

At Réseau Environnement, we want the provincial and federal governments to give municipalities a hand in order to eliminate the asset maintenance deficit. The cities can work on maintaining the infrastructure, but they need help to deal with the maintenance deficit that has accumulated over recent decades. It is profitable to do it, and that is why we did this study.

There is going to be an agency and some good studies that will showcase projects like the one you are talking about, but after that, it will take political courage to provide money so these initiatives can be implemented and be more widely adopted, so that everyone can draw on them, but, most importantly, to adapt them to as many places as possible.

● (1705)

Mr. Gérard Deltell: Can you give us an example of a project that worked, that has been applied in very concrete ways and can be inspiring for a lot of communities?

Mr. Mathieu Laneuville: Yes, I can give you several.

We were talking earlier about reduction at the source. PFAS are one example. There should not be any more of them in our products, like Teflon-coated frying pans, raincoats, and so on.

We can also talk about conserving water. In Toronto, my Ontario colleagues have been able to do some very good things to reduce water consumption. A lot of work as been done on concentrations of some products coming from industry in water. This is a good thing, but as long as there are large discharges, it will have huge consequences, even if the concentrations are small. So we have to work to reduce these discharges.

There is another example that might affect the average person. During the pandemic, people used a lot of those disposable wipes to disinfect everything. People threw them in toilets, and that caused huge problems. It costs Canadian municipalities $250 million per year, because these wipes are in our sewer systems and clog up the pumping stations. Then they are found in our wastewater treatment plants, like the Jean-R. Marcotte wastewater treatment plant in Montreal. So they have to be taken out for processing, when people could simply put them in the garbage to start with so they could be easily dealt with after that. This example shows that we are able to do good things at the source.

Municipalities have also installed water recirculation systems in water-cooled air conditioning systems in hospitals. Hospitals' water consumption has been reduced by 90%.

Men will also remember those urinals in elementary schools with their automatic flushing systems. Every ten minutes, fresh potable water flowed into the urinals, and that continued even when there was a water shortage, and in the summer, in all our schools. They also kept working at night, when they were not being used. There have been innovations in that regard too.

These are all examples of practices that work. However, as you said, it takes funding to implement them widely.

Thank you.

Mr. Gérard Deltell: Thank you, Mr. Laneuville.

Mr. Mathieu Laneuville: Thank you, Mr. Deltell.

The Chair: Thank you, Mr. Deltell.

The floor is yours, Ms. Chatel.

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

I would like to welcome today's witnesses.

I would like to come back briefly to the comment my colleague Mr. Leslie made a little earlier, that there needed to be more investment in water technologies. I think that is in line with what you said. We also talked about that with the previous group of witnesses and with Ms. Gomez, who is still with us, I see.

However, Mr. Leslie said that there had to be cuts in our tax system at the same time. I don't really agree with that. I have been to countries where there is no tax system, and there simply is no drinking water. There are open-air sewers.

On the other hand, I agree completely on the need to do more with our money, with taxpayers' money, and to invest in municipal infrastructure. In my riding, rural communities are faced with drinking water systems and sewer systems that are obsolete. That is the challenge we will have to meet. In fact, if we want more housing, we will have to have systems that are a lot more functional and able to provide a high flow.

Earlier, someone mentioned the fuel tax program and Quebec's contribution, or TECQ. Under the program and the TECQ, with Quebec's contribution, Canada invests a portion of the gasoline excise tax revenue in municipalities' infrastructure. That concerns you, Ms. Vodanovic and Mr. Laneuville.

I would like to hear your concrete proposals in that regard, and I would ask that you each present your proposals, in turn.

Ms. Maja Vodanovic: I will answer first because I have been following the work done by the city of Montreal closely. I can tell you that of the revenue generated by the gasoline tax in Quebec, $200 million has been dedicated to our city. That is the best thing that can happen. It is like a gift from heaven, because it allows us to invest in a truly stable way. We know that we will have this money, which enables us to carry out maintenance on all our systems, replace the lead pipes, and so on. We know that we need that money, that we are going to continue needing it, and that it will always be there.

