



# SUBMISSION TO **ONTARIO'S CLIMATE CHANGE DISCUSSION PAPER 2015**

April 2015

SPECIAL REPORT

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The conference report was prepared by Oonagh Fitzgerald, with notes and assistance from Patrícia Galvão Ferreira, CIGI post-doctoral fellow, and Kent Howe.

## ACRONYMS

CDM	Clean Development Mechanism
COP	Conference of the Parties
ECO	Environmental Commissioner of Ontario
ETS	emissions trading scheme
FLEGT	Forest Law Enforcement, Governance and Trade
GHG	greenhouse gas
IBA	International Bar Association
ICJ	International Court of Justice
IETA	International Emissions Trading Association
INDCs	intended nationally determined contributions
IP	intellectual property
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development
REDD	Reducing Emissions from Deforestation and Forest Degradation
SDSN	Sustainable Development Solutions Network
TTO	technology-transfer office
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USPTO	United States Patent and Trademark Office
VPA	voluntary partnership agreements
WRI	World Resources Institute
WTO	World Trade Organization

## INTRODUCTION

The International Law Research Program (ILRP) of the Centre for International Governance Innovation (CIGI) congratulates the Province of Ontario's Ministry of the Environment and Climate Change for launching a province-wide public consultation process — *Ontario's Climate Change Discussion Paper 2015* — in relation to an issue of global importance and urgency for Ontarians and Canadians alike, at a time when nations need to galvanize their subnationals, climate experts, civil society, business and industry to commit to intended nationally determined contributions (INDCs) to reduce carbon emissions and mitigate the effects of climate change. The CIGI ILRP is optimistic that through this provincial consultation process and implementation of the best ideas it generates, as well as through Ontario's initiatives undertaken in collaboration with other provinces and foreign subnationals, Canadians will be able to prove to the world our commitment to make a meaningful contribution to achieving an ambitious, verifiable and enforceable international agreement on climate change in December 2015 in Paris. By proactively addressing climate change *now*, the Government of Ontario positions this province, its citizens, universities and businesses to be innovators for sustainable prosperity rather than victims of global environmental and economic crisis.

## ABOUT THE CIGI ILRP

Based at the CIGI Campus in Waterloo, Ontario, the ILRP is an integrated multidisciplinary research and teaching program that will provide leading academics, government and private sector legal experts, as well as students from Canada and abroad, with the opportunity to contribute to advancements in international law.

With matching funding over 10 years from the Province of Ontario and a private donation, the ILRP is unique in that it straddles and leverages academic, business and governmental perspectives, and focuses on understanding and improving international law for better global governance. The program is connecting knowledge, policy and practice to build the international law framework — the globalized rule of law — to support international governance for the future. In consultation with public, private and academic sector experts in international and transnational law, the ILRP has developed a strategic plan focused on advancing knowledge and understanding in three vital areas of international law: international economic law; international intellectual property (IP) law; and international environmental law. As well, the ILRP is interested in empirical case studies, analysis of the efficacy of international law regimes and interdisciplinary research that considers the impacts on human security, rights and development.



The ILRP's preliminary areas of focus all, in one way or another, engage the issue of climate change. The ILRP's work in international economic law includes analyzing how well international trade and investment law is responding to urgent global policy challenges such as climate change. In the area of international IP law, the ILRP is investigating how technological innovation and its transfer play a fundamental role in addressing climate change through mitigation and adaptation, along with examining how international IP, trade and investment, and environmental law should be reconciled to respond to the global challenge of climate change and sustainable development. As well, much of the ILRP's work in international environmental law revolves around the issue of climate change, including research looking to advance effective use of science-based national, international and transnational law to protect the environment, reverse climate change and achieve sustainable prosperity.

For that reason, the ILRP is well positioned to provide the province with feedback on its climate change discussion paper. In making this submission, the ILRP endeavours to provide informative commentary on certain critical policy areas by highlighting relevant issues and preliminary findings and proposing future research.

In February 2015, the ILRP held a high-level consultation workshop on "Emerging Issues in International and Transnational Law Related to Climate Change." The workshop provided the ILRP with several concrete recommendations for research and collaboration, and will shape further development of the ILRP's research agenda on international environmental law and climate change. The CIGI ILRP submission concludes with a report on this workshop, including a summary of areas for further research.

Although the CIGI ILRP was established only recently, it has mustered its researchers in international economic law, environmental law and IP law and innovation to provide the Ministry with initial feedback on the issue of climate change, a matter of significant common interest to both the Ministry and CIGI ILRP, and undertakes to contribute further in the future.

## SCOPE OF SUBMISSION

The ILRP's submission provides comments on the following themes: **indigenous peoples and risk to communities**; **actions in key sectors**; **putting a price on carbon**; and **science and technology**. The submission follows the themes and order of select questions posed on pages 37–38 of *Ontario's Climate Change Discussion Paper 2015*:

- **Indigenous peoples and risks to communities:** What are the best ways to employ the traditional knowledge of

First Nations and Métis communities in the process of developing the climate change strategy and action plan, and in implementing their provisions?

- **Actions in key sectors:** What can government better do to encourage industry to further increase rates of innovation that lead to improved productivity of all capital, including national capital in order to reduce emissions?
- **Putting a price on carbon:** What market mechanisms will best achieve carbon reduction goals for Ontario? What carbon pricing market mechanism will be most beneficial? What design considerations should be taken into account?
- **Science and technology:** How can Ontario better support early stage research that could lead to the future commercialization of technologies that will provide economic benefits while also helping Ontario achieve its carbon reduction goals?

## RESPONSE TO DISCUSSION QUESTIONS

### INDIGENOUS PEOPLES AND RISKS TO COMMUNITIES

*Encouraging active involvement and participation of Ontario's indigenous communities in formulating policies and designing mitigation and adaptation strategies*

As part of its mandate, the ILRP is committed to incorporating international law research of indigenous issues that crosscut our three areas of primary focus, while also considering the impacts on human security, rights and development. The ILRP is pleased with the inclusion of this theme, as it is a necessary component of any comprehensive response to climate change. The discussion paper poses the following question:

**What are the best ways to employ the traditional knowledge of First Nations and Métis communities in the process of developing the climate change strategy and action plan, and in implementing their provisions?**

The framing of this question is significant for two reasons.

First, it departs from the disempowering perspective that climate change is a phenomenon of which indigenous populations are mere passive victims. Second, it provides an opportunity for these Ontario communities to



contribute their knowledge toward mitigating adverse impacts of climate change. Implicit in the province's question is perhaps an acknowledgement of ongoing international efforts to conceive climate change as a human rights concern (the most recent being the Geneva Pledge for Human Rights in Climate Action [2015])<sup>1</sup> and the acknowledgement that a clear understanding of this fact could lead to better and more informed climate action.

Climate change affects indigenous populations in different ways than it affects more industrialized populations, and understanding the specific context of Ontario's First Nations and Métis communities will be crucial for integrating their knowledge in the province's climate change strategy. As such, the most important method for employing the traditional knowledge of Ontario's indigenous communities in this process will be to apply a principle that is common to almost all consultations on climate change and indigenous populations, namely, ensuring the active involvement and participation of the communities themselves. This principle is especially relevant in designing mitigation and adaptation strategies particular to the conditions of these communities: their perspectives must be central in the decision-making process.

The following approaches would help to incorporate the traditional knowledge of these communities in the climate change strategy:

- creating opportunities for indigenous communities to participate in and contribute traditional knowledge to the discussion about climate action;
- supporting and promoting traditional adaptation strategies, and incorporating them into the overall strategy and plan of action;
- where appropriate, promoting the transfer of technology that is sensitive to the cultures of these communities;
- involving these communities in collaborative research with the aim of integrating scientific and traditional knowledge for adaptation and mitigation;
- supporting these communities in creating diversified, sustainable livelihoods and in negotiating effectively with industrial, infrastructure or natural resource development projects that may impact their communities and traditions; and
- supporting global efforts to ensure indigenous communities around the world, and particularly in the

Americas, have an effective voice in international climate change negotiations and in domestic implementation of climate change measures.

## ACTIONS IN KEY SECTORS

*Offering incentives for rapid development, commercialization and globalization of clean technology*

To support transformation to a resilient, low-carbon economy, action must be taken in key sectors and climate-friendly technological innovation must be encouraged. There is a potentially significant role for incentives for rapid development, commercialization and globalization of clean technologies. The discussion paper poses the following question:

**What can government better do to encourage industry to further increase rates of innovation that lead to improved productivity of all capital, including national capital, in order to reduce emissions?**

The international community currently looks to technology as a vital source of potential solutions to the problems presented by climate change. These solutions would include technologies that can mitigate or reduce emissions of greenhouse gases (GHGs), and those that enable communities to adapt to an environment altered by climate change. According to the United Nations Environment Programme (UNEP), "The key aim for a transition to a green economy is to enable economic growth and investment while increasing environmental quality and social inclusiveness" (UNEP 2011).

There are numerous legal and non-legal aspects to the potential regulation of climate change. It may be necessary to introduce measures imposing environmental standards and facilitating access to climate-friendly technologies. The development of an efficient legal framework to enhance technological innovation and its commercialization is a central tool of environmental management. In this context, the role of IP rights in fostering innovation and promoting implementation of clean technologies is a critical factor in the fight against climate change and mitigating its harmful effects. Patent rules and regulations create an exclusive exploitation right for the holder over the invention within a specified territory for a specific period of time, which occasionally creates a monopolistic situation characterized by high prices and a restriction on the dissemination of knowledge for the use of clean technology innovation.

