



Revisiting the NAFTA Agenda on Climate Change

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A year ago, we wrote a policy brief titled *Setting the NAFTA Agenda on Climate Change*, which explored issues of energy and environmental cooperation among the three North American countries in light of the climate legislation that had recently passed the US House of Representatives. Similar legislation did not pass the Senate, and Congressional leaders are now considering much more modest measures aimed at reducing greenhouse gas (GHG) emissions and reforming US energy policy.

This paper updates our analysis of what the NAFTA partners could do together to promote renewable energy development and capacity building on climate change. Some of our observations and suggestions have remained the same since our last policy brief, but many have been revised to take account of the changes in the US debate on climate policy.

COMMON NORTH AMERICAN INTERESTS

The three NAFTA partners have mutual interests in harmonizing climate policy. They share a common environment and a long history of environmental cooperation. The United States and Canada have signed acid rain and transboundary smog agreements, and the United States and Mexico have several border environmental and water compacts such as the International Boundary and Water Commission. More recently, the North American Development Bank (NADB) has provided funding and coordination for environmental infrastructure in the US-Mexico border region.

The NAFTA region also has an interdependent but not fully integrated energy market. How energy is produced, used, and traded has a large impact on GHG emissions and affects how each country can adapt to a low-carbon future. The United States is a major consumer of petroleum; Canada and Mexico are major US suppliers. Almost 30 percent of US oil imports come from North America, and in 2007 about 70 percent of the crude oil produced in Canada was shipped to the United States.¹ Trade in energy totaled almost \$100 billion between the United States and Canada and almost \$10 billion between the United States and Mexico in 2007 (USITC 2009). Given their strong energy interdependence, US decisions that affect energy consumption will have a heavy impact on Canada and Mexico. Likewise, decisions made in Canada and Mexico that affect energy production will impact the US economy.

While Canadian electricity does not make up a large portion of most US states' electricity portfolios, it does account for a major percentage of total consumption in a few border states. Vermont obtains almost 40 percent of the electricity it consumes from Quebec, and North Dakota and Minnesota obtain more than 10 percent of the electricity they consume from Manitoba. US exports are less significant to Canadian provincial electricity supply; the exception is British Columbia, which gets almost 10 percent of its electricity supply from American states.²

1. Energy Information Administration. Statistics Canada. 2009.

2. Energy Information Administration, Statistics Canada, National Energy Board.

In addition, the North American countries share a common interest in minimizing policies that distort North American trade and investment. But the climate change debate has raised competitiveness concerns and prompted calls for border adjustments to offset the impact of climate policies on domestic firms. Politicians and the public worry that pricing carbon could put US firms and workers at a competitive disadvantage against China and other Asian countries; in fact, however, Canada is the top supplier of US imports of most carbon-intensive goods.³ Thus, there is much at stake for both countries in harmonizing policy in order to prevent trade-related border carbon measures.

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Finally, there is already several billion dollars’ worth of trade in environmental goods between the United States and Canada and between the United States and Mexico. Under a carbon-constrained economy, all three countries stand to gain from expansion of this trade—both in North America and abroad.⁴

STARTING FROM BEHIND

Climate change issues were not on the radar of the trade officials that negotiated the NAFTA in the early 1990s. During NAFTA’s early formative years, the issue was only briefly vetted in the North American Agreement on Environmental Cooperation (NAAEC)’s Council on Environmental Cooperation while the three countries participated in the drafting of the Kyoto Protocol, which committed developed countries to begin to lower their aggregate emissions and to help developing countries formulate and finance GHG mitigation strategies. The nascent NAAEC initiatives foundered amid strong opposition in the US Congress to the Kyoto Protocol.⁵ Neither the Clinton

3. These include steel, cement, paper, and aluminum. Canada is also the number two exporter of chemicals, behind Trinidad and Tobago. See Rob Bradley et al. 2008. *Leveling the Carbon Playing Field*. Washington: Peterson Institute for International Economics and World Resources Institute. See also Gary Hufbauer et al. 2009. *Global Warming and the World Trading System*. Washington: Peterson Institute for International Economics.

4. United Nations Conference on Trade And Development Trade Analysis and Information System (UNCTAD-TRAINS) via World Integrated Trade Solution (WTI). 2009. Based on World Bank 2007 list of environmental goods (at 6-digit Harmonized System [HS] level).

5. Although the United States signed the Kyoto Protocol, the Byrd-Hagel

nor the Bush administrations submitted the treaty for ratification. Canada did ratify the Kyoto Protocol, but its subsequent actions on climate change have been very limited.

