

North American Climate Policy Forum

Exploring Cooperation between Canada, the U.S. and México

JUNE 22-23, 2016

POST-CONFERENCE DISCUSSION & SUMMARY REPORT



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1. Introduction

Canada, the United States, and Mexico are closely connected geographically, culturally, and economically. These North American countries have also historically been close policy partners, collaborating through cross-border policies and policy diffusion to address both international issues and issues unique to the North American region. In recent years, the three nations have begun to recognize opportunities for harmonization on climate change policy as a way to decrease costs and increase the efficiency of actions to address climate change and to help all three countries achieve their greenhouse gas (GHG) emissions reduction goals pledged under the 2015 Paris Agreement.

The North American region may provide fertile ground for climate policy harmonization due to the close economic and cultural ties between the countries, and an existing foundation of best practice-sharing that encourages policy diffusion. Significant progress has already been made at the sub-national levels on climate policy innovation in North America, as subnational jurisdictions have taken the first steps in experimenting with different forms of climate policy. For instance, states and provinces are pursuing climate policy harmonization across national borders, such as the linking of carbon markets between California, Quebec, and soon, Ontario.

However, more attention is needed to understand how increased coordination on climate change policies in North America could address concerns such as competitiveness, emissions leakage, and policy consistency in the region. To begin the conversation on the potential for and impacts of climate policy harmonization in North America, The University of Ottawa's Sustainable Prosperity and Duke University organized the first annual [North American Climate Policy \(NACP\) Forum](#), held in June 23-24, 2016 in Ottawa, Canada. The Forum brought together prominent climate policymakers, business leaders and researchers from Canada, the United States, and Mexico for a two-day dialogue on policy options to mitigate climate change and stimulate innovation for low carbon technology solutions. This Forum was designed to initiate conversation about whether climate goals and policies could and/or should be harmonized across the region, and to highlight the potential challenges and advantages of such harmonization. The Forum took place the week before the 2016 North American Leader's Summit, also in Ottawa, where joint energy and climate change policy goals were announced by Prime Minister of Canada Justin Trudeau, President of the United States Barack Obama, and President of Mexico Enrique Peña Nieto.

In advance of the Forum, the organizers published an [issues paper](#) that detailed the existing climate change policies in each country, as well as existing forms of climate policy harmonization in North America. Sessions at the Forum focused on reviewing current emissions reduction targets and climate policy initiatives in the three countries, discussing opportunities for clean technology innovation policies and policy linkage, highlighting existing and emerging carbon pricing and fiscal reform throughout the continent, and providing insights on the integration of climate policy with each country's broader energy goals.^{1,2}

Building off of the insights shared at the Forum, this report reviews opportunities and challenges for climate change policy harmonization in North America. We first provide an overview of how existing regulatory approaches to climate change, as well as recently announced joint emissions reduction targets, lay the groundwork for this climate policy harmonization. We then discuss four issue areas that present potential opportunities and challenges for climate policy harmonization: alignment with trade policy, carbon pricing, clean innovation policy, and climate change adaptation policies. For each area, we review insights raised during the Forum regarding the policy opportunities, challenges, and potential for cross-jurisdictional harmonization, occasionally expanding on these insights drawing on relevant literature. The report concludes with opportunities for future research that can further illuminate the issues raised at the conference and in the literature.

2. Climate Change Policy Harmonization: Opportunities & Challenges

NORTH AMERICAN CLIMATE CHANGE POLICY LANDSCAPE AND JOINT GOALS

Canada, the United States (US) and Mexico have all set forward-looking greenhouse gas (GHG) mitigation goals through the Paris Agreement. At the NACP Forum, presenters gave overviews of each country's individual commitments and described the national and subnational initiatives already in place to help meet these obligations.ⁱ Although many Forum participants acknowledged these Paris pledges as commendable, discussion at the Forum focused on the challenges in meeting them.

In Canada, for example, recent modelling and analysis presented at the Forum suggest that the combined result of current and planned subnational and national Canadian climate change mitigation efforts will not be sufficient to meet the Canadian 2020 or 2030 GHG reduction targets.ⁱⁱ The federal government has committed to working with the provinces and territories to develop a *pan-Canadian framework on green growth and climate change*;³ however, the Forum discussions raised a major challenge to overcome, namely that reduction costs in carbon-intensive provinces like Saskatchewan and Alberta will be much higher than in other provinces.