The variety of challenges presented by climate change requires new models of innovation and commercialization of climate change adaptation and mitigation technologies. The Government of Ontario is encouraged to lead in removing barriers to the development and transfer

<sup>1</sup> The Geneva Pledge for Human Rights in Climate Action (2015) is a voluntary initiative, signed by 18 countries, with the aim of promoting the sharing of knowledge and best practices among experts in human rights and climate change at the national level to build the collective capacity to respond to climate change in ways that are good for people and the planet.

of climate-friendly technological innovation by first establishing provincial clean innovation centres to develop low-carbon, greener technologies. If linked with similar federal agencies and institutions in other provinces, these centres could create a national technology pool that ensures access to pooled technologies without payment of royalties. The patent commons<sup>2</sup> as a tool of corporate environmental governance should “promote and encourage cooperation and collaboration” (Van Hoorebeek and Onzivu 2010) between innovators, including public and private sectors, to “foster further joint innovations and the advancement and development of solutions that benefit the environment” (ibid.). The patent commons will promote further innovation by disclosing new knowledge and minimizing transaction costs. This collaborative model can also be relied on by publicly funded climate-friendly technological innovations emerging from universities, research institutions and government centres.

These entrepreneurship centres could play a crucial role by acting as technology-transfer hubs in promoting, financing and commercializing climate-friendly technological innovation. These new centres could inspire the creation of similar, linked centres in other provinces and in foreign subnationals, all providing incentives to enterprises and institutions to commercialize and transfer climate-friendly technologies on a national and international level. The Government of Ontario may wish to promote discussion of the concept of linked climate change entrepreneurship centres at its Climate Summit in July 2015. This proactive approach to encouraging development and sharing of climate-friendly technological innovation would help to integrate sustainable development and preservation of the environment in national and international trading systems.<sup>3</sup>

## PUTTING A PRICE ON CARBON

*Legal and regulatory design considerations in applying market mechanisms to price carbon*

Ontario’s *Climate Change Discussion Paper 2015* states that “the most cost-effective approach to reducing greenhouse gas emissions” is putting a price on carbon. It indicates Ontario is considering two main approaches to carbon

pricing: emissions trading and taxes. Among the key questions asked by the discussion paper are:

**What carbon pricing mechanisms will be most beneficial? What design considerations should be taken into account?**

Most often in the design of market mechanisms to price carbon, factors such as efficiency, revenue generation and allocation, emission reductions and social acceptability are identified as the relevant criteria. Legal and regulatory considerations are often given only cursory consideration, or not mentioned at all.

However, there are major differences in legal and regulatory complexities between the use of emissions trading and carbon fees or taxes. Clear and transparent rules are essential to the use by industry of emissions trading schemes (ETSs) as well as to the social acceptability of such regimes to the public. The following is a synopsis of the main legal and policy design issues that should be taken into account in considering the Ontario approach.

The achievement of carbon reductions through an emissions trading regime requires a strong and detailed regulatory system with clear rules, dedicated monitoring and demonstrable enforcement capabilities applied consistently across all jurisdictions in which it operates. Without a system of this nature, emissions trading regimes can be expected to suffer from many serious problems — not least of which would be no carbon reductions. In contrast, it is generally recognized that a carbon tax is much easier to design and implement, as well as to scrutinize for compliance, than emissions trading. Putting a further carbon-related fee or tax on fuel, for example, should be straightforward; fuels are taxed in proportion to carbon content and the necessary tax structure is already in place, since fuels are already subject to other taxes.

This difference does not mean that emissions trading should not be considered. In fact, both approaches may have their own strengths when used in different sectors, and could be used in a complementary manner to achieve overall carbon reductions.

In considering an emissions trading regime, however, the ILRP’s review demonstrates the importance of appreciating the range and degree of potentially significant administrative and legal complexities these entail, as well as the opportunities for fraud, scams and other manipulation that have occurred in such regimes. Unless these issues are recognized in advance and the emissions trading system is particularly designed to prevent these problems from arising in Ontario, the result could be a major lack of confidence and use by business and industry in addition to public skepticism, as well as little, if any, emission reductions.

2 There are examples of green patent cooperative initiatives being developed internationally (<https://webaccess.wipo.int/green/#wipo-int>), among transnational corporations (<http://ecopatentcommons.org/>) and sectorally (<https://www.cosia.ca/>).

3 World Trade Organization (WTO) member states are currently discussing “ways to eliminate trade barriers in the goods and services that can benefit the environment. Facilitating access to products and services in this area can help improve energy efficiency, reduce GHG emissions and have a positive impact on air quality, water, soil and natural resources conservation.” More details are available at the WTO Committee on Trade and Environment: [www.wto.org/english/tratop\\_e/envir\\_e/wrk\\_committee\\_e.htm](http://www.wto.org/english/tratop_e/envir_e/wrk_committee_e.htm).

Therefore, if Ontario decides to use an emissions trading regime, it will be vital that the chosen regime be efficient, can achieve emissions reductions in the necessary time frames and has appropriate revenue generation and allocation. Ontario will also need to commit to implementing it with an appropriate oversight structure, transparency and appropriate resources, enshrined in a legal framework that inspires the confidence of industry and business as well as the general public, in order to gain social acceptability. It will also need to avoid contravening international trade rules (such as the WTO). Appropriate design and implementation takes time, during which GHG emissions will continue unless other incentives such as a carbon fee or tax are also used.

### Legal and Regulatory Issues to Guide Consideration and Design of an ETS

Establishment of an ETS requires a strong and detailed regulatory system that includes a dedicated regulatory agency, clear rules, dedicated monitoring and enforcement applied consistently across all jurisdictions in which it operates.

Past reports by the Government of Ontario (2009, 18), as well as the Environmental Commissioner of Ontario (ECO) (2010, 27–30), recognize that a dedicated and strong regulatory authority is needed to carry out the essential tasks of an ETS, such as setting allocations, approving and validating protocols and projects, issuing offset credits or allowances, tracking emissions, overseeing trading activities, verifying reliability and security of data, and ensuring compliance.

Critical responsibilities for the agency include:

- establishing clear rules;
- developing and implementing measures to ensure accurate reporting and verification;
- enforcement capability, as well as demonstrable and successful enforcement activity, to discourage evasion and fraud;
- protection of confidential business information and data security; and
- harmonization with other reporting requirements.

The 2009 Ontario report recognized that:

Emissions reporting and good quality data are essential to support the development of a Cap and Trade system. Verification is a key component of most Cap and Trade programs to ensure the validity of data. Accurate data is essential in a Cap and Trade system because emissions will be

reconciled with allowances to assess and ensure compliance. The allowances also have value and financial implications; therefore, there has to be confidence in the emissions data. (Government of Ontario 2009, 23)

In 2010, the same point, that a “strong regulatory framework” is needed to make cap and trade work, was made by the Ontario environmental commissioner in his annual report: “tradable permit systems do not replace regulation; they work best when they are supported by strong regulatory frameworks” (ECO 2010, 5).

The ECO also advised that, “[t]he foundation of any trading system is the monitoring and reporting protocols employed to validate and verify the reductions claimed” (ibid.).

An Ontario ETS linked to other jurisdictions must anticipate, and be designed to overcome, significant problems documented in other jurisdictions, ranging from failure to reduce emissions through to serious fraud.

A number of serious ETS systemic problems have been documented in regimes that operate across national borders. One aspect of these systemic problems is encapsulated by the following comment in an INTERPOL report on carbon emission trading: “Carbon as an intangible asset leads to a separation between ownership of the investment project and the rights to trade the emissions that are offset. This makes tracing the origin of carbon credits more difficult than for other credits derived from physical commodities” (INTERPOL 2013).

Serious problems to be avoided in system design include the misuse of offsets and inappropriately ascribing value to carbon “reductions” — ones that would have occurred regardless of the ETS (i.e., worthless credit-creating projects).

The misuse of offsets can mean no carbon reduction actually occurs, thereby negating the essential purpose of using an ETS.

As one commentator has put it: “Carbon offsets are another fundamental problem with carbon trading. The European Union ETS is the biggest buyer of credits issued through the UN-backed Clean Development Mechanism [CDM]. By using offsets to meet emissions reductions targets, the purpose of capping emissions becomes obsolete. Companies can simply buy credits to pollute from so-called emissions reduction projects in the South, thereby eliminating the need to reduce pollution at source and, as extensive research has shown, exacerbate social and environmental problems for communities in the South” (Gilbertson 2011).



The misuse of carbon offset projects and credit-creating projects has already occurred in Alberta. In 2011, the journal *Nature* summarized these problems as follows:

Lax verification for carbon-offset projects has been a problem for several schemes. For the credit-creating projects to be effective at reducing overall greenhouse-gas emissions, the scheme operators are supposed to approve only projects that would otherwise not have gone ahead. The auditor-general criticized the Alberta Department of Environment and Water for allowing carbon credits for emissions-reducing activities that have become common practice. The Alberta report found a lack of standards for how agricultural credits were verified — not one of the credits the auditors checked could be confirmed. It also pointed out that there was no standardized, accurate method for measuring the emissions from oil sands tailing ponds, which store contaminated water, clay, sand and bitumen from oil sands processing. (Hoag 2011)<sup>4</sup>

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**The ETS design must minimize market inefficiencies and transaction costs, as well as uncertainties in rules and procedures.**

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A report on the European Union ETS cap-and-trade regime concluded it is vital that structural and regulatory issues relating to transaction costs and uncertainty in rules and procedures be overcome if carbon trading is to be adopted and continued to reduce emissions:

Transaction costs are a fact of life in every market; those that are incurred in the emissions market include legal fees, lost time, staff costs, and consultant costs. These costs result from the need to acquire information, seek out contract partners, negotiate trades, choose from among alternative options, and monitor and enforce outcomes.

