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Chair

Mrs. Deborah Schulte

Standing Committee on Environment and Sustainable Development

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● (1535)

[*English*]

The Chair (Mrs. Deborah Schulte (King—Vaughan, Lib.)): We'll get started.

We don't have all of our witnesses here. We're missing one, but he may be down in security; I understand there's quite a lineup. Hopefully, he'll be here soon. There are four witnesses today in total. I think we can get started.

Welcome, everybody. I'd like to welcome our guests. Today we are having our academic panel for the CEPA review. We really appreciate all of you being here. To those on video conference, thank you very much.

I will introduce everyone. We have Mark Winfield, professor, faculty of environmental studies at York University. Welcome. We have Lynda Collins, associate professor, centre for environmental law and global sustainability, faculty of law, common law section, University of Ottawa. That's quite a title. We have Meinhard Doelle, professor, Schulich school of law at Dalhousie University. He's with us by video conference. We're going to start with you in a minute. We have Daniel Krewski, professor and director, faculty of medicine, University of Ottawa. I'm sure he'll be coming soon.

We have a couple of rules of engagement. We have 10 minutes for depositions. We're going to do all of those first. Then we'll start our rounds of questioning, which will be six minutes of questions and answers. I'm fairly strict. We have these little cards that I use, which is very hard for everybody. We have a yellow card that basically lets you know you're within one minute left. When a red card goes up, it means that you're out of time. I don't want you to end right away, but just finish your thought, and we'll end it at that point, if you don't mind. I do that to guests and to the committee members as well. Everyone is treated equally.

We have a full suite of members in the room, so we'll get started.

We'll get started with Meinhard Doelle, if you don't mind. Thank you.

Dr. Meinhard Doelle (Professor, Schulich School of Law, Dalhousie University, As an Individual): First of all, I would like to thank the committee very much for asking me to give this presentation and for embarking on this important task. It is one that I worry may be overshadowed a bit by other federal review processes, such as the review of the Canadian Environmental Assessment Act, the Fisheries Act, the National Energy Board Act, and the Navigation Protection Act.

I make reference to those not only to express my concern about this one being overshadowed, but also because I think there are important opportunities to integrate the reviews and to draw connections. There are certainly connections, and I will talk a bit about this in my 10 minutes. I see some potential connections between the Canadian Environmental Protection Act and the Canadian Environmental Assessment Act, for example.

I also think there are opportunities to learn more generally and to improve regulatory approaches across the board. Many of the reviews, CEAA being the exception, are really about improving the regulatory craft and regulatory approaches in the federal government. I think there are important lessons to be learned in any of these that can apply across the board.

I have a couple of other introductory comments.

First of all, I think for many of us who have tried to work with CEPA, one of the challenges is that CEPA is not an act we encounter regularly. When we encounter it, it is often in the details when we deal with specific regulations. I'm hopeful that other witnesses have worked with the legislative provisions you are reviewing in more detail, because for many of us it is an abstract act we don't often deal with.

In terms of my background, as was said, I'm a professor at the Schulich school of law at Dalhousie. My research interests are in environmental assessment, climate change, and environmental governance, including regulatory approaches.

I haven't focused on CEPA in particular as a research priority, so my comments will be fairly high level and they will focus on improving regulatory approaches in the context of CEPA.

The focus of my presentation will be on the regulation of toxic substances. I recognize that there other more specific areas in the act, but I will focus on the regulation of toxic substances.

My first point is that I think we need a more science-based approach to listing substances as toxic. A tremendous amount of work has gone on for the last 20 years in categorizing substances, and so on, but I don't feel we have a sufficient focus on science in determining which substances ultimately are listed as toxic and then regulated. Socio-economic and other factors should affect how a substance is regulated, not whether to list it or to regulate it.

I would suggest that the overall goal of listing any substance as toxic should be to minimize the risk in the short term, to motivate research for non-toxic alternatives, and to ultimately eliminate the toxic substance from use.

One of the key themes of my presentation is that too often regulatory approaches are static. They do not have built into them opportunities and motivation for continuous improvement. They often forget about what the long-term goal is. They often are based on what is practical and achievable at the time the regulation is designed, and the solutions that seem practical and achievable at the time are then enshrined over the long term.

I think we need to get past that. We need to design regulation with clear long-term goals, clear motivation for continuous improvement, and clear mechanisms to achieve that.

I think there should be clear legislative timelines and substantive obligations associated with listing a substance as toxic in the Canadian Environmental Protection Act. I think we can look to SARA for some guidance at least on the concept on that.

● (1540)

Those of you who are familiar with SARA will know that the listing process, even though it does have a political component, is largely a science-based process and there are actual legal requirements that are associated with listing a species under SARA. There are prohibitions that apply automatically. There are timelines within which responses in the form of recovery strategies and action plans have to be proposed and implemented.

If you translate that into the approach to toxic substances under CEPA, we should have a science-based listing and clear timelines for a mandatory regulatory action. There should be immediate control of the most significant hazards associated with the toxic substances listed, along with a clear commitment to continued improvement toward the elimination of the threat. We should recognize that the job of regulating and designing the regulation is not over until the threat is eliminated. I think that's particularly important in the context of the growing recognition of cumulative effects, whereas we often only view the effects of one particular activity in isolation. Also, there is the growing recognition of the precautionary approach as a basis for regulating toxic substances. Both of these points suggest that we need to recognize that the job of regulating these substances is not over until their use has been eliminated or at least the threat of release has been eliminated.

Regarding what can be done in the design of regulatory approaches to encourage progress towards elimination, if that is not possible, at the outset, we should create clear targets for regulators that are built into regulations as a possible element of that. We have had experience with that in Nova Scotia in the form of the Environmental Goals and Sustainable Prosperity Act where the government set clear targets for itself. That meant that there was a built-in incentive and requirement for the government to regularly review its regulation and the performance of its regulations to ensure that the overall targets were met. Other elements that would help with this idea of continuous improvement towards elimination of the risk and the threat include financial and non-financial incentives, such as clear timelines for the phase-out that can motivate those who are using substances to find alternatives, and on the financial side, if there are costs associated with using toxic substances, that can also provide incentives for phasing them out.

Full transparency not only for the listing process, but also for resulting regulatory responses is another key element. With respect to the section on new substances in particular, I would draw your attention to the recent AquaBounty decision by the Federal Court. I would suggest that decision is a clear indication that the new substance notification process, or new substance process, is not working and careful reworking of that section I think is important.

I would recommend that this is an area where I would draw connections to other acts that are being reviewed. The integration of the new substances section with the Canadian Environmental Assessment Act and specifically, when a new substance notification is associated with a new project, then the fact that a new substance is being proposed should trigger an environmental assessment. In my view, the environmental assessment would be much better positioned to engage the public to consider alternatives and to consider whether allowing the new substance into Canada is more appropriate than the current new substance review process.

● (1545)

The Chair: I just want to let you know you have one minute left.

Dr. Meinhard Doelle: Okay, thank you.

For new substances that have broader implications, I would recommend that a strategic environmental assessment process, SEA, be utilized, but I want to be clear that by that I don't mean a cabinet directive. I mean by that a newly designed SEA process under the federal environmental assessment process that many of us have been proposing.

I will conclude with a couple of key points. I realize that my time is almost up. I'll make reference to the Aarhus convention, which I think can be a good source of information and a good source of ideas about how to improve access to justice, not just in the Canadian Environmental Protection Act itself, but more broadly, and I'll make reference to the substantive and procedural environmental rights and the idea of including those in the act.

I'll leave it at that. Thank you very much.

The Chair: Thank you very much.

Now we'll move to Mark.

Dr. Mark Winfield (Professor, Faculty of Environmental Studies, York University, As an Individual): Madam Chair, thank you for the opportunity to speak to the committee today.

My name is Mark Winfield and I'm a professor of environmental studies at York University. I'm also a coordinator of the joint program in environmental studies and law that we offer with Osgoode Hall Law School.

I come to this meeting with a fair history of involvement around CEPA. I was extensively involved in the first CEPA review between 1995 and 1999. I was somewhat involved in the semi-review that happened in the early part of the last decade and the conversations around the clean air act, and so I picked up on some themes that seemed to have carried over those 20 years, and some new things as well as I was thinking this through.

Originally I was intending my comments to be very short, but as I thought about it more and more, I ended up more with a Frankenstein's monster of pieces from the legislation, but that's inherent to the character of CEPA. The legislation itself was originally an amalgam of different pieces of legislation. It covers a whole range of different topics. It's inevitable that one ends up having to talk about it in those terms.

In terms of specific things, I've identified six areas where I thought the act could be significantly strengthened. I'll talk about each of those in turn. Then there were three or four areas, mostly in the government's discussion paper, which I thought the committee may want to approach with considerable caution. All of them are themes that ring bells going back all the way to 1995. Conversations have been going on about CEPA for a very long time and I think this needs to be approached with some caution.

In terms of things that could be strengthened, I would focus in particular on the provisions around public participation. In part two, the intention was in some ways to have embedded originally a kind of environmental bill of rights into CEPA itself. That happened partially. I've made a number of recommendations there that there be a general statutory duty in the administrative duties section around a general right of public participation within the federal jurisdiction.

I've also made recommendations to expand the application of the CEPA registry, which at the moment is limited to policies and regulation. In particular, I've made a suggestion that the registry should be expanded to include public notice of specific approvals that are given under the act, things like ocean-dumping permits, permits for import and export of hazardous waste, and a number of other examples I give in my brief. I think that would make the registry much more effective. It's certainly been our experience in Ontario with the environmental registry. It also means the registry starts to function in very useful ways as a kind of archive. At least in Ontario, the environmental registry is searchable. It allows you to see the history of decisions that have been made around particular activities or even particular firms. I've also suggested expanding the scope of the application of the request for investigation provision and the whistle-blower protection provisions within the federal jurisdiction.

The second theme that I can touch on is the question of vulnerable populations and environmental justice. I believe the Canadian Environmental Law Association has spoken about this to the committee at some length. My colleague, Professor Dayna Scott, from Osgoode Hall Law School has also addressed this. I think it's quite crucial here. The crucial point really is that the government, in its proposal, simply proposed to deal with this at the level of the preamble. I think Professor Scott, CELA, and others have emphasized the importance of putting the environmental justice components into the operational provisions of the statute. Both have given quite specific examples of the places where those sorts of things should be operationalized.