With respect to the US, Forum participants discussed the potential for the US Environmental Protection Agency's (EPA) *Clean Power Plan* to achieve significant reductions of GHGs from the country's single largest source: electricity generation. Forum participants identified that the current suspension of the *Clean Power Plan's* implementation by the US Supreme Court created a significant source of uncertainty, at least until the US courts render judgment. Although 19 states are voluntarily continuing to assess their planning options under the plan,⁴ this pause on implementation could go until 2017, which would mean implementation, if the suspension is lifted, would fall under the new presidential administration. Moreover, if the courts were to rule that the Clean Power Plan was not consistent with the intent of the *Clean Air Act*, which is its governing statutory authority, then it would likely be remanded back to the EPA (again, under a new president) to develop a rule that is consistent with the *Clean Air Act*.

Representatives of the Mexican Embassy in Canada also described their country's ongoing GHG mitigating efforts, including the introduction of a *General Law on Climate Change* in 2012 and the creation of an institutional framework to support their GHGs mitigation goals.ⁱⁱⁱ Despite this institutional progress, discussants at the Forum raised questions about the stringency of the measures implemented to date. For instance, Mexico's national carbon tax on fossil fuels introduced in 2013 is currently priced at \$2.13 USD per metric ton of CO₂, which is very low when compared to other explicit or implicit carbon prices in other North American jurisdictions. However, during the summer of 2016, Mexico announced the introduction of a cap and trade program. This program will be first introduced as a 12-month pilot program in November of 2016^{iv}, and it is expected to be fully enacted across the country in 2018.⁵ Mexico also recently signed a joint declaration with Ontario and Quebec to share information and expertise on carbon markets.⁶

Following the Forum, the *Leaders' Statement from the North American Leader's Summit on a North American Climate, Clean Energy, and Environment Partnership* emphasized that the three countries will work together with

ⁱ The [issues paper](#) describes these commitments and national and subnational policy initiatives in greater detail.

ⁱⁱ See Office of the Auditor General of Canada "2014 Fall Report of the Commissioner of the Environment and Sustainable Development" and Dave Sawyer's [presentation](#) at the NACP Forum.

ⁱⁱⁱ See the [issues paper](#) for more details about Mexico's climate mitigation actions and institutional framework.

^{iv} 60 power generating companies have voluntarily agreed to participate in this initial pilot phase.

states and provinces to explore options and share lessons learned on carbon market implementation. Building on the individual country pledges made in Paris, the three countries also agreed to develop mid-century, long-term low-GHG emissions development strategies by the end of 2016 — well ahead of the 2020 deadline set in Paris. In line with this, the three leaders also announced their joint goal for North America to achieve 50 percent clean electric power generation by 2025^v — which includes a commitment to support the development of cross-border renewable energy transmission projects, and to jointly identify and implement options for broad energy system integration.⁷

Forum participants discussed the opportunities that increased collaboration in the clean energy sector could generate. Although under the *Clean Power Plan* there is no provision for trading carbon allowances with Mexico or Canada, these two countries could export low-carbon electricity to US states needing to comply with the EPA's emissions standards set in the plan. For instance, Mexico's renewable electricity capacity represents 25 percent of total installed capacity,^{vi} and in 2015 it generated 20.34 percent of total electricity,⁸ but Forum participants highlighted these numbers could increase given Mexico's untapped renewable energy potential (particularly wind and solar) and the opportunity this represents for exporting electricity to the US.

Other relevant announcements at the Leaders' Summit included a commitment by the three countries to phase out fossil fuel subsidies by 2025. Joining Canada and the US, Mexico also committed to reduce methane emissions from the oil and gas sector by 40-45 percent by 2025, and the three countries agreed to align fuel efficiency and/or GHG emission standards by 2025 and 2027, respectively.⁹

Forum presentations and discussions raised important questions in this context, suggesting that more research is needed to understand how increased harmonization of national climate goals might impact already existing regional climate initiatives like the Western Climate Initiative, the Regional Greenhouse Gas Initiative in the US (RGGI), or climate collaboration between New England Governors and Eastern Canadian Premiers. Participants at the Forum discussed the possibility for existing climate policy regimes only covering one sector, such as the RGGI (which only covers the power sector) to expand to other sectors such as transportation, or to other states not currently covered by this program. While this could increase the coverage of climate policy, participants anticipated this would generate concerns over the leakage of revenues from auction allowances, which are currently reinvested in the power plants of North Eastern states to reduce the cost of emission reductions.