Trading will cease when transaction costs exceed the cost savings that would be incurred from continued trading. In addition, transaction costs can inhibit the development of a liquid market, leading to uncertainty regarding the availability of permits in the future and a preference among businesses for self-sufficient compliance with emissions limits.

Uncertainty in the emissions trading market is the result of several factors, including unclear rules and ongoing changes in the system's institutional design, inherent market uncertainty, and technical uncertainty regarding the benefits of emissions abatement investments.

Unclear rules and procedures, as well as the potential for changes in policy design, generate considerable uncertainty in permit trading. The ETS in particular is plagued by this type of uncertainty due to its international character, which has always involved political negotiation.

Uncertainty regarding medium- or long-term aggregate abatement targets prevents businesses from anticipating the long-term price of carbon, which makes it difficult for them to decide which technologies to pursue or to formulate a long-term carbon strategy.... Finally, uncertainty may result from monitoring techniques of production processes and abatement measures....

Uncertainty from any of these factors can dissuade businesses from making effective investment and technology decisions. (Matisoff 2010)

These issues, already experienced in Europe, should be considered by Ontario in determining if it ought to adopt an ETS and, if an ETS is adopted, how to design it to prevent these issues occurring in Ontario.

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**The ETS design must minimize, if not prevent, serious risk of market manipulation, gaming, fraud, hacking and serious criminal infiltration.**

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The serious nature of the risk of fraud, manipulation and other criminal activity that has already been experienced in carbon-trading regimes, and the sophisticated and complex regulatory systems that must be put in place to try to minimize these significant problems for carbon trading, are indicated in two recent reports, one by INTERPOL, another by the Emmett Institute on Climate Change and the Environment, UCLA School of Law.

However, we start by referencing observations by Friends of the Earth, Australia: "The EU ETS is a concrete example on how the use of market-based solutions to address climate change is delaying real change towards a carbon-free future while allowing business as usual to continue. Trading a virtual commodity on a market is a dangerous and costly distraction from the real task of reducing

<sup>4</sup> The Alberta auditor general's report can be found at [www.oag.ab.ca/webfiles/reports/OAGNov2011report.pdf](http://www.oag.ab.ca/webfiles/reports/OAGNov2011report.pdf).

greenhouse gas emissions at source and keeping fossil fuels in the ground" (Gilbertson 2011).

This critique raises a concern relevant to the choice of market mechanism to reduce carbon use and emissions. The public has experienced and can readily understand that increased fees or taxes on goods, such as gasoline, can be effective in dissuading them from driving cars; therefore, they can understand why a tax or fee is a credible mechanism for decreasing both emissions and the development of carbon reserves. Conversely, they have a difficult time understanding how a regime that allows for "trading" will cause a reduction in either emissions or the exploitation of carbon reserves.

INTERPOL (2013) concluded there are serious risks of fraud and criminal activity permeating a cap-and-trade system and that these risks are compounded when trading occurs across international jurisdictions, as monitoring capacity is often diluted, making "the illegal recycling, double counting and sale of non-existent or stolen carbon credits much more viable."

The report, prepared with the assistance of a number of national environmental agencies, including Environment Canada, has among its important findings the following:

Unlike traditional commodities, which at some time during the course of their market exchange must be physically delivered to someone, carbon credits do not represent a physical commodity but instead have been described as a legal fiction that is poorly understood by many sellers, buyers and traders. This lack of understanding makes carbon trading particularly vulnerable to fraud and other illegal activity. Carbon markets, like other financial markets, are also at risk of exploitation by criminals due to the large amount of money invested, the immaturity of the regulations and lack of oversight and transparency.

In broad terms, the illegal activities identified include:

- (i) fraudulent manipulation of measurements to claim more carbon credits from a project than were actually obtained;
- (ii) sale of carbon credits that either do not exist or belong to someone else;
- (iii) false or misleading claims with respect to the environmental or financial benefits of carbon market investments;

(iv) exploitation of weak regulations in the carbon market to commit financial crimes, such as money laundering, securities fraud or tax fraud; and

(v) computer hacking/ phishing to steal carbon credits and theft of personal information. (Ibid.)

A report called *Rules of the Game: Examining Market Manipulation, Gaming and Enforcement in California's Cap-and-Trade Program*, published by the Emmett Institute on Climate Change and Environment, also demonstrates the extensive and considered planning, legislative detail, and legal and regulatory oversight and enforcement required for an ETS designed to be relatively immune from "gaming" and other types of manipulation and fraud (Cutter et al. 2011).

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**The design of an ETS (or a carbon tax) must avoid contravening international trade rules.**

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Another regulatory complexity that especially needs to be considered in the context of an ETS, and possibly also in a carbon-tax regime, is the concern to not contravene WTO rules.

The International Bar Association (IBA) summarizes the issues in its report *Achieving Justice and Human Rights in an Era of Climate Disruption*:

Where domestic climate change policies impose costs on domestic production that adversely impact their international competitiveness, states may wish to supplement domestic policies with provisions that "aim at leveling the playing field by imposing the same or similar costs on *imports*, as domestic climate policy imposes on *domestic* production." These measures are designed to combat a phenomenon known as carbon leakage, whereby carbon-intensive industries based in countries with stringent climate change regulations seek to shift production or to relocate to countries with lower standards, which can result in an overall increase in GHG emissions.

However, such "competitiveness" provisions may conflict with the state's obligations under the WTO agreements and, therefore, must be carefully designed so as to comply with WTO requirements. Moreover, the ambiguity surrounding the scope of some WTO rules can generate uncertainty as to the WTO-consistency of states' climate change policies, contributing to a regulatory "chilling effect."

As such, the WTO regime presents potential obstacles to states' domestic climate change regimes...

...Importantly, states are prohibited from both direct and *indirect* discrimination. Direct discrimination is exemplified by a measure expressly targeted at the origin of the product, for example, a tariff or ban directed at the products originating from a state in an attempt to induce that state to comply with climate change measures.

Indirect discrimination, on the other hand, refers to an apparently "neutral" measure, which does not overtly distinguish on the basis of the origin of the product but that has the *effect* of disadvantaging products originating from certain countries in relation to others. For example, fiscal or regulatory measures applied to imported products at the border to equalise or compensate for climate change costs borne by domestic products (known as "border carbon adjustments") must be carefully designed so as not to discriminate, in effect, against imported products. (IBA 2014, 70-71)

The International Emissions Trading Association (IETA) has recognized that dealing with trade rules in the context of a trading regime as opposed to a tax or regulatory mechanism has "no strict precedent":

Within the context of the WTO, there are a number of trade-related measures that can be taken to ensure the competitiveness of energy-intensive and trade-exposed sectors while still preserving domestic climate regulation. In the future, governments may use border tax adjustments (BTAs) to protect emissions intensive sectors, apply counter-vailing duties (CVDs) to offset de facto subsidies created by the free allocation of allowances or appeal to GATT Article XX to ensure the conservation of exhaustible resources. Furthermore, it is imperative that competitiveness provisions adhere to the non-discriminatory principles of most-favored-nation status and national treatment. However the WTO has never been faced with these differences being expressed in a trading regime as opposed to regulation or tax. While there is no strict precedent for dealing with a price rather than a tax, there is no logical reason why this should be any more difficult and the

trading community needs to engage with the trade community on technical levels to ensure the issue is teased out. (IETA 2015)

In summary, the design of new systems must clearly take into account these international trade rules.

## Comparing a Carbon Tax to an ETS in Terms of Ease of Design, Implementation and Oversight

The extent to which one method compared to the other may be simpler to design, implement and oversee should be a relevant criteria in choosing the approach to putting a price on carbon, or at least in assigning where each approach may work best and/or in assigning a dominant role to one approach rather than the other.

A number of commentators agree that a carbon fee or tax has a key advantage over a cap-and-trade system in terms of ease of design and implementation.

In 2014, Nicholas Rivers, Canada Research Chair in Climate and Energy Policy, University of Ottawa, summarized these advantages, some of which are as follows:

- Carbon taxes are transparent and simple to design.
- Legislation to support a carbon tax could be short and simple. In a recent interview, Henry Jacoby, an economist at the Massachusetts Institute of Technology, says that carbon tax legislation could fit on a single page. Actually implemented carbon tax legislation runs somewhat longer than a page, but both in theory and in practice a carbon tax is extremely straightforward to design: fuels are taxed in proportion to carbon content. The necessary tax infrastructure is already in place, since fuels are already subject to other taxes.
- In contrast, other types of policies to reduce emissions are much more complex. Canada's regulations on passenger and heavy duty vehicles are long and difficult to understand, and the (failed) US cap-and-trade bill of 2009 famously was well over 1,000 pages long. The simplicity of a carbon tax makes it easy to understand, both for individuals within the country — which facilitates engagement and understanding — and for other countries — which makes it straightforward to explain the stringency of policy being pursued to other countries. British Columbia is widely considered a leader on climate change primarily as a result of



implementing a carbon tax, even though other policies it has implemented may contribute as much or more to recent emission reductions.