Absent federal action, various US states and Canadian provinces have pursued their own climate change policies. These have not been sufficient, however, to stem large emissions increases in all three NAFTA countries. In the United States, greenhouse gas emissions rose by 17 percent between 1990 and 2005. Canada’s performance was even worse, a 26 percent increase over 1990 levels. Mexico’s emissions, though still low on a per-capita basis, increased by 37 percent during the same time period (see table 1).

Table 1 GHG emissions, millions of metric tons

	1990	2005	Change, 1990–2005
US	5,975	6,964	17 percent
Canada	579	732	26 percent
Mexico	460	630	37 percent
World	30,055	37,767	26 percent

Source: Climate Analysis Indicators Tool (CAIT), World Resources Institute, 2009, available at <http://cait.wri.org> (accessed on July 30, 2009).

Fossil fuel–fired electricity generation is one of the main reasons why it has been difficult to control emissions. Between 1990 and 2005, electricity emissions were responsible for the largest portion of the emissions increase in all three countries.⁶ Coal makes up almost half of American electricity; about 10 percent comes from renewables, including 6 percent from conventional hydropower (EIA 2010a). Like the United States, Mexico has a largely fossil fuel–based economy, with 9 percent of generation from coal, 36 percent from natural gas, and 29 percent from fuel oil. However, almost a quarter of Mexican electricity comes from renewables, including 21 percent from hydroelectric, and 3 percent comes from nuclear power (SENER 2007). Canada is the only country of the three that currently gets most of its electricity from hydropower, which provides almost 60 percent of Canada’s electricity. Nevertheless, Canadian electricity utility generation from fossil fuels jumped from 100 million MWh in 1995 to 150 million MWh in 2001, although the amount of fossil fuel–fired electricity has since fallen (Statistics Canada 2010).

Resolution passed by the Senate in July 1997 by a vote of 95-0 clearly indicated that the treaty as negotiated would fail in Congress.

6. Between 1990 and 2005, 63 percent of the emissions increase in the United States, 31 percent of the emissions increase in Canada, and 41 percent of the emissions increase in Mexico were attributed to electricity generation. Source: World Resources Institute. Climate Analysis Indicators Tool. 2010; authors’ calculations.

All three NAFTA countries, therefore, have much lost ground to recover. The sharp recession in 2009 has significantly reduced carbon emissions,⁷ making targets set according to 1990 or 2005 levels easier to meet. However, the wrenching economic adjustments have conversely made the task all the more politically difficult. The big challenge facing political leaders is how to sell climate policies to consumers and industry, which fear sharp price increases for energy-intensive products, without significantly dampening incentives to adapt and conserve. Regional concentrations of carbon-intensive industries exacerbate the difficulty of this task. Studies showing that cap-and-trade legislation could create thousands of jobs and increase energy security have not prevented these fears from gradually watering down Senate climate goals in favor of weaker targets, utility-only legislation, or “energy-only” legislation as recently proposed by Senators Bingaman and Lugar (Houser, Mohan, and Hoffman 2010; Houser and Levi 2010).⁸

Enter NAFTA. Since 2009, climate change issues have been given more priority on the NAFTA agenda. At the August 2009 North American Leaders’ Summit (NALS) in Guadalajara heads of state agreed to legislate nationally and cooperate regionally. To that end, the three countries agreed to develop a Trilateral Working Plan on climate change and clean energy that would be considered at the NALS in 2010 (NALS 2009). The plan is supposed to foster inter alia the following notable actions:

- financing mechanisms to support mitigation and adaptation actions, including Mexico’s “Green Fund”;
- comparable approaches to measuring, reporting, and verifying emissions reductions, a prerequisite for any future North American emissions trading regime;
- collaboration on “building a smart grid in North America” and cooperation on carbon capture and storage projects;
- aligning national energy efficiency standards;
- reducing GHG emissions in the oil and gas and transportation sectors (which account for a large share of GHG emissions in Mexico); and
- cooperation on “protecting and enhancing our forests, wetlands, croplands, and other carbon sinks.”

Not surprisingly, the leaders finessed the key issue of how to reconcile interrelated and possibly conflicting demands to reduce GHGs and to ensure “reliable energy supplies across North America” (including from the Canadian oil sands). How-

ever, the leaders’ declaration instructed officials to develop a work program on climate change for consideration at next year’s summit. Following NALS, the NAFTA Free Trade Commission (FTC) agreed in October 2009 to seek to strengthen the relationship between the FTC and the North American Commission for Environmental Cooperation (CEC) by appointing an ad hoc working group of senior trade officials to explore areas of potential collaboration (FTC 2009).

In addition, there have been US-Canada and US-Mexico bilateral talks on energy. In February 2009, the United States and Canada announced the commencement of a Clean Energy Dialogue toward the “development of clean energy technologies to reduce greenhouse gases and combat climate change.” The dialogue established three working groups on carbon capture and storage; creating an updated “smart” grid; and clean energy research and development. A 2009 Bilateral Framework on Clean Energy and Climate Change between the United States and Mexico promised training and infrastructure to promote clean energy technologies (White House 2009). In May 2010, Presidents Obama and Calderón created a Cross-Border Electricity Task Force to promote regional renewable energy markets.