Similarly, attention at the Forum focused on the role that internationally transferred mitigation outcomes (ITMOs), as established in article 6 of the Paris Agreement,¹⁰ might play as a potential tool to operationalize collaboration among North American countries. For example, a presentation at the Forum on international emission trading suggested that while the three North American countries have no obligation to join international carbon markets, their participation could potentially help them achieve mitigation outcomes at a cheaper cost than by simply engaging in national carbon markets. However, it is still unclear the shape that these international markets would take; one option would be a globally centralized hub governed by the Conference of the Parties (COP), another option could be the creation of multiple spin-off clubs governed by its users.¹¹

ALIGNING CLIMATE CHANGE POLICY WITH TRADE POLICY

Because Canada, the US, and Mexico are already tightly integrated under the North American Free Trade Agreement (NAFTA), climate policies implemented by any of the three countries will have significant impacts on economic relationships between all NAFTA partners. The implementation of fragmented climate change policies in these

^v According to the *North American Leaders' Statement* (2016), clean power includes renewable, nuclear, and carbon capture and storage technologies, as well as demand reduction through energy efficiency.

^{vi} This includes wind, solar, geothermal and hydrological energy sources.

countries has already begun to create conflicts between climate policy and free trade. For example, given the premise of free trade between the countries, the implementation of stringent carbon pricing in one country gives industries in that country a competitive disadvantage when faced with cheaper imports of goods and services produced by a North American country without such stringent regulations.¹² This can lead to “emissions leakage” as emissions-heavy industries leave highly regulated jurisdictions to produce products (and emissions) in jurisdictions with less stringent environmental policies.

Additionally, the implementation of different climate mitigation policies throughout North America can threaten the free trade tenets of NAFTA. To protect the competitiveness of their domestic industries, jurisdictions may pursue trade barriers such as border carbon adjustments which levy a tariff on imports that face lower carbon emissions regulations.¹³ Mismatched climate and energy policies can also create political friction between countries. A prime example of this is the recent use of NAFTA’s chapter 11, which allows transnational corporations to sue a NAFTA government for lost future profits resulting from public interest legislation, by TransCanada to sue the US government for lost profits after the KeystoneXL pipeline was rejected.¹⁴

Given these challenges, discussion at the Forum centered on the need for further alignment of North American free trade policies, energy and climate change policies. Existing infrastructure under NAFTA, such as the Commission for Environmental Cooperation, could provide a vehicle to address environmental concerns linked to trade flows between North American countries.¹⁵ In 2015, the leaders of Canada, the US, and Mexico announced their intention to make combatting climate change a formal part of NAFTA by implementing a new five-year plan under NAFTA’s environmental agreements, promoting “green growth” strategies, emission control zones, and limiting environmental degradation.¹⁶ In February 2016, the energy ministers of North America also signed a trilateral memorandum of understanding on North American climate change and energy collaboration. This MOU leverages the energy opportunities among the three nations and has been argued to be leading the way towards a “green NAFTA”.¹⁷

During the North American Climate Policy Forum, the impacts of North American climate policy on trade were primarily discussed in terms of concerns about competitiveness. Participants noted the need to protect economies exposed to trade from industries outside of the jurisdiction of domestic carbon pricing schemes, and especially emissions-intensive trade-exposed (EITE) sectors. Several participants identified the use of border carbon adjustments as a solution to ease competitiveness concerns while also gaining domestic buy-in for carbon policies.¹⁸ However, it was mentioned that this approach may introduce cross-border tariffs and regulations on the free movement of trade flows that would challenge the free-trade tenets of NAFTA. Generally, Forum presentations reflected a consensus that more research is needed on the optimal role of border carbon adjustments, and how they fit in with the norm of free trade in North America.