- Carbon taxes minimize information requirements.
- A carbon tax is a market-based instrument, meaning that it creates incentives for market participants to reduce emissions. When firms and individuals face a cost for reducing emissions, they can make informed choices to reduce emissions that are both in their own best interests and collectively achieve reductions in emissions. Government's role is limited to setting an appropriate price for emissions, and monitoring and enforcing the policy. (Rivers 2014)

Ecojustice has made similar observations:

In theory both a carbon tax and a cap and trade system are capable of delivering a significant and sustained reduction in GHG emissions across a broad spectrum of sectors. However, a carbon tax has a key advantage over a cap and trade system.

Crucially, it is much easier to implement a carbon tax, therefore allowing for faster introduction by government (as it can rely on existing administrative structures for taxing emissions). That is what the government of British Columbia did in 2008, moving from the announcement to the implementation of its carbon tax all within the same year. While it is theoretically possible to implement a cap and trade regime with similar swiftness, experience has shown that cap and trade systems for GHGs are highly complex, heavily influenced by vested interests, and require an extensive regulatory regime. For example the U.S. Congress Waxman-Markey cap and trade regulation bill was 1427 pages in length. By contrast, the legislation establishing the BC carbon tax is under 50 pages long. (Ecojustice 2015)

### A Municipal Role in Market-based Carbon Reduction Mechanisms?

A further question to consider is whether Ontario should authorize its municipalities to engage in market-based carbon reduction mechanisms, such as ETS and congestion pricing, or to participate in regional, national and international regimes for this purpose. Although this

is not referenced in *Ontario's Climate Change Discussion Paper 2015*, there may be opportunities at the municipal level of government to develop market-based approaches to reduce carbon emissions. Given that it is the province that is seeking input on opportunities to reduce carbon emissions — and because municipalities are, legally speaking, “creatures of the province,” having only such legal authority as the province provides — it is appropriate that the province recognize the willingness and capacity of municipalities to implement such measures, and consider providing them with the clear legislative authority to do so.

Some major cities, such as Tokyo, Tianjin, Rio de Janeiro, Shanghai and São Paulo, have implemented emission-trading programs. Others, such as Vancouver, Montreal and Los Angeles, have been examining using emission trading or congestion-pricing approaches. The World Bank has studied some of these municipal initiatives and has encouraged them (World Bank 2010a). For example, Tokyo has a sophisticated emissions trading regime and the results in Tokyo are highly positive (World Bank 2010b).

Researchers at the University of Ontario Institute of Technology (UOIT) and University of Toronto (UofT) have advanced the concept that an emissions trading program for a larger Toronto-focused urban area, as defined under the Places to Grow Act, should be established, with emissions trading permitted with Canadian cities as well as cities in other countries.

As already noted, from a regulatory governance perspective, one of the major issues with ETS programs is the need for a complex regulatory system to prevent misuse, fraud and manipulation. The joint UOIT/UofT submission to the Province of Ontario (Hoornweg et al. 2015), based on the studies carried out by the World Bank, suggests that these issues would likely be less significant when implemented at a municipal level.

Ontario should consider empowering Ontario municipalities to take an appropriate role to implement emissions trading, with assistance and oversight by the province. Further, Ontario could work with municipalities to establish acceptable ways for some individual cities or grouping of municipalities to establish congestion-pricing mechanisms that would improve municipal air quality and encourage use and development of energy efficient transportation methods.

### SCIENCE AND TECHNOLOGY

*The role of IP legal knowledge mobilization in the commercialization of low-carbon technologies*

Science and technology play a critical role in finding innovative solutions to address the climate change challenge. Accordingly, in order to encourage the success

of low-carbon technologies that promote more efficient energy use, one must consider how best to facilitate the dissemination and acquisition of critical IP legal knowledge in order to increase chances of successful commercialization of those technologies. *Ontario's Climate Change Discussion Paper 2015* poses the following question:

**How can Ontario better support early stage research that could lead to the future commercialization of technologies that will provide economic benefits while also helping Ontario achieve its carbon reduction goals?**

Commercialization is not a direct outcome of research. In a globalized, connected and competitive world, if innovation is not strategically managed and protected, the opportunity for commercialization can easily be squandered, lost or stolen. The commercialization process requires different support mechanisms from those considered optimal for the creation of new ideas. Ontario's commercialization infrastructure currently takes two general forms:

- technology-transfer offices (TTOs) to help commercialize university faculty research; and
- the establishment of entrepreneurship centres, incubators and accelerators throughout the post-secondary sector and their communities in Ontario. These are designed to provide business development support and expertise to ensure that businesses are formed around new technologies so that they can be brought to market.

One fundamental weakness in this commercialization infrastructure relates to what we have termed IP Legal Knowledge Mobilization, operating at two interconnected levels:

- the provision of affordable IP legal services and advice at the earliest stages of the business venture; and
- the provision of sophisticated IP strategy and IP management services and advice throughout the entire life of the venture to manage complex IP portfolios, especially as the venture grows beyond domestic borders and engages at the international level.

At the first level, early stage start-ups in any new technologies require specialized IP legal services. Ideally, these services should be delivered to them on a pro bono basis. Currently, IP legal services are being provided, but in an ad hoc manner, and there is insufficient coverage throughout the province. The emphasis is being placed on raising awareness among start-ups through workshops, webinars and the like. Lawyers and law firms might sometimes also provide free informational sessions.

While these initiatives are fine places to start, they stop short of getting to what is more essential, namely, the provision

of transactional legal services and strategic IP advice. Law firms are hesitant to commit to start-ups because they are clients who are often unable to pay for legal services. As well, few of the law firms have lawyers that are sufficiently well versed with IP to provide strategic advice to spur domestic and international commercialization.

If the Province of Ontario is committed to shoring up its commercialization infrastructure to support climate-friendly technological innovation, it needs to focus on these issues and develop ways of facilitating greater access to these essential legal supports. One possibility is to encourage and adequately resource Ontario law schools to establish IP law clinics to provide transactional support to start-ups throughout the province, similar to an initiative under way at the University of Windsor, Faculty of Law (Law, Technology and Entrepreneurship Clinic) and the CIGI ILRP International Intellectual Property Law Clinic that operated at the Communtech hub in Kitchener during the summer of 2014.

In addition, although fairly small in number and concentrated in the larger Canadian centres, the IP bar in Canada should be encouraged to provide early-stage pro bono transactional work to clients, similar to initiatives undertaken in the United States under the United States Patent and Trademark Office (USPTO), through its Nationwide Pro Bono Program.<sup>5</sup> Finally, the province could consider a menu of funding possibilities to assist clean-tech start-ups with their IP protection strategies, including funding their first patent, similar to an initiative attempted in Quebec in 2014 under its National Research and Innovation Policy (Gouvernement du Québec 2013).

At the second level of capacity building, TTOs and other key players within the commercialization eco-system must have the right skill set and have greater access to IP strategic advice that goes beyond basic IP legal concepts. They must have access to expertise specifically relevant to commercializing climate-friendly technological innovation. The individuals who staff the TTOs need to have relevant industry experience, need to be appropriately incented to deliver on optimal outcomes and should be able to deploy their limited resources effectively, either through the adoption of uniform best practices or potentially by pooling resources.

Currently, the system of incentives in the post-secondary sector is driven by funding that creates multiple "disconnects" throughout the system. Examples of the tensions inherent within the commercialization system include:

<sup>5</sup> The Nationwide Pro Bono Program is an initiative aimed at bringing pro bono legal assistance to under-resourced inventors and small businesses across the United States. More information can be found at [www.uspto.gov/patents-getting-started/using-legal-services/pro-bono](http://www.uspto.gov/patents-getting-started/using-legal-services/pro-bono).

- Funding metrics that are based on patenting rates without a thorough examination of the uses to which the patented product or process is put. The patent becomes the end in itself, rather than the means to a greater social good.
- University tenure and other career assessments generally do not consider patents or other commercialization initiatives as relevant for career advancement or, if they do, the patent itself becomes the metric for assessment rather than the use to which the patent is put.
- Very short provincial funding windows to establish entrepreneurship centres or innovation hubs both on and off campus. This drives the need to look for short-term “wins” that may not have any significant long-term impact.
- Lack of standardized models for licensing and other IP legal transactions across the post-secondary sector that affect efficiency in the process. Similarly, even within institutions, a lack of openness and transparency in the negotiation processes with researchers leads to missteps and significant issues of trust between researchers and the post-secondary commercialization infrastructure.

These identified gaps in nurturing innovation suggest that a systematic and independent review of commercialization infrastructure and practices should be undertaken with a view to determining whether they are actually achieving the beneficial goals sought by the province. Consideration should be given to whether a reworked system would have a greater impact in helping to attain commercialization objectives.

The urgent need to find solutions to the many challenges of climate change and to transform to a green economy only underscores the importance of nurturing innovation so that it becomes commercially viable. If the Province of Ontario aspires to building a green economy, it will need to create a robust eco-system for climate-friendly technological innovation that provides targeted legal and strategic supports for commercialization.