Despite these efforts to cooperate regionally, national legislation appears to have stalled, at least in the United States and Canada. Below, we detail the status of climate change action in the three NAFTA countries.

CANADIAN POLICY

Canadian policy faces cross-cutting environmental and economic interests pitting climate change objectives against the exploitation of natural resources, especially oil sands. In both areas, Canadian officials are concerned that their policies may create frictions with their NAFTA partners that could affect regional trade and investment. The Harper administration wants to encourage development of Alberta’s oil sands resources, and has been concerned about California’s low-carbon fuel standard, which could potentially have a major impact on Alberta if widely adopted by other US jurisdictions. While pending US legislation initially included a (weak) national low-carbon fuel standard, the measure was subsequently dropped (Alberts 2009).

Canada exports about \$68 billion in energy-intensive manufactures to the United States, and is thus highly concerned about competitiveness impacts on these industries should Canada fail to synchronize its policies with the United States. On the one hand, Canada is reluctant to subject these industries to higher costs than those experienced in the United States, so it prefers a continental approach to climate change rather than unilateral action. On the other hand, the US Congress has threatened to require importers of carbon-intensive manufac-

7. Energy-related GHG emissions fell by 3 percent in 2008 and 7 percent in 2009 (EIA 2010c).

8. These bills are the American Clean Energy Leadership Act (ACELA), S. 1462, and the Practical Energy and Climate Plan, S. 3464, respectively.

tures from countries that fail to adopt equally stringent climate policies to buy allowances at the border. The Canadian National Round Table on Energy and the Environment recently warned that Canada could face ruinous protectionism if it did not adopt a climate policy similar to that of its southern neighbor (NRTEE 2009). As a result, Canada has remained paralyzed on the issue, deferring action on climate change until the United States decides on its own policy course.

In the interim, Canada is slowly moving away from its previous climate change plan, *Turning the Corner*. In its January 2010 Copenhagen submission, Canada pledged to reduce emissions 17 percent below 2005 levels by 2020—in contrast to *Turning the Corner's* 20 percent by 2020 target—in line with the United States' Copenhagen promise and US legislation currently on the table. Canada further qualified its submission as “to be aligned with the final economywide emissions target of the United States in enacted legislation.” Thus, the likelihood that Canada will act ahead of United States is slim.

MEXICAN POLICY

Mexico has set ambitious targets for GHG mitigation. In December 2008, Mexico promised to reduce emissions 50 percent below 2002 levels by 2050, and in an annex to the Copenhagen Accord, Mexico announced its commitment to reducing emissions 51 million metric tons (MMT) below business as usual by 2012—equivalent to about a 6.4 percent cut—and 30 percent below business as usual by 2020 (UNFCCC 2010a). Both commitments are explicitly contingent upon developed-country financing. Mexico will also host the Conference of the Parties (COP) 16 in Cancún in late November–December 2010.

Unlike Canada, Mexico has not predicated its actions upon those of the United States, and President Felipe Calderón has sharply criticized Canada for refusing to take a unilateral approach if necessary (Meyer 2010). In 2009, Mexico introduced a Special Climate Change Program (PECC) that lays out actions toward meeting its 2012 target (IPCC 2009). Mexico likely will not develop an economywide cap-and-trade program in the near future, although the Ministry of Finance and the environment ministry have examined sector-specific cap-and-trade programs for PEMEX, CFE, and CEMEX, Mexico's government-owned petroleum, electricity, and cement companies (Morales 2009).

The Centro Mario Molina (2008) estimates that Mexico has the potential to reduce emissions 25 percent from 2005 levels by 2030 using existing and near-commercial technologies. These reductions include an increase in the renewables

share to 50 percent of generation by 2030,⁹ a shift in electricity generation from oil to natural gas, and installation of a smart grid system (Centro Mario Molina 2008). In order to reduce transport emissions, Mexico will also need to embrace new standards for fuel efficiency, develop sustainable biofuels, and

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expand public transport. Much of Mexico's capital stock has not yet been built, so if investments are made in the near future, the cost of replacing existing infrastructure can be avoided.

The key to energy reform in Mexico is tax reform, however, and to date only modest and incremental progress has been made. Large energy subsidies reduce incentives to conserve and deplete government coffers at the same time. PEMEX and CFE both face serious budgetary problems that reduce the money available for new investments. Moreover, the government electricity monopoly operates under a set of restrictive conditions that effectively impede the development of renewable energy resources.