The third area where I think CEPA could be strengthened is around the management of toxic substances. Professor Doelle spoke to this already in terms of both accelerating and depoliticizing the process of putting things onto the toxic substances lists, TSL, but also emphasizing the importance of the listing of something on the TSL as a trigger for risk management actions, that this can't just be a paper process, that something has to flow from a finding of toxicity, and there have to be statutory duties of some form of action. There already are, but we found they haven't worked very well. There are some things, like the NPRI listing, for example, and the listing under the emergency regulations that are in section 200, triggering pollution prevention planning for example. These are all things that pretty much have happened automatically on a finding of toxicity given the way that is structured at the moment.

● (1550)

I've made a number of suggestions around international obligations as well to introduce into the administrative duties section a requirement that the Government of Canada ensure that it is fulfilling Canada's international environmental obligations. I've made the suggestion that there actually be a specific schedule of the agreements that Canada has entered into, to which that duty would apply. It's probably a more robust mechanism for making sure that the government is conscious of its obligations to the international community and fulfills those obligations.

I've made some suggestions around the international air and water pollution provisions as well, in part 7, essentially suggesting that the process for the federal government to take action against sources of international air and water pollution inside Canada be streamlined. At the moment, those provisions are subject to very extensive consultation requirements with the affected province. We are suggesting that this be streamlined and that there be very clear criteria for the point at which the federal government can act to regulate those sorts of sources of pollution within Canada. We are also suggesting a parallel set of provisions around interprovincial air and water pollution.

Finally, I've highlighted the question of environmental management within the federal jurisdiction. I think this emerges as a particular fail in terms of CEPA and its structure, that we have almost nowhere here at all.... Indeed, as I was researching this, I discovered that of the three regulations that were made under this part, two actually have subsequently been withdrawn.

There are a number of options here. The government has proposed incorporation by reference of provincial standards or simple application of the relevant provincial standards in whatever jurisdiction. There could also be a general offence provision within the federal jurisdiction for activities that cause harm to the environment, which is in fact typically what most provinces have within their jurisdiction. How do you deal with the question of what happens on federal lands and other things? Well, you can have a general offence provision that says you cannot release contaminants into the environment that may cause harm. Something along those lines, I think, would be helpful.

There are cautions growing from the government's white paper. I am somewhat nervous about the notion of separating the virtual elimination substances from the other substances on the toxic substances list. I am sensitive about the construction of the constitutional basis for federal regulatory authority around toxic substances as a result of the Hydro-Québec case in 1997, and I would be very cautious about anything that affects that.

One theme that emerges very strongly from the government's white paper is that of reliance on other departments and other statutes to carry out risk assessment and risk management activities. Again, this is something I would approach with great caution. In the original CEPA review, one of the big issues was around the residualization of the act, making it apply behind everything else. Our view was always that CEPA should actually be the benchmark. If something is going to be regulated under another act, there have to be criteria under which that regime has to qualify in order for something to not fall under CEPA anymore but under something else: the Food and Drugs Act, the Seeds Act, the Feeds Act, or whatever. This can't just be hand-waving. There have to be criteria that apply there.

The same argument in some ways applies to the government's discussion of the expanded use of equivalency and administrative agreements. Again, this is something I would approach with a great deal of caution. As I was researching this, I was quite concerned about the extent to which we don't actually have evaluations, at least that I could find, of performance under the existing equivalency and administrative agreement provisions.

In my view, the government seems to want to lower the threshold here, eliminate the requirements of the actual agreements, and eliminate the requirement that these things have sunset clauses. In the original CEPA review, we argued completely the opposite, and I'm going to argue completely the opposite again here, that the criteria for equivalency agreements have to be articulated within the act in more detail. It's the same thing with administrative agreements. The reporting requirements need to be articulated in the statute in more detail. Otherwise, the risk particularly around equivalency agreements is that these come to be regarded as a kind of "get out of jail free" card for provinces; we are saying that federal rules exist, but they don't really apply in their jurisdiction. I would want to look at that very carefully.

● (1555)

I will end on that note.

Thank you, Madam Chair.

The Chair: I feel so bad because you're on a roll and you have a lot to share with us. I'm sure we'll get more of that information from you in the questions.

I want to welcome Daniel Krewski. Thank you very much for joining us. I don't know which one of you would like to start. Lynda.

Professor Lynda Collins (Associate Professor, Centre for Environmental Law & Global Sustainability, Faculty of Law, Common Law Section, University of Ottawa, As an Individual): First of all, thank you very much for having me today. More important, thank you for the work that you're doing in this CEPA review.

For those of us who aren't doctors, it's rare that you can say you're work can save lives, but this work you're doing could save thousands of lives every year in Canada, and not just save lives, but improve the quality of life for all Canadians, including children, the elderly, people with disabilities, low-income communities, indigenous communities, and other vulnerable populations. I think we all agree that CEPA 1999 needs a lot of work. You've undertaken a big project, but the good that could come from this is also very significant. I'm very happy to be a part of your work.

I'm a professor at the Centre for Environmental Law and Global Sustainability at the U of O. My expertise is in the area of environmental human rights and liability for toxic substances. In that capacity, I've testified in public hearings at the European Parliament, done consultative processes at the UN Human Rights Council, testified at our own Senate Standing Committee on Energy, the Environment and Natural Resources and before this committee at the last CEPA review 10 years ago. I'm past co-chair of Ontario's toxics reduction scientific expert panel, which helped the province develop their Toxics Reduction Act. Along with Dr. Heather McLeod-Kilmurray I'm the author of *The Canadian Law of Toxic Torts*.

I have reviewed the submissions that have already come before this committee, and in my opinion, you can find a clear, comprehensive, and feasible road map for building a better CEPA in the submissions of Dr. Dayna Scott, Dr. David Boyd, of course my colleagues on the panel today, as well as Ecojustice and the Canadian Environmental Law Association.

I'm going to focus my submissions in the areas of my own expertise. CEPA needs a lot of revision to meet its goals. I commend to you all the recommendations in those submissions that I mentioned.

I submit that CEPA should recognize, and more importantly effectuate, the right of every Canadian to a healthy and ecologically balanced environment. To do this, CEPA will need to take into account three distinct dimensions of environmental human rights that have been recognized internationally, notably by the UN special rapporteur on human rights and the environment. Those are: one, the substantive right to environmental quality; two, the obligation of non-discrimination in environmental protection; and three, procedural environmental rights.

Taking each in turn, first is the substantive right to environmental quality. As a first step, I submit that the Government of Canada should amend subsection 2(1) of CEPA to impose on the government the obligation to respect, protect, and fulfill every Canadian's right to a healthy and ecologically balanced environment. This amendment would bring Canada into the overwhelming global consensus, which views environmental protection as a human right. Some of you may know that the Supreme Court of Canada will hear its first charter environmental rights claim next week. The environmental rights revolution is coming to Canada. It only makes sense to embody this important concept in our most important federal environmental law.

In my view, even more important than recognizing the concept is implementing it, giving effect to it. To do that, CEPA needs to begin to do a much better job of identifying, limiting, and even banning harmful chemicals. In particular, it should eliminate exposures to known carcinogens, developmental neurotoxins, and endocrine disrupters.

To do that you have to implement the precautionary principle at every stage of the CEPA process. If you don't, you not only end up with under-protective results, but you violate rights in the process. I think Dr. Joe Thornton, says this the best, “People, not chemicals, have the right to be presumed innocent until proven guilty. People also have the right not to be experimented on without consent”. In other words, if the substance hasn't been proven to be safe, I submit it should not be released into the Canadian environment.

Still on this topic of the substantive right to environmental quality, we would need some particular amendments. We should amend CEPA to require the ministers to establish binding and enforceable standards for ambient air quality and drinking water.

As you know, historically we've regulated point-source pollution, without a total limit on the number of point-source permits that can be issued, which results in pollution hot spots. This doesn't make any sense ecologically or physiologically. These values are too important to be embodied in non-binding guidelines. They need to be enforceable within the act. We know from other jurisdictions that these binding national standards can be effective at improving environmental quality and public health.

We also need to remove the need for exposure data in determining toxicity under section 64, and take a hazard-based approach to substances of high concern, requiring industry to prove safety, rather than government proving toxicity.

● (1600)

In my submission, in the 21st century we now know that any substance that enters the environment will eventually end up in human bodies, and vice versa. We're seeing that the drugs and pharmaceuticals we take are in lakes and rivers; similarly, industrial chemicals such as PCBs are measurable in human bodies. In order to assume that you could allow the release of a substance without its resulting in exposures, you'd have to rely on the logical fallacy of the human separation from nature, which is just not supportable anymore.

As Dr. Scott pointed out, the requirement to include exposure data when you're assessing toxicity has resulted in some very long delays. I support Dr Scott's proposal that we should actually delete the words from section 64, “is entering or may enter the environment in a quantity or concentration or under conditions that”.

I would suggest amending CEPA to require assessment of alternatives and substitution with safer options. Again, and you've heard this over and over again from experts in the field, alternatives assessment prevents the adoption of more toxic substances that sometimes can happen without it, and the substitution principle ensures ongoing improvement in health and safety by continuously moving away from more dangerous substances towards safer ones.

Again, to echo the testimony of many of the experts who have come before you, I suggest we need to remove the “do nothing” option once a substance has been identified as toxic. I suggest this is probably necessary just to be in compliance with existing section 7 of the charter. Once a substance has been identified as toxic, to do nothing probably is a violation of security of the person, even under our current constitutional law.

We should implement binding reasonable timelines for assessment and regulatory action—we've already heard some of the notorious examples of very long delays, such as in the case of PBDEs—and we should impose an interim ban on substances when another OECD country has banned or substantially limited the use of a substance.

That's all going to the first category of the substantive right to environmental quality. With respect to the obligation of non-discrimination, this in North America is typically referred to as environmental justice. It deals with the equitable distribution of environmental benefits and burdens. I would suggest again that this is probably already required by our existing section 15, the equality provision of the charter.

In order to improve CEPA's performance on environmental justice, the Government of Canada should amend subsection 2(1) of CEPA to require the government to protect vulnerable populations at every stage of the CEPA regulatory process.

We should ensure that toxicity assessment under section 64 takes into account the unique susceptibility of vulnerable populations. We should amend CEPA to ensure equitable regulation of ambient pollution across the country, in other words, end pollution hot spots in marginalized communities, and we should complete a national environmental health inequality assessment, as recommended by the World Health Organization.

I want to emphasize here that in many cases we have not been doing a good job of collecting data on exposures of vulnerable populations. The absence of that data should never be used as an excuse to delay a listing or regulatory action. I submit that wherever data on the unique exposure vulnerability or susceptibility is absent, we should draw an adverse inference; in other words, we should presume that vulnerable populations are more likely to be exposed and more vulnerable to the adverse effects of exposure, if the data is not there. That is under that section, the second category of environmental human rights, the obligation of non-discrimination.