## EMERGING ISSUES IN INTERNATIONAL AND TRANSNATIONAL LAW RELATED TO CLIMATE CHANGE: INTERNATIONAL ENVIRONMENTAL LAW CONSULTATION WORKSHOP

### CONFERENCE REPORT

February 18, 2015, 8:30 a.m.–9:00 p.m.  
Toronto, Canada

### ACRONYMS

CDM	Clean Development Mechanism
CIGI	Centre for International Governance Innovation
COP	Conference of the Parties
ETS	emissions trading scheme
FLEGT	Forest Law Enforcement, Governance and Trade
GHG	greenhouse gas
ICJ	International Court of Justice
ILRP	International Law Research Program
INDC	intended nationally determined contributions
IP	intellectual property
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development
REDD	Reducing Emissions from Deforestation and Forest Degradation
SDSN	Sustainable Development Solutions Network
UNFCCC	United Nations Framework Convention on Climate Change
VPA	voluntary partnership agreements
WRI	World Resources Institute

### Introduction

The International Law Research Program (ILRP) of the Centre for International Governance Innovation (CIGI) held its first multi-stakeholder international environmental law consultation workshop on February 18, 2015. Under Chatham House Rule, in a round table format, there were 29 participants, with 19 making introductory comments. Participants represented the following stakeholder groups: think tanks, private legal practice, public sector (municipal, provincial and federal), non-governmental organizations (NGOs), Canadian and foreign university faculties of law and other relevant faculties, private sector and scholarship students.

### SUMMARY OF RECOMMENDED AREAS OF FUTURE INTERNATIONAL LAW RESEARCH

- supporting the United Nations Framework Convention on Climate Change (UNFCCC) global framework
- methods for domestic and transnational implementation
- regulation of geo-engineering
- post-Paris strategies
- compliance and performance management
- mechanisms to reduce forest-related emissions
- national discussion on Canada's intended nationally determined contributions (INDCs)
- climate governance issues and role of subnationals
- relative merits of a carbon tax and other market mechanisms
- climate change risk assessment and management best practices
- legal recourse mechanisms for mitigation and adaptation and to compensate for loss and damage
- human rights and climate change
- eco-innovation and technology transfer

Research should focus on **supporting the UNFCCC global framework** and only support private and subnational initiatives that ultimately strengthen the global framework. To the extent possible, research should explain how existing international trade, human rights and environmental law can be interpreted as complementary and not opposed to climate change law. It would be useful to develop short information pieces (primers) on key elements of the UNFCCC infrastructure. Researchers could work with global partners to gather examples and develop best practices regarding **methods for domestic and transnational implementation**. Research could focus on challenges. Longer-term research could consider how international key elements of the emerging draft



agreement and the related implementation **regulation of geo-engineering** could be accomplished using existing and new mechanisms (for example, developing a research registry or clearing house to improve transparency about research undertaken and results achieved), and consider **post-Paris strategies** and even contemplate the successor to the UNFCCC.

Research could focus on the role of international law in the design of a Paris agreement that addresses **compliance and performance management** and encourages linkage and coordination among INDCs, in particular those dealing with regional, national and subnational emissions trading mechanisms, including design options to connect non-state actors, public actors and the UNFCCC to strengthen transparency, compliance and verification of states' performance. Research could focus on global regulatory **mechanisms to reduce forest-related emissions** in developing countries (for example, comparing the efficacy of Reducing Emissions from Deforestation and Forest Degradation [REDD] and Forest Law Enforcement, Governance and Trade [FLEGT] in strengthening climate change-related forestry governance).

Research could contribute to a **national discussion on Canada's INDCs** and adopting the goal of "net zero" (phasing out carbon emissions) by 2050, already supported by many countries. Such research should link to other researchers in Europe, the United States and India (for example, World Resources Institute [WRI], Belfour, Harvard University and Arizona State University) for exchange and leveraging of ideas. Following the release of the United Nations' spring 2015 report from its Deep Decarbonization Pathways Project, researchers could examine how international and transnational law can assist in achieving deep decarbonization for Canada. Research could consider whether allocation of the right to extract fossil fuels may be a feature of future climate change law.

Research could examine **climate governance** issues: how dynamics of centralized authority, voluntary compliance, like-minded "clubs" and international rivalries contribute to or detract from achieving an effective global climate change framework agreement; how international norms can be used as litigation tools as well as political mobilization tools; and how voluntary regimes can mature into ones that legally bind (for example, the New York Declaration on Forests — released at the 2014 UN Climate Summit — is an initiative by private-sector interested actors that could evolve from soft law to more binding norms). Research could consider the **role of subnationals** (provinces and municipalities) in mitigation and adaptation, and how they contribute to international discourse. The Ontario government's Pan-American Climate Summit (Toronto 2015) would be an excellent opportunity to do so. Researchers could prepare a submission in response to *Ontario's Climate Change Discussion Paper 2015*.

Researchers could convene an international and subnational discussion to examine **relative merits of a carbon tax and other market mechanisms** (cap and trade), including discussion on fraud and verification. Research could focus on how domestic and foreign subnational and national carbon markets integrate and link to international markets. Research could address how to design carbon emissions trading schemes (ETSs) that are resistant to manipulation and criminality.

In the short term, research on the linkages among developing national climate change risk assessment and management best practices; existing international, transnational and national **legal recourse mechanisms; and loss and damage** under the Warsaw International Mechanism, could contribute to the June 2015 meeting in Bonn to help dissipate the logjam between developed and developing states (and NGOs) regarding inclusion of loss and damage in the Paris text. The aim would be to deepen research into climate change risk assessment, study how existing legal recourse, dispute settlement and adjudication mechanisms can be used to support mitigation and adaptation and compensate for loss and damage and propose additional solutions (for example, an international environmental court). There could be an event with small island and Arctic states and other key negotiators interested in these questions.

Research could further elaborate how securities reporting regulations, the Ruggie Principles,<sup>6</sup> John Knox's analysis of **human rights and climate change** and such standards as the Organisation for Economic Co-operation and Development (OECD) Guidelines on Multinational Enterprises are resulting in adoption of improved environmental responsibility and more accurate and measurable transparency in the extractive industry, other heavy greenhouse gas (GHG)-emitting industries, forestry, agriculture, transportation and the insurance underwriting business. Researchers could explore the intersection between the UNFCCC process and the establishment of the post-2015 sustainable development agenda and how international law can help to operationalize those sustainable development goals relevant to human rights, development and climate change. Researchers could explore how to strengthen administrative and human rights law related to the administration of the Clean Development Mechanism (CDM) and the Green Climate Fund, and consider how measures to suppress peaceful protest for alleged security reasons could interfere with mobilizing concerned citizens.

<sup>6</sup> The United Nations Guiding Principles on Business and Human Rights are informally known as the Ruggie Principles due to their authorship by Harvard professor John Ruggie, the UN Special Representative for Business and Human Rights, who conceived them and led the process for their consultation and implementation.

Research could focus on how existing multilateral, regional and bilateral trade agreements, bilateral cooperation and policy experiments can facilitate **eco-innovation and technology transfer** to support climate change mitigation and adaptation, and engage with the International Centre for Trade and Sustainable Development to develop international policy approaches to promote climate-friendly technologies.

In conducting international law research on climate change, the CIGI ILRP will lead and produce practical, balanced research that reflects the highest standards of international law expertise and draws on the knowledge and experience of public sector, private sector and academic experts. In order to pursue its research agenda, the ILRP will build partnerships with individuals and institutions with interest and expertise on these issues. This first consultation workshop was an excellent first step in identifying the salient themes and experts. A working group will be created to shape the research agenda. The ILRP welcomes feedback about working group membership and work plan.

## OBSERVATIONS FROM THE CONSULTATION WORKSHOP

The objective of the consultation was to receive guidance on whether and how the CIGI ILRP can make a significant contribution, leveraging the expertise and efforts of others who are active on climate change domestically and internationally.

There was discussion of the February 2015 meeting of the UNFCCC in Geneva; it was the last negotiating opportunity before the meeting that will work on the draft text for Paris 2015. The text is essentially the same as that agreed at the Conference of the Parties (COP) 20 in Lima, albeit expanded, including references to human rights as proposed by Chile. The key expectation is that developed countries such as Canada will be bringing forward their INDCs by March 31, 2015. Between now and June there will be informal subsidiary body meetings, at the discretion of the organizers (for example, a meeting in Lima, March 21-22, was focused on adaptation and loss and damage).

Referring to an observation made by the World Bank, *Ontario's Climate Change Discussion Paper 2015* notes that after 20 years of international negotiations we are using more energy, burning more fossil fuels and producing more GHG emissions than at any time in history (World Bank 2013). Workshop participants were asked to advise how the ILRP and its research partners can contribute to the UNFCCC process and other processes to deal with climate change in an effective and timely way.

A workshop participant noted that the INDCs are currently under discussion. One helpful initiative is Open Book,

released by the Washington-based WRI: "Open Book is a WRI initiative to enhance transparency of the INDCs, and will develop a comprehensive list of information for countries to provide when communicating their INDCs in 2015" (WRI 2015). It appears that Canada has not yet confirmed participation, but countries such as New Zealand and the United States have already indicated they will join. The text includes some reference to sanctions against those that do not submit their INDCs, although the language is vague.

## SESSION 1: INTERNATIONAL, TRANSNATIONAL, NATIONAL AND PRIVATE LAW FRAMEWORKS RELEVANT TO CLIMATE CHANGE

A participant noted a helpful paper by the Harvard Project on Climate Agreements that proposes that negotiators should focus on common definitions of key terms (Bodansky et al. 2014). There is also work being done on provision for registry and tracking mechanisms, and ongoing discussions on how to monitor and assess INDCs, including the role of non-state actors and the private sector in contributing to compliance mechanisms. The WRI initiative could facilitate comparison of performance. Non-state actors such as WRI and Germanwatch can contribute to building a compliance process, especially if we risk losing the opportunity to create a centralized, top-down compliance system. Germanwatch ranks Canada 58th out of 61 countries, among the lowest performers in terms of climate change performance and "the worst performer of all industrialised countries" (Burck, Martin and Bals 2014, 6). Canada is behind in its Copenhagen commitments and has not yet embraced the net zero concept.