That is the kind of funding we want to have, because, otherwise, we will not get it done. We have to do maintenance, we have to adapt to climate change, and we have to comply with the new secondary wastewater treatment regulations. That amounts, at a minimum, to an additional $2.4 billion.

That is just gargantuan. It is enormous.

● (1710)

Mr. Mathieu Laneuville: I am going to talk about the gasoline excise tax. The federal government has long wanted to tie funding to the construction of new housing, and that presents us with a challenge at present. We think this is bizarre, because we have a big water supply deficit. We can't think about adding new housing to it. We need a good water system in order to have good housing and a good sewer system to be able to have new housing.

We need to think first about our primary infrastructure before building new housing. We believe the priority would be for the TECQ to no longer be tied to building new housing. That is an important message, which I wanted to send.

You also talked about how to go about improving the situation. We think that water conservation is the best vector. Because of climate change, pressure has really grown on our water resources.

Compared to the past, to all of human history, we are currently witnessing a demographic explosion everywhere on the planet. That also puts pressure on our water resources. We can manage it by conserving water. That way, new people will be able to come to our rural and urban communities and we will not need to build new infrastructure.

In a nutshell, if we conserve water, we will be able to admit new people.

Mrs. Sophie Chatel: Thank you.

We can see that the gasoline excise tax is not always a bad thing. In fact, it is helping our municipalities in Quebec.

I would also like to ask you a question, Ms. Chronopoulos.

You mentioned the importance of local municipalities and the crucial role played by the Federation of Canadian Municipalities, the FCM, in building resilience when it comes to the climate and water in cities.

Can you tell us more about that?

Ms. Soula Chronopoulos: Okay. I am going to take the opportunity to answer Mr. Deltell's question as well.

When it comes to innovation, entrepreneurs run into a lot of obstacles at the municipal level. Patricia Gomez talked to you about that. In our ecosystem, there are at least 80 people who, like her, have solutions. However, they do not have the resources to implement them. The challenges that municipalities have to meet have been the issue.

That said, there are innovators who have solutions when it comes to collecting data and keeping it up to date, to provide access to high quality data everywhere. Some design smart meters, others collect algae for producing biogas.

The Federation of Canadian Municipalities can give the municipalities a mandate, to help them. It could be done using grants and awards. In this way, innovations could be developed, or at least tested. At present, because we do not have the appropriations or funds needed to help local entrepreneurs, they go elsewhere. We are exercising leadership at the global level, certainly, but these entrepreneurs do not have enough reasons to stay in Canada.

There are a lot of young innovators in Canada when it comes to technology, but they are going elsewhere. That is truly unfortunate.

[*English*]

That flushing sound we hear is that we're going south.

[*Translation*]

The Chair: Thank you.

Ms. Pauzé, the floor is yours.

Ms. Monique Pauzé: I would like to welcome all the witnesses once again.

I will not have enough in my six minutes' speaking time, Mr. Chair.

The Chair: Do what you can, Ms. Pauzé.

Ms. Monique Pauzé: Before starting, I would like to make a comment. A lot of organizations come to testify before the committee. I note that the terms "our investors" or "increase the return" are often part of their vocabulary. What I see is that there are always conflicts around water usage.

If we take taxpayers' money to develop water technologies, it has to be effective. We would like it to deal with the health of water and water systems, which means monitoring PFAS, agricultural contaminants, radionuclides and industrial waste, among other things. That is what we want. We do not want investors to make more money. That concerns me a bit.

Ms. Vodanovic, I am going to talk to you about Chalk River, of course. I have heard you on the radio, and I know that you are the spokesperson for the Montreal Metropolitan Community, or MMC, on this subject. I also know that you have a very firm position on the despicable decision by the Canadian Nuclear Safety Commission, the CNSC, about the nuclear waste mounds in Chalk River.