Finally, we have procedural environmental rights. These again are very well entrenched internationally and have been recognized by the special rapporteur. They're understood to include the rights to access to information, public participation in environmental decision-making, and access to justice in environmental matters.

CEPA needs to be amended to allow ministers to request information at any time and for any purpose connected to the act, and producers should be required to respond expeditiously. Right now, we have a system that actually encourages manufactured ignorance, and this has been well documented in the literature. Why would a rational corporation that has a legal duty to maximize profit fulsomely study its substances unless it has a legal duty to do so? We need to flip that to create incentives to produce information on the safety or toxicity of substances.

We need an overhaul of the national pollutant release inventory along the lines that were very clearly spelled out in the Ecojustice submission, and we need to implement Canadians' right to know by creating a toxics labelling program to permit Canadians to make informed choices in their consumption.

● (1605)

Finally, we need an effective suite of citizen enforcement actions that allows any Canadian to initiate a special review of a substance that has been banned or substantially limited in another OECD country, and to enforce the act whenever it has been violated without the need to show existing environmental harm.

I see that I've been yellow-carded, so I will leave my submission at that.

The Chair: You've done well, though.

Prof. Lynda Collins: Thank you very much.

The Chair: Thank you very much.

Our final presenter is Daniel Krewski. Welcome.

[*Translation*]

Professor Daniel Krewski (Professor and Director, Faculty of Medicine, University of Ottawa, As an Individual): Thank you, Madam Chair.

How much time do I have to make my comments?

Do I have ten minutes?

[*English*]

The Chair: You have 10 minutes, yes, and at one minute, I will give you a signal with the yellow card. I will hold up the red card at 10 minutes, and you can wrap it up. Don't stop all of a sudden; just finish your thought, and we'll end it there. Thanks.

Prof. Daniel Krewski: Thank you.

It's a pleasure to have a chance to offer just a few comments as you contemplate the renewal of a very important federal statute, the Canadian Environmental Protection Act.

I have five areas that I want to make very brief comments on. There is one you might think a little peripheral, but I think it's quite central, and that's the exploitation of new science in environmental health risk assessment. I'll focus about a third of my comments on that topic.

Among the other topics, as Lynda has mentioned, is air pollution, and I'm going to expand it to a global environmental health challenge which is important that we consider. There is the possibility of strengthened provisions for drinking water safety within CEPA, and a brief discussion of the principles by which we should make important risk decisions. Finally, I will have some comments about linkages with other international environmental risk assessment programs.

On the science side, the science of toxicity testing and assessment of environmental agents is undergoing a transformation. I chaired a committee of the U.S. National Research Council which reported in 2007. The title of the report is “Toxicity Testing in the 21st Century”. We were asked to chart how we should be using new scientific tools and technologies to better assess the risks associated with agents in our environment.

We wrote a detailed report which was transformational. It talked about using new technologies, high throughput in vitro screens and computational toxicology being two of about a dozen different approaches. These tools offer the potential to greatly accelerate the rate at which we can test the tens of thousands of agents that are present in the environment at reduced cost. There are now robotic laboratories that can run through 100,000 chemicals in the space of six weeks for 50, 100, 200 different biological end points. The world is truly changing in the field of toxicological risk assessment.

This report, to my surprise and to my satisfaction, has received widespread acceptance around the world. It has been adopted by four major regulatory agencies in the United States. The Council of Canadian Academies wrote a report in 2012, which said that this is a good way to go. There has been a grassroots consortium to develop the science needed to implement these procedures. The Chinese Society of Toxicology translated our whole report into Mandarin, and it's very popular now in Asia as well, so we've had lots of widespread international acceptance for these ideas.

As a follow-on, I worked for three years on a project initiated by the U.S. Environmental Protection Agency to talk about how we should translate these new ideas into practice. What should the next generation of risk assessment look like? We published a major report under the auspices of the U.S. EPA. I have references to most of the points that I'm making here in the handout that I've left with the committee. We've laid out a template, a paradigm, and a framework for the next generation of risk science, which shows how we could be doing toxicological risk assessment better, cheaper, faster. The key cornerstones are the new toxicological approaches, advanced risk assessment methodologies, and some ideas from population health, looking at multiple determinants of health simultaneously, gene environment interactions and social environment interactions included.

Another theme—and I'm coming to the end of my scientific remarks—is we now have very well-thought-through frameworks for evidence integration, pooling together evidence from multiple sources to come up with the best scientific statement of levels of risk. The U.S. Environmental Protection Agency's integrated risk information system was reviewed in 2014, and there's a template that is being adopted by the U.S. EPA for integrating evidence in a thoughtful, balanced manner.

Some of the lessons from all of this are we can use the new science to look at data-poor compounds. There are 23,000 substances on the domestic substances list that Health Canada and Environment Canada have prepared. These new high throughput techniques can run through those efficiently, and give us answers to potential hazards and risks in a cost-effective manner. At the other end of the spectrum, when we go to PSL, priority substances types of compounds, which are typically data-rich and warrant in-depth evaluations, some of the new evidence integration techniques would be very valuable there.

My take-home message from the first of my five points is the science by which we conduct environmental health risk assessment is undergoing a revolution and there are plenty of opportunities to exploit these new techniques.

● (1610)

I don't know that CEPA itself wants to be prescriptive on how it should be done in practice, but I think CEPA should acknowledge that there are tools at our disposal that we did not have in the past.

Just as a footnote, one of the questions that came up early on during this transformation was by the legal community in the U.S. They asked how all of these new scientific ideas would work with respect to existing federal statutes. We had a session sponsored by the Environmental Law Institute in Washington. The conclusion was that the statutes typically say you should do your best assessment with the best available science. All of these new ideas were seen to be compatible with the existing legislation in the U.S. and presumably in Canada as well.

Getting on to the remainder of my points, I want to highlight the importance of air pollution at the global level. I'm looking here at a very nice map of the world drawn based on satellite images. It can predict ground level pollution concentrations at any latitude and longitude on the planet. I see some hot spots in Asia and Africa due to the Sahara dust. I have another map corrected for natural dust.

The point is there is a global public health issue related to air pollution. We have a paper on environmental research, which I've cited in my submission, suggesting that globally, approximately 10% of all deaths worldwide may be attributable to air pollution. So it is something we need to pay attention to from a public health point of view, and it's a problem we cannot solve totally in Canada because a lot of our pollution migrates across national borders.

Turning to drinking water, which is another important area of environmental concern, there was a drinking water materials safety act in 1997 that made it to first reading in the House of Commons. The House was prorogued, and that act never was reintroduced.

I have a cartoon in front of me that looks at the three main components of that, which are treatment of drinking water at the filtration plants, distribution of water throughout the water system through copper pipes and other materials, and point of use devices like charcoal filters on your kitchen tap, all of which could be used to enhance drinking water safety.

My suggestion is, if the committee is so inclined, to take a look at some of the elements of the previous drinking water materials safety act, and since that act did not materialize, to see if any of those might be useful to consider for inclusion in CEPA.

My second-last point is about how we make decisions about environmental risk issues. I just finished my class earlier this afternoon. The session was on principles of decision-making. There are about 10 major principles we discuss. Different principles are applicable in different contexts.

One that I stress to my class is the precautionary principle, of which there are over 20 different definitions, which are embodied in a lot of statutes and guidelines worldwide. It's a very useful principle. It says that if you're uncertain, if the science is not clear at this point, and if the stakes are high, you may want to take action rather than wait until it's too late.

When you get a message in Fukushima that it might be good to evacuate because there might be a tsunami coming, that's a good example of the precautionary principle.

Another one we focus on is risk-based decision-making, which says that when you have limited risk management resources, you want to try and do the most good for the most people, so you should try to allocate your resources to risks you know can be modified and risks you know are real, and modify them in a cost-effective manner.

We define the right principles to underlying environmental decision-making. Again, I'm not sure that CEPA wants to promote principles, but some consideration of how decisions should be made might be useful as you're crafting the new legislation.

My final point is about international collaboration and risk management. Canada is not the only country that has environmental legislation. In the European Union, the REACH program under the European Chemicals Agency has required that every chemical in existence have a detailed toxicological dossier submitted for evaluation. The U.S. Environmental Protection Agency has generated a huge database on environmental agents and potential risks. They have offered me no fewer than three million datasets to play with for our research at the University of Ottawa, so there's a lot going on internationally.

If we could work somehow at the international level, we could perhaps more effectively address international risk issues such as transboundary air pollution. We might be able to harmonize risk assessment practices, leading to the avoidance of non-tariff trade barriers, which is quite important in this era of globalization. We might even achieve cost savings through data sharing agreements and mutual recognition agreements. Some international perspective would be quite valuable.

● (1615)

I do have a handful of references in my handout that support most of the comments that I've offered the committee today.

Thank you.

The Chair: Thank you very much to all our witnesses. That was great food for thought.

Now we're going to open questioning.

Mike Bossio can start.

Mr. Mike Bossio (Hastings—Lennox and Addington, Lib.): Wow. They were four incredible presentations that are music to my ears, but daunting. I feel like my brain is going to explode any second. There was so much information there.

We've had a lot of discussion with panels around a risk versus a hazard based approach, what we're doing today versus REACH. REACH is too far and risk doesn't do enough.

One of our three panellists who are here, Mark, Lynda, or Daniel, could you quickly give us your 10-second elevator pitch on a risk versus a hazard based approach?

Prof. Daniel Krewski: I asked the head of the REACH program, Derek Knight, that question when he was presenting at an EPA symposium in North Carolina. I got up in the discussion period and I said, “Derek, I get the sense that the REACH program is a little more hazard based, a little more precautionary, than the approach that's used by the U.S. Environmental Protection Agency”, and he said, “Yes”.

The idea, I think, relates a little bit to guilty until proven innocent; show me safety before you can use an agent. I think we need to find the right balance between those two. I don't have a simple solution to your question, but I think it's a very important one, and one that you need to give some guidance on within the new statute.

Prof. Lynda Collins: I favour strongly a hazard-based approach, as Europe has undertaken. Again, I'm going to draw on Joe Thornton to illustrate this problem.

One of the biggest barriers in toxics regulation is scientific uncertainty. Part of the problem is just identifying hazards. Is this a substance that causes cancer? The incredible work that's been done with Tox21 has made it easier to do that.

When they do risk assessment, they take that difficult project of figuring out whether the substance causes something, and then they add it to exposure estimates. Typically, what they try to do is estimate, say, if we're looking at cancer, how many excess cancers in a thousand will be caused by this substance. You compound the uncertainty. We've historically underestimated risk exposures.

