

## Multi-level and Multi-track Climate Law and Policy in North America: Implications for Developing Countries

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Prepared for presentation at IUCN Academy of Environmental Law: Climate Law in Developing Countries post 2012: North and South Perspectives

September 26-28, 2008, Ottawa

Draft 9/15/08– Do Not Cite Without Author’s Permission

### Introduction

With the United States rejecting the Kyoto Protocol, Canada acknowledging that it is unlikely to meet its Kyoto commitments and Mexico, as a developing state, not having to reduce its GHG emissions within that framework, the state of climate law and policy in North America may look bleak. However, as the trajectory of global climate change governance post 2012 shifts towards a multi-level and multi-track framework, there may be greater opportunities for tri-lateral cooperation on climate change in North America. This paper surveys the current bilateral and tri-lateral initiatives aimed at GHG emission reductions in North America, with a view to assessing the nature and potential role of regional climate change law and policy within the broader global framework. In light of this assessment, this paper seeks to identify, in a preliminary fashion, the approaches to climate change mitigation that may usefully be regulated on a regional scale, and the potential governance structures and institutions that may be drawn upon to create and implement regional cooperation on climate change. Particular consideration will be given to the capacity of regional approaches to climate change cooperation to meet the particular objectives that developing states, in this case Mexico, have identified in relation to climate change.

In order to frame the context of the discussion that follows this paper begins with a brief discussion of the current development of global climate change governance towards a more diffuse, multi-centric structure. The role of regionalism in addressing international environmental issues is also considered. Here we examine, with reference to the particular challenges raised by global climate change, some of the reasons why states may seek to organize environmental governance structures on a regional basis, as opposed to a global, bi-lateral or unilateral basis. Proceeding from the basis that regional environmental cooperation requires that the participating states have common policy objectives, Part Two canvasses the international commitments, stated policy objectives and existing policy structures addressing climate change of Canada, Mexico and the United States. Because the aim of this paper is to identify the broad contours of potential cooperation in addressing climate change, the particular

commitments and policy approaches are described in summary form, with an emphasis on identifying areas of commonality. Part Three considers in greater detail the prospects for regional climate change governance in North America. Here we seek to identify the potential forms of climate change regulation that are likely to benefit from regional cooperation. We also consider the potential of the principal existing regional environmental governance structures, the Commission for Environmental Cooperation, and the Security and Prosperity Partnership, to contribute to the formation and implementation of climate change law and policy. Finally, in Part Four, we consider the capacity for regional climate change governance structures to meet Mexican objectives in relation to climate change, including improved GHG reporting, nationally appropriate mitigation actions, continued economic development, access to technology and improved climate adaptation capabilities. Given that the primary role of this paper is oriented towards identifying and framing areas for further empirical and theoretical study, the conclusion describes a future research agenda for North American climate change governance.

## Part 1 Context: Decentralization and Regionalism in Climate Change Governance

### a) Multi-level and Multi-track Climate Change Governance

As the first commitment period (2008 to 2012) of the *Kyoto Protocol* draws to a close and states look towards the negotiation of a new global compact on climate change, two important characteristics of the nature of climate change governance are becoming apparent.<sup>1</sup> First, climate change governance is becoming increasingly multi-level in its architecture.<sup>2</sup> Whereas the *United Nations Framework Convention on Climate Change* (UNFCCC) and the subsequent *Kyoto Protocol* operate on a global scale, there are now numerous examples of climate change governance structures that involve actors both below and above the state, and that are organized on multiple scales. The EU has chosen to implement its *Kyoto Protocol* obligations through regional measures and has, in fact, made collective commitments to reduce greenhouse gas (GHG) emissions irrespective of the commitments of other states. The Asia Pacific Partnership is a further, albeit looser, example of regional climate change cooperation.<sup>3</sup> In North America, sub-national governments have organized climate initiatives on a sub-regional basis, with participating governments from both the United States and Canada, and a number of Mexican states participating as observers.<sup>4</sup>

The transnational dimension of sub-regional climate change cooperation is significant because it demonstrates the potential for environmental cooperation beyond the state without the participation of national governments, or, at least, without sub-national interests being aggregated at the national level. In the case of North American climate change law and policy, the lack of national leadership has led to the creation of a policy vacuum that is being addressed by sub-national governments.<sup>5</sup> The decentralized nature of environmental governance and energy regulation in North America has facilitated this process

<sup>1</sup> *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 11 December 1997, 37 I.L.M.22 at art. 3(7) (entered into force 16 February 2005) [*Kyoto*].