I imagine that you are somewhat stunned by that decision, as was I. All, or nearly all, municipalities have come out against that plan, along with indigenous communities. We talk about reconciliation, but we act in complete contradiction of the United Nations Declaration on the Rights of Indigenous Peoples. We run roughshod over them and tell them the plan will go ahead even though they do not want it.

To your knowledge, does Montreal have technologies to detect radionuclides in its water treatment facilities?

● (1715)

Ms. Maja Vodanovic: We can detect them, but we can't stop them. If the water were to become radioactive, we could do nothing to change it, because we do not have the necessary equipment. That is one of the reasons why we were against this plan.

We do not know exactly what is going to be on the site over the next 50 years. In addition, the site will have to be monitored for 500 years, but no one can monitor a site for 500 years. We are very concerned, because the site is located right beside the water, alongside the groundwater. We are afraid that climate change and floods will mean that it gets to the Ottawa River and affects everybody downstream, right to Montreal.

Ms. Monique Pauzé: I agree with you entirely.

I recently learned that there is already tritium in the drinking water of municipalities on the banks of the Ottawa River. So that element is coming toward us. As a Montrealer, I thought it made no sense for me to be drinking that water.

I would also like to point out something that I find a little strange.

We are always told that the Canadian Nuclear Safety Commission is independent, but I am going to give you an example that shows why I do not consider it to be very independent.

Rumina Velshi, the president of the CNSC, spent a lot of time at conferences and events talking up the small modular reactors we are all familiar with. However, she has been replaced by Timothy Berube.

When I did a bit of research to find out who this man was, I learned that he has a doctorate in "divinity". The bulk of his university curriculum at the University of Metaphysical Sciences involved meditation, angels and chakras.

Since learning that, I have been a bit worried, particularly since the CNSC has appointed him as acting president. Am I the only one who finds this strange?

Mr. Laneuville, let's talk about the Canada Water Agency.

Last week, a witness told us that since the Agency was created, it has been given all sorts of little mandates by the whole world. It has been told that it should look after *X* river and *Y* lake and *Z* creek, and so on.

Did we not put the cart before the horse when we created this agency?

Could we not first have established objectives and principles of action?

Mr. Mathieu Laneuville: That is a very good question, Ms. Pauzé.

At Réseau Environnement, we have worked with the Canadian Coalition for Healthy Waters and the Coalition québécoise pour des eaux saines. We believe it was important that this agency be created and that we be able to get on with the job. We participated in its creation by providing it with all our comments.

Before the Agency was set up, there was chaos, and it was difficult for the members of our network to work with more than 17 departments and agencies on the subject of water.

One of the problems we had to deal with was this. At the moment, we are working on the freshwater study. We believe that water, whether freshwater or saltwater, knows no borders.

The study is critical for our St. Lawrence River and estuary. Why? Because, at present, we are evaluating the volume of total nitrogen in freshwater.

Total nitrogen does not have a major impact on our freshwater. However, our estuary, and our famous Matane shrimp, are threatened, and, if the trend continues, we will have none left in a few decades.

Ms. Monique Pauzé: Mr. Laneuville, I am going to stop you...

The Chair: Mr. Laneuville, we are going to let Ms. Pauzé interrupt because she does not have a lot of speaking time.

Ms. Monique Pauzé: Mr. Laneuville, I wanted to interrupt you to say the following to you.

You think that the Agency can do this, while other people think it can do that. A lot of people who have testified before this committee have told us about the various mandates the Agency has been given. Seriously, I would not want to be working there.

Everybody is assigning it mandates, because it has not been given a clear direction as to its objectives and the issues it is to work on.

I will read you what one of the witnesses said [*Translation*]: "Responsibility for the entire global hydrological cycle and prioritizing maintaining the carrying capacity of ecosystems are therefore two sides of the same coin, and that must necessarily guide the work of a Canada Water Agency... ."

However, it was not given that objective. That should have been done following a consultation and political decisions.

● (1720)

The Chair: Thank you, Ms. Pauzé.