To give you an example of how uncertain those can be, there's a famous risk assessment of trichloroethylene in drinking water from the U.S. EPA. They used four computer models using the risk, not the hazard, system, to estimate how many cancers it would cause. The results differed by orders of magnitude. In the preamble to the report, the EPA said that there was “an uncertainty equivalent of not knowing whether one has enough money to buy a cup of coffee or pay the national debt.” Hazard is a much more precautionary approach, in my opinion, than a risk-based approach.

● (1620)

Dr. Mark Winfield: I approach this from two minds. The risk assessment side of me strongly favours the hazard-based approach. I was one of the authors of the notion of inherent toxicity in the existing act. The other side of me was one of the contributors to the ultimately successful factum in the Hydro-Québec case, in which we struggled with this a lot in terms of where the threshold fell for a definition of toxicity and what then would qualify as a legitimate target for the federal criminal law power.

I haven't resolved that dilemma yet. On the one hand, I would prefer a much more precautionary and hazard-based approach versus being unsure about what it would do to the jurisdictional basis of the regulation of toxic substances if, in effect, you changed that threshold from the combination of hazard and exposure to just hazard. I don't know the answer to that, and I'll just leave that on the table.

The Chair: Mr. Krewski wanted to throw something else into the answer, but you now have one and a half minutes.

Mr. Mike Bossio: Sorry, Mr. Krewski, I apologize, but there's another question I'd like to get out there, and that's feeding off what you just said on the toxicity side.

We go through the hazard process. We've implemented, let's hope, a testing regimen that gives us both the risk and the hazard-based side of it in a much quicker, cost-effective way. Now what do we do when something's been identified as toxic? Today, as you said, the do-nothing approach, which is what we've been doing, isn't working because there's no stick and there's no incentive for them to do anything. How do we get to the incentive? How do we get to the stick? How do we get to elimination?

Dr. Mark Winfield: I think the stick really comes down to.... Once there is determination of toxicity, this has to trigger a series of statutory duties on the part of the Government of Canada. There have to be requirements for action. This is typically the way U.S. environmental legislation works, with the Clean Air Act or the Toxic Substances Control Act. Once you have a finding of toxicity or endangerment, out of the Clean Air Act, that triggers a series of duties on the part of the Environmental Protection Agency to actually do something. That's really what we've lacked in CEPA.

Once we've gotten to the determination of toxicity in the schedule 1 listing, we've been painfully slow in translating that into risk management action of actual regulation and control. I think it has been a very consistent theme in all the presentations you've been hearing, at least from the non-industry side, that this component of the act needs to be much stronger, and that a finding of toxicity—an addition of a substance to the list of toxic substances—has to carry with it much greater consequences and requirements for action on the part of the Government of Canada.

Mr. Mike Bossio: Thank you.

I apologize, Meinhard, for not including you on that.

The Chair: Maybe someone else can pick it up.

The next one up is Mr. Fast.

Hon. Ed Fast (Abbotsford, CPC): I will do exactly that. I'm going to pick up from that discussion.

Mr. Krewski, you did hear Ms. Collins strongly support a hazard-based approach to the assessment of substances. I have a couple of questions in that regard.

First, is it possible to apply the precautionary principle within a risk-based assessment process?

The second question is, how will Tox21, or the computational methodology that is leading us forward and will complement our conventional testing and assessment processes, improve our ability to use a risk-based assessment system? How will that improve the process?

● (1625)

Prof. Daniel Krewski: Those are two terrific questions. I wanted to slip in one of them as a supplementary to my previous comment, so thanks for setting me up.

Let me answer the question about how the new toxicology will help. If we have these very cost-effective, highly efficient, high-throughput techniques, we could actually get data very quickly. We can run a particular agent through a series of 50, 100, or 200 assays in a range of levels at which we would see biological activity.

We also have advances in high-throughput exposure assessment. There is high-throughput biomonitoring, and high-throughput exposure characterization. I can show you some nice work from U.S. scientists that shows biological activity across a range of assays for a whole bunch of agents being up here, and exposure levels based on high-throughput [*Inaudible—Editor*] going down here. As long as I have a comfortable margin of safety between where I see biological activity in these high-throughput assays and the levels of anticipated human exposure—now I'm in a risk world—I'm feeling good, because levels at which biological response occurs are maybe a hundredfold or a thousandfold higher than any exposure. We might be able to get data that will help us move this a little out of the precautionary principle arena, where we don't have enough information, to actually make more risk decisions more cheaply and more effectively now than we could in the past.

That was an answer to the second of your two questions.

The first one is whether there are ways in which the precautionary principle can be applied in a risk context. To a certain extent, yes, there are. The Rio Declaration is quite conservative. The Wingspread version of the precautionary principle talks about a little less responsibility to demonstrate safety and a little more cost-effectiveness in its implementation. There are various interpretations, but I think those are subtle. The more important observation I would make is that the new science may get us the data we need to fill data gaps that previously were not going to be easily filled up.

Hon. Ed Fast: How has the Canadian testing and assessment environment responded to the Tox21 trajectory, which is to use computational methodology to address large data sets and be able to get at more information than traditional processes got at?

Prof. Daniel Krewski: We've had a lot of conversations with federal government scientists and regulators on their viewpoints. I actually gave a presentation to Health Canada last month on the new approaches. I think the Canadian scientific community, even in these government regulatory programs, is very much aware of the new science and is accepting of it.

It has been amazing how much endorsement we have from around the world, not just computational methods but high-throughput in vitro screens, high-throughput pharmacokinetics, and high-throughput exposomics. It's a total revolution, and I think the future is really offering us a huge opportunity to do things we never could in the past, and maybe give Lynda the data that she'll be able to use for risk assessment without having to fall back on the precautionary principle.

Hon. Ed Fast: What I'm hearing you say is that the new computational methodology is going to dramatically improve our ability to protect Canadians, protect their health and safety.

Prof. Daniel Krewski: I would rather have data on which to base an evidence-based decision than have to make assumptions or be overly cautious. There is a downside to the precautionary principle. Everybody would agree, it's better to be safe than sorry. If we're overly cautious, we could not be making optimal use of our finite risk management resources.

Hon. Ed Fast: That is my key concern. We have to find that appropriate balance.

Prof. Daniel Krewski: My contribution will be to give you some data to help get yourself out of that box.

Hon. Ed Fast: Thank you.

On another issue you raised, which is global air pollution, you had suggested that 10% of all deaths globally are from air pollution, or are related to air pollution. How do you feel amendments to CEPA could actually contribute to that? This is a CEPA study. We do have air pollution in Canada but the major risks around the world are mostly outside our country. How do you see a CEPA review and perhaps some amendments contributing to addressing the global challenge?

Prof. Daniel Krewski: That's a great question. You are asking thoughtful, perceptive questions of us.

Let's imagine we were to set solid, evidence-based air quality objectives for Canada, and maybe even they're enforceable. We do a great job of controlling point sources, cleaner vehicles, but we import a lot of pollution from other countries. I don't know that CEPA can be enforceable in that area. It's not just from our neighbours south of the border, but from other countries; dust from the Sahara can migrate all the way to Canada. There may be a way to build on CEPA and have some international agreements within the Great Lakes basin or the Lower Mainland of B.C. so that we could try to work in a co-operative manner with the international community.

● (1630)

Hon. Ed Fast: Thank you. That's been very helpful.

The Chair: Linda Duncan.

Ms. Linda Duncan (Edmonton Strathcona, NDP): As I expected, this is a stellar panel. I wish we could have had each one of you for two hours.

What I'm hearing is, in a number of areas we're getting strong consensus from all the witnesses who have come forward, certainly on strengthening CEPA on environmental rights and on obligations to extend. I noticed, though, in the preamble, interestingly, that there's absolutely no reference to public rights, which is odd. That's something we might want to look to if we're going to be trying to build on.... Interestingly, we have part two, and yet there's no reference in there to do that.

There is the recommendation by a couple of you that we consider endorsing the Aarhus convention. The argument back then by Canada was that we have those rights in CEPA.

As Professor Winfield has pointed out, and I think possibly Dr. Doelle, those aren't provided in other statutes at all. I would welcome any additional presentations. You're well aware that I've tabled an environmental bill of rights three times over in the House. It is basically a framework for exactly the kinds of rights that you're calling for. The reason I did it that way is it should cover everything: endangered species, fisheries, and so forth. I welcome that input.

Thank you, Dr. Winfield, for mentioning part 9. That's been a bugbear ever since CEPA was enacted. It's never been expanded, and I welcome your recommendations also on equivalency. I think both of you talked about that; there's a problem.

One thing I would like any of you to speak to is this issue of the federal government asserting its jurisdiction, and that basically they become a doormat to the provinces. I notice that in section 55, the Minister of Health has an option to confer with other levels, but it's not an obligation. In fact, she has mandatory obligations, whereas the environment minister doesn't, which is a real oddity. I wonder if you could speak to that, about how we might revise CEPA to actually require action instead of this continuous study.

I give you as a case study, mercury. Mercury was actually listed before CEPA. It was under the clean air act. CCME identifies coal-fired mercury as the top priority substance and it's reprehensible that to this day there's no federal regulation on mercury.

I welcome any recommendations you have on how we assert federal jurisdiction more strongly into actually acting on these toxins that we have listed.

Prof. Lynda Collins: This comes back to the whole question of mandatory duties on the Government of Canada within CEPA. Many of us, in terms of the expert submissions, have proposed specific mandatory duties. Right off the bat, when we talk about mercury air emissions, I'm reminded of this need for binding ambient federal air quality standards, which is absolutely a way that the federal government needs to exercise its jurisdiction and occupy the field.

When Dr. Krewski was talking about computational models looking at exposures, I don't know what those models do, but in the past we've been looking at average exposures. There are some communities, like the Aamjiwnaang First Nation near Sarnia, that are not subjected to average exposures. They're subjected to exposures that are five to 10 times higher than other communities. That's why we need binding ambient standards that the federal government enforces, as they do in the United States.

Yes, there will always be some levels of inequality in this country, but certain things should not be unequal. You shouldn't have to worry that the air your children breathe might kill them, no matter where you live in this country. So yes, I absolutely agree the federal government needs to occupy the field.

Similarly, you can look at the presumptive bans. Dr. Boyd has suggested that if a substance has been banned in another OECD country—this answers your question as well—there should be an automatic temporary ban until the minister or the proponent can demonstrate that for some reason we're different in Canada and it will be safe here. Those presumptive bans that just kick in when a certain trigger is passed are a really useful way to motivate government action.

● (1635)

Ms. Linda Duncan: I'll let Dr. Doelle speak, then Dr. Winfield.