<sup>2</sup> For theoretical discussion of multi-level governance in climate change see Michele Betsill and Harriet Bulkeley, "Cites and Multilevel Governance of Climate Change" (2006) 12 *Global Governance* 141; see also Barry Rabe, "Beyond Kyoto: Climate Change Policy in Multilevel Governance Systems" (2007) 20 *Governance: An International Journal of Policy, Administration and Institutions* 423.

<sup>3</sup> Asia-Pacific Partnership on Clean Development and Climate, *Charter*, (Sydney, Inaugural Ministers Meeting, 2006) available online: < <http://www.asiapacificpartnership.org/charter.pdf> > (Canada joined APP in November 2007).

<sup>4</sup> See WCI website for full list of members and observers, Western Climate Initiative, online: < <http://www.westernclimateinitiative.org/> >.

<sup>5</sup> Barry Rabe, "Regionalism and Global Climate Change Policy: Revisiting Multi-state Collaboration as an Intergovernmental Management Tool" (Paper presented at the Annual Meeting of the Midwest Political Science Association, April 2008).

since sub-national governments have significant pre-existing environmental responsibilities, many of which overlap with climate change, such as, air pollution, control over natural resources and land use decisions. Likewise, at the local level, jurisdictional control over matters such as land use and transportation planning, as well as local air quality, has given municipalities a platform from which local climate initiatives have been pursued.

The relationship between levels in multi-level governance structures is not hierarchical and non-exclusive. As such, different levels of government may address the same issues and cooperative efforts may arise between different levels. California has, for example, entertained climate change initiatives with the British government,<sup>6</sup> while New Jersey sought to provide opportunities for Dutch companies to obtain emissions trading credits for activities undertaken in New Jersey.<sup>7</sup>

The second emerging characteristic is that climate change negotiations are no longer solely focused on extending the *Kyoto Protocol* beyond the 2012 time period and broadening participation in the GHG reduction commitments found in the *Protocol*.<sup>8</sup> There does appear to be an international consensus that the *UNFCCC* should remain the principle basis upon which future international negotiations should go forward.<sup>9</sup> Thus, the objectives and principles agreed to in the *UNFCCC*, including the principle of common but differentiated responsibilities, will provide a universal normative basis for future negotiations. However, the top-down, “targets and timetables” approach adopted in the *Kyoto Protocol* is not likely to be the exclusive approach taken. The Bali Action Plan, which sets out the broad framework for future climate negotiations within the *UNFCCC* framework recognizes that approaches to cooperative action on mitigation may take a number of different forms beyond economy wide quantified emission limitation and reduction commitments, including sector-specific actions, and cooperation on technology development and transfer of technology.<sup>10</sup> The approach adopted in the *Declaration of Leaders Meeting of Major Economies on Energy Security and Climate Change*, which includes all three North American governments, acknowledges the role of the *UNFCCC* as the global forum for climate negotiation, but also stresses the importance of technology driven solutions, land use change and adaptation.<sup>11</sup>

A multi-track climate framework means that states may negotiate multiple and overlapping sets of commitments in accordance with their specific national circumstances.<sup>12</sup> States may have preferences for different approaches to climate change mitigation, such as preferring carbon taxes to emissions

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<sup>6</sup> David B. Hunter, “The Future of U.S. Climate change Policy” in Steven Bernstein et al., *A globally Integrated Climate Policy for Canada* (Toronto: University of Toronto Press, 2008) 79 at 96. See also Joseph DiMento and Pamela Doughman (eds), *Climate Change: What it Means for Us, Our Children, and Our Grandchildren* (Cambridge, Ma.:MIT Press, 2007).

<sup>7</sup> Kirsten H. Engel, “Mitigating Global Climate Change in the United States: A Regional Approach” (2006) 14 N.Y.U. Env’t. L.J. 54 at 68.

<sup>8</sup> Daniel Bodansky, “Targets and timetables: good policy but bad politics?” in Joseph E. Aldy and Robert N. Stavins, *Architectures for Agreement* (Cambridge: Cambridge University Press, 2007) 57 at 59.

<sup>9</sup> *Report of the Conference of the Parties to the United Nations Framework Convention on Climate Change on its thirteenth session, Bali Action Plan*, FCCC/CP/2007/6/Add.1 and Decision 1/CP.13 (15 December 2007); see also G8, Hokkaido Toyako Summit, *G8 Hokkaido Toyako Summit Leaders Declaration Climate Change, Clean Energy and Sustainable Development* (8 July 2008) available online: < [http://www.g8summit.go.jp/eng/doc/doc080714\\_en.html](http://www.g8summit.go.jp/eng/doc/doc080714_en.html)>

<sup>10</sup> *Bali Action Plan*, *ibid*.