Additionally, Forum participants highlighted that more research is needed to understand if and how the tenets of NAFTA could be used to support the harmonization of climate policies, and whether the environmental frameworks under NAFTA could be used to mitigate the need for border carbon adjustments. Finally, given the importance of trade as an issue in the upcoming US election, attention may need to be paid to what might happen to climate policies if NAFTA is renegotiated.

CARBON PRICING HARMONIZATION

Carbon pricing mechanisms, such as carbon taxes and emission allowance markets, are vital parts of an efficient climate change policy approach.¹⁹ Since carbon emissions are generated by nearly all aspects of economic activity, solutions must create economic incentives for companies and individuals to reduce their carbon emissions.²⁰ In North

America, various experiments with different forms of carbon pricing have been implemented at the sub-national level, but the efforts have been mostly fragmented. However, in recent years, efforts have been made to begin to harmonize carbon pricing mechanisms across jurisdictions. Linking carbon markets, such as the recent linkage of the markets in California and Quebec (and soon Ontario), is one form of harmonization that has a number of potential benefits, including increased price stability and cost effectiveness as the pool of available credits increases.²¹ It also signals commitment to a low-carbon future to national governments, and sets the groundwork for possible future harmonization of carbon pricing among North American nations.

Harmonization of carbon markets has a number of advantages. As mentioned, linking carbon markets unlocks cost savings, reduces domestic market volatility, lowers compliance costs, and creates a framework for the continent to become a net exporter of emissions credits in a potential future global emissions trading system.²² However, linking is only one form of harmonization. Jurisdictions may not choose to explicitly link their carbon markets but may choose to operate them under joint principles of stringency, scope and coverage. More broadly, harmonization of carbon markets in North America could limit free riding and, together with the alignment of trade policies and climate policies, further reduce opportunities for emissions leakage across borders. Jurisdictions with limited potential for renewable energy can also leverage resource availability in other jurisdictions. For example, if the US were to implement linked carbon markets with Canada and Mexico, the US could leverage investments in the renewable resources of Canada and Mexico for credits. Additionally, transaction costs on cross-border trade and other trade distortions are significantly reduced when regulations and prices are the same on both sides of a border.²³

While the literature is prolific on the benefits of linking and other forms of harmonization, presentations from policy leaders at the Forum were more cautious. While the vast potential to minimize leakage was noted, states and provinces that currently have a carbon pricing mechanism in place are concerned about losing revenues and control over the design of their markets if the administration of the markets is moved up to a national or transnational level. There are also concerns about what type of carbon pricing should be selected – a tax or a market system – and how to harmonize over jurisdictions that have different levels of government centralization. For example, while carbon pricing schemes in Canada and the US are currently decentralized at the state and province level, Mexico has implemented a centralized carbon pricing scheme (tax) at the national level. Forum participants emphasized that linking up state-level to national-level carbon pricing schemes and tax to emissions trading markets may prove complicated, as is now (Fall, 2016) being witnessed by national carbon price harmonization efforts in Canada.

Despite these concerns, most presenters saw a gradual move towards carbon pricing harmonization in North America as a positive trend. Participants tended to agree that the likely path forward will consist of a bottom-up approach for harmonizing carbon pricing schemes, involving the build-up and expansion of existing programs. An important step of any harmonization will be to give states and provinces input into the design of the schemes and the use of the revenues from their jurisdiction. Meanwhile, additional research needs to be done to determine the details of an ideal harmonization of carbon pricing in North America. Specifically, researchers should focus on defining mechanisms for monitoring and enforcement between jurisdictions, evaluating what sectors should be included in a harmonized carbon market, and determining what degree of harmonization is optimal, specifically between jurisdictions with different levels of government centralization. Similarly, more research is needed to explore how to determine stringency equivalencies between jurisdictions that have implemented different carbon pricing mechanisms (such as a tax or carbon market system), to allow for equitable credit trading in an expanded market setting.