A workshop participant said that at the Geneva meetings of the UNFCCC, carbon markets were an important subject of negotiations, but the conclusion was that markets did not necessarily have to be mentioned in the Paris agreement text in order to facilitate access to international trading regimes. References to trade sanctions were included in the text, but with constructive ambiguity. There is recognition that whatever comes out of the UNFCCC will have trade implications and therefore affect "common but differentiated responsibilities." Negotiations moved away from preoccupation with binding agreements and formal international compliance mechanisms. If done right, establishment, implementation and monitoring of the INDCs can be just as compelling as internationally predetermined targets. They can ensure as much transparency and allow as much peer pressure as an international compliance mechanism. Stakeholders will be able to assess whether publicly proposed INDCs are seriously implemented. For some it may seem like regression to go from the reporting compliance mechanisms of Kyoto to "sunshine methods" of transparency and peer pressure. However, non-state actors are demonstrating how they can help hold states to account in climate peer



review. The climate regime is embracing these more informal linkages — for example, on the UNFCCC website there are linkages to the bulletin of the International Institute for Sustainable Development, a non-state actor think tank; the bulletin reports on the state of negotiations. Another example is the NGO Traffic, which verifies state compliance with the Convention on International Trade in Endangered Species.

REDD was identified as an example of how private and public actors can generate learning and governance experimentation in climate change despite the absence of a global framework. With REDD, states were encouraged to move forward with national project experimentation, and the global rules are being discussed along the way, informed by experience. There were no deforestation-related targets. In contrast, the CDM created top-down rules, adopted during COP negotiations, and later these rules faced implementation problems, negative implications and ineffective schemes that required adjustment of the rules. Efforts to improve design for CDM rules are ongoing.

There are interesting questions about how to conceptualize the evolving global climate change framework agreement. Michael Greenstone, professor of energy policy at the University of Chicago, recently wrote a *New York Times* article on the voluntary versus binding nature of climate agreements, noting that motivation to comply or not is more important than the specific form of the agreements (Greenstone 2015).

It was noted that margin discussions at Geneva revolved around what would be the big deliverables from Paris. France seemed particularly interested in innovative suggestions about emissions accounting in the land sector. It would be worthwhile considering the relevance to Canada, as this could be one of the main Paris contributions.

Jeffrey Sachs (with the Sustainable Development Solutions Network [SDSN]) and Laurence Tubiana (with the Institute for Sustainable Development and International Relations) released an interim report in 2014 (UN 2014) and will be releasing the UN Deep Decarbonization Pathways Project report in spring 2015 to demonstrate how countries can contribute to achieving the globally agreed target of limiting global temperature rise to below two degrees. The SDSN press release states:

The 15 national pathways all demonstrate the importance of three pillars for the deep decarbonization of energy systems: (i) greatly increased energy efficiency and energy conservation in all energy end-use sectors (including buildings, transport and industry); (ii) the decarbonization of electricity, achieved by harnessing renewable energy sources such as wind and solar, as well as nuclear power,

and/or the capture and sequestration of carbon emissions from fossil-fuel burning; and (iii) replacing the fossil fuels that drive transport, heating and industrial processes with a mix of low-carbon electricity, sustainable biofuels and hydrogen. Countries have several options to achieve deep decarbonization, based on differences in the resource base and public preferences. (SDSN 2014)

A workshop participant suggested that preventing or regulating extraction may be the most effective way to control this problem, but this is antithetical to the usual approach to environmental problems.<sup>7</sup> Another participant noted that there has been considerable focus on the production aspect of carbon-heavy fuels, but it is also important to consider the aspect of consumption. Demand for fossil fuels is increasing with global economic and population growth. There was a query whether frameworks for controlling production should also address the appetite for consumption. Doing so might facilitate the creation of mechanisms to trigger accountability.

A participant commented that climate change has the four attributes of a “super wicked problem” (Lazarus 2009): it is urgent and time is running out (despite 20 years, we are still using more energy); the people trying to solve the problem are those creating the problem (consumption is crucial); there is no central authority (UNFCCC is weak on compliance and enforcement) and international relations rivalries will factor into the process; and policy responses discount the problem irrationally (postponement aggravates the problem). Slowing climate change and facilitating adaptation may give us more time and will prevent us from resorting to geo-engineering. Abundance of fossil fuels is a key aspect of the issue, so frameworks to keep fossil fuels in the ground must be a priority in terms of policy response. The legal framework should be modified to remove subsidies that encourage extraction and use of fossil fuels. The focus should be on slowing down climate change, as this will also ease the adaptation agenda. Consideration could be given to a global auction of rights to extract fossil fuels.

Because the Canadian government is not playing a leadership role, one cannot have high expectations for positively impacting the Paris UNFCCC process. It might be useful to develop alternative approaches and focus on areas where Canada has more credibility, for example: studying climate change and Arctic governance; developing a legal framework for geo-engineering to manage enthusiasm for scientific fixes (developing a regulatory approach would add value because the potential consequences of geo-engineering are incalculable and there is no regime to

<sup>7</sup> For support of the idea of extraction regulation, see George Monbiot in *The Guardian*: [www.theguardian.com/theenvironment/2015/mar/10/keep-fossil-fuels-in-the-ground-to-stop-climate-change](http://www.theguardian.com/theenvironment/2015/mar/10/keep-fossil-fuels-in-the-ground-to-stop-climate-change).

govern even small-scale experiments); studying climate governance and trade rules; and, finally, drawing on Canadian financial expertise to create public and private systems of incentives and disincentives to assist the developing world to make the transition to a low-carbon economy.

## SESSION 2: CONTRIBUTION OF SUBNATIONAL ENTITIES

A workshop participant noted that at Lima, COP 20 municipalities were given a stronger voice and it was evident that in the Americas there has been at least as much, if not more, leadership on addressing climate change at the subnational level as at national levels. Municipal and other subnational climate change initiatives have been among the most effective in the last 20 years. This is because the impact of climate change is felt municipally (for example, at the level of infrastructure for roads and stormwater systems), and the crucial policy levers (such as urban planning, transit, building codes and energy generation) are at the municipal level. There is already a pool of organizations around the world aggregating these local initiatives to strengthen their voices, both in Canada and worldwide. The Federation of Canadian Municipalities Partners for Climate Protection initiative is more than 15 years old. Ontario is an interesting test case to study how to link domestic and foreign subnationals and integrate them into a global legal framework.

With more national and subnational carbon-pricing regimes, national governments will have to consider promulgating border adjustment mechanisms to level the playing field between domestic and foreign industries. There is a way to do this that is consistent with international trade and investment commitments, specifically the requirement to give national treatment. Similarly, incentives to develop a green economy have to be consistent with international trade and investment law. Reference was made to trade disputes concerning Ontario's green energy program and Quebec's ban on fracking. Since coal is the worst source of GHGs it would make sense to develop trading rules that facilitate coal users converting to cleaner sources of fuel.

Ontario has already undertaken perhaps the largest single action in Canada (perhaps the world) in reducing emissions by phasing out coal-fired electricity generation. This is a way of driving transformation in the economy. Globally, however, coal remains a huge challenge to overcome. In the developing world, electricity is needed to lift people out of poverty and 80 percent of electricity generation around the world is from coal. Even within Canada there are significant differences of viewpoint and interest regarding continued extraction of fossil fuels. In Ontario, where we live and how we work determine 80 percent of our emissions, with 34 percent of emissions now coming from transportation. A query was raised as to

whether Ontario needs a carbon-trading system to remain competitive. Another question was raised as to whether decentralized electricity generation and provision on the one hand, a globally connected grid based on solar and wind power on the other, or a combination of the two, is the better approach to creating sustainable prosperity.

## SESSION 3: ROLE OF CIVIL SOCIETY AND INDIGENOUS PEOPLES

There are many aspects of climate change and land use planning (agriculture, forestry, resource extraction or energy infrastructure projects) that give rise to the need for prior informed consultation and consent of indigenous peoples. Workshop participants agreed that it made sense to collaborate with other organizations actively engaged in researching these issues (for example, the Centre for International Sustainable Development Law, the Centre for International Forestry Research and the International Centre for Trade and Sustainable Development).

A participant observed that there is enthusiasm about framing climate change as a human rights challenge and thereby contributing to the UNFCCC negotiations. Human rights law offers authoritative norms and an existing institutional framework. The Inuit experience before the Inter-American court was disappointing and there is little evidence that it led to any change in perception among the Inuit about the issue of climate change or their rights. Human rights could be useful to tailor climate change mechanisms such as REDD in a way that respects human rights in general and indigenous rights in particular. For example, human rights activists' mobilization around REDD led Indonesia to advance indigenous rights more than any other scheme specifically designed to protect indigenous rights. Thus, climate change mechanisms may provide top-down (World Bank and multilateral development banks) and bottom-up (activist) opportunities to persuade governments to take human rights and indigenous rights seriously. Contrary to some expectations, the carbon marketplace itself also favoured REDD projects that protected human rights.

