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Panel Discussion - Climate Change, Policy , and Law

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PANEL DISCUSSION –
CLIMATE CHANGE, POLICY, AND LAW: WHAT
NEEDS TO BE DONE, AND HOW CAN IT BE
ACHIEVED?

Moderator: Lawrence L. Herman

Speaker: Martha Hall Findlay

Speaker: Commissioner Lana Pollack

Speaker: The Honorable John Godfrey

MR. HERMAN: Okay. Ladies and gentlemen, if we could resume please. All right. We will start our next panel, and leading into the discussion let me just say a couple things:

First of all, I want to thank Dean Michael Scharf and Case Western Law School for all they have done in supporting the Canada-U.S. Law Institute and with a tremendous team headed by Steve Petras, including Chi Carmody on the Canadian side and Ted Parran, I think they put together a wonderful program this year, and I am pleased to be part of it.

You know, one thing that should be understood is that, while we are called the Canada-U.S. Law Institute, we talk about things far beyond black letter law. We talk about policy issues concerning Canada and the United States, and I think that has to be appreciated by everybody; that it is not just a bunch of lawyers talking about statutes and regulations.

We deal with issues of policy that are timely and pertinent and need to be discussed. And we are unique. This is a bit of advertising, we are unique in the sense that I don't think there is any other institute that deals with Canada-U.S. issues as we do. So just tell your friends and if you are not members of the Institute, I urge you to take up the membership. It is a wonderful body. It has been around as we know since 1976, and we want to continue for another 40 or 50 years, if not more.

The other thing I should say, I am a stand-in. Chris Sands, who is the director of Canadian studies at John's Hopkins School of Advanced International Studies could not be here, largely as I understand it due to 737 issues. Transportation was just impossible to get him here on time.

Chris Sands is one of the most well-informed experts on Canada-U.S. relations, and I am humbled by being asked to stand in for Chris, but here I am.

So let me now talk about the panel. We have had a discussion already at high political levels, and now we are going to drill down a little bit and talk about certain

specific laws, policies, instruments, that can be used to deal with climate related issues and we have a first class panel.

We couldn't be better served than having Martha Hall Findlay, Lana Pollack, and John Godfrey on the panel. Now, you've all got written material in front of you, so you know their detailed bios, but let me just introduce them very briefly.

Martha Hall Findlay, who I have known for many, many years, is a leader in public policy thinking in Canada. She has been a member of parliament, and she has had activities in the private sector as legal counsel in the information and technology business.

She now heads one of Canada's premier think tanks, the Canada West Foundation based in Calgary, and I might add that we are so pleased to have Western Canada represented here at our annual conference.

Next to her is Lana Pollack, again a leader in policy, someone who has served politically in the legislature, and as you heard from Jim Blanchard, who stole my lines a little bit, he often does in the legislature in emission, she has had a major role in policy development both in her state and at the national level, and she is now the Chair of the U.S. section of the International Joint Commission, an incredible institution formed by Canada and the United States in 1909, a groundbreaking body dealing with environmental boundary water related issues.

And when you think about it, well over a hundred years ago there was a bilateral body constituted by the two bodies to deal with common problems, and Lana will talk more about that in due course.

And finally, if I may, next to her is John Godfrey, who we heard last night and who kindly consented to do double duty today standing in for Joanna Dafoe, senior policy adviser in the environment industry who could not be here. John, in his biography, again someone who has served in government, a member of parliament and in the academic world, he was also editor of the Financial Post before entering politics, and he recently chaired the task force for the government of Ontario on environmental issues. So John, we are very pleased you are able to take up this double duty role this morning.

So let me start the discussion -- and by the way, I should say each of the panelists has agreed to limit their formal remarks to ten to twelve minutes to allow us to have enough time for an exchange with the participants, with the audience, and I want the students particularly to feel free to ask questions.

In fact, we encourage the students to take an active role in the question period that we will have after the opening remarks of each of our panels. So that being said, let me start with Martha Hall Findlay and ask her for her opening comments.

Martha?

MS. FINDLAY: Terrific. Thank you very much, and thank you very much to the Canada-U.S. Law Institute. It is a real pleasure to be here. I don't get to do the lawyer part of my role very often, so I am very much looking forward to this and to the discussion with the audience, and I do thank you for noticing the Western piece.

I do really think it is really important even at home and in Canada and find it frustrating often a lot of these discussions don't, in fact, include different regions

of the country, and as you know, it is a really big country because it is big like the one here in different perspectives and some are often important.

I actually changed my notes for this morning based on the earlier discussion and based on, John, your comments last night and, in particular, appreciated the emphasis on the opportunities for cities, for municipalities, and towns to be engaged. So I have brought it into three components.

One is a little bit of an optimistic piece that certainly from our perspective what is really changing things is not, in fact, government regulation, is not, in fact, specific approaches that are political or governmental or even legal, an awful lot of the change that is happening worldwide is happening because money talks.

And the more conversations that we have been having with the global investment community, particularly in energy, that's an area that we are involved in, so that happens to be a big part of the global investment community's focus, and frankly, Canada is not seen as a very good place to invest because a lot of our activities have been -- in fact ground to a halt.

There are some environmental activists that might think that that's a really good thing because we are not actually able to export a number of our energy products the way we might like to, and we can talk about that in a minute. My point is, whether you agree or disagree, I am very positive and hopeful that what we are hearing from the investment community and, of course, they are reflecting not just the desires but increasingly the demands of their sources of money.

So pension funds, individual shareholders, consumers who drive behavior of that, in fact, then makes investment decisions because, of course, you want to invest in companies that are addressing the needs or desires of consumers. So that's one point I want to, make and I am very hopeful that a lot of change is happening because of money. And indeed, in the Canadian energy industry -- and you know, there was some talk about it before, and I think Jim Blanchard pointed out that an awful lot of energy companies are, in fact, leading the way in renewable energy.