<sup>11</sup> G8, Hokkaido Toyako Summit, *Declaration of Leaders Meeting of Major Economies on Energy Security and Climate Change* (9 July 2008) available online: <[http://www.g8summit.go.jp/eng/doc/doc080709\\_10\\_en.html](http://www.g8summit.go.jp/eng/doc/doc080709_10_en.html)>.

<sup>12</sup> Daniel Bodansky and Elliot Diringer, “Towards an Integrated Multi-track Climate Framework” (2007), prepared for Pew Center on Global Climate Change, online at <http://www.pewclimate.org/>; See also Daniel G. Victor, “Fragmented carbon markets and reluctant nations: implications for the design of effective architectures” in Joseph E. Aldy and Robert N. Stavins, *Architectures for Agreement* (Cambridge: Cambridge University Press, 2007) 133.

trading, or focusing on developing technology based solutions.<sup>13</sup> They may also differ in the degree to which they are willing to adopt legally binding international commitments, preferring soft law commitments to harder commitments with strong compliance features. In some cases, such as with the EU ETS framework, states may choose to develop collective responses that are highly integrated with the UNFCCC and Kyoto process.<sup>14</sup> But as the Asia Pacific Partnership illustrates, states may also choose to develop a framework that is largely parallel and supplementary to other international cooperative efforts.

It is beyond the scope of this paper to canvass the desirability and implications of a multi-level, multi-track climate framework. However, we would note that the pluralist trajectory of climate change governance provides greater scope for regional initiatives that are oriented towards the specific national and regional conditions. Bodansky and Derringer note that increased flexibility is the primary advantage of a multi-track framework since states are more likely to be willing to participate in cooperative actions that are well suited to their domestic economic and political requirements.<sup>15</sup> Where those requirements are regional in scope because of common geographical features, closer economic integration, or shared political institutions, there may be advantages to regionally based arrangements. When one considers the multi-level aspect of climate change governance, flexibility also provides improved opportunities for actors, such as sub-national governments and non-state actors, who are not formally recognized in international law, to respond to global climate change in accordance their preferences, without necessarily having those preferences aggregated and possibly subsumed by national governments.<sup>16</sup>

The potential cost of increased flexibility is a loss of broader policy coherence, and a lack of reciprocity between states. The latter is particularly important given the strong incentives for free-riding associated with climate change mitigation.<sup>17</sup> As a consequence, continued coordination of the various tracks is necessary. The ability to accurately track emissions and require disclosure of emissions data is a baseline requirement for continued cooperation, particularly as the ability for states to be able to reliably compare emissions reduction information enhances the opportunity for linking different tracks.<sup>18</sup> Comparability is critical to providing states with assurances that their own sacrifices are being reciprocated by other states, and provides a basis for assessing the fairness of climate change burden allocation globally. Given that cooperative arrangements may be developed on multiple levels, coordination requires both vertical integration between levels and horizontal integration between various tracks. The complexity of integrating suggests that states should approach the negotiation of multiple climate change arrangements with considerable caution, as the transaction costs and the costs of increased fragmentation may outweigh the benefits of flexibility. Increased governance arrangements are not an unalloyed good.

#### b) Regionalism, Climate Change and North America<sup>19</sup>

Given the global nature of the climate change problem, it is helpful to consider further the potential advantages to engaging in regional cooperative efforts in North America. While the problem

<sup>13</sup> Joseph Aldy, Scott Barrett and Robert Stavins, "Thirteen Plus One: A Comparison of Global Climate Policy Architectures", (2003) KSG Working Paper RWP03-012 ; See also Daniel Bodansky, Sophie Chou and Christie Jorge-Tresolini, *International Climate Efforts Beyond 2012: A Survey of Approaches* (Washington: Pew Center on Global Climate Change, 2004).

<sup>14</sup> Brunnée and Levin, *supra* note 5.

<sup>15</sup> Bodansky and Derringer, *supra* n.12 at 3-5.

<sup>16</sup> Compare Alberta with Quebec

<sup>17</sup> See Scott Barrett, *Environment and Statecraft* (New York: Oxford University Press, 2003)

<sup>18</sup> For example, there may be benefits to allowing emissions trading across different governance structures. See for example the attempts by New Jersey to participate in EU ETS, discussed in Engel.