REDD entered the climate negotiations because deforestation and land degradation are significant sources of GHG emissions in many developing countries with weak domestic governance systems. The international community needed to find effective ways to help developing countries promote domestic governance reform and make realizable international pledges to reduce forest-related emissions. Despite billions invested in governance reform initiatives using bilateral and multilateral development agreements (for example, the Canadian International Development Agency, the United States Agency for International Development and the World Bank), improvements in governance indicators have been negligible. REDD was originally designed using

financial incentives to drive behavioural change: private actors would directly give financial incentives to those local actors engaged in projects to reduce deforestation, and they would only pay based on proven environment services performed. After 10 years of REDD, there are 58 countries still building the minimum domestic capacity to make them ready for REDD, i.e., to allow them to enter carbon markets to finance forest conservation efforts in the future. It is not clear that the economic experiment is working. An alternative approach is the European Union's FLEGT, under which European countries use trade incentives to lure forest-rich developing countries into signing voluntary partnership agreements (VPAs) as part of bilateral trade agreements. By signing VPAs, developing countries agree to create domestic governance systems (including multi-stakeholder committees and independent verification of compliance) in the forestry sector to impede illegal timber from entering European markets. Research comparing the efficacy of REDD and FLEGT would be useful in strengthening forestry governance related to climate change.

It was noted that the issue of loss and damage (the Warsaw International Mechanism) is a source of disagreement between developed countries, which view this as a matter of adaptation, and developing countries, which view it as a matter of reparation. This disagreement is unlikely to be resolved by COP 21. To achieve climate justice at the international level, there is a need to adopt some kind of compensation fund/mechanism. Even if some kind of mechanism is included in the Paris text there are details of funding, transparency, accountability, participation and due process to be addressed. It was suggested that because there are already references to loss and damage in the draft convention that will be legally binding if the convention is adopted in Paris, it might be prudent to avoid a fight that could prove to be a deal-breaker.

The current discussions about the post-2015 sustainable development agenda will set the trajectory for sustainable development efforts for many years to come. The development agenda presents opportunities (such as including human rights and indigenous perspectives) and risks (such as the co-option of funding by business interests masquerading as climate change projects), and should be carefully monitored.

## WORKING LUNCH

Participants considered that the ILRP should do the following: tap into activities being led internationally by the UNFCCC and locally by the Province of Ontario to add useful research, such as on the advantages and disadvantages of a carbon tax and other market mechanisms; aim to bridge the academic and practical worlds by providing easily digestible information on key international law issues related to climate change; and do research on how the issue of loss and damage could impact

Canada and Ontario, considering what interim steps could support the development of a loss-and-damage mechanism in the future. Participants considered it important to try to address the international embarrassment arising from Canada's positions on climate change.

## SESSION 4: ROLE OF BUSINESS AND INDUSTRY

A workshop participant observed that securities regulation by the Ontario Securities Commission and the US Securities Exchange Commission requires listed corporations to disclose material events and trends, including direct and indirect effects (including GHG emissions) and potential impacts of extreme weather. In the United Kingdom, since 2013, corporations have to report on climate change. Hong Kong requires sustainability reporting. Listed companies already disclose all their oil deposits, but state-owned corporations may not be listed and thereby avoid reporting requirements. As investors become more interested in carbon divestment and stranded carbon assets, there is a pressing need to strengthen regulatory cooperation and data collection so that standards and measurements can be compared internationally.

The Ruggie Principles, which are broader than securities regulations, are not so much about disclosure to investors, but about disclosure to and engagement with relevant stakeholders. Ruggie's three pillars are: that states should protect human rights; that business should respect human rights; and that the state and business should provide judicial and non-judicial remedies. These have been incorporated into the OECD Guidelines on Multinational Enterprises (revised in 2011 to explicitly reflect this), the International Finance Corporation performance standards on environmental sustainability and the Global Reporting Initiative. John Knox, the first independent expert appointed by the UN in 2012, is characterizing environmental rights as human rights, relating to the enjoyment of a safe, clean, healthy and sustainable environment. Business has a role to play in addressing human rights and climate change.<sup>8</sup>

## SESSION 5: GREEN TRANSITION, INNOVATION AND RESILIENCE

A workshop participant suggested that a comparative study of different forms of carbon pricing (carbon tax, cap and trade, sectoral regulation) was needed and should consider feasibility, complexity, efficiency, effectiveness, overall societal costs, implementation costs, distributional impacts and fairness. Carbon taxes have major strengths — economy-wide impact, highly efficient (at least when compared to a cap-and-trade regime), administratively feasible (relatively easy to integrate) — but their weakness is their visibility to voters.

<sup>8</sup> See the IBA report on climate justice: [www.ibanet.org/PresidentialTaskForceClimateChangeJustice2014Report.aspx](http://www.ibanet.org/PresidentialTaskForceClimateChangeJustice2014Report.aspx).



Cap and trade is less visible than a carbon tax, with costs left to final emitters and embedded in prices. Its complexity allows for adaptability of different interests, but no one has yet designed an ETS that works as intended: carbon prices keep collapsing, and impacts are limited to the sectors targeted (i.e., big final emitters). It was noted that Quebec is anxious to have a partner in the carbon-trade regime, and may lobby Ontario to adopt a grand bargain, in exchange for access to hydro imports from Quebec. Sectoral regulation has a high certainty of outcomes and compliance but its weakness is that it is limited to the target sector, and can generate regional and sectoral regulatory conflict.

Nobel Prize-winning political economist Elinor Ostrom suggested that grassroots leadership was needed to get political support for sustainable growth.<sup>9</sup> She became convinced that cities were the answer for sustainable development. Moises Naim's book *The End of Power* discusses the diffusion of power. Cities are emerging as important players and, despite governance challenges, they are well placed to address climate change. Large cities can have emissions cap-and-trade systems, and can trade with each other if the markets are connected. The World Bank is working on this. There was some skepticism about the risk of fraud and graft, as city governments have been susceptible to corruption. The suggestion is that the inventory of GHG emissions is highly knowable within a city as compared to an international market but this does not address the risks of trading between foreign cities. It was proposed that six major international cities should try this. To count the city's GHG emissions, "scopes" were developed by WRI and World Business Council Sustainable Development to avoid double counting: Scope 1 includes all emissions in Toronto; Scope 2 includes emissions generated in Toronto but used outside; and Scope 3 includes embodied emissions imported and used in the city. It was noted that integrating markets is complex, and even though Quebec and California have the same standards, integration of their markets is taking years. It would be best if the international negotiations yielded common standards for municipalities that all cities could follow to facilitate intercity trading.

<sup>9</sup> Ostrom (1990) identified eight design principles of stable local common pool resource management: clearly defined boundaries (effective exclusion of external un-entitled parties); rules regarding the appropriation and provision of common resources that are adapted to local conditions; collective-choice arrangements that allow most resource appropriators to participate in the decision-making process; effective monitoring by monitors who are part of or accountable to the appropriators; a scale of graduated sanctions for resource appropriators who violate community rules; mechanisms of conflict resolution that are cheap and of easy access; self-determination of the community recognized by higher-level authorities; and in the case of larger common-pool resources, organization in the form of multiple layers of nested enterprises, with small local common pool resources at the base level.

Climate engineering or geo-engineering involves deliberate large-scale manipulation of the environment to mitigate climate change and raises complex international governance and ethical issues. Specifically, the hypotheses of CO<sub>2</sub> removal and solar radiation management are now being tested in field experiments and impacts are being measured. Climate engineering creates moral hazard in that it can be seen as the technological solution to a problem caused by technology, but it should not be seen as a replacement for adaptation and mitigation. It may be a necessary adjunct. It will be important to develop an international legal framework, perhaps building on the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972), to ensure environmental protection and international oversight. Private corporate interests in this experimentation need to be disclosed.

## SESSION 6: COURTS, REMEDIES AND ADJUDICATION

The idea of an international environmental court or tribunal is not new, and there are no legal impediments to its creation, but there could be political impediments. The UNFCCC has not ruled out arbitration and judicial dispute settlements. Article 14 lists modalities of dispute resolution, application and interpretation of convention. It allows for parties to use existing courts. When parties join the convention they can opt to submit conflicts to the International Court of Justice (ICJ) or other dispute settlement mechanisms, including arbitration. There is an open door to explore these procedures, including adopting conciliation procedures. Actual mechanisms are open to discussion.

Many bodies have already had to deal with disputes related to environmental issues (for example, the *Chevron v. Ecuador* arbitration dealt with important climate justice issues). Considerations that arise in such cases are standing (i.e., who has the right to bring a claim or otherwise participate in a proceeding), competence of some of these bodies, and the level of skill and knowledge of members in areas other than trade and investment law. The International Court of Arbitration now has a specific unit for settling environmental disputes. The Stockholm Chamber of Commerce is interested in the question of transboundary harms in the context of investment disputes. The United Nations Conference on Trade and Development is actively considering how to improve the next generation of bilateral investment treaties and how to modernize or reform international investment dispute settlement mechanisms. One proposal it is exploring is the creation of an international investment court or appeals court. In the past the ICJ has not proven amenable to settlement of environmental disputes. A workshop participant suggested that with the deep integration of global environment and global economy, the time is

right to start laying the foundation for an international environmental court to resolve disputes on the plethora of existing international environmental treaties and regimes, help to harmonize existing legal regimes at the national and international level, and enhance access to justice where there are gaps. A question was posed as to whether it would be useful to frame a request for an advisory opinion from the ICJ to start to develop international climate change jurisprudence.

There are many similarities between shared water law and climate change law. The main difference is that usually in water disputes there is equality between the states involved. Climate change is different, with specific recognition of differentiated responsibilities. Water law is governed by two principles — equitable and reasonable utilization, and no significant harm — with the second principle being subsidiary to the first, requiring due diligence obligation only. UN bodies have subjected the no significant harm principle to equitable and reasonable utilization. If a state causes significant harm that is not justified by equitable and reasonable utilization, the affected state can seek adaptation, mitigation, resolution and even compensation. States have agreed to compensate for environmental harm in this area, so it is conceptually possible to do the same with climate change harm.