So it is a bit of an unknown thing and perhaps a bit counterintuitive, but money talks, and they know that the future is there as well, and so there is terrific investment in wind and solar and geothermal and in hydrogen and all sorts of really, really interesting things.

So what I would like to say -- and that goes a bit to Peter's comments about the optimism around technology. Technology and technological innovation even in the Canadian Oil Sand has now brought oil sand oil to be lower in GHG emissions than California heavy crude, than the Venezuelan options that we are quite happy to import.

And so to the extent than even the oil coming from the Oil Sands, you might not like the fact that the world is using oil. We would love to actually see an alternative tomorrow, but that's not going to happen, and to the extent that the world is going to continue, like it or not, to use and consume fossil fuels, at least for the foreseeable number of decades, a few decades -- don't get me wrong, we can all say we would love that not to be the case, but the reality is -- and somebody asked the question last night, too -- we have to recognize that there is energy poverty around the world, and it is a little rich, pardon the pun or maybe pun

intended for the developing world to say it is okay, we have done all of this damage.

You can't have cheap and readily accessible energy because it happens to be fossil fuel based. And so to the extent that we are recognizing that that will still be the case, I am really excited that what's happening from a technological perspective in terms of reducing the footprint wherever we can in the context of realizing of what's happening in our consumption. But investment is driving those innovations.

It is interesting that companies are realizing that doing the right thing as in reducing greenhouse gas mission footprint is also lowering costs. And in juries, even in the last few years, the mindset and the realization that these are win-wins is really quite extraordinary and is going to continue at pace.

The next piece I wanted to talk about was, in fact, politics and where we have encountered a problem -- and I have to say I quite a few years ago was part of an effort in Canadian politics to implement a federal carbon tax.

I had significant scars on my back from that effort because it became so politicized, and I now see -- and let me just say we lived through a year and somewhere the slogan became job killing carbon tax, and it took hold. And it ended up, I think, putting the effort years back, in fact, to actually get to the point where we can implement a price on carbon. The unfortunate thing -- and again this is the politicization in the fact that politicians can't -- if you go to the table and you say "I am right and you are wrong, we are not going to compromise," we are not going to get anywhere frankly.

And so now we have a situation with the Canadian federal government where a new attempt to bring in legislation -- and I will talk about C-69 but not now because I think it is an important part of the discussion -- legislation regulatory legislation and after that add a carbon tax, but frankly, it was done too ideologically. It was done without recognition that certain regions and certain parts of the country -- we need to understand more how to manage different regions, different needs, rural versus urban.

And unfortunately, it was done in such an ideological way that it basically handed the opponents of carbon pricing another opportunity to go down the path of the political slogan of job killing carbon tax.

And so unfortunately, because of the ideological I-am-right-you-are-wrong approach -- and this is nonpartisan or maybe multi-partisan, everyone is guilty of this. It certainly is in our country, and as a result, we are not getting far enough forward. And so we really do need to find a way to find compromise and collaboration. I would finally add my -- because I realize we are short of time for these intro remarks -- but I am just going to add now in terms of where we might be able to cooperate because that is the title of the conference, I am going to set the stage with just a scenario to offer the question.

The Paris Agreement, everybody who signed on to it, we all have set ourselves targets for greenhouse gas emissions, but they are territorial targets. They are not consumption targets. They are actually production, and they are territorial based.

So here is a dilemma for Canada and the United States where I think may be an area for potential cooperation. Canada is trying to build a natural gas pipeline

to the West. We have tons of pipelines by the way. We have tons of natural gas pipelines, but we are trying to build another one to a plant that can actually create liquid natural gas, which we would like to be able to export to China.

So if we look at global greenhouse gas emissions which, in fact, what we should be looking at is global reduction, that reduction of global greenhouse gas emissions, to the extent that there is an argument -- and I think it is a very strong one -- that cleanly produced LNG displacing coal-fired electricity in China is, in fact, a very good thing, even though liquid natural gas is a fossil fuel, and it does use some to actually create -- make it liquid. But if the net result is reduction, that's great, except the system we've -- we have now after Paris doesn't actually allow us to really calculate, well, if there is a net reduction in China, but it actually means a net increase in GHG emissions in Canada, how do we settle that?

But that same pipeline, if in building that pipeline we use Canadian steel, then we actually, if we want to attribute, we want to calculate the GHG associated with that project, we have to include the greenhouse gas emissions associated with the fabrication of that Canadian steel in Canada.

I am fine with that except that the way the system is structured, if we import American steel, we don't have to include those greenhouse gas emissions in terms of being associated with that project. That doesn't make any sense to me.

So I think -- and I throw it out -- there is some interesting work being done in this area. There is an opportunity I think, whether it is Canada-U.S., I would prefer to think perhaps North America, would want an opportunity to figure out how we can actually make some horse sense out of what we are trying to do in terms of a larger effort to reduce greenhouse gas emissions.

MR. HERMAN: Thank you. Very well done.

MS. POLLACK: Thank you very much, and thank you for inviting me here. I am pleased and honored, and most importantly, I am learning. I have been with the IJC for nine years. It is a relatively long period of time for a commissioner if you look over the last 110 years.

In that time, I have been with the commissioners that have been hyper appointments, working with Obama people. Now, we still have Obama people, and there is Trudeau administration, but they have yet to make their appointment. So we are effectively shut down and waiting for the government of Canada to make those appointments.

So I say that because it is important, and we have important people here, and I hope you will carry that back because the longer we are not in session, the less relevant we become, the less helpful we become, and I think we have a history of being very helpful to both countries. So that's out there. I know they are distracted, but I don't think there is any controversy. It is just distraction and other business. So okay.

IJC works, of course, all the way across the boundary, certainly in the western basins and as far East as St. Croix, New Brunswick, and Maine, and we have witnessed and lived with the people there who are suffering today and yesterday from -- and indeed, the whole nine years I have been on from the consequences of climate change. There is extraordinary flooding. There is extraordinary flooding sometimes followed by drought in the same year.