The Clean Development Mechanism (CDM) of the Kyoto Protocol has had some success at financing emissions reductions in Mexico, delivering about 9 MMT of reductions every year (UNFCCC 2010a). These reductions, however, are small in comparison to Mexico's short-term 51 MMT reduction goal and its medium-term goal to reduce emissions 30 percent below business as usual by 2020. In addition, the CDM is not well-designed to fund projects in the transportation sector, where it is difficult to monitor nonstationary pollution sources and determine additionality (Labriet, Caldés, and Izquierdo 2009). Out of 2,262 CDM projects currently registered by developing countries, only three are transport related.¹⁰ Furthermore, the majority of emissions reduction potential in forestry lies in activities such as forest management whose additionality is difficult to ascertain and which fall outside the scope of the CDM (Tudela 2003).

Although \$100 billion was promised for developing countries in Copenhagen, it is unclear where the money will come from or how it will be disbursed. Funds may be given in greater measure to least-developed countries, rather than middle-

9. The researchers estimate a modest increase in solar, geothermal, and hydroelectric power relative to Mexico's potential. However, they assume that Mexico makes better use of “stranded” wind generation sites in order to exceed its current calculated wind potential.

10. One hundred twenty-one CDM projects are registered in Mexico (UNFCCC CDM 2010).

income countries like Mexico (Houser 2010). In February 2010, the United Nations set up an Advisory Group on Climate Change Financing that will study potential sources of revenue for this fund, including both public and private sources (United Nations 2010). Given the slow pace of progress of UN efforts in this area, Mexico would benefit from additional bilateral technical and financial assistance from its NAFTA partners, as well as the development of an integrated North American climate regime that would ensure that environmentally sound Mexican projects qualify to sell carbon credits to the other two countries.

US POLICY

To date, US climate policy has largely been pursued by individual states, many following precedents of performance standards set by California. Thirty states adopted a renewable portfolio standard, and 17 states committed to adopting automobile emissions standards that would produce fuel economy improvements in excess of federal regulation. Many states also implemented energy efficiency measures.

These policies were developed in the face of federal inaction on climate change. During the negotiation of the Kyoto Protocol, the US Congress had indicated its unwillingness to ratify a treaty to reduce greenhouse gases unless developing countries such as China and India made similar commitments. Subsequently, the Bush administration rejected the Kyoto Protocol, followed a permissive environmental agenda regarding regulation of CO₂ as a pollutant, and blocked states from implementing stricter automobile standards. Overall US GHG emissions increased despite increased energy efficiency.

With the entrance of the Obama administration, this dynamic appeared to have changed. The administration has directed the National Highway Transportation Safety Authority to raise fuel economy standards to California levels, and issued an endangerment finding for CO₂. Most importantly, a cap-and-trade bill, the American Clean Energy and Security Act (ACES), passed the House of Representatives, and a similar bill, the American Power Act, was introduced in the Senate. However, the American Power Act remains in legislative limbo.

A pending Senate bill, the American Clean Energy Leadership Act (ACELA) by Democratic Senator Jeff Bingaman, could instead define US climate and energy policy going forward, along with various state regulations. The Practical Energy and Climate Plan introduced by Republican Senator Dick Lugar could influence the final outcome as well, although it has not passed committee and does not have the same support of the Democratic leadership. Neither bill has a comprehensive plan to reduce GHG emissions, instead including a patchwork of measures designed to encourage clean energy development.

While both include low-carbon portfolio standards for electric utilities that address emissions from electricity production—which were responsible for 63 percent of the emissions increase in the United States between 1990 and 2005—both standards are weaker than the renewable electricity standard in ACES in the near term.¹¹

FEDERAL LEGISLATION PENDING IN THE UNITED STATES

Cap-and-Trade

Both ACES and the American Power Act contain a cap-and-trade program that regulates GHG emissions from covered sources such that they achieve a 3 percent reduction from 2005 levels by 2012, a 17 percent reduction by 2020, a 42 percent reduction by 2030, and an 83 percent reduction by 2050. About 85 percent of total emissions are covered under the cap and trade programs. Both bills allow for a total of two billion tons of firms' compliance obligations to be met with offsets. ACES allows up to half of these offsets to come from international sources, and the American Power Act allows for up to a quarter of offsets to be internationally derived.

Renewable Portfolio Standards

ACES requires 6 percent of suppliers' electricity load to be derived from eligible sources and/or energy efficiency in 2012. This requirement escalates to 20 percent in 2020. Up to one quarter of firms' compliance obligations can be met through energy efficiency as opposed to renewable electricity, unless the Federal Energy Regulatory Commission upon petition increases the standard to two-fifths. Eligible renewable sources include wind, biomass, solar, geothermal, some hydropower, marine, and hydrokinetic energy. Other eligible energy sources include landfill gas, wastewater treatment gas, coal mine methane, and qualified waste-to-energy. In addition, the standard is reduced in proportion to the portion of a supplier's electricity sales that are generated from existing hydroelectric facilities, new nuclear facilities, and fossil fuel units that use carbon capture and storage.