Ms. Collins, the floor is yours.

[*English*]

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

Thank you to all of the witnesses.

My first question will follow up on some of the comments that have been made about the brain drain and how Canada is doing in comparison to the United States—maybe first to our witness from AquaAction, but then also to our witness from Foresight Canada.

I'd love to hear what you see as the concrete steps Canada needs to take not only to keep some of our skilled folks here but also to train up and ensure that the next generation has the skills they need to go into these fields.

Ms. Soula Chronopoulos: I think that first of all we need to make sure that there are available grants for them. Right now, even though there are a lot of federal grants from ISED they're not specific for water technologies, as we've said.

Two, they also don't have enough clean tax credits—nothing. When we have our U.S. counterparts going to them and saying, “hey, no taxes, so come to Michigan, come to New York”, they're jumping on that. The United States recognizes a major problem. There is no water crisis plan, and they're trying to develop one, so they're coming to Canada and they're taking all this amazing talent from us.

I'll let my colleague speak about this too.

Ms. Laurel Collins: Yes, and just before you jump in, I want to follow up.

It's really disappointing to see this federal government hand out billions of dollars for carbon capture and storage to oil and gas companies that are making record profits. At the same time, we don't have comparable funding for really important water tech.

Thanks for this.

It's over to you.

Ms. Heather Crochetiere: Yes. Thank you so much for the question.

As I said in my remarks, we have a big problem with the technology adoption here in Canada. As a result, as we heard from Ms. Gomez earlier, she is having a hard time finding someone to actually adopt her technology. She may go elsewhere or she may focus on other priorities.

Tax credits and incentives are absolutely important. This is not an exhaustive list, of course, but beyond direct funding, the government could look at things like developing water standards in environmental regulations, which would push industries to adopt those cleaner technologies here at home and give our Canadian entrepreneurs an opportunity. They could look at things like innovation and high environmental requirements for all infrastructure development programs, like those that are delivered by Infrastructure Canada. Really, it's about making sure that our procurement policies here at home enable the adoption of innovative water technologies, rather than prevent them.

It's also finding opportunities. I like what we heard earlier about using federal facilities and infrastructure to try to provide those pilot opportunities. A lot of Canadian entrepreneurs in the water-tech sector, when they go to develop their technology, don't have opportunities to pilot it here. We need to create those opportunities for people to develop those use cases that they can demonstrate to customers and showcase those pilots at home—and hopefully not leave Canada, but be able to export their technology and sustain a business here in Canada.

Ms. Laurel Collins: Thank you so much.

One of the policies I've been pushing forward in Parliament is a youth climate corps. Part of that is ensuring that we're training up young people into the sustainable jobs of the future.

Just quickly, Mayor Vodanovic, I know that you started a youth advisory... I'm wondering if you've seen this at the municipal level and if you're struggling to find skilled folks in these areas. What do you see as a possibility to get young people involved?

Ms. Maja Vodanovic: Yes, there is a lack of workers in general in every field. Especially for our water plants, in the sewer plants and in the filtration plants, we don't have enough students coming out and graduating. I even went to different schools and talked to them about everything we're doing. I said, “Come and work here. If you want to work in the environment, there's no better way than to actually do it concretely and change things.”

So I do go and talk to them. Next week I'll be talking to them at the Université de Montréal.

Ms. Laurel Collins: Mr. Laneuville, did you want to jump in?

Mr. Mathieu Laneuville: Yes. We need more water operators in the province of Quebec. We needs thousands of them and we train less than 100 per year.

Ms. Laurel Collins: Mr. Chair, I didn't press my timer. How much time do I have left?

The Chair: You have about a minute and 15 seconds. You don't have to use it all up if you don't want to.

Voices: Oh, oh!

Ms. Laurel Collins: I will.

Just quickly to AquaAction, you mentioned the green municipal fund. This is an amazing initiative that was started by Jack Layton. I actually sat on their board when I was a municipal councillor.