There are all sorts of consequences that are costly and harmful, and IJC is frankly helping. We are the only organization that can work with environment Canada EPA at the same time, fisheries and oceans and the interior department. We do all these things, and we are quite effective.

And I will go into some of the programs and policies that we have helped these agencies and governments, jurisdictions both at the provincial and the federal level, developed and defined to better deal with -- that is to say to adapt to the consequences of climate change.

They are there. I am proud of that work. Everybody who has been associated certainly are extraordinary staff and boards who both volunteer their time and -- well, they all volunteer their time. There has been improvements.

We are like our governments, both governments are pretty good at adaptation. We are lousy, and I would say irresponsible in, as our governments, in addressing mitigation.

Now, I also want to pause and say what I should have said at the beginning. There are people in the offices, civil servants and people in Ottawa who get very nervous when I talk. Mark don't laugh.

And so I want to make clear, these are my comments. You know I respond to the IJC. I represent the IJC, but everything I say represents the positions of the IJC. When I say the IJC like our governments should be addressing mitigation, the reduction of greenhouse gases as well as adaptation, which we are doing very well, I mean, I am proud of that. It is pragmatic. It is helpful. It is cutting edge stuff in these various basins.

But when I say that, I am not speaking for the IJC because the IJC doesn't deal with mitigation. We just deal with consequences, and I am here to say I think it is time that everybody deals with the cause as well as the consequences.

I am also here to say that, as Jim Blanchard I think pointed out and John also, it is hard to deal with consequences, and it is going to be particularly hard, I understand, for Canada because I believe a larger part of the Canadian economy and also more geographically concentrated development of the energy, that's real. Those are real lives. That's real economies, that's real.

But that doesn't mean we can wait decades and export Canadian Oil Sands to China or LNG to China. We can't do it, or we will have what I haven't actually heard, and I am speaking for myself, not the IJC, the term "climate change" or "climate genocide."

We do not have the time, and so -- I mean Millie and Sam, my grandchildren, a year old and almost three years old, how many people have here have children or grandchildren who were born in this century?

(Showing of hands.)

MS. POLLACK: So they are virtually all going to live through whatever it is we bequeath to them. And we don't have the time to wait. We can't delete that stuff in the ground, and we have to recognize the economic impact on those regions especially and those individual people who are going to be bearing the brunt of this massive essential readjustment.

We can't just let the people who -- as Peter said, you have to drive 200 miles to work or 200 kilometers to work. I mean, they drive a long way. They are poor. They can't do it.

But that doesn't mean, oh, therefore, we can't do it. That doesn't mean, okay, we will stand by and let the seas rise and the ice melt and the glaciers disappear in the Himalayan mountains so that billions of people in Asia will be without water. Try that for an immigration consequence.

I am full of admiration for your prime minister, especially in contrast to our current president. As you know, Canada has embraced Syrian refugees who aren't climate refugees essentially.

But I would ask, quiz time as Professor Takle said today, you are looking at - - and this is -- and I think he would agree this is IPCC's assessment, and every mark that the IPCC has had since going back to its establishment, we have overshot it because IPCC is an extraordinarily conservative consensus driven organization.

So if IPCC says we have got about a meter to go in Sam and Millie's lifetime of sea level rise and it is very likely to be more, who in this room -- for those of you who know don't get to answer this -- who in this room can say what a meter of sea rise represents in terms of climate refugees? What's the number?

(No response.)

MS. KOWALSKI: 50 million.

MS. POLLACK: How many?

MS. KOWALSKI: 50 million.

MS. POLLACK: Do I hear another number? Hundred million. The United States couldn't even deal with a hundred thousand refugees in New Orleans a few years ago. This is hard stuff, and if we think we are going to do this and wait -- and this is my last, second to last comment for time -- if we think we are going to wait to benefit the people of Zimbabwe and Mozambique because they haven't had a chance to develop, are we doing them a favor today?

They are bearing the consequences of waiting. Yes, they need energy, but they can't wait to have energy the way we have energy. The poorest on the planet will surely suffer the most. So when we are thinking we are delaying in any way because we are helping the undeveloped, I think that needs to be reconsidered.

But what I would say is -- what we all need to do and our legislators need to do, our leaders need to do, we need to say, yeah, it is going to hurt Calgary a lot, but that doesn't mean -- and many other interests in people a lot -- doesn't mean we can't figure out a way to have a carbon tax or some other mechanism and still take the burden off the poor people who have to drive the distance to work and heat their homes from a distance with something not as good as we would like.

The last thing I will say before we have our conversations is, we are treating the atmosphere like an open sewer, and that also is not an IJC position or statement. But it is a true statement, and we have to stop thinking it is free.

If we had people upstream of us, if we are a city living with people upstream of us and they start dumping ethyl methyl bad stuff -- I am not a chemist -- in the water upstream, the best action shouldn't be to pass out water filters to the people downstream; we should do something upstream to stop the stuff going in in the first place.

And it is costly, and it is hard, and it is disruptive but not nearly as much so as doing nothing in greeting those hundred million or 200 million climate refugees.

Thanks.

MR. HERMAN: Thank you.

John?

HONORABLE JOHN GODFREY: Well, thanks very much, and before I say anything, I want to recognize that John McKay has arrived, and it is also his birthday.

Happy birthday, John.

So I want to basically try to be an over the horizon radar person. You know, over the horizon radar sees things that are beyond the immediate horizon, and in a way what I want to talk about are two things, which have been referenced this morning, one by Martha and one by Karlis.

I am going to try two sets of initials on you. Who knows right off the top what BCA is? How wonderful. We have got something to talk about and learn about. Who knows what these initials stand for, TCFD? Oh, even better.

So this is really going to be stuff that is coming as that, and you will have to take into account where policy will have to become law I think, but it is not on your radar right now.

GOVERNOR BLANCHARD: So those are basketball teams?

HONORABLE JOHN GODFREY: They are.

GOVERNOR BLANCHARD: They are not even in the March madness.