Dr. Meinhard Doelle: I have a couple of thoughts. First of all, I think it's clear that we need timelines. We need required action and response to designating a substance to be toxic. I think we also need to make sure we understand the totality of the use of the substance, identify opportunities for substitutes, and learn from other jurisdictions. For example, the fact that the EU is taking a hazard-based approach means that it's likely we will find opportunities for substitutes and alternatives through that mechanism in the EU.

First of all, I think it's good to also build motivation for finding alternatives for substitutes into our regulatory system. I talked about timelines for phase-out. I talked about using economic instruments to provide economic incentives for the phase-out of substances. I think it's important on an issue like mercury to start with having a good sense of what the sources are of the contamination that we experience in Canada. Some of this may have to be resolved cooperatively with the provinces, so I would separate the question, where is the problem, from the question, what is the role of the federal government in solving it.

I don't think we should be afraid of exploring the issue in the context of CEPA just because we're worried that there may be certain components that you can't make a good constitutional argument over in terms of implementation. I think we should make sure that we gather all the information, find out what the problem is and what the potential elements of the solution are, and then in areas where the federal government maybe doesn't have the jurisdiction to act on its own, encourage cooperative action with the provinces.

Ms. Linda Duncan: Dr. Doelle, can I put this—

The Chair: I hate to do this—

Ms. Linda Duncan: Is my time up?

The Chair: Yes. There's never enough time. The second round it will be.

Mr. Gerretsen, please.

Mr. Mark Gerretsen (Kingston and the Islands, Lib.): A little bit of discussion has taken place with respect to the precautionary principle, but I was interested to get Ms. Collins' take on it. You mentioned it in your opening remarks. Just for reference, the precautionary principle, as defined by the Canadian Environmental Law Association, is a duty to prevent harm when it is within our power to do so, even when all evidence is not in. Can you explain what currently happens without that principle, the way the legislation is currently set up?

Prof. Lynda Collins: Sure. The legislation does incorporate the precautionary principle right now, but it's just not implementing it. To me, the fundamental anti-precautionary aspect of this legislation is that the burden is on government to prove toxicity, rather than the burden being on industry to prove safety. In fact, for some substances we simply don't have a good dataset, so unlike the European Union which has this principle of “no data, no market”, we don't have that principle currently.

For the substances that were grand-parented and have not undergone in-depth review through the chemical management plan, I characterize it as a “hope for the best” policy. That's what Dr. Thornton is talking about in terms of experimentation. When substances are released that aren't well understood, it's effectively an uncontrolled, involuntary epidemiological experiment.

A precautionary approach actually requires industry to provide data, and for substances of high concern, to provide proof of safety.

Mr. Mark Gerretsen: Is your position that this should be an enforceable provision then?

Prof. Lynda Collins: Yes, as it is in the European Union, exactly, so to harmonize with that.

Mr. Mark Gerretsen: I'm going to ask you to try to play the devil's advocate then. Can you identify any possible negative implications to applying that principle?

Prof. Lynda Collins: I think that the precautionary principle, in my view, and I've always said this, should be paired with what I've called a utility filter. I'll give you an example. I have a family member who twice has had her life saved by an experimental drug, twice was at the brink of death with cancer and was saved by an experimental drug. The drug was not well understood and there was risk, but everyone of course was willing to tolerate it because of the huge benefit.

We haven't so far had that utility filter so that you can experience a risk of possible harm for a substance that does some crucial thing in the economy or for a substance that makes your life greater.

In my opinion, in the European Union and in Japan, for substances of high concern they have a presumptive ban. Then the onus shifts to industry and if they can show that there's a crucial socio-economic reason why it's needed, there's no safer substitute and we need it....

I think there are certainly circumstances. I'm not suggesting that we go back to making fire with two rocks, but the way we've done it now is we've given so much of the benefit of doubt to the substance. We've assumed that an absence of evidence of risk is evidence of an absence of risk, and it's simply not so.

● (1640)

Mr. Mark Gerretsen: Thank you.

I'm going to change gears now to the reporting mechanism for spills. I think that Mr. Winfield or anybody who feels comfortable can try to answer.

My understanding is that within CEPA, if a spill or a substance has been allowed into the environment, there is a mechanism in place to report existing spills as they happen. I think first it's verbally and then it's followed up by a written submission. I apologize. The legislation is so cumbersome that it's difficult to find this, but do you know if that also applies retroactively?

If a municipality, for example, discovers 50 years after the fact that there is contamination as a result of a gasification plant, for example, or a tannery site, would there be a mechanism to report that after the fact or a requirement to do that?

Dr. Mark Winfield: I think the short answer is no. There would be no statutory basis at this stage for that.

Mr. Mark Gerretsen: Do you think it's necessary? I represent a southeastern Ontario riding which at one time had a lot of manufacturing, and there was one particular plant where there is a gentleman who has said—and I won't name the particular manufacturer—my job in the summer was to bury the barrels.

There are a lot of places where it's just unknown where these substances are located, but when a municipality or when another purchaser of the property goes to do work and it's discovered, is it not just as important to make sure that this is properly documented and handled? Is there other legislation that does that or should that somehow fall within this legislation?

Dr. Mark Winfield: There are two dimensions to this. This largely would actually fall under provincial jurisdiction, under provincial legislation.

The exceptions would be if it involved a CEPA toxic substance and there were some specific regulatory requirement around that.

The other dimension of this is, of course, is CEPA part 9, which is if it was on federal land, then potentially the Government of Canada could do something about it, but, of course, to date there are virtually no rules under CEPA around that and, indeed, the commissioner of the environment and sustainable development has at some length described in detail the problems around the identification of contaminated sites, even on federal lands, and the scale of the problem just within the federal jurisdiction.

The problem at the moment is that we have made virtually no use of the provisions that exist under the act.

Mr. Mark Gerretsen: There's a federally owned lighthouse on one of the islands that I own and for 200 years they've scraped lead paint off it and it just fell on the ground. There are lots of examples where there would be federally contaminated sites. I'm curious as to whether there should be a provision to make sure that those.... But I appreciate your answer.

The Chair: Mark, I'm going to have to cut you off. You didn't look my way.

Mr. Mark Gerretsen: I'm not looking your way intentionally.

The Chair: You were doing that on purpose. I knew that.

Mr. Eglinski.

Mr. Jim Eglinski (Yellowhead, CPC): Madam Chair, I will be sharing some of my time with my colleague, Ed Fast.

I would like to thank the four witnesses. I found your information very valuable. Thank you for all being concerned about the well-being of Canadians to live a safe and healthy life.

I want to go back to Mr. Krewski regarding the water. As a former mayor of the city of Fort St. John, I was very proud of a new system that we put in, bringing the water out of the Peace River and pumping it 20-some kilometres, with the state-of-the-art technology, and highest trained technicians in the province of British Columbia. I was quite interested, and my ears perked up when you mentioned a drinking water safety act.

I was under the impression that most provinces have their own legislation with regard to fresh water within the provinces, and are responsible for the distribution of it, the guidance and overall safety within the province. Why do you think we need a national drinking water safety act?

● (1645)

Prof. Daniel Krewski: Water quality is the responsibility of the provinces. We have the federal-provincial interplay to think about.

I don't have any wise advice on how to make that run as smoothly as you can, but the drinking water materials safety act, which was designed in 1997 or 1998 and made it to first reading in the House, focused on a subset of the issue. It focused on the distribution system point-of-use devices, filtration plants, and the materials used in those plants. It was subject to extensive consultation. It received support from multiple stakeholders, from federal, provincial, and municipal governments, because it was circumscribed so as to not really conflict with existing jurisdiction.

There would be copies of that statute. It's rather short. It's about 18 pages long compared to CEPA, which I think is 257 pages long. All I was suggesting is there might be some nice ideas in there worth looking at this time around for CEPA.

Mr. Jim Eglinski: Thank you very much.

Ed.

Hon. Ed Fast: Thank you.

Again, Mr. Krewski, I heard the other three witnesses actually recommend that environmental justice be incorporated into CEPA. I didn't hear you comment on that, because you're probably the only scientist on this panel.

Do you have a view on that at all?

Prof. Daniel Krewski: I do.

The graduate program that we offer in risk at the University of Ottawa has a session on decision-making principles, communication, perception, and regulation. We cover everything. I have 10 principles of risk decision-making that we published. It's in one of the references that I provided with my notes, and that I teach the class.

Precautionary principle is in there, as is risk-based decision-making and benefit risk balancing. Lynda gave the perfect example of a patient-physician relationship where the risks accrue and the benefits accrue to the same individual. It's a natural trade-off of risks and benefits. That's not so much the case for environmental pollutants where I can't think of a whole lot of benefits that we want to trade off for, but we do have environmental justice as one of the 10 principles within there.

I would not be disappointed to see some allusion to environmental justice in the preamble, and maybe some allusion to some other general guidance on how we should make decisions in a fair and equitable way.

Hon. Ed Fast: My only concern when we talk about establishing new rights.... Most Canadians would assume that these rights are inherent in being a resident or a citizen of this country. When you establish formal legal rights.... There are a number of lawyers on the panel. I'm a lawyer, and I understand the moment you establish these rights, there will be an immediate set of obligations and liabilities which the federal government will assume. It will be left up to the courts then to not only interpret those rights, but over time to expend the scope of those rights. This is essentially creep that occurs as time goes by. When I think that we live in an imperfect world, where we have limited resources, we would like to address the needs of all of our citizens in the most fulsome way, but it is an imperfect world. My only concern is that the establishment of formal rights like this will cost Canadians big time in terms of the resources it will take.

We don't know what the remedies might be in the courts, whether it's damages, or mandamus, under which governments are directed to act in a certain manner.

I don't think you'll find a lot of debate over whether there are some inherent rights. It's when you put them in statutes and establish them formally. In this case, I'm quite certain there would be an immediate liability for the federal government which eventually might extend into the provincial realm as well.

Prof. Daniel Krewski: I'm not the right person to comment on that law.

Hon. Ed Fast: There are a couple of others here.

Prof. Lynda Collins: I would say that embodying environmental justice within CEPA is probably the best way to protect the federal government. As you may know, there's already an ongoing section 15 claim. I'm not sure if you're familiar with the claim.

Hon. Ed Fast: Yes, I'm familiar with it.

Prof. Lynda Collins: Yes, it underlines the—

Hon. Ed Fast: It hasn't been adjudicated yet.

Prof. Lynda Collins: No. I fully anticipate it will get to the Supreme Court of Canada.

I typically take a conservative approach to new legal claims. I've often turned down cases that look.... I can point to five or six different examples within CEPA that I would take on right now as cases. They're existing section 15 violations within the act, right now.