INNOVATION PROMOTION AND PRIVATE SECTOR LINKAGE

Discussants at the Forum recognized carbon pricing as fundamental tool of an overall climate policy approach — helping achieve emissions reductions in a flexible and cost-effective way. However, there was consensus that carbon pricing alone will not be sufficient to drive the degree of clean innovation necessary for long term decarbonization,²⁴ which will be necessary to place North America and the rest of the world on an economic growth path consistent with the goal of limiting global temperatures to no more than 2 degree Celsius.

Market failures such as knowledge spillovers — where inventors are not able to fully appropriate the profits of their discovery or innovators are easily imitated — may discourage firms from investing in clean technology research and development.²⁵ Furthermore, participants pointed out that the current price for GHG emissions (in those North American jurisdictions with a carbon price system in place) is not high enough to drive the level of technical and behavioral change that may be required. Forum participants also observed that the exclusive use of market mechanisms to reduce emissions tends to favor the deployment of clean technologies that are market- ready,²⁶ which limits the incentive to invest in the early development phase of new technologies.

While Forum participants agreed that there is a role for public policy to help accelerate clean innovation beyond carbon pricing, there were different views as to where and how public intervention can be most effective. For instance, some presenters suggested that the public sector should focus on supporting research and development of technologies in their earlier stages,²⁷ similar to the efforts of the US Department of Energy's Advanced Research Projects Agency- Energy (ARPA-E) program.²⁸ Others stressed the need for the public sector to support the demonstration and commercialization phase of clean innovations, where access to private finance is particularly difficult.^{vii} Institutions such as Sustainable Development Technology Canada (SDTC) aspire to do just that; SDTC funds Canadian clean tech projects and builds capacity in the firms that lead them in order to move their inventions to market, and may provide an example to learn from.²⁹

The discussion also centered on how the public sector can encourage private sector involvement in the development of clean innovations. The recently created Mission Innovation initiative³⁰ — a global initiative where 20 countries, including Canada, US and Mexico, have agreed to double their clean energy research and development investments over the next five years — has an important private sector component. Through this initiative, 28 private investors have committed to invest patient capital in early-stage energy technology development occurring in signatory countries. At the Forum, this patient, early stage capital from the private sector was recognized as crucial to advancing clean innovation. It was also noted that, despite this commitment made through Mission Innovation, the public sector must continue to develop policies that help reduce the financial uncertainty associated with supporting emerging technologies in order to increase private sector involvement.

Another point raised during the Forum is that Mexico and Canada in particular have relatively poor historical performances on many indicators of innovation outcomes.^{31, 32} In the Canadian case, this has been partly attributed to its position in a larger North American market dominated by the US, where much of Canadian businesses occupy subsidiary roles in an integrated North American value chain, and where much of the innovation occurs in the US market, to which Canadian suppliers and consumers respond.³³ Research presented at the Forum suggests that successfully building a clean tech industry in smaller markets like Canada and Mexico will require effectively targeting demand in the much larger US market.³⁴

In line with this point, David Popp's review of top sources of solar and wind patents in the US revealed that while most foreign inventors first filed a patent application in their home country before seeking protection in the US

^{vii} This funding gap is usually referred as the “Valley of Death”.

market, Canadian inventors filed nearly 80 percent of patents in the US first. These findings illustrate just how important the US market is to Canadian inventors, relative to the smaller domestic market. Therefore policies in the US that create demand for low-emission technologies – and not just Canadian low-emission technology and climate policies – will be crucial to creating larger markets for Canadian inventors.³⁵

Forum participants also noted that further research is needed to understand how North American governments can design a regulatory framework that is more favorable to the development of clean innovation; in other words, have a better understanding of the effects of different policy interactions in order to ensure that regulations set in place are not cumbersome to clean technology inventors and developers. Participants also pointed that Canada needs better publicly available information on firm level data in order to identify constraints and strengths in terms of developing clean innovation technologies.

ADAPTATION

Designing climate change policies often has dual objectives: mitigation of climate change through the reduction of greenhouse gas emissions, and adaptation to the impacts of climate change that cannot be mitigated. While most of the discussion at the Forum focused on the former, there is also significant potential to harmonize climate change adaptation policies in North America. The sharing of cross-border ecological zones such as coastlines, forests, and species migration means that much of the ecology of North America is not limited by borders. Efforts to adapt to climate change can be more effective if they are approached on a continental-level, not divided between different national jurisdictions.