HONORABLE JOHN GODFREY: So the first one, which is BCA, is border carbon adjustment. What is a border carbon adjustment? It relates to the problem that Martha raised. What do we do with the CO₂, which is embedded in U.S. Steel but would have to compete against Canadian steel, which has been penalized for the CO₂ that is embedded within. How do we make that fair?

Well, that's a really great question because it is not just about U.S. Steel; it is about imports from any part of the world. So, for example, when the United Kingdom says, well, we really reduced our greenhouse gas emissions; no, you haven't. You actually just transferred it to China where you bought a lot of stuff which you imported, which doesn't count in your CO₂ emissions. It is just simply a transfer from one place to another.

Well, one of the interesting projects, which folks are working on, is this very problem, which is, how do we make it fair?

Now, when Ontario was doing its cap and trade scheme and California and Quebec as well one of the thoughts was that you would spare trade exposed sectors. So in other words, in the steel question, in the steel case, even though you recognize that in Canadian steel there was a certain percentage because you didn't want to wipe out the Canadian steel industry or Canadian cement industry, you simply gave them free allowances, to allow them to transition to some future date, and therefore, you didn't open yourself up to these foreign imports that didn't reflect their carbon content.

The alternative strategy, which folks have been working on, and if it were an easy strategy, I am sure it would have been adopted by now by more, is to bring in a border carbon adjustment. What that means is that you ascribe to an import of

U.S. steel, a certain amount of carbon that you simply say, well, unless you can prove to the contrary, we will assume that you used up this much carbon, that much is embedded in your product, and until -- you know, you will be penalized for that the way our own people are penalized.

You will be given an actual treatment, so there is a certain logic to this; that you are treating everybody the same, but you are ascribing to the foreign importer a certain value.

Now, that may seem a little arbitrary, but happily the international organization of standard, the ISO has been working on this problem, and they are developing methodologies that are now ISO standards, which are life cycle, so they take into account the raw materials, the processing, the transportation, and by the way, you know, the disposal at the end of the life.

There are measures which allow you to assess what other people's products are in terms of their CO₂ emissions, and that the trick would be you would say, well, look, we are not discriminating against your import, but we insist that you reveal how much is in your product, and then, you know, you will be treated exactly the way we treat our own, whether it is through a cap and trade system or carbon tax, so there is an equalization.

Now, this implies eventually a certain kind of interference if you like because it means you have to be able to know what happened to that plant in China or wherever else, but we do this in other sectors. We do it for child labor. You have to prove a certification that your product was not the product of child labor, and so this is -- it is complicated, but it is intriguing as a solution to the problem of carbon leakage or displacement or unfair trade. So that would be my first point. Keep an eye on that one.

And as I say, there is a more and more sophisticated response to that. The trick is you have to allow for inspectors to go in and see exactly what's going on. You can't simply take the foreign plant at its word that it is low producing in carbon dioxide. So that's the first one. Border carbon adjustments are kind of an interesting solution to carbon pricing, number one.

So the second set of initials was the TCFD. So TCFD is the Task Force on Climate related Financial Disclosure.

Now, you think now that I have given the fuller part some of you know about this, this is a product of the Financial Stability Board, which has been headed up by Mark Carney, again the Canadian foreign governor Bank of England and Michael Bloomberg. So they about two or three years ago commissioned, created a new financial task force to deal with two problems, how as investors do we know whether public companies and particularly financial institutions, how are they doing in two areas? How are they doing in mitigating the production of greenhouse gases? They call that transitional risk.

How do they assess the risk of a company, which is really exposed to having a lot of carbon in its portfolio. That's the first point. And then, the second risk is physical risk. How do companies reveal how exposed they are to interruption of business, for example, because of extreme weather events.

So these two risks are now confronting the corporate world. And so what the task force said was, no longer will the directors of public companies be able to say

they didn't know because they do know. We have told you, everybody else has told you, the science is getting stronger. It is undeniable. You can't claim you didn't know. That's not going to be a defense in the future.

And what you do about it has to be reflected in four elements of corporate policy. It has to be reflected in your government structure. It has to be reflected in your risk management plan. It has to be reflected in your strategic plan, and it has to be reflected in the various indicators you use to tell investors and the world about your company.

So this report came out about a year-and-a-half ago, and it has had a profound effect. First, about 400 corporations have signed up around the world to do this, and secondly, naturally, the financial regulators are looking at this and saying, well, in the past language about climate change and environment was kind of descriptive.

In your reporting structure, it was optional. It was not really something you would be held accountable for, but increasingly, they are going to say this is approaching a material risk. This is a material fact, which investors must know about if they are going to make sensible investments. And what's going to be really important, of course, is that boards of directors are going to be held liable.

They are going to be -- if they do not produce that kind of disclosure on both kinds of risk, the carbon risk and the physical risk, due diligence, it will be determined they haven't done their due diligence.

And I think this is going to the way of tobacco, that increasingly you won't be able to get away with it, to try and deny it or to push it aside or not take it into account.

And when I was listening to Karlis suggest one approach might be to declare this a form of genocide. That's a pretty high standard, and it also raises all kinds of emotional issues, and it is probably true, but it is challenging, and I think probably -- and I will let all of you lawyers tell me in more detail -- it is probably at a much higher burden of proof.

But if I take it down to disclosure of your vulnerability on carbon and on physical risk, then we are at a much lower burden of proof.

And by the way, with every passing climate event, it just becomes that much more obvious that you can't ignore it. So these are two emerging areas, which I think will, first of all, become policy and eventually become law.

And it will not be limited by the way to simply corporations themselves; more importantly, the financial institutions, which are funding and investing in those corporations.

So it is really at the financial services level, the insurance business, the pension business, the investment business, the banking business. They are all going to be covered by the task force and climate related disclosure.

And it will be a rising pressure as it was in the past with tobacco or investments in other things. It is a coming thing, and we should keep an eye on it, and I think it is only going to go one way.

Thanks very much.