Can you talk a little about the need to reallocate some of those funds or increase some of those funds for water?

● (1725)

Ms. Soula Chronopoulos: To Heather's point earlier, they just are unable; they block at the pilot phase. A lot of these companies like Patricia's need funds to deploy their technologies, and the municipalities just don't have those funds. This is where we find it stops and they look to adopt their technologies elsewhere. If we could reallocate some funds and give each one the ability to test their technologies, I think that would unleash innovation.

Ms. Laurel Collins: Thanks.

[*Translation*]

The Chair: Thank you.

We are now at the second round of questions.

This is for all speakers.

You have four minutes. However, if you do not want to use all your speaking time, do not hesitate to do that.

Mr. Kram, the floor is yours for four minutes.

[*English*]

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

Thank you to all of the witnesses for being here today. We certainly have lots of interesting ideas and never enough time. I'll see if I can get everyone in very quickly.

Ms. Chronopoulos, you talked about climate and water policy in your opening statement. I've always been of the view that it's good when we can kill two birds with one stone, so to speak.

Recently, the committee heard about how irrigation projects can increase carbon sequestration in the soil in farmland. Do you have any views on that, and on how that can be a beneficial climate and water policy all in one?

Ms. Soula Chronopoulos: Absolutely. A lot of the solutions we see emerging in the innovation sector are how to make agriculture more effective. Right now 70% of water usage is by agriculture. We're very cognizant that in Alberta, for example, we have a severe drought. A lot of the solutions our innovators are seeking are on how to use less water. When we reduce the amount of water we use, we reduce the carbon that's released and we reduce the contaminants that need to be treated, etc.

All of it is interrelated. You cannot separate water from carbon.

Mr. Michael Kram: Very good.

Ms. Crochetiere, I wonder whether you have any views on irrigation policy and sequestration of carbon in farmland and soil.

Ms. Heather Crochetiere: Absolutely.

I would echo what we just heard from Ms. Chronopoulos. There's tremendous opportunity between the water and ag sectors. Where there is opportunity to increase the efficiency of water use, it could also lead to soil health, which can lead to increased carbon sequestration.

I absolutely think policy should be supportive of trying to, as you said, kill two birds with one stone and find ways to support innovative water technologies as well as healthy soil.

Mr. Michael Kram: Ms. Vodanovic, you had a positive comment about the Liberals and the Conservatives in your opening statement. Congratulations. I don't think that's ever happened before at this committee.

Voices: Oh, oh!

Ms. Maja Vodanovic: It's because Canada is good.

Voices: Hear, hear!

Mr. Michael Kram: You also mentioned that it's better not to pollute than to let cities pay the clean-up costs.

I wonder whether you could elaborate on what the most expensive pollutants to clean up are, and which ones are less of a concern.

Ms. Maja Vodanovic: PFAS is definitely one that we don't know how to handle. The cost would explode. We would like the Canadian government to keep pushing. I know we banned it in Canada, but we import it. Everything we have or own has PFAS. If we could push for a regulation on that, it would be great. I know we have friends in the States, among the Democrats, who really want to ban it and have this happen. They say they need their Canadian counterparts to come together and do something about this.

I'm just putting that out there.

The other thing is blue algae. We don't know how to handle that, either. Once it gets into our system, we don't know what to do. The big problem is that all of our infrastructure is built. It's very hard to build something new within this old infrastructure. The costs are just huge, as you said. All of our infrastructure is old, so we have to maintain it. We have to adapt to all the flooding and live up to the new regulations. It's hard.

Mr. Michael Kram: Thank you.

The Chair: We're pretty much out of time.

Here's a little trailer for you, Mr. Kram: next week, Dr. Chandra Madramootoo is coming. He's an expert in irrigation and sequestration. I'm sure he'll give you some good answers.

Mr. Longfield.

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

Thank you, everybody, for being here.

I'm very interested in the discussion we've been having about conservation. That's something we haven't addressed yet in this study.