Flooding caused when municipalities are not prepared for extreme weather is a potential source of class action litigation (for example, cases involving Thunder Bay, Mississauga and Chicago). Corporations need to take into consideration the environmental impacts of their decisions.<sup>10</sup>

## BACKGROUND ON THE CIGI ILRP

Globalization and the increased interaction and integration of governments, peoples, environments, businesses, technologies, products and ideas present new governance challenges that call for a reassessment, revision and reinforcement of the international rule of law. As a multicultural and multilingual nation of indigenous peoples and immigrants, defined by good governance, rule of law and respect for human rights, Canada is well positioned to exercise global leadership in improving the international rule of law. With its global and regional networks of influence and an advanced economy reliant on trade and investment, information technology and innovation, and with actual or potential competitive advantage in finance, energy, extractive industries and the environment, Canada has much to contribute and much to gain through improving the globalized rule of law.

The CIGI ILRP is unique in being a non-partisan research program straddling and leveraging academic, business and governmental perspectives, and focused on understanding and improving international law for better global governance. With funding from the Province of Ontario and a private donation, the ILRP is located at the award-winning CIGI Campus in Waterloo, Ontario.

The ILRP's vision is to strive to be the world's leading international law research program, with recognized impact on how international law is brought to bear on significant global issues. The ILRP's mission is to seek to connect knowledge, policy and practice to build the international law framework — the globalized rule of law — to support international governance of the future. Its founding belief is that better international governance, including a strengthened international law framework, can improve the lives of people everywhere, increase prosperity, ensure global sustainability, address inequality, safeguard human rights and promote a more secure world. The ILRP will focus on the areas of international law that are most important to global innovation, prosperity, sustainability and security.

Through the ILRP, CIGI will provide opportunities for stakeholders in the public and private sectors to collaborate in advancing their knowledge and understanding of international law, and in exploring theoretical approaches to international law and testing them in practice. Benefitting from CIGI's multidisciplinary research environment, the ILRP will endeavour to find innovative and creative ways for international law to improve global governance. ILRP research will contribute to multidisciplinary work across CIGI's other programs, for example, providing international law support to CIGI research on Internet governance, Arctic governance and climate change governance.

The ILRP will develop concentric circles of knowledge and influence, from local and provincial to national and international spheres, connecting all with cutting-edge, relevant and practical international law research and policy advice. As appropriate to further its research agenda, the ILRP will engage individual international law experts from academia, the public and private sectors, law faculties and other relevant academic institutions, professional organizations, all levels of government, international governmental organizations, NGOs and other international institutions.

Through its networks of influence the ILRP will produce world-class workshops, conferences, reports and policy briefs. It will become an established and internationally recognized international law research program and centre of excellence focused on global governance. The ILRP envisions employing up to 19 senior fellow full-time equivalents as research, consulting and mentoring experts. Complementing this will be a cohort of research fellows

10 *BCE Inc. v. 1976 Debentureholders*, [2008] 3 SCR 560, 2008 SCC 69 (CanLII), <http://canlii.ca/t/21xpk>.

and post-doctoral researchers, and up to 10 student researcher/practitioners and 20 graduate scholarship recipients. CIGI Campus residency requirements for all graduate scholarship recipients and post-doctoral fellows will deepen and widen future international law research networks.

In consultation with public, private and academic sector experts in international and transnational law, the ILRP has developed a strategic plan focused on advancing knowledge and understanding in three vital areas of international law, detailed below: international economic law, international intellectual property (IP) law and international environmental law.

## INTERNATIONAL ECONOMIC LAW

International economic law is a vast field, which for purposes of research focus has been subdivided into three key areas. Within each there are many potential avenues to explore:

- international and transnational governance and regulation of cross-border insolvency and sovereign debt;
- multilateral harmonization of local regulations in the global value chain, including developments in private international law and adoption of the Ruggie Principles on business and human rights; and
- emerging issues in international trade and investment law, in particular: governance of multilateral and preferential trade agreements; and assessing use of investor state arbitration in diverse contexts (case studies).

## INTERNATIONAL IP LAW

The ILRP's study of international IP law will initially focus on five key aspects, but will evolve with the pace of innovation and related international law governance challenges:

- green/clean technology;
- adaptation of international IP law frameworks for innovation and collaboration;
- evaluating international IP rules and the advantages and disadvantages of multilateral versus like-minded or regional IP instruments (case studies);
- protecting IP rights while unlocking and commercializing IP; and
- disseminating functional international IP knowledge to innovators.

## INTERNATIONAL ENVIRONMENTAL LAW

The ILRP's research on international environmental law issues aims to advance effective use of science-based international, transnational and national law to protect the environment, reverse climate change and achieve sustainable prosperity:

- assessing the efficacy of bilateral or regional environmental agreements versus multilateral environmental agreements;
- international or transnational governance and regulation of the extractive industry and energy sector, including the UN Office of the High Commissioner for Human Rights (John Knox) concept of environmental protection as a human right; and
- assessing international, transnational and local law-based and market-based approaches to reversing climate change (case studies).

## INTERDISCIPLINARY AND INTEGRATED METHODOLOGY

In pursuing its research work, the ILRP will employ interdisciplinary and integrated methodology to explore practical approaches, empirical case studies, analysis of the efficacy of international law regimes and interdisciplinary research that considers the impacts on human security, rights and development. Furthermore, the ILRP will incorporate international law research of indigenous issues that cross-cut the three areas of primary focus, for example:

- reconciling the protection and development of traditional knowledge with international IP law frameworks;
- environmental protection, benefit sharing and prior informed indigenous consultation and consent in respect to energy and extractive industry developments in Aboriginal territory; and
- Arctic governance to find effective international and transnational legal mechanisms to address emerging environmental, maritime, human security, economic, political and developmental issues in the North.



## AGENDA

**FEBRUARY 18, 2015 — 8:00 A.M.–9:00 P.M.**

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**8:00 a.m. — Continental Breakfast**

- Location: Boardroom, Main Mezzanine, Royal York Hotel, 100 Front Street West, Toronto, Ontario

**9:00–9:15 a.m. — Welcome and Introduction**

**9:15–10:15 a.m. — Session 1: International, transnational, national and private law frameworks relevant to climate change**

- Governance challenges and opportunities to limit global warming in the UNFCCC process; multilateralism and volunteer “climate clubs”
- What should be the process for determining the content, monitoring, follow-up and future revision of INDCs?

**10:15–11:15 a.m. — Session 2: Contribution of subnational entities**

- Provincial initiatives, or joint initiatives by provinces and foreign subnationals, for example, Ontario/Quebec/BC and California Partnership on Climate Change
- Initiatives by major cities, for example, C-40 Cities Climate Leadership Group

**11:15–11:30 a.m. — Health Break**

**11:30–12:30 p.m. — Session 3: Role of civil society and indigenous peoples**

- Procedural due process, respect for human (including indigenous) rights in development and execution of projects financed by climate change funds, as well as assuring benefit to, and not further degradation of, local ecosystems and communities
- Equity, transparency, fairness and human rights in climate change related funding

**12:30–1:45 p.m. — Working lunch (thematic discussion) and networking**

- Strategies to raise awareness of and engagement on the issues

**1:45–2:45 p.m. — Session 4: Role of business and industry**

- Evolving and required roles and expectations for business and industry re: climate change and carbon limits, measurement, reporting and mitigation
- Ruggie Principles and further environmental and climate change obligations identified by the UN independent expert on human rights and the environment, John Knox, in their application to the extractive industry and forestry, including use of forest preservation incentives
- Public and private governance related to climate change in a global supply chain

**2:45–3:00 p.m. — Health Break**

**3:00–4:00 p.m. — Session 5: Green transition, innovation and resilience**

- Facilitating clean technology transfer to address climate change
- The role and functioning of carbon taxes, cap-and-trade policies and climate change fund
- A precautionary legal framework for geo-engineering research

**4:00–5:00 p.m. — Session 6: Courts, remedies and adjudication**

- Legal recourse and remedies for climate change

**5:00–5:30 p.m. — Wrap-up**

**6:00–8:30 p.m. — Dinner for continuation of informal discussion**

- Opportunities to have impact
- Organization of further research and collaboration

**8:30–9:00 p.m. — Adjournment/departures**

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## ABOUT CIGI

The Centre for International Governance Innovation is an independent, non-partisan think tank on international governance. Led by experienced practitioners and distinguished academics, CIGI supports research, forms networks, advances policy debate and generates ideas for multilateral governance improvements. Conducting an active agenda of research, events and publications, CIGI's interdisciplinary work includes collaboration with policy, business and academic communities around the world.

CIGI's current research programs focus on three themes: the global economy; global security & politics; and international law.

CIGI was founded in 2001 by Jim Balsillie, then co-CEO of Research In Motion (BlackBerry), and collaborates with and gratefully acknowledges support from a number of strategic partners, in particular the Government of Canada and the Government of Ontario.

Le CIGI a été fondé en 2001 par Jim Balsillie, qui était alors co-chef de la direction de Research In Motion (BlackBerry). Il collabore avec de nombreux partenaires stratégiques et exprime sa reconnaissance du soutien reçu de ceux-ci, notamment de l'appui reçu du gouvernement du Canada et de celui du gouvernement de l'Ontario.

For more information, please visit [www.cigionline.org](http://www.cigionline.org).

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