MR. HERMAN: Thank you, John, and I thank all of the panelists because, as I watched them on my stopwatch, they all kept within their allotted time, and they

came under the 12-minute threshold. So that being said, I am going to give each of them, each of them, one minute to comment on what they heard the others say.

So, Martha, please begin.

MS. FINDLAY: Thank you. Task force, it is not just risk. That's the focus of the task force, which is fantastic, but what I was alluding to earlier in terms of a global investment community, there is also a reaction to other, whether it is investors, consumers, not just saying oh, oh, risk, they are saying we want you to behave better. We want you to be greener.

So there is a negative, there is a disincentive, and then there is an incentive, which I think is incredibly valuable, so thanks for elaborating on the task force because it speaks to my earlier point: Money talks, and money is actually going to be hugely influential here.

I don't have enough time -- one minute doesn't get me enough time to talk about what has happened, a fantastic innovation, based here in Cleveland with respect to water. So I will do that later in the panel.

So I do just want to talk about the issue about trade exposed and what the ISO is doing. It is the ISO 14,000 Series of their standards. It can't just be trade exposed. It can't just be a border adjustment because those still end up being territorially based issues.

The ISO is not a government body. It needs for some of that extremely important work to work we also need the political collaboration, and I know it is tough because Paris was tough enough to get. We all know how hard it was to get global agreement on anything, but because the commitment was to territorial based production of greenhouse gas emissions, in order for us to take full advantage of what the ISO is doing in terms of addressing my steel challenge, we are going to need broader political collaboration to say it is not just an economic trade exposed; it is also how do we account properly for our collaborative effort, not yet collaborative efforts, but other collective efforts, even if they are calculated individually to reduce greenhouse gas emissions.

So anybody interested in the ISO, it is a 14,000 Series, really, really interesting work, but it can't work without that political collaboration as well.

MR. HERMAN: Lana?

MS. POLLACK: I would like to pick up on something both of my colleagues have said here. One is, what we do has to be fair, and you mentioned, Martha, this -- that tax wasn't going to be fair. And once people believe something is not fair, they should fight it.

So we need to watch our language as well as the content of how we present our ideas. So that's one thing. At the very least -- and this isn't -- I just started writing what you could call it, but until you come up with a better, it should be a fair carbon tax, and you could come up with something better, but it should be fair, and it should be represented that way.

The second thing is what -- when John started talking, you know, he is a really nerd and brainiac, and that's what we need. And, Martha, you lead, you know, an institution full of brainiacs, and so what we need to do is settle on what needs to be done as a society, and as a global community, and stop fighting about what needs done.

Start getting realistic on the timeline that needs to be done and put the kind of brains that I am sitting between to work on how to do it. There is too much time spent, well, we could wait, or we can do it. It is over here. The Mozambique people only had one cyclone, and we need more farmland to grow more corn, not to eat but to burn.

Let's figure out what needs to be done because there really is agreement on that. The hard thing is the policy. There are wonky things that will work to make it fair, and the last -- my last point is, because I like to go back to IJC, because I am not talking a lot about it, and yet, I am so proud of what we have been able to do in looking at adaptation.

One of the things we called for and not specifically with relationship to climate change but as extended producer responsibility, which is another way of saying the life cycle tracking, and with the ISO and all the things that you've mentioned, that is a mechanism. It is a policy mechanism that could be developed much more strongly and could be a substantial contributor.

That is in the first IJC's annual TAP, Triannual Assessment of Progress report. And it is a concept worthy of considerable development. Canada, I think, is a little ahead of the United States in various ways in applying that principle in different provincial law and programs.

MR. HERMAN: John?

HONORABLE JOHN GODFREY: Well, very quickly, I just want to pick up on something that Lana said, which, of course, is all about part of the work that IJC -- part of the folks on the Great Lakes, and I just want to point out to one significant information gap, which makes it difficult even to relate what kinds of risks we may be exposed to, which is that certainly in Ontario and may well be the case here in Ohio as well, we lack something called down-scaled climate data.

We know quite a lot about what's going to happen in general terms as Gene pointed out, and this does really relate to Gene's as much, in general terms over the next 50 years in terms of increased water, increased storms, heat waves, all the rest of it. What we don't know is how it is going to play out on about a five square kilometer footing.

But there is incredible work going on and particularly a guy at the University of Toronto who is a physicist, which builds on work, which is being done in Quebec, a climate modeling collaborative, to be able to do what they call dynamic downscaling, which allows you to understand what happens when all of the various complex things are happening in the atmosphere and they meet the surface at that interface.

And one of the extraordinary things that happens at the Great Lakes level is that the Great Lakes throws everything off. It would be like if you had mountains, it would be the same kind of challenge. So you get snowfalls of zero percent in Niagara on the Lake and Lake Ontario, and 50 kilometers to Buffalo you get six feet of snow. That's lake effect.

And anybody who is a skier by the way in southern Ontario knows a lot about that.

So we in order to make the kind of plans for adaptation and resilience -- so if we are going to build a new piece of infrastructure, a bridge or anything else, so

we want to know what the new reality is about a hundred-year storm or wind or anything else. We need that kind of data in order to plan period of time and protect our population from what's coming at us. Weronose has a long history of this, but it is huge super computers with all the rest of it, and the rest is needed as well, and we need it by the way for any of our financial institutions, which are investing around the world increasingly in infrastructure and real estate because the same arguments apply.

If you are going to buy a port in Sydney, you better know more accurately about sea level rise and sea surges and all that kind of stuff because it will affect our pensions, right, and increasingly, we are investing around the world, thinking that it is safer to get into infrastructure and real estate than stocks and bonds, but it is actually worse because it is being subjected to increasing extreme weather events. So that's a missing scientific piece, which we need to focus.

MS. POLLACK: Can I say just one quick thing? I would say that the scientists and investors and certainly the reinsurance companies are way ahead of a lot of other people who are either denying or fussing with detail. The politicians in their wisdom -- and I don't want to get the wrong state, I think it is South Carolina, but it might be North Carolina -- they have created a law, a requirement that no plans for future ports, roads, infrastructure can include presumptions or assumptions that there is going to be any change in climate. They have to use the last hundred years. You can't use science be damned. I'd say the voters really need to look at who they elected.