Similar provisions are included in the Bingaman and Lugar bills, although both Senate versions are weaker. Bingaman's bill requires electricity utilities to obtain 15 percent of electricity sales from renewable sources or energy efficiency savings by 2021. This requirement is predicted to be roughly along busi-

11. In fact, the Bingaman renewable portfolio standard does not exceed business-as-usual predictions by the Energy Information Administration (EIA) (Union of Concerned Scientists 2009).

ness-as-usual lines (United Nations 2010). Lugar's bill requires utilities to obtain 20 percent of electricity from "diverse sources" by 2020, which may include any combination of renewable electricity, energy efficiency, nuclear power, or coal sources that sequester more than 80 percent of emissions. Both bills also include a building standard that requires buildings to achieve 30 percent in energy savings relative to 2006 levels in 2010 and 50 percent savings in 2016.

Other Provisions

All of the legislation discussed above—ACES, the American Power Act, and the Bingaman and Lugar energy bills—includes provisions to increase building efficiency by 50 percent within the next decade.¹² In addition, the Lugar bill contains a provision that exempts old coal plants from environmental regulations as long as they shut down by 2018. The bill also requires national fuel economy standards to automatically increase by 4 percent per year. The Bingaman bill directs the Federal Energy Regulatory Commission (FERC) to remove barriers to distributed generation by creating a harmonized national interconnection standard and to revamp the transmission grid.

STATE AND PROVINCIAL LEGISLATION

Due to the uncertainty surrounding US and Canadian federal legislation at this time, states and provinces may gain increased importance as the leaders of climate policy in both countries. If lawmakers are able to put into action all of the state initiatives currently on the table, coverage of these programs will be extended to the greater part of the United States, including the industry-heavy Midwest. States are developing and implementing several programs that may not be passed at the national level in the near term, including caps on industry and transportation emissions, renewable portfolio standards, and low-carbon fuel standards. Below, we explain some of these policies in detail.

Cap and Trade

The Regional Greenhouse Gas Initiative (RGGI) is the only multi-state cap-and-trade system with mandatory emissions caps currently in force in the United States. Members include Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

12. The building sector contains some of the most cost-effective emissions abatement opportunities. See Houser, Trevor. 2009. *The Economics of Energy Efficiency in Buildings*. Peterson Institute for International Economics Policy Brief 09-17. Washington: Peterson Institute for International Economics.

The program initially covers only electric power generators—about 95 percent of the electricity sector falls under the cap-and-trade regime—but coverage may expand later to other sectors such as transportation. The goal of the cap-and-trade system is to stabilize emissions from 2009 to 2014 and reduce emissions by 2.5 percent per year between 2015 and 2018, for a total decline in emissions of 10 percent by 2018 (RGGI 2008).

“To date, US climate policy has largely been pursued by individual states, many following precedents of performance standards set by California.”

The Western Climate Initiative (WCI) is an agreement among California, Montana, New Mexico, Oregon, Washington, British Columbia, Manitoba, Quebec, and Ontario to reduce emissions 15 percent below 2005 levels by 2020. Unlike the RGGI, the WCI envisions an economywide cap by 2015. California has led US states on implementation, publishing a draft regulation under Assembly Bill 32 in 2009.

However, other US states including Oregon, Washington, and Montana seem unlikely to be able to implement a cap-and-trade program by the WCI start deadline. The New Mexico environmental department, faced with opposition in the state legislature, is attempting to formulate resolutions under existing state law. Even California's law is subject to a ballot measure in November 2010 that could suspend it until unemployment reaches 5.5 percent—which is not likely to happen in the near future. Republican gubernatorial candidate Meg Whitman also supports postponing implementation until 2013.

Despite these possible setbacks, the WCI is likely to have a far larger geographic scope than the RGGI. Whereas the RGGI trading program is confined to the northeastern part of the United States, with Canadian observers, the WCI trading system involves both US states and Canadian provinces, with Mexican observers. Further, the WCI allows carbon offsets to come from anywhere in North America, whereas RGGI offsets must come from within the RGGI region.

Renewable Portfolio Standards

The most common local measure implemented in North America, the renewable portfolio standard, is a requirement that covered utilities supply a certain percentage of electricity from renewable sources. As of 2007, 31 percent of US retail electricity sales were covered by a mandatory renewable stan-

dard (Wiser and Barbose 2008). Although the renewable energy requirement is the most common measure catalogued in our study, measures differ widely across the continent. The most obvious area of divergence is the target percentage of renewable energy to be achieved by a certain date; arguably the least stringent target belongs to Texas—5 percent by 2015—whereas California’s target is 33 percent by 2020.