An example is assessing vulnerability or exposure based on the average person in a way that doesn't protect children. I think the parents of asthmatic children who have lost their lives have a very strong claim right now under CEPA.

I think the best thing to do is to do the right thing. Effectuate environmental justice. No one is suggesting environmental perfection, just that we shouldn't have these huge disparities in protection.

● (1650)

The Chair: We've run out of time on that one, but maybe someone else will pick that up. That's a good theme.

Mr. Fisher.

Mr. Darren Fisher (Dartmouth—Cole Harbour, Lib.): Thank you, and to echo the immortal words of Mike Bossio, wow. There was an awful lot of stuff there.

Being late in the line-up certainly takes a lot of your questions out, and Mark Gerretsen took a couple of mine.

As a Nova Scotian, I get excited when Nova Scotians craft legislation or come up with really cool strategies or plans. In fact, just yesterday the Minister of Environment and Climate Change was in my riding of Dartmouth—Cole Harbour to recognize the things that Nova Scotia is doing to help with greenhouse gas emissions and climate change.

If we go back a bit—not too far back—we also have former MP Megan Leslie, who worked on the microbeads bill or motion, and had microbeads deemed CEPA toxic. The government recognized them as toxic under CEPA. I followed it in the news. You can still go into any store and you can buy several products with microbeads in them. My question is probably redundant. I probably know the answer.

I'm going to go to Lynda on this, because I felt like you were a race car that was really stuck in idle in your testimony, and you really wanted to get going. Does CEPA appropriately manage the risks? I guess I'm asking if you would extrapolate a little bit on the substitution principle and how we can get there. How can we put some teeth into this?

Prof. Lynda Collins: Sure.

No, CEPA doesn't appropriately manage the risk. For many different criteria, as Dr. Dayna Scott put it, we have the least protective standards in the industrialized world. For example, our regulations for persistence and bioaccumulation are the least protective in the world. We allow much higher levels of persistence and bioaccumulation before we regulate, compared to other industrialized countries.

On the substitution principle, in my mind there are many paths to the top of the mountain. One way to get to the substitution principle is pollution taxes. You make it more costly to use the more dangerous substance. You harness the power of the market. There is an exciting field called green chemistry.

Mr. Darren Fisher: It's about innovation.

Prof. Lynda Collins: It does spur innovation. It does feed the economy. We know that.

Mr. Darren Fisher: It's called pollution pricing.

Prof. Lynda Collins: Okay, pricing.

This has been well established in Massachusetts, which has actually done the data gathering on what happened with their toxics reduction. They found it saved business millions of dollars and saved the environment many tonnes of toxic substances.

I think the substitution principle should be in section 2 as a mandatory obligation for the government. I also think that these presumptive bans are very powerful in pushing forward substitution. When you have a substance of very high concern that is carcinogenic, mutagenic, whatever, you have a presumptive ban. The onus shifts to industry, and then industry has to prove either that it's safe or that there's no safer substitute and that it's absolutely necessary.

In the case where there is a safer substitute, they're out of luck. Their substance is banned, and the market will move to the safer substitute.

Dr. Mark Winfield: I think the substitution notion is a very interesting one to embed in the risk management process of CEPA. We've had lots of precedents with other jurisdiction moving in that direction, so we would not be moving anywhere that radical. It opens some interesting possibilities, when you think about what alternatives exist out there.

Mr. Darren Fisher: This may be a rhetorical or redundant question as well. Today no one touched too much on vulnerable populations in Canada. It has been touched on a little bit. We've heard a lot of testimony previous to yours on vulnerable populations.

What specifically can we strengthen within CEPA to adequately respond to the needs of marginalized and vulnerable communities?

I'll start with Lynda again, and then, maybe I would like to go to Dr. Doelle.

Prof. Lynda Collins: Yes, great idea.

I think that the requirement to protect vulnerable populations should go into subsection 2(1) so that it becomes a mandatory duty on the government, and specifically, some of the submissions have suggested that the susceptibility of vulnerable populations should be a mandatory consideration under toxicity assessment under section 64 and under risk management under section 74, I think. It's late in the day.

Mr. Darren Fisher: Yes, I think you're right.

Prof. Lynda Collins: Professor Doelle, do you want to elaborate?

● (1655)

Dr. Meinhard Doelle: Yes, I'll just add to that. I think as a starting point the recognition of the problem is critical because in many jurisdictions we have been fighting over environmental justice issues in a whole variety of contexts, and it's difficult to even get the issue taken seriously. To have a piece of legislation that clearly recognizes that environmental justice is an issue, that it needs to be considered through the life cycle of the regulatory process and then implements, it will make a tremendous difference in this country.

Mr. Darren Fisher: I'm just going to wrap up on this.

All four of you provided some amazingly solid recommendations and suggestions to consider. I'm hoping that if you have things that you didn't get a chance to say today during your testimony, you'll feel comfortable submitting them to us.

Dan, you spoke about a report. I don't know how big that report is.

Prof. Daniel Krewski: The report on Tox21?

Mr. Darren Fisher: Yes.

Prof. Daniel Krewski: I can send you lots of material, some shorter, some longer. I'd be pleased to send in several things on that, but I do have one point—

The Chair: Perhaps I could just make one point. If you're going to send in something, is it possible to send it translated? Is it available in both official languages? If it is only in one language, it becomes a bit of a problem, a challenge for us.

Prof. Daniel Krewski: These would be publicly available published documents in English.

The Chair: Okay, so that's—

Mr. Darren Fisher: We probably can't take....

The Chair: You've referenced them already in the back of your presentation. Yes, give us a listing of what you want us to look at.

Prof. Daniel Krewski: There are a couple more specifically in response to this question. It's basically the scientific literature which would describe the Tox21 concept.

The Chair: Okay.

Prof. Daniel Krewski: I do have one little point I'd like to make. It is a response to how we manage risks. I'll be very brief, Madam Chairman.

One of the things I liked about the previous version of CEPA is that once you're on the PSL, you go into a risk management phase which is supposed to have a finite timeline. I like the multi-stakeholder issue tables where you would give different members of those discussion groups opportunities to be creative. That's very consistent with what I've been promoting as five ways to manage risks.

We call this the REACT approach: regulatory approaches, that's the “R”; economic incentives and disincentives, that's the “E”; advisory approaches, that's the “A“, tell people how to avoid risk; “C” is community-based grassroots action; and “T” is technological. If we want to think about continuing the broad spectrum of risk management options, the REACT framework, which is in some of the references that I provided, might be helpful to you.

The Chair: Thank you very much.

Next up is Mr. Shields.

Mr. Martin Shields (Bow River, CPC): I really appreciate the witnesses we have today and the expertise they bring to this study.

I loved the discussion on precautionary and risk, having spent a career with junior high school kids. Obviously, precautionary is irrelevant to them.

We do have some issues when you talk about it, and it came up in our last session. Nicotine would be one. Cancer is still caused, with the highest rate of death in this country, by cigarette smoking, and it's legal. For a vulnerable population, it's fetal alcohol syndrome. I have seen a lot of that with children. We believe children should have a safe environment, but they don't because of adults' actions that are legal. We tried prohibition. That didn't work.

We have chemicals in our society that are precluding what you're saying because people are willing to risk. We now have an opiate crisis where people are risking their lives. How do you take that risk and precautionary, with chemicals in our society, when children.... There's nicotine, alcohol, fetal alcohol syndrome.... Teenagers and young adults are just doing whatever with the risk. Precautionary is irrelevant.

How do we as a state regulate that? Prohibition didn't work.

Prof. Lynda Collins: I love this question so much.

Mr. Martin Shields: Good.

Prof. Lynda Collins: I was speaking recently to a health law group and what I said is the health law people and the environmental law people need to talk, because in every other form of health promotion you actually require individual co-operation. You tell people to stop smoking, but then they have to stop. You tell them to exercise, to go in for cancer screening, whatever, and you require their co-operation. This is that sweet spot where as government you can actually give the gift of health. This is just such a profound and powerful opportunity that you have.

When you improve ambient air quality, you save thousands of lives. No one disputes that.

Mr. Martin Shields: We're going to legalize marijuana, so that there are more choices to it. Now, come on.

● (1700)

Prof. Lynda Collins: Yes, you're absolutely right. There are going to be areas where people continue to compromise their health. But this is an area in which you as government can give people health. That's a pretty incredible opportunity, in my view.

The thing is, you're right. There are always going to be people who throw themselves off cliffs, who climb Mount Everest, who smoke and risk their health. Sometimes their health is put at risk by someone else, and those are injustices, and we work on them. But in environmental cases, there is a certain poignant injustice.

I'm going to speak now as a mother, because I have a child who is one of these vulnerable populations. I have a child with severe disabilities. We live downtown, because he uses a wheelchair, and downtown, things are accessible. Two years ago he started developing acute respiratory crises, and I have seen him fight for his life in the emergency room, all the while knowing that traffic-related air pollution could well be part of the cause.

That's not right. We can do better than that in Canada.

Mr. Martin Shields: And 10,000 deaths are caused year by year in accidents in hospitals. Should we quit going to hospitals?

Dr. Mark Winfield: I think part of the distinction around environmental risks in particular is this question of voluntary versus involuntary risk.

Mr. Martin Shields: Yes.

Dr. Mark Winfield: The question in particular is that the contaminants we're talking about here under CEPA are things to which we are involuntarily exposed. We have no choice at all about the exposure pathway, precisely because they're in the ambient environment. Indeed, with certain vulnerable populations we even find that exposure pathways are different for children, for example.

That's something quite different from a situation in which you have a voluntary consent. However poorly informed your former students may have been, they were still giving their consent, and that I think is a fundamental difference here. It is here that the role of the state becomes important, because as government you're acting as a proxy to try to deal with those situations of involuntary risk and exposure.

Mr. Martin Shields: Yes, and I agree.

Prof. Daniel Krewski: I like the question. I want to make a couple of quick points. One is what the scope of CEPA is whether we're talking about environmental tobacco smoke or active smoking.

Certainly, active smoking is the predominant cause of lung cancer, responsible for some 90% of all lung cancers in this country, but among the other causes, and this is my second point, close on the list would be radon in your homes, which is responsible for about 10%. The vast majority of the radon-related lung cancer cases, however, occur in smokers because of the synergism between the two agents. If you got rid of smoking, you'd also solve the radon problem.

This point came up in the "next generation of risk" science project we did, in which you might have a particular statute that focuses on an environmental agent such as radon, while a lifestyle factor such as smoking is outside the scope, but because those two interact, maybe at a cross-agency or cross-statute nexus there might be some public health interventions you could design that would serve multiple purposes. That's what we call the population health approach to risk assessment.