MS. FINDLAY: So as frustrating as that is, can I just get permission from our chair to actually tell my story about what Ohio and, in fact, Cleveland did the opposite not too long ago?

So there is an old friend of mine now passed away by the name of Bill Pryor. He was co-founder of a company called Conetico, which is known as a worldwide company in terms of water treatment, lot of residential water, water treatment, but also to the municipal size water treatment activities.

And one of the things that they developed a number of years ago, not too many years ago was a system that Bill used to call toilet to tap. And I told him many times that's probably not your best marketing slogan.

But the point was that they had developed water recycling, one of the original technologies in terms of membrane for water treatment years ago, but this newer approach was a full closed loop opportunity, and there is a residential house that has been operating, and I am not sure where it is here in Cleveland in a small commercial property that has been operating entirely closed loop for the last several years.

So I am talking -- I am not just talking gray water. Recycling gray water has been around for a long time; I am talking entire closed loop with, you know, the toilet piece into completely purified water and dry waste.

The opportunities for this technology are huge, but what they came up against was a regulatory barrier that in Ohio you could not use anything that related to sewage.

So anything that had been through or been, you know, had been or been through, you could not use it regardless of how pure the ultimate water was. They

worked for years to get the legislation changed to say, but if the science shows that the water is pure, then we should be able to do this.

Ultimately, the Ohio -- is it legislature? -- anyway, the Ohio government in its wisdom not only overturned that regulation but did so unanimously because the science was overwhelming to say here you have an opportunity, a full total closed loop water recycling technology that you can actually now use.

Now, Bill passed away a couple years ago. It is not -- you know, the company is in a lot of transition, but the opportunity -- think of that as an opportunity, not from just having recognized the science but the opportunity for the world in terms of small community recycling.

Like I said, you might want a different slogan, but the opportunity is terrific. So that's an example, a positive example right here in Cleveland of where government and politicians have, in fact, been able to embrace an opportunity. I am hopeful. I mean, notwithstanding whichever Carolina it was, there are good stories, too.

MS. POLLACK: Of course.

MR. HERMAN: So we are going to go to you for question and answer period. Let me just make a comment: If you followed the progression of our discussion from last night to now, you see that we talked about the need for global intergovernmental action, fundamental need for countries of the world to do something on a common and serious challenge.

We have talked about the need for governmental and intergovernmental action at a more specific level. We talked recently last few minutes about community action to deal with the issues, and we've talked -- John has mentioned it -- we talked about corporate action, and we've explored each of those levels, and I think that that has been a very good development as we progressed in these discussions.

One of the things that I think that has -- that needs more attention by everybody involved in climate change law and policy is the impact of private sector regulation, which has kind of been ignored in the discussion but, you know, there are private sector standards not related to government legislation.

And one of them is the whole area of corporate social responsibility where corporations are judged in the marketplace on what they are doing to deal with climate change issues, not because governments have forced them to do that but because the markets have dictated that their stock price will depend on how effective their CSR programs are, and that engages things like labor relations, standards and environmental issues that a particular company is pursuing.

As I said, not because governments have dictated it but because the markets have, and I think that's an area that needs further explanation. Anyway, that being said, let's start having some vigorous questions. Over here. Yes, sir.

MR. PETRAS: Larry, if you could please identify yourself --

MR. HERMAN: Yes.

MR. PETRAS: -- for the questions, that's all.

MR. DELAY: I am Brendan Delay. I have a question on science.

MR. HERMAN: Sorry. The mike doesn't seem to be on.

MR. DELAY: Delay. I have a question on science. One of my college roommates is a laser chemist at Rutgers University, and his colleague just won the

Nobel Prize for chemistry, Don Strickland for laser chemistry, and we have been talking a lot about climate and lasers and how they are now measuring what is happening that comes from the solar system, from the star system.

And what's being found from the NOAA satellites is that the outer two layers of the atmosphere, the ionosphere and the exosphere have been cooling. And there have been cases that the cooling started four years ago, and the cooling is getting cooler in the last two years.

So that's now being an issue handed over to the solar scientists to say what is this happening with the solar cycle?

And some solar scientists are saying that a cooling trend is happening, and it is somewhat slight right now, but it will grow. Now, I am not a solar scientist, but could it be that this may be leading to a cooling of our lower levels of the atmosphere, may be giving more time to deal with these climate effects, so we are not talking about climate genocide?

MS. POLLACK: I think we need Gene -- Professor Takle on this. Can you respond to that?

MR. HERMAN: Come over and have a mike. Give him the mike.

DR. TAKLE: This is the first time I have heard of that particular issue. I should say, however, that there are -- at the time as we measured that the troposphere, the lower atmosphere is warming, we also know that a natural consequence of that is the stratosphere's cooling.

But that is driven by the greenhouse gases. I think what you are saying is that there may be something in the output of the sun that is interacting with the exosphere and ionosphere -- well, the exosphere is probably not at issue.

Those molecules are leaving anyway, but the ionosphere, the upper stratosphere, I don't know about that, and I don't know how strong that connection is with what's happening at the surface. So we are talking there about very low density environment.

So you know, even though it might be warming so to speak, but molecules are so far apart that what we mean by temperature is even called into question. So we would have to look at the magnitude, the amount of heat -- I mentioned zettajoules in the ocean, and so we need to compare the amount of energy that is either leaving or entering there with the amount of energy that we already have stored in the ocean, for instance and maybe could compensate for that.

It is something that definitely needs to be looked at, but I think we have to make sure we are talking about comparable amounts of energy so we can make decisions about what happens here that is going to affect us. It is going to affect human society over the next hundred years.

MR. HERMAN: And this is a good example of a discussion that should be taking place offline between the two of you.