Other areas of divergence, however, are more significant for North American cooperation. In particular, rules regarding eligibility of various sources of electricity, recognition of other states’ renewable electricity, and recognition of other states’ renewable electricity credits (RECs) vary widely across the continent. Varying definitions of renewable energy limit the fungibility of REC markets, as a REC certified in one state might not be able to be sold to another state in order to comply with the second state’s standard. Despite definitions of renewable energy that differ from state to state, many state laws do not clarify which RECs can be used to count toward RPS compliance and which cannot (Holt and Wiser 2007). In addition, the systems that certify and manage renewable electricity credits are highly regionalized.

IMPLICATIONS OF CLIMATE LEGISLATION FOR NORTH AMERICAN TRADE AND COOPERATION

Carbon Market Integration

Both the House and Senate cap-and-trade bills contain international allowance trading provisions whose use could help link climate policies in North America. In order for US firms to use allowances “imported” from a foreign country, however, the foreign country must have a national or international carbon trading regime that imposes mandatory greenhouse gas emissions limits on one or more sectors. The foreign cap-and-trade program needs to be at least as stringent as that of the United States. For Canada, which is likely to meet this standard, allowance trading with the United States could be a boon, lowering the price of allowances and greatly mitigating pressures on carbon-intensive industries (Bramley, Partington, and Sawyer 2009). If Mexico implements a sectoral cap-and-trade program that produces reductions comparable to those in the Waxman-Markey bill, it could, under the bill, take part in a trilateral cap-and-trade program for those sectors.

If cap-and-trade programs are limited to US states, as is likely to be the case, there could still be an opportunity to trade emissions allowances trilaterally. In fact, the state and provincial cap-and-trade programs are by nature trilateral. The RGGI contains Canadian observers that could potentially join the program later on. Four Canadian provinces are scheduled to participate in the WCI and all of the Mexican border states—

Baja California, Sonora, Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas—are observers.

The WCI is open to participation from any North American jurisdiction, in one of several capacities. Any jurisdiction may join the initiative so long as it adopts the same emissions reduction commitments—15 percent by 2020. The WCI also permits allowances from other cap-and-trade programs to be sold within the region, although the combined total of outside allowances and offsets is restricted to no more than 49 percent of emissions reductions (WCI 2009). The standards for sale of outside emissions allowances to the WCI are as yet unclear. There is also the potential to link with the WCI through offset sales, as detailed below.

International Offset Provisions

The significant portion of international offsets allowed under pending cap-and-trade legislation could provide a channel for US support for GHG mitigation in Mexico. Used properly, offset markets can improve the environment, reduce deforestation, alleviate poverty, and lower the cost of abating climate change. Although the offsets would not provide reductions in addition to those realized by developed-country cap-and-trade programs—one would not wish to double-count offset reductions toward both the United States and Mexican emissions reduction programs, for example—they could provide funding to start Mexico on a path to a lower-carbon economy. Centro Mario Molina (2008) estimates that Mexican offsets could be worth US\$2 billion per year by 2030, assuming a US\$50 per ton carbon price.

As stated above, up to one billion tons of emissions could potentially be offset internationally under ACES, and up to 500 million tons may potentially be offset internationally under the American Power Act.¹³ Due to its relatively high GHG emissions level and relatively high GDP, Mexico would likely be required to sell offset credits on a sectoral basis in sectors covered under the federal cap-and-trade program. This means that for sectors covered under cap-and-trade, only emissions reductions under a countrywide baseline could be sold. Baselines would need to be established below business-as-usual trajectories. Reduced emissions from degradation and deforestation (REDD) credits could also only be issued to Mexico for emissions reductions under a countrywide baseline; these baselines would be established according to nationally appropriate mitigation actions (NAMAs) and would need to achieve net zero deforestation in 20 years.

13. These numbers are subject to firm-specific offset limits detailed in both bills.

Neither the Bingaman nor the Lugar bill includes a role for offsets, as neither includes a cap-and-trade program for carbon emissions. Even without a federal cap-and-trade program, however, there is still a significant opportunity for Mexico to sell offsets in North America. Although the RGGI limits offsets to those produced within the RGGI region, WCI offsets may come from anywhere within North America and may account

“Both federal cap-and-trade bills on the table, ACES and the American Power Act, contain two types of provisions to protect the competitiveness of trade-exposed manufacturing sectors.”

for up to 49 percent of emissions reductions. The WCI design recommendations require WCI partners to set stringent standards for monitoring, reporting, and verifying offsets.