<sup>19</sup> Our references to "regionalism" in this paper refer to global regions, as opposed to regions with states, which we refer to as "sub-regions".

structure of climate change is largely global in that emissions in any part of the world have negative consequences for all, some of the associated problems arising from climate change have a strong regional orientation. There will, for example, be ecosystem impacts that transcend national boundaries. In the North American context, shared freshwater resources, including ground water resources, are predicated to become further stressed by climate change, requiring heightened transboundary management.<sup>20</sup> Climate change may also impact the ranges of species within a region, leading to conservation concerns and increased opportunities for invasive species proliferation.<sup>21</sup>

In addition to there being regional environmental impacts from climate change, many of the economic impacts from climate change may also be regional in scope. For example, the economic losses associated with climate change impacts in Mexico may place additional labour migration pressures on the United States. Consequently, the United States may benefit more by focusing its adaptation efforts on a regional basis, rather than on a global basis. Relatedly, given the extent of economic integration between all three North American countries, economic losses in one part of the region may have a stronger potential to impact other parts of the region given the extent of economic inter-dependence. Thus, while Canada may have low vulnerability to the direct affects of climate change, it nevertheless has a strong interest in ensuring that its economic partners' losses from climate change are minimized. The high degree of economic integration further militates in favour of regional solutions. In sectors, such as energy and transportation, where compliance with climate change policies are likely to be significant, there will be pressure for states to maintain sectoral competitiveness.<sup>22</sup> Similarly, in the event of high degrees of asymmetry in climate change commitments, there may be heightened concerns that firms will locate in jurisdictions with less onerous requirements.<sup>23</sup>

Regional cooperation can also generate more efficient solutions by allowing countries to pool mitigation opportunities and, in the case of emissions trading, to increase the size of the carbon market.<sup>24</sup> The flexibility mechanisms under the *Kyoto Protocol* recognize the benefits that may flow from allowing states to meet their emission reduction requirements jointly.<sup>25</sup> The so-called 'EU bubble' is an example of a regional approach to joint implementation.<sup>26</sup> The Clean Development Mechanism further recognizes that there may be particular advantages to directing mitigation measures towards developing economies, where there may be further efficiency gains arising from higher levels of GHG emissions intensity in those economies.<sup>27</sup> Regional solutions may rightly be seen as a second best approach in relation to flexibility, where global approaches will further maximize efficiency gains. However, flexibility mechanisms also require high degrees of trust among partners to ensure that credits are properly

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<sup>20</sup> C.B. Field et al., "North America. Climate Change 2007: Impacts, Adaptation and Vulnerability" in M.L. Parry et al., eds., *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2007) at 617.

<sup>21</sup> *Ibid*; see also Thomas Homer-Dixon, "Positive Feedbacks, Dynamic Ice Sheets, and the Recarbonization of the Global Fuel Supply: The New Sense of Urgency about Global Warming" in Steven Bernstein et al., *A globally Integrated Climate Policy for Canada* (Toronto: University of Toronto Press, 2008) 37.

<sup>22</sup> See Robert Page, "Kyoto and Emissions Trading: Challenges for the NAFTA Family" (2002) 28 Can.-U.S.L.J. 55.

<sup>23</sup> See discussion of "leakage" in Scott Barrett, *Environment and Statecraft* at 383. The extent of economic leakage requires careful empirical analysis, as firm location is determined by a variety of factors unrelated to the extent of regulatory burden.

<sup>24</sup> Wider trading may be more efficient because of economies of scale, and opportunities to exploit natural advantages of the participating entities.

<sup>25</sup> But high emission reduction commitments aided by including economies in transition, where economic contraction has lead to dramatic reduction in emissions, see *Brunnee and Levin, supra* note 5 at 70.

<sup>26</sup> *Kyoto, supra* note 1 at art. 4; EU Decision June 1998.

<sup>27</sup> Emissions intensity is a ratio of GHG emission per unit of economic output (GDP).

accounted for and that emission are accurately calculated.<sup>28</sup> In this regard, regional approaches may offer stronger opportunities for cooperation requiring high degrees of trust.

In Europe, the high degree of political integration accompanied by strong regional institutions allows for the development of regional climate change policies through existing institutions. The vertical structure of the EU allows for the enactment of binding rules such as the EU ETS and the allocation of climate change burdens among members. The highly institutionalized nature of the EU also provides a forum for the development of a uniform position on international climate policy.<sup>29</sup> We do not want to understate the complex nature of regional integration, and the associated explanations accounting for the degree and nature of regional integration.<sup>30</sup> Our point here is simply that the presence of regional environmental institutions provides opportunities for the development of shared environmental goals and reduces barriers to cooperation by providing forums for regional negotiation and mechanisms to jointly develop policies and implementation measures, such as emission trading systems or cooperative research and development strategies and technology transfer. In this regard, attention must not only be paid to formal institutions, but also informal institutions, such as transgovernmental networks and epistemic communities, since informal institutions may generate cooperative arrangements of their own through exchanges of information, and co-ordinated regulatory measures. In addition, informal arrangements provide opportunities for the socialization of the participants, who through repeated interactions with their counterparts in other jurisdictions can come to shared normative understandings around particular issue areas.<sup>31</sup> The existence of prior cooperative activity may also build confidence and trust between negotiating partners. Moreover, the incentives to defect from an agreement may be tempered by higher degree of interdependency, particularly where parties are able to link issues through common institutions.<sup>32</sup>