DR. TAKLE: This is kind of wonky stuff, but it is the kind of thing that needs to get into the scientific community because this is what scientists gravitate to. Here is the new potential area of uncertainty. We need to get on that right away.

MR. HERMAN: Jim Blanchard. Thank you, Dr. Takle.

GOVERNOR BLANCHARD: Great Lakes, my law partner, who you all saw last night, was honored with the Henry King, Jr. award, has been worrying about

lake levels near his home, near Lake Ontario, and Lana and I know about those along Lake Michigan, the models on climate change suggest that a warming because of evaporation at a lower level, Gene, but Rick Newcomb is worried that they are rising and driving him nuts.

In fact, that was a factor in the selection of this topic for our conference. So Lana, commissioner, chairperson, others, what say about lake levels and climate change?

What is going on?

MS. POLLACK: Well, I will say that I am one -- well, I will say a couple of things: One, I bet everybody from Governor Cuomo to the town supervisor on the south shore of Lake Ontario plus all the people up in Georgian Bay a couple years ago were calling for my head.

You know, they are all wrong, IJC, and if we only change the IJC commissioners, we won't need to worry about -- I swear -- we won't need to worry about, in this case, high water levels on Lake Ontario. And to give them just a little context, the IJC is under the treaty. We set the orders on dams, where those dams are shared dams binational dams. So when the St. Lawrence Seaway was opened, new dam, new order on that dam, goes back to the '50s. And putting the dam in and with the orders, which is to say how many gates you open under which conditions, how much flow you allow under various conditions, which is the IJC's work that has to be also approved by both governments.

So what the dam did and the order did was eliminate 98 percent of the flooding downstream of -- no, not downstream -- 98 percent of the flooding in the basin, Lake Ontario and the upper St. Lawrence. Ninety eight percent wasn't enough. People were not happy because there was still occasional floods.

As professor Takle said, the lakes varied between five -- up to two meters. So you are trying to compress it, and the lakes are too big. The main driver, Jim, is precipitation. It is also impacted by how much ice cover there is, how much evaporation is, but it is the amount of precipitation. When you have a lot of precipitation, it runs into the lakes and guess what happens? The lakes rise. When you have little precipitation, the lakes go down. The dam can only do so much.

We changed the order on the dam after 50 years of debate and discussion and \$20 million dollars of Canadian-U.S. money on a study because the 1950s order compressed the waters unnaturally, and by so doing compromised 64,000 acres of wetlands, because in the '50s, no one paid any attention to the environment and wetlands.

Come to my term of office, this period of time, the IJC with lots of study, lots of public input changed the order as the scientists would say, and in that sense, we got unlucky because we changed it on January 1st, 2017, and then it started to rain, and it rained for 40 days, and it rained for 40 nights, and it was an unprecedented amount of water, climate perhaps. And I am not making light of the people who got flooded. I am not making light of that. That's a very serious thing to go through. Oh, my goodness, it is a terrible thing to go through, but I am saying when it rains, you are likely to have flood, and changing the commissioners on the IJC is not going to change the water levels nor will it make them go up in Georgian Bay under low water periods.

We spend -- last thing -- we spend so much time fighting reality and too little time figuring out how do we adjust. In this case, that's where the work on mitigation -- excuse me -- adaptation is terribly important. We can do more for the people on things to help them live with it, but what we can't do is change the water levels.

MS. FINDLAY: Can I just have -- I have lived for a long -- most of my entire life with Great Lakes water levels, particularly Georgian Bay, and the IJC cannot win because you are dammed if you do, and you are dammed if you don't.

HONORABLE JOHN GODFREY: And you are dammed if you are dammed.

MS. FINDLAY: And you are damned if you are damned.

(Laughter.)

MS. POLLACK: Very good.

MS. FINDLAY: But I think -- but I think this is where science is so important because water levels in Georgian Bay, Lake Huron go up, and we have only been measuring since the late 1800s.

Let's acknowledge that's a small amount of time in our history, but it has been over a hundred years that we have been measuring, and if you look at the charts, it goes up.

Anybody that does any boating or whatever, the charts acknowledge this. It is a six foot range, but if you look at since we have been measuring, the only thing that you can conclude is that it goes up and down a lot. So the historical lows were in the 1920s, the 1960s, and about five, six, seven years ago it went down.

It didn't stay down as long and as low as in the 1960s by the way, but this is where the science has to be the base because people can get really upset at their own rules.

Right?

MR. HERMAN: Sure.

MS. FINDLAY: So the historical lows, '20s, '60s and a few years ago a few people bought property on Georgian Bay when the water was high because the highest record, highest levels on record were in the 1990s to the point where national geographic had to cover, oh, my God, we are being inundated.

The thing is Georgian Bay has rock and Lake Huron has soft shore. So when the water was high, people on the Lake Huron side of the shore were losing their cottages, losing shoreline. Panic, panic, panic. What are we going to do to stop the waters being so high? You fast forward about 30 years because the cycles -- the only thing you can conclude is the life cycles go up every 30, 40 years.

So it is a long cycle, and truth be told, nobody really understands why. Of course, it is precipitation, but what causes precipitation? Nobody really knows what it is. But we just know that this happens.

But this is where you have to rely on science because you get people panicking about when the water then is high, they are losing shoreline, and to Georgian Bay a couple decades later, panicking because the water is now low, and they didn't actually do the research and bought a cottage that was far from the historical or they bought a boat that was too big for the channels, and now they are panicking, right?

But they are the ones who drove to the point of wanting to sue the U.S. Corps of Engineers for having allowed the water to drop. I mean, in both cases, the important part is to say this might be affecting you, but our job is not to shake the environment to suit any particular vested interest.

We have to go back to the science and say what is really happening and why? And water levels in Georgian Bay and Lake Huron are the best example of how people -- we end up with people reacting because of their own vested interests or because of their own personal experiences without being able to step back and really look at the science.

And I feel for the IJC. Like I say, they have been damned because they have done, and they have been damned because they have not done -- grammatically, that was a challenge, but you knew what I meant.

MS. POLLACK: Thank you.