Maybe I'll start with Mayor Vodanovic.

Guelph has a groundwater-fed supply. We've reduced our water consumption from about 330 litres per day per person to 167 litres per day per person.

● (1730)

Ms. Maja Vodanovic: Congratulations.

Mr. Lloyd Longfield: Thank you.

The average in Canada is somewhere around 335. In the EU, it's 144. There's an opportunity for conservation that the federal government could have a role in with national targeting.

In Guelph, it meant we didn't have to increase our wastewater facility. We saved about $26 million in municipal costs there. At our wastewater facility, we're also taking the solid waste and treating it, then using it for fertilizer at the farms around Guelph and creating some methane production. There's an opportunity for net zero on waste water.

When you look at municipal costs, conservation can actually stretch the dollar. Thirty per cent of our losses are in pipeline leakage. We had to address pipes. That's an expensive cost.

Could you talk about the opportunity cost for conservation as it relates to the water study we're doing, as well as to reducing costs for municipalities?

Ms. Maja Vodanovic: The leaks in our infrastructure are up to 24% right now. It's pretty bad as well. We're the worst. Montreal is the worst consumer of water. We're at the top.

Mr. Lloyd Longfield: It's 367 litres per person per day. That's not terrible.

Ms. Maja Vodanovic: We're trying to get to the medium bar.

We looked at Toronto. Toronto did a lot to lower it. They have the water meters. They've lowered it, but it hasn't decreased the need for investment so much. It's a small amount. The part that is the production of water is just a couple of percentage points of the need to maintain the whole system. It's not like, if we use less water, we can finance our four incinerators. It's going to be a small amount.

Yes, we have to reduce our water intake, but it will not finance the rest of our needs.

Mr. Lloyd Longfield: Right.

We have population growth, so we're trying to keep our curve flat because we don't have the groundwater to feed that. It also limits us economically if we don't address this. It's different when you're on the St. Lawrence.

Ms. Maja Vodanovic: Exactly. It's different when it's abundant.

Mr. Lloyd Longfield: That's right.

I think, Mr. Chair, that that's something I want to capture.

Is there any other piece on conservation that any of you want to put out?

Ms. Soula Chronopoulos: I think that a lot of the innovation that you're seeing develop right now, especially in Quebec in Canada, is about how we use less water and how we regulate it. For example, Quebec just released a report recently about industrial water usage. That's an important transparency measure for us to look at who the water-wasters are and how we reduce that with smart metering.

There are ways we can adopt this, but we need to bring in more of that innovation and tech that we've been talking about.

Mr. Lloyd Longfield: We all have smart meters in Guelph. That was a big part of it. Then—

Ms. Soula Chronopoulos: We don't.

Mr. Lloyd Longfield: —we got competitive.

Thank you.

[*Translation*]

The Chair: Thank you, Mr. Longfield.

Ms. Pauzé, the floor is yours.

Ms. Monique Pauzé: Ms. Crochetiere, your organization receives federal funding. I think that when you receive federal funding, you have to demonstrate a degree of transparency, but I did not see the annual report on your website. Maybe I was not searching properly.

You produce reports, at a cost of $1,000, and the services you offer seem to be very similar to what the federal government calls its "Net Zero Accelerator Initiative," which we heard a lot about when we did the study on clean technology.

Is there a difference between the two organizations? I have the impression that there is duplication with organizations that already exist.

[*English*]

Ms. Heather Crochetiere: I would not agree with that.

We do get funding, very generously, from the federal government and from provincial governments, as well as from industry sources. We have demonstrated, time and time again, that we're able to punch above our weight. I shared some of those stats that we've been able to achieve over our 10 years in existence.

We've been able to—

[*Translation*]

Ms. Monique Pauzé: Forgive me for interrupting you. What I wanted to know is whether you think there is a kind of duplication. My second question is more or less the same.

I read that the Canadian Water Network had existed since 2001. It was created in response to the Walkerton contaminated water scandal, if I recall correctly. You say that you bring together stakeholders from across the ecosystem to improve things, but, again, I think your objectives resemble what we would expect from the Canada Water Agency.