Progress made at the North American Leaders' Summit in June 2016 the week following the Forum signifies that coordination on climate change adaptation across the continent may become more of a priority in the coming years. Following the Summit, the leaders identified their joint intention to focus on conserving endangered species habitats, engaging indigenous communities, strengthening cooperation on invasive alien species, and collaborating on ocean management.

At the Forum, most of the focus on adaptation policy in North America came from the representatives of Mexico. *México Resiliente*³⁶ is a nationwide program designed to help ecosystems and protected areas adapt to climate change. Focusing on the resilience of their population, Mexico City has also joined the *100 Resilient Cities* movement to reduce the vulnerability of the capital to the impacts of climate change. Additionally, Mexico was the only North American country to include an adaptation plan and targets in its [Nationally-Determined Contribution](#) (its submission to the United Nations Framework Convention on Climate Change specifying climate change targets in advance of the 2015 Paris Agreement).

There was a recognition at the Forum, however, that more coordination and best-practice sharing about adaptation is needed across North America. Issues of particular focus included invasive species, drought, waste management, and human migration. More attention should also be focused on improving infrastructure across borders as a way to address adaptation, managing cross-border resources such as water supplies during droughts, and setting up a process to share best practices on how to protect people and ecosystems that are vulnerable to the severe weather effects of climate change. In light of the priorities for climate adaptation laid out during the North American Leaders' Summit, further research is needed to develop specific policy proposals to be implemented to carry out these priorities and to coordinate adaptation policies across North America.

3. Next Steps for North American Climate Policy Research

In June 2016, at the North American Leaders Summit, the leaders of Canada, the US, and Mexico jointly committed to achieving 50 percent clean power^{viii} generation by 2025, reducing the emissions of short-lived climate pollutants (such as methane, black carbon and hydrofluorocarbons) by 40-45 percent by 2025, promoting clean and efficient transportation, and protecting endangered species through habitat restoration.³⁷ Discussions at the North American Climate Policy Forum suggest that coordinating climate change policies across North America, particularly in the areas of trade, carbon pricing, clean tech innovation and adaptation, may be an important factor in achieving these commitments. However, a number of outstanding questions need to be addressed in order to accomplish this.

First, more insight is needed to understand the degree of climate policy and carbon pricing harmonization that is desirable in North America. While the attendees shared the general sentiment that a greater level of climate policy coordination is desirable, many jurisdictions with their own carbon pricing schemes are cautious about relinquishing control over their systems to an external body. What kind of pricing harmonization could be implemented without threatening the control and revenue that subnational jurisdictions currently have from their own pricing schemes?

Additionally, clean energy innovation will be a necessary part of achieving the goal of 50 percent clean power generation by 2025. This will require innovation at all points in the research and development trajectory, as well as market support through carbon pricing policies. While all three countries have national programs to fund and support clean energy innovation at different points in the research and development process, more coherent support particularly in the early phases is needed. Similarly, without a coherent carbon pricing scheme across the region, price signals for clean innovation are unpredictable and make the clean energy market seem volatile. How best can all three nations support and encourage clean energy innovation? What role should harmonized carbon pricing and research and development policies play in encouraging clean energy innovation in North America? How can coordinated climate policy help to expand markets for clean innovation across North America?

Finally, additional discussion is needed on the role of politics in the prospect of linking climate change policies in North America. As several Forum participants alluded to, political challenges in each country create roadblocks that dictate which climate change policies are feasible. One particular political debate is the role that NAFTA will continue to play in guiding climate policy harmonization. Current political debate ahead of the US election suggests that trade policy could be a key dynamic influencing North American climate policy harmonization. If North America's free trade agreement is altered, that may have a substantial effect on factoring competitiveness concerns into policy design. More research is needed to understand the political dynamics of trade and climate policies in North America, including how competitiveness mechanisms might be used by each country and the impacts that may have on carbon emissions and the economy of the continent as a whole.

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³⁶ Espacios Naturales y Desarrollo Sustentable (2015), *México Resiliente*. Accessed from

<http://www.endesu.org.mx/noticias/mexico-resiliente/#.V87eCJgrKCh>

³⁷ Ibid 1