Renewable Electricity Trade

Both Mexico and Canada have abundant renewable resources that could be sold to the United States to meet renewable electricity procurement goals. Canada derives about 60 percent of its electricity from hydropower, and Mexico's La Venta and La Rumorosa regions contain some of the best wind capacity in the world. Although Mexico's expected 2012 renewable electricity capacity of 5 GW is only a tiny fraction of total US electricity needs, it could play a more significant role in the generation portfolios of some US border states (Dukert 2010). In particular, demand for renewable energy in California will be high, as it is currently required to procure a third of its electricity from renewable sources by 2020.

Mexico's fledgling renewable electricity industry in particular has the biggest stake in ensuring open markets for renewable energy. Because Mexico's state-run energy monopoly, the Federal Electricity Commission (CFE), faces high barriers to purchasing renewable electricity for public use, private electricity purchases have driven Mexican renewable electricity development (Wood 2010). US states could present Mexico with yet another outlet for development of its rich renewable resources along the border. Many US states allow for electricity generated outside their jurisdiction to count toward meeting renewable targets, so long as the electricity is delivered to a utility within their jurisdiction.

Already, the United States and Mexico have taken steps toward cooperation on these issues. As part of a 2009 Bilateral

Framework on Clean Energy and Climate Change, Presidents Obama and Calderón committed to address transmission and distribution obstacles between the two countries (White House 2009). In May 2010, the two presidents launched a Cross-Border Electricity Task Force to promote a regional renewable energy market and advance options on standards, electricity transmission, and grid connections (White House 2010). These initiatives should be used toward substantive action to address barriers to renewable energy trade and development in the border region.

However, lack of transmission capacity prevents Mexico from fully taking advantage of US renewable electricity markets (Wood 2010). Currently, the Baja California-California connection comprises the only significant transmission capacity between Mexico and the United States, but it has only one 800-MW transmission line operated by CFE and San Diego Gas and Electricity, and two privately owned lines of 310 MW and 1,200 MW, for a total of 2.3 GW of transmission capacity (PA Government Services 2009, Wood 2010). The rest of Mexico is cut off from this transmission.

In addition to direct transmission, many states allow utilities to buy tradable RECs for renewable electricity generated outside the state, even if the electricity itself is not actually delivered to the state. New Mexican utilities may count RECs toward compliance with its renewable electricity standard, and California is considering regulations that would allow its utilities to do the same.

Currently, the only Mexican state that may sell RECs to either state is Baja California, as it is the only state permitted to register credits with the Western Renewable Energy Generation Information System (WREGIS) tracking system. Both states require eligible RECs to be certified by WREGIS.

In theory, hydropower transmitted from Canada could also help US border states meet renewable portfolio standard requirements. In order for hydropower to qualify as renewable electricity under any of the various federal bills under consideration, however, it must meet standards for additionality and environmental quality. In verifying compliance with these standards, inclusion of Canadian hydropower as a qualifying renewable source poses regulatory difficulties. The US Federal Electricity Regulatory Commission is responsible for certifying qualified hydropower in all federal bills, but FERC does not have jurisdiction over Canada. In order for Canadian hydropower to qualify under federal renewable electricity legislation, Canada would have to negotiate some form of equivalency agreement for certification of compliance with US standards.

Even unqualified hydropower can help a utility meet its renewable portfolio obligation under federal standards. Unqualified hydropower, along with nuclear electricity and

electricity generated using carbon capture and sequestration, is subtracted from a utility's base generation amount. Thus, the more hydropower a utility uses, the less energy that utility is obligated to produce from renewable power.

Many states exclude large hydropower altogether from qualifying as renewable electricity, a point that is highly contentious among US and Canadian border states. Hydro Quebec has been a vocal advocate for including large-scale hydropower in state standards, arguing in New York State discussions and preparing a submission to the NAFTA CEC. Manitoba Hydro and the state of Minnesota have also clashed over the definition of hydropower in state standards (Rowlands 2009).

Industrial Competitiveness

Both federal cap-and-trade bills on the table, ACES and the American Power Act, contain two types of provisions to protect the competitiveness of trade-exposed manufacturing sectors. First, a rebate program compensates trade-exposed manufacturing industries for 100 percent of sector average costs. Second, an international allowance reserve program could require importers of goods from countries that (1) have not adopted commitments comparable to those of the United States; (2) have not negotiated a sectoral emissions reduction agreement with the United States; and (3) have a sector-average carbon intensity of production greater than that of the United States to buy allowances at the border to compensate for the difference in regulation. Because these conditions do not take into account common but differentiated responsibilities, countries such as Mexico that are not likely to make international commitments as stringent as those of the United States could be sideswiped by this provision should cap-and-trade legislation take effect.