The degree and nature of integration in North America differs significantly from that in Europe. As a consequence, one would expect that the form of regional climate change governance will also differ as the form of governance will be influenced by the pre-existing institutional landscape. Taken in its broadest sense, the institutional landscape relating to environmental governance in North America includes not only formal environmental institutions like the North American Commission for Environmental Cooperation (NACEC), but also includes less formal institutions, such as the constellation of transgovernmental networks and working groups addressing environmental issues, which have more recently been organized within the North American Security and Prosperity Partnership (SPP) framework.<sup>33</sup> In addition, the institutional context also includes shared environmental norms and priorities of the three North American states.

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<sup>28</sup> See Richard Cooper, "Alternatives to Kyoto: the case for a carbon tax" in Aldy and Stavins, at 106, raising concerns about emissions trading with states "less meticulous about the rule of law".

<sup>29</sup> Commission of the European Communities, *Limiting Global Climate Change to 2 degrees Celsius – The Way Ahead for 2020 and Beyond*, COM, 1 October 2007.

<sup>30</sup> See Young Jong Choi and James Caparaso, "Comparative Regional Integration" in Walter Carlsnaces, Thomas Risse and Beth Simmons, *Handbook of International Relations* (London: Sage Publications, 2002) 480, discussing approaches and literature on regional integration.

<sup>31</sup> Neil Craik and Joseph DiMento, "Environmental Cooperation in the (Partially) Disaggregated State: Lessons from the Security and Prosperity Partnership of North America" (2008) 8 *Chicago J. Int'l. L.* 479. See also DiMento, J., "Process, Norms, Compliance, and International Environmental Law," 18 *Journal of Environmental Law and Litigation* 251 (2003).

<sup>32</sup> See Michele M. Betsill, "The Multilevel Governance of Global Climate Change" (2006) *MEA Bulletin*, International Institute for Sustainable Development, available online: <<http://www.iisd.ca/mea-/guestarticle17.htm>>; See also Jonathan R. Strand, "The case for regional environmental organizations" in Norichika Kanie, ed., *Emerging Forces in Environmental Governance* (Tokyo: United Nations University Press, 2004) 71.

<sup>33</sup> Discussed *infra*.

The literature on regional cooperation suggests that there are cooperative advantages associated with negotiations among fewer numbers of actors.<sup>34</sup> Where negotiations are restricted to states that have convergent policy interests, deeper commitments should be possible.<sup>35</sup> There are, of course, critical limitations to regional negotiations, such as the desirability of including all of the relevant parties to solve a particular problem.<sup>36</sup> In the case of climate change, regionalism cannot supplant global approaches, but it may nevertheless supplement those approaches and provide middle ground between globalism and unilateralism.<sup>37</sup> The smaller numbers associated with regional negotiations may make sectoral agreements easier to arrive at where the sector's principal markets are regional and the industry itself has a small number of dominant actors.<sup>38</sup> A related factor is that certain sectors may be responsible for significant GHG emissions on a regional scale, making coordination efforts worthwhile.

In determining the scale of cooperation, states must be cognizant that governance activities at any scale entail costs associated with resources dedicated to negotiation and implementation, and perhaps more importantly, these activities consume time and may distract leaders from other more fruitful governance structures.<sup>39</sup> With this in mind, the next section of the paper seeks to provide an overview of the existing institutional framework surrounding climate governance in North America, with the intent of making a preliminary assessment of the degree of shared interests and common understandings regarding approaches to addressing climate change.

## Part 2 The Existing Governance Landscape: Climate Change Commitments and Policies

### a) North American GHG Emissions

Before looking at governance instruments, it may be helpful to take stock of the basic GHG emissions conditions in North America. Looking at the basic statistics in Figure 1, the principal condition that must be accounted for is the asymmetry in emissions between the three countries. On an absolute basis, the U.S. emissions are so much larger than both Canada and Mexico, owing to the U.S.'s larger economy, and on a per capita basis, Mexico's emissions are significantly less (1/4) than those of Canada and the U.S. This asymmetry will likely impact the architecture of any regional climate structure. For example, regional cooperation will need to account for the Mexico's lower per capita emissions and its higher emissions growth rate. In relation to