MR. HERMAN: Now, excuse me, panel because Professor Colares has been very patient. He is waiving his hand. He wants to ask a question, just lean over.

PROFESSOR COLARES: Thank you. Case Western, Professor.

I posed a question.

MR. HERMAN: Wait, we need a microphone.

PROFESSOR COLARES: I was at the American lawyers conference, ABA, where I posed the question that the Honorable John Godfrey mentioned as border carbon adjustments, and although I believe climate change is happening, I do believe that we need to discuss what we shouldn't be doing about it.

And I was quite sympathetic to the idea in the beginning before finishing the research of eventually making the legal case and the economic policy case for BCAs, and unfortunately, although I succeeded in finding a way of demonstrating how that could be made compatible, how BCAs could be made compatible with WTO obligations --

MR. HERMAN: Do you have a question, of course?

PROFESSOR COLARES: Yes. So the question is the economic case is disastrous. Recently after Professor Bill Nordhaus won the economic prize, the Nobel Prize in economics, there was some controversy disagreement between major controversy, including Dr. Nordhaus and the IPCC in terms of what would be the best policies to address.

The IPCC seems to be addressing an agenda like what you propose as deep carbonization, which would be according to the economists on the issues, would be disastrous to the world in terms of economic loss. So my question is climate change is definitely a political problem, and it is in the political arena that these issues need to be debated, and this is where I think that panels like this are very important.

My question to you is, what do you think -- how do you -- what are your ideas of making climate discussion and consideration of costs of decarbonization, relative decarbonization and open the discussion to the public, and what is the likelihood of actually having that being done by people who are in the politics and Congress?

Thank you.

MR. HERMAN: Well, now, in asking for the panel to respond, note that there is only two minutes left in our time frame. So keep your response within that, if you can, please.

HONORABLE JOHN GODFREY: So two minutes, it is going to be like IQ. It would seem to be we are balancing two kinds of risks. It is not simply a political challenge; it is a physical challenge. It is a scientific challenge. It is absolute disastrous we are facing if we don't do something.

So you say to yourself, well, if we simply can't manage this economically or industrially, we will just have to keep going. That's not an answer. I mean, it is obviously -- so what it does require -- and we talked a little bit about this last night -- is a transformational act of our economy, which changes the basic assumptions about how we use energy and materials.

That's what it comes down to. And we don't have a choice, but we didn't have a choice in the Second World War either about what we needed to do to produce armaments. We have the capacity as a human society to organize ourselves for these crises when we recognize them.

And so, of course, if we stick to an industrial paradigm, which will produce disaster, we will produce disaster, but we can't afford to do that. And happily in the history of human kind, we are ingenious people, and this will summon up all of our ingenuity on a global basis, and we will have to get it right together. We don't have -- we don't have a choice, so we have got to find a way to do it.

MR. HERMAN: Any final observations, Lana, Martha?

MS. POLLACK: My observation of this meeting is among the best I have been to. I have been going to climate change discussions -- I am married to a climate scientist -- and I have been going to climate discussions since at least 1990, actually very earlier than that, and I really respect what I am hearing and the seriousness and the wisdom with which you are offering these ideas.

The last point is, a week ago I was able to hear Christianna Ferrous, who is the UN ambassador for climate change and a major figure in the Paris Climate Agreement, and she said that she -- gave a marvelous talk, almost as good as John Godfrey's -- and she said "I am a stubborn optimist. I have to be," and all 3,000 people went out of that big Hall and saying "we are stubborn optimists, we must be." So I leave you with that, and perhaps we can all be stubborn optimists in how to proceed.

MS. FINDLAY: Can I finish also with a note of optimism? In Canada right now, the federal government put forward a massive piece of legislation, which we refer to as Bill C-69, which has -- will have tremendous impact on what we do in terms of environmental assessments, making it much broader into full impact assessments, changing how we approve of energy projects, pipelines, transmission lines.

It is a massive piece of legislation. We have a current government that is very concerned about climate as they should be. The legislation was somewhat ideologically driven and was responded to by industry very, very negatively.

So a few months ago or like 18 months ago we ended up with very polarized positions on a major piece of legislation that will affect the next, at least, decade

of how we do things in Canada. The positive piece about this is that over the last number of months and Canada West Foundation has been very involved in trying to moving this forward. We -- it looks like now through a lot of discussion and a lot of collaboration between industry, between other people concerned, between them and government that we may end up getting a piece of legislation that is significantly amended before it finally passes that will not be perfect. And that might not sound great, but the fact that it will have been reflective of compromise and collaboration on the part of all concerned, we may very well -- and I am crossing fingers over the next number of months, and it will be just the next couple of months -- we may end up with a massive piece of legislation in Canada that we can then go to the rest of the world and waive and say are we ever proud of the fact that this is not perfect in the sense that we can have industry go out and say not perfect, but at least we can live with it.

We have environmental activists who can say not perfect, but at least we can live with it, and then go back to the investment climate, which is saying we need you to do this kind of thing.

I am crossing fingers. A lot of us are working really hard to make this happen, but if we can, should be by the end of June that will actually be an example of how we, when you want to add politics and the law and science, it could be something we are really, really proud of. Classic Canadian will really be proud of something that is not perfect, but I think it could be really something.

MR. HERMAN: Well, I am really proud of our panel that has been perfect, and I want to thank each of you, Martha, Lana and John. You have been excellent, and we have profited by your wisdom. Thank you very much, and now, Steve, over to you. You tell us what we have to do.

MR. PETRAS: Well, first we need to thank the outstanding panel.

(Applause.)

MR. PETRAS: And I need to thank Larry Herman for doing an outstanding job.

(Applause.)

MR. PETRAS: All right. So it is now lunchtime. What we are going to do, we have lunch set up out there so you can go through the line, grab your lunch, drinks are over here, come back and sit down, and at about 20 after 12:00, we will start the afternoon lunch program where we will have our presentation from the Honorable John McKay.

(Luncheon recess taken.)