Is there not a kind of duplication of functions?

● (1735)

[*English*]

Ms. Heather Crochetiere: The Canadian Water Network is quite focused on municipalities and research, and that's an important area.

We at Foresight also focus on working directly with industry and with innovators and investors, trying to take that whole-of-ecosystem approach to really make sure that we are creating the conditions for clean tech and water tech in Canada to thrive.

We also support the Cleantech Accelerator, as well as connecting with those end-users.

The Chair: Thank you.

Would you mind, maybe in writing, just giving us an idea of what programs you access federally? That would be very useful.

Ms. Heather Crochetiere: Sure.

The Chair: Thank you.

Ms. Collins.

Ms. Laurel Collins: I'll follow up with some questions for Foresight Canada.

I want to hear a little bit more about waterNEXT.

Could you talk a little bit about how investments in water innovation can advance Canada's broader economic development and our climate priorities?

Ms. Heather Crochetiere: Absolutely.

We've heard from different folks across the sector that there does need to be investment both in the innovators themselves, providing them with the opportunity to develop their tech, and in support of the adoption of technology. Maybe I'll spend a bit of time there.

We've heard from end-users that they don't have the capacity to actually adopt any innovative solutions. There may be risk aversion, or they may not have the time in their day or the people-power to actually assess innovative technologies, understand the risks, and understand how they may fit into their infrastructure.

Investing in initiatives to help overcome those capacity shortfalls will actually support the adoption of technology, which has a good economic benefit for the water-tech ventures and potentially lowers costs for those end-users.

Ms. Laurel Collins: We had a witness come to us for our study who was talking a little bit about the importance of incubators. It was Caleb Behn, an indigenous leader and a water expert who works for the AFN.

I'm just curious as to how your organization interacts with incubators. I am curious about your thoughts.

Ms. Heather Crochetiere: Yes, absolutely.

Ventures that would be in an incubator may be at an earlier stage. We do have some programs that support earlier stage ventures, but I would see it almost as the incubator moving the innovator along to a certain stage, and then Foresight would be able to support them on their continued journey.

The Chair: Thank you.

Mr. Mazier.

Mr. Dan Mazier: Thank you, Chair.

Thanks to the witnesses for coming this afternoon.

I was on the science and research committee, where we studied commercialization in Canada. For clean-tech companies, one of their biggest concerns was the difficulty in getting to commercialization. They referred to the gap between research and commercialization as the “valley of death”.

I think that's one of the reasons why they are leaving, but we are also told that other countries do commercialization much better than we do. How can Canada accelerate the commercialization of clean technologies?

Ms. Soula Chronopoulos: That's a great question. This is where my recommendation about funding water-tech accelerators like Foresight and AquaAction and some of the other agencies we talked about is, because we de-risk it. There is a lot of risk aversion right now in Canada, whereas if you look at Israel, Israel will adopt 90% of start-ups. They'll take that risk because the ones that hit are the ones that are actually making a big difference. They recycle 90% of their water, whereas Canada recycles less than 10%.

What we're asking for is an investment from the federal government to support accelerators like us regionally. We de-risk. We can make sure that we place them in the right place in the market, and we make sure they have an impact. Those are the hands and the eyes and ears of the federal government on the ground floor, so that we can accelerate that.

In Canada, because everything is federal, it's very difficult to manage what happens on the ground. Sometimes what happens on the ground is chaos for these entrepreneurs. They have all the barriers that hit them. That's why we can't get far. We really need to create more of a process from funding all the way down to the ground, where we hit them with what they need to make sure they are successful on the commercial market.

● (1740)

Mr. Dan Mazier: We did talk quite a bit about intellectual property in that study. I wonder.... What it is, I think, is that we set them up basically for failure—

Ms. Soula Chronopoulos: We do.

Mr. Dan Mazier: —or being ripe for someone else to invest in them and away they go.