Mr. Martin Shields: Yes, that's a good response. I appreciate it.

The Chair: You have one more minute, sir.

Mr. Martin Shields: Let's explore that a little further. You talk about the fast way you can deal with.... I'm really interested in the technology of using it.

How fast do you think it will be available and how widespread?

Prof. Daniel Krewski: It's available now. We had some discussions with colleagues at Health Canada about the possibility of applying on a large scale some of these new technologies to the domestic substances list.

The technology is there now. It would cost something to run a large number of environmental agents through those new testing procedures, but the price that would be paid would be small compared with the benefit of new data. You couldn't get that kind of data 10 years ago. If you wanted to make an investment in applying the new technologies to as yet untested chemicals, it would be highly cost-effective, in my opinion, and could be done now.

Mr. Martin Shields: Individually and in compounds—

The Chair: I have to cut you off.

We have quite a bit of time, and if our guests are willing, I'm willing to continue the exercise of questioning. I could give everybody another six minutes.

What do you think? Is everybody up for that?

Is that a yes?

An hon. member: [*Inaudible—Editor*]

The Chair: Do you know what? I jumped you, Will. I am so sorry.

I missed Will because I was going to add the time to Linda's, so that you didn't get the chopping. It's my fault.

We will do five minutes, if everybody's okay, after we allow Will six.

I'll add five to you, Linda, and then we'll do five and five.

I'm sorry about that, Will; my apologies.

Mr. William Amos (Pontiac, Lib.): Thanks to our witnesses.

It is very edifying to be hearing your submissions. I look forward to studying the written ones in greater detail.

I first want to ask Professor Doelle to expand on the idea of the use of environmental assessment-type procedures and applying those to toxicity assessments as currently undertaken in CEPA.

Could you speak to the issue of animate substances, new genetically modified species? Do you think that kind of environmental assessment-type approach involving greater public participation would be helpful or useful, and how might that be operationalized in the context of a CEPA review?

● (1705)

Dr. Meinhard Doelle: To start with your last question, the way you operationalize it potentially would be for a CEPA provision to be the trigger for the environmental assessment, but that also depends on how the CEAA review goes. I think that has to be coordinated.

If CEAA goes with a list approach to triggering as opposed to the kind of a lawless trigger we used to have, then you would find different ways of ensuring there is an opportunity to do an environmental assessment.

To go to your specific example, I think the AquaBounty decision provides exactly that example where you had genetically modified salmon introduced or proposed for Canada for the first time, and so it raises two possibilities.

One possibility is the facility that proposes to introduce this new substance goes through a project assessment. But if there's a sense that this is a broader new type of activity, I think the real opportunity is to do a strategic environmental assessment, something many of us are advocating for in the context of the review of the Canadian Environmental Assessment Act where you then would go proactively out and ask some basic questions.

These questions would be whether this type of activity should be allowed, and under what conditions, where you look at alternatives, you look at what the utility is. All the kinds of questions and issues that have been raised in the context of our discussion about toxic substances, and their use, and how you minimize or eliminate risk, are amplified I think to some extent when you're talking about a new substance.

That would be my suggestion, that you utilize a process that is working elsewhere, certainly at the project level, to engage the public in a discussion about particularly the utility side of this, and the alternative side of this.

Mr. William Amos: Thank you for that.

Dr. Meinhard Doelle: Is the risk warranted in light of the benefits?

Mr. William Amos: The challenge would lie in identifying what types of substances would be appropriately subjected to more of a project-style environmental assessment.

If any of the witnesses have any particular comments on that, I would welcome those.

Dr. Winfield.

Dr. Mark Winfield: As much as I agree it would be very useful for some of the new substance assessment processes to be much more in the character of an environmental assessment and to take a broader perspective on things, the challenge, of course, becomes what the basis is for that on the part of the federal government.

At the moment, the new substance assessment process within CEPA is grounded very much in the finding of toxicity. That's the basis on which the federal government can do something, and that's what defines the boundaries of the assessment.

If we were to take a broader perspective—and I don't disagree with the notion it would be very useful—we would then need some other constitutional basis on which there would need to be another federal hook, be it under the Fisheries Act in the case of AquaBounty, or somewhere else, in order to provide a foundation for that type of assessment and then to be able to operationalize the outcomes. That's the dilemma with that approach.

Within CEPA we're tied to a toxicity assessment for a complex series of legal reasons, and we have to broaden the basis of the assessment out from a federal perspective, or at least the grounding of the assessment from a federal perspective, in order to be able to incorporate some of these wider questions. I agree very strongly, particularly around things like products of biotechnology, but also other new substances, that we would very much want on the table these questions of what is the rationale, what are the downstream effects, what are the alternatives? They are very desirable questions to have new substance assessments, but trying to do it within the existing structure of CEPA would be challenging.

● (1710)

Mr. William Amos: Thank you for that.

I'd like to invite Dr. Collins to expand on her response to Mr. Fast's question.

It seems that some are of the view that the sky might fall if environmental rights are incorporated and that liabilities would be over-broad. Is there a way to bring comfort to the opposition? I think this is an important piece.

Prof. Lynda Collins: I think it's an important piece too. I would just say, look to international experience. We're actually only one of 12 countries in the entire world that doesn't codify environmental rights. In fact, the sky has not fallen.

The thing about Canada, of course, is that we pay for health care, so it doesn't make any economic sense in Canada to allow serious public health problems to continue. You're not externalizing those costs. The government is on the hook for those costs. It's way cheaper to prevent the health damage in the first place.

The Chair: Thank you very much.

Over to Ms. Duncan, and we're going to add five minutes, so you have eight minutes.

Ms. Linda Duncan: Thank you very much. That's very kind.

I have so much to ask, although I really appreciate the testimony and especially the effort to provide written briefs.

My first question will be for Dr. Krewski.

You mentioned, sir, this new way of assessing toxins that a number of other jurisdictions have adopted. What has been the response of the Canadian government?

Prof. Daniel Krewski: I think the Canadian government is very aware of the new science. They're looking at it and starting to use certain parts of the complete tool box that we've offered the world. In fact, I think Health Canada in particular has been very proactive because they're currently involved in a planning process for where we would like to be in 2017 and 2020, which are two key checkpoints on DSL deliverables under CEPA, and they also have a planning process under way to look at 2020 and beyond. I would say that our federal government, at least as represented by the Department of Health, is very much on the cutting edge of the new science.

Ms. Linda Duncan: That's encouraging.

I really appreciate all the testimony that we've heard, even before I joined the committee, about equity and about environmental justice, particularly for vulnerable populations. When we did the review of emissions from electricity, mostly coal-fired power in Alberta, what the government agreed to do is adopt what I proposed, which is a hot-spots protocol. You are probably aware that in the U.S. they also adopted a hot-spots protocol for coal-fired power. That mechanism is put forward when you have a situation where you have a consolidated source of pollution, such as coal-fired power, oil sands, petrochemical, and so forth. Do you think there is a way the legislation could also incorporate that?

In the Alberta model, there are a number of trigger points. One is when you've got repeated non-compliance, or there's new science that becomes available, and it would trigger a review, including the impact to the community. I wonder if both of you could speak to a variety of options we could use to make sure that vulnerable populations are protected under the act.

Dr. Mark Winfield: I think the scope is potentially quite broad, given that most of the air pollutants of concern, both the smog precursors and the hazardous air pollutants, are already on the list of toxic substances, so the potential scope of federal regulatory actions is already quite wide.

I would think a potential model for that is the one that exists, for example, under the U.S. Clean Air Act with the notion of a non-attainment area. The implication, of course, is you have to have some sort of national ambient air quality standard against which you could then say that this location in Fort McMurray or wherever fails to achieve those standards, and therefore, further interventions are required.

I think it's entirely feasible, and we have precedents for doing that, either as toxic substances, but also, as was suggested, we could do interprovincial air pollution as well. I think it's quite doable. The pieces we don't have are provisions around air quality standards per se, but that's not infeasible. There could be guidelines that would then be triggers for regulatory action in relation to the toxic substances that were implicated in a failure to achieve the ambient air quality standards.

● (1715)

Prof. Lynda Collins: I concur. I really favour the U.S. Clean Air Act approach that has binding consequences. Basically, if states fail to attain the national ambient air quality standard, they lose certain federal funding. The reason I favour it is we have data that it worked. We've actually seen real improvements, for example, in fine particulate matter concentrations in the non-attainment areas after these consequences were imposed.

Professor Doelle, do you want to add anything?

Dr. Meinhard Doelle: No, I agree.

Ms. Linda Duncan: I have time for one more quick question. I'm really interested in hearing your submissions further if you think about an equivalency. Over time I've been deeply concerned that the interest in friendly federal-provincial relations has overridden the exercise of the federal power, so I'd welcome any comments that you would have. Do we need changes in the law? Do we need changes in the attitude of the federal government so that we make sure this legislation has priority over ensuring there are friendly federal-provincial relations?

Dr. Mark Winfield: I think the short answer is yes on both fronts.

What needs to happen within the act is there needs to be much more specific criteria about when the Government of Canada can enter into an equivalency agreement with a province. They need to ask not just is there a legislative or regulatory enactment of equivalent requirements, but does the province have the capacity to administer and do that. There needs to be provisions around regular reporting on performance, as well. The government is proposing that there not even be equivalency administrative agreements, but also that they be evergreened and not even have time limits on them.

Ms. Linda Duncan: The problem has been that there's a federal regulation, and then a province or territory could claim equivalency, if they have the same regulation and the same enforcement compliance policy. What's happened is that there's no federal regulation, and they just say, “Oh, are you thinking of doing something?”

Dr. Mark Winfield: Indeed, you get a pre-emptive offer of equivalency from the federal government the moment it says, “Well, we might do something about this, but there will be an offer of equivalency on the table immediately.” I think that needs to be approached in a much more robust way. If the standards made under CEPA are supposed to be national in scope, then the provinces need to meet a substantive test for equivalency. This is what happens in the United States. The states do administer the EPA standards under the Clean Air Act, but there are very stringent tests on the part of the U.S. EPA as to whether they allow that. There is a record of the EPA effectively taking equivalency back from states that have not performed adequately, and then they enter into direct administration of the federal Clean Air Act regulatory regime within a state.

It's a much more robust approach on the part of the federal government. This does not preclude harmonious federal and provincial relations. I would argue that it's fairer to the provinces that deliver and take action. They're not disadvantaged by other provinces that say, “Oh, yes, we have an equivalency agreement”, but haven't done anything.

The other thing that troubled me greatly, as I was investigating, is that I couldn't find any recent evaluations of provincial performance under the existing equivalency or administrative agreement. I would be extremely cautious about loosening the rules around those without some greater evidence about the performance under the existing regime.