The international reserve allowance provision is put off until 2020 in ACES and 2025 or later in the American Power Act, giving countries time to either (1) negotiate a binding international agreement in which all major emitters reduce greenhouse gases "equitably," which would stave off the border allowance program entirely; or (2) negotiate bilateral sectoral agreements with the United States in order to keep trade flowing in those sectors. However, several members of Congress already have indicated that they would seek a more immediate application of border adjustment measures, if a cap-and-trade bill goes forward in the Congress.

OPPORTUNITIES FOR NORTH AMERICAN COOPERATION

As in our previous policy brief, we conclude with concrete steps that the three North American countries could pursue together to advance their national climate change objectives. Some of our recommendations have remained the same; some have been changed slightly; and some have been added. Combined, they form a pragmatic NAFTA agenda for action on climate change issues under an uncertain regulatory regime.

1. **Use the Commission for Environmental Cooperation (CEC) as a clearinghouse for climate change-related data.** The CEC is underutilized and underfunded; with modest budgetary increments it could play a significant role in NAFTA climate change initiatives by expanding its database on North American emissions and reporting on new climate initiatives and regulations in each country. In so doing, the CEC could become a North American clearinghouse for monitoring, reporting, and verification (MRV) of carbon credits—issued under national or regional carbon regimes—that could lower transaction costs of offset projects among the three countries.
2. **Study options for coordinating or integrating evolving carbon regimes, both at the federal and state levels.** Policy coordination could facilitate carbon credit trading by ensuring that carbon credits in all three countries represent similar kinds of carbon reductions. On the national level, such coordination could evolve from two separate but similar national cap-and-trade systems in the United States and Canada, with incentives for Mexican participation. On the state level, various state and regional cap-and-trade programs might create a framework for mutual recognition of each other's carbon credits.
3. **Standardize definitions of renewable energy and coordinate policies.** Currently, definitions vary widely among states and provinces, complicating regulation of renewable electricity from across the border. The major differences between the US and Canadian regulations lie in the eligibility of hydropower to meet renewable standards. Both sides should make virtue out of necessity and agree on how imported electricity should be credited and certified under renewable portfolio standards, both at the federal and state levels. To the extent feasible, states and provinces should harmonize definitions of renewable electricity in order to stimulate development by increasing the fungibility of RECs.

4. **Harmonize renewable electricity tracking systems.** REC tracking systems are highly regionalized, which limits the jurisdictions that are able to sell RECs to certain states. Harmonization and expansion of renewable energy credit tracking systems could widen the geographic area from which renewable credits could be purchased.
5. **Improve cross-border transmission capacity between the United States and Mexico.** Additional cross-border transmission would allow for firms conducting renewables projects to take advantage of economies of scale, and in fact several firms have already located generation sites along both sides of the border in the hopes of scaling up generation for both markets (Wood 2010). Such economies of scale would lower the cost of compliance with state renewable standards, make solar and wind power more competitive relative to conventional fuels, and accelerate the development of renewable infrastructure on both sides of the border.
6. **Use NAFTA institutions for capacity building in Mexico.** First, NAFTA facilitation of Mexican carbon offset sales could potentially generate revenue that could be put toward climate change measures in Mexico. Second, the North American Development Bank (NADB) should be used to provide finance and technical assistance for energy-saving and pollution-control projects in Mexico in support of its ambitious climate change policies.
7. **Establish a “safe harbor” to shield climate change taxes and regulations from claims under the indirect takings provisions of NAFTA chapter 11.** Chapter 11 requires governments to provide compensation to investors for measures that are “tantamount to expropriation.” To date, chapter 11 decisions have not cast a wide web regarding

findings of indirect expropriation resulting from the implementation of environmental laws and regulations. Climate change laws will most likely have much broader economic effects than prior environmental legislation, and the scope of potential claims under NAFTA chapter 11 due to climate change laws and regulations could be orders of magnitude greater than those filed in the past. The potential for such chapter 11 litigation against climate change laws could slow the implementation of measures designed to mitigate GHG emissions as well as adversely affecting flows of trade and investment in the region.

8. **Adopt a NAFTA peace clause.** In the near term, trade measures or border adjustments should not be used to equalize costs between domestic and foreign producers, as these measures are likely to be emulated or provoke retaliation in other countries. In order to handle competitiveness concerns that are not addressed through international climate negotiations, a framework needs to be developed under the WTO so as not to give rise to litigation or to snowballing protectionism. Because such a framework would take a few years to develop, a temporary “peace clause” suspending border measures for a limited time should be incorporated into US (and foreign) climate legislation in order to encourage international negotiating efforts. This is particularly necessary in light of current regulatory uncertainty in all three NAFTA countries.

In addition to these recommendations, the North American countries might consider harmonization of emissions standards or the establishment of a North American carbon trading regime. North American cooperation could serve as a model for how developed and developing countries can mutually benefit from an international climate change agreement.

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