Are you familiar with any intellectual property laws or anything like that so we can protect this and build wealth here in Canada instead of in Israel or in the U.S.? Would you have any recommendations for our study?

Ms. Soula Chronopoulos: I do. It's a great question.

I do. I think what we have to do is that if we fund accelerators and entrepreneurs, we should be signing agreements with them and saying, “Hey, if you're receiving federal funding, you should be staying in Canada for five years—otherwise, you pay that back.” What we're doing right now is that we're giving them money, they're getting greater job offers and incentives from everywhere else and they're leaving. That's why we're losing them.

I think there are ways that we can strengthen this. It doesn't take a lot of effort.

Mr. Dan Mazier: Very good.

You talked about clean tech and picking priorities. Like my colleagues around the table, I'm kind of taken aback. Of course, we have so many priorities. Today, we're talking about water, and tomorrow we'll be talking about CO2. When it comes to the environment, if we could pick the priorities, I think it is really important to make sure that we are killing one bird with two stones, or one stone with two birds—

Some hon. members: Oh, oh!

Mr. Dan Mazier: —or whatever...however it goes.

The Chair: We understand.

Mr. Dan Mazier: Anyway, it's about doing it as efficiently as possible.

Yes, and we don't want to kill birds either.

Thank you. I'm done.

The Chair: Ms. Taylor Roy.

Ms. Leah Taylor Roy: Me?

The Chair: Yes.

Ms. Leah Taylor Roy: Thank you.

The Chair: It's time to clean up.

Ms. Leah Taylor Roy: Very briefly, then, we're focused really on the establishment of the Canada water agency and perhaps revisions to the Canada Water Act. We've been talking about technology, but really, for this study, what would you say are the main things we could do in the Canada water agency that would help your efforts on the ground?

Ms. Maja Vodanovic: I see how it works at the City of Montreal.

Sometimes they have to apply and fill out forms for 10 different ministries—fisheries and infrastructure and this and that—and then, by the time they're finished, the law changes and they have to redo the whole thing. It's taking us years and years to get approvals for something. On the fish habitat, we're doing beneficial municipal projects and we're caught in this net of regulations.

I think we need to streamline. If the agency can become something where we just apply to the agency and that's it, where we don't apply to these 10 things and the agency.... That will be the death of us. It has to simplify the regulations.

Ms. Leah Taylor Roy: That's a great idea.

Go ahead, Mathieu.

Mr. Mathieu Laneuville: I know we don't want to kill birds, but if we want a good bang for the buck, it's especially for PFAS. There was good leadership for the harmful and non-standard contaminant called organofluorine, but there was also.... When you look at the periodic table, there's fluorine, chlorine, and bromine, as well. These are now taken into account molecule by molecule. Fluorine was taken as a family. When it's taken as a family, it helps us a lot, because if manufacturers change a process they cannot do it to another molecule in the same family. That's not so for bromine and chlorine. They can do it there, so if we can change that, it will be a good bang for the buck.

Ms. Leah Taylor Roy: That's great. PFAS are a great concern to many people I know, namely for our health and environment, so thank you for that.

Ms. Soula Chronopoulos: I'm going to add one more thing. We have no leadership in Canada for water. There are so many different departments we go to for everything, but we have no department for water. We live for three days without water. It's so important to everything, for example, climate, health, etc.

We need leadership. We need the Canada water agency to really align with ISED. ISED has a lot of power that the Canada water agency needs to adopt, as well, to support us at this level, so we can have access to everything we need to make sure we execute.

Ms. Leah Taylor Roy: That's fantastic. Thank you all.

If you could all send in an even more detailed wish list, or some more details on what you've said, that would be great.

The Chair: Along those lines, Mr. Mazier also asked for any comments, insights, or ideas about commercialization and the barriers that should be removed, etc. Please send those in, in writing, as well.

Thank you so much for a great meeting today. I think it was fantastic.

Have a safe return home.

The meeting is adjourned.

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