Ms. Linda Duncan: What's interesting is that, originally, when CEPA was tabled—and you were probably involved in that, or you were still young then, and I wasn't—there were two rules that the federal minister put in place. One was that you have equal regulation and the other one was that you have an equivalent enforcement compliance policy and strategies. That seems to have gone by the by.

One of the things we just haven't time to look at is that there's a second statute, right? There's the environmental enforcement statute that Jim Prentice enacted. That was always supposed to be part of CEPA. We also have to ask, what are the mechanisms to ensure enforcement and compliance? First of all, you have to regulate, and you have to set the standard.

I remain deeply troubled that the top priority substance, mercury, is still not regulated. I think it shows a serious problem with the statute and the attitudes to the statute.

I think you've all made incredible recommendations. We're going to have real fun trying to put together our report. It's going to be as thick as the statute.

I don't have any more questions. I just want to thank everybody for their incredible testimony.

The Chair: Okay. We have five minutes with Mr. Fast.

Hon. Ed Fast: Mr. Krewski, getting back to presumptive bans, we heard that some of the other witnesses support presumptive bans. I'm wondering whether you have a position on that. If so, what impact would presumptive bans have on the current assessment process in Canada?

● (1720)

Prof. Daniel Krewski: Are you thinking that if an OECD country takes action, then we should immediately take some action, at least on an interim basis?

Hon. Ed Fast: Yes.

Prof. Daniel Krewski: I'm not sure I would slavishly follow a decision taken by another regulatory jurisdiction in another country, because they may have different principles by which they develop and enforce environmental regulation. I think we're pretty sophisticated about the way we do it in Canada. Just because the United States bans a food additive doesn't mean automatically that we do the same thing in Canada. We look at the science, and then we make a sensible decision.

I think we should take notice, and maybe it should be a red flag. We should look at it, but I'm not sure an automatic ban would necessarily always be the right decision.

Hon. Ed Fast: When I think of some of the OECD countries, I'm not sure they necessarily have the same quality of science and methodology that we might use in Canada. I would trust our process, our science, and our government to a greater degree than a number of those other governments.

Prof. Daniel Krewski: It's my hope that as we move forward we'll gravitate towards a common set of principles of risk assessment and risk decision-making. This is in the interest of globalization. It's in the interest of avoiding non-tariff trade barriers. I think we're still some distance from that yet. An international perspective is always good to keep in mind when you're crafting this piece of legislation.

Hon. Ed Fast: The hazard-based approach, which is in place in the European Union, has been touted as being a better system than a risk-based management approach. The United States uses a risk-based management approach.

Do you have a comment on the European system, as to whether you find it to be superior, or perhaps on some of its shortcomings compared with the system we have in Canada?

Prof. Daniel Krewski: My simple comment would be that they're different. I'm quite familiar with the European system, because we spend a lot of time in Europe. We've actually done REACH submissions for European proponents. We spend a lot of time in the United States working with EPA on their more risk-based approach. I see strengths and limitations to both.

I would hope we could find some kind of—I'm not trying to waffle on this one—happy medium whereby we could find the best of both worlds. There are areas in which a precautionary approach, a hazard-based approach, is particularly appropriate: big-ticket items, such as global change, concerning which if we do nothing we may be really sorry we didn't act. That's probably a key area. Whether it should be applied routinely for minor issues, something that's produced in the quality and quantity of 10 kilograms per year, I'm not sure.

I want to get this comment in at some point. This is now as good a time as any.

What you have in front of you is a wonderful opportunity to rethink a major piece of legislation that has huge impact. A lot has changed since the 1999 version of the act, to the extent that some consideration of new science, current thinking on decision-making approaches, possible consideration of other factors, maybe even whether environmental justice has a role or not.... It's just a wonderful opportunity to see whether you can get it as right as we can.

I like the last statute. I'm expecting the next one to be even better.

Hon. Ed Fast: Thank you.

I will ask all four of our witnesses this. Has any of you been consulted by the government on future amendments to CEPA? I'm talking not about this committee, but about the government itself.

None of you has been directly consulted?

Prof. Daniel Krewski: We've been consulted on science and how to use it, but not about CEPA.

Hon. Ed Fast: Thank you.

The Chair: I'm curious. Normally I don't get to ask questions, but I have something, and all the right people in the room. I've been incredibly impressed with what you shared with us today.

We know that CO2 is climbing, and we know that at some point it's toxic to humans. Do we have a sense of where that line is? We know what it would take to kill someone with CO2, but what is happening out there? We have these levels climbing. Do we know when it gets to the point that people are starting to be affected in their functioning and in their health? Do we have a sense of CO2 and its toxicity and where the levels are? Is anybody doing a study on that?

Dr. Meinhard Doelle: I'll take the first stab at this.

I think the answer to it is a combination of what is safe globally. You can have a debate about whether that's 2° or 1.5°, perhaps—

● (1725)

The Chair: I wasn't thinking about the global warming effects. I realize that. I'm thinking about the actual chemical, the air quality, CO2 as a toxic substance.

Dr. Meinhard Doelle: In fairness, I think CO2 was declared toxic under CEPA because of its greenhouse gas emissions effect, not because of—

The Chair: I understand that, but it was just occurring to me that we're focused on the greenhouse gas aspect of CO2's climbing in the atmosphere, but what about the toxicity of CO2? Do we know at what level it starts to affect human functioning?

Dr. Meinhard Doelle: I'll defer to others on that.

The Chair: Okay.

Prof. Daniel Krewski: I don't have the test results of the LD50 for CO2, but I think we're a long way from toxicity of CO2 at ambient concentrations. If it were hydrogen sulfide, that would be another story: if you go from 1 ppm to 5 ppm, you've gone from safe to dead in a short space of time.

Dr. Mark Winfield: Keep in mind that one of the dimensions is, of course, that the definition of toxicity in the existing act is quite broad and was actually drafted for the specific purpose of being able to capture something that doesn't have a direct toxic effect at the level of individuals or people, but at a systemic environmental level. That's the basis on which it was declared toxic.

Indeed, when that definition was originally drafted, they weren't thinking about CO2. They were actually thinking about CFCs and ozone-depleting substances. They wanted to be sure that the definition was broad enough to capture those sorts of global threats. I think the classification of the Kyoto six substances under CEPA demonstrates that there is breadth and flexibility within that definition to capture these very serious threats.

The Chair: I was just really thinking, we know when it's toxic, when you're expiring, but are there effects that we know of with different individuals who may be more susceptible? We know with other chemicals and other compounds that some people are affected by certain chemicals and they don't affect other people.

Do we know the gradient, or are we way off the scale?

Prof. Daniel Krewski: If you drop one oxygen from that molecule and make it carbon monoxide, we have epidemiologic data that show that with ambient concentrations there are some demonstrable adverse health effects in the general population.

The Chair: I was more focused on carbon dioxide.

Prof. Daniel Krewski: I'm not concerned about the toxicity of carbon dioxide, at this point, in ambient concentrations.

The Chair: Super.

I know there's lots of.... Yes, I know, but it's the concentrations, right?

How far did we get? We're all done.

We have an opportunity here for Mr. Gerretsen to ask the last couple of questions.

Mr. Mark Gerretsen: Thank you, Madam Chair.

I just want to follow up on a comment that Ms. Collins made about 20 minutes ago. It was with respect to preventive measures and having an economic argument for doing things preventively, as opposed to in a reactionary manner, in particular as it relates to health. Regrettably, I think quite often politics is driven by emotion, which is quite often reactionary.

However, to that end, specifically how do you think CEPA can be reformed to encourage that type of behaviour?

Prof. Lynda Collins: I think that is encompassed in all the recommendations that have been presented to you by Dr. Scott, Dr. Boyd, Ecojustice, CELA—

Mr. Mark Gerretsen: They encompass that idea.

Prof. Lynda Collins: They absolutely do. That's the point of these.

I would just add, emotion can also be on your side. On this question about harmony between the provinces, selling it to the provinces, to the electorate, there's a little bit of public education that needs to happen within government and outside.

Actually, there's no one in this room who hasn't lost somebody to cancer. There's no one who doesn't know a family with a child with asthma. Some of those losses could have been prevented. In fact, I think you can use people's very natural human emotions that are appropriate emotions to achieve some buy-in.

Mr. Mark Gerretsen: Thank you.

Mr. Mike Bossio: Dr. Krewski, earlier with Mr. Fast asking questions about the risk-based approach, you seemed to indicate that you felt that with technology, the risk assessment could be done without a hazard-based approach. I'd like to clarify, because you talked during your presentation about risk and hazard. I would think with these technologies, the effectiveness of them and the cost reduction in using them would actually, if anything, make a risk and hazard based approach both equitable in that you weren't necessarily excluding the hazard-based approach in your testimony.

● (1730)

Prof. Daniel Krewski: I think both approaches have applications in the right context. A lot of the decision criteria that I would point to will depend on the risk context. Are we talking about an environmental contaminant? Are we talking about a life-saving drug? Are we talking about an emerging pathogen? Those are different decision contexts.

However, in terms of environmental issues, I think precaution and risk based both have a place. The more data we have, the more risk based we can be.

Mr. Mike Bossio: That's what I was saying. From a vulnerable population standpoint, given these technologies, it actually gives us the ability to formulate a lot more of that data, bring about that much more data to support that side of it.

Prof. Daniel Krewski: Yes. We can test many more different contexts with the new technologies and get more information on different population subgroups.

Mr. Mike Bossio: Thank you so much.

The Chair: We'll have just one last question, and then we're out of time.

Mr. William Amos: Dr. Winfield, what are some of the changes that were not made in 1999 that you really think were missed opportunities?

The Chair: That's probably well beyond the time we have remaining, and I think there are quite a few things that you've touched on today already.

Do you wish to respond quickly?

Dr. Mark Winfield: There are a couple of themes that I would highlight again. One is the need for action once we declare things toxic. The other is the theme of the residualization of CEPA, which was introduced in the last stages of the 1999 process. I think it needs to be looked at very carefully both in relation to the provinces but also in relation to other statutes and other government departments. There's a lot of that in the government's discussion paper as well, to go further down that road. I think that would be a mistake.... CEPA is supposed to be the benchmark. It's supposed to be the standard against which other statutes are measured and what happens under other statutes in relation to substances of concern is measured. That's where I would tend to highlight the concerns relative to where we left off in 1999.

The Chair: Thank you very much to all our guests. It was an excellent session. We really appreciate your words of wisdom and advice, and we have a lot of work to do. Thank you.

The meeting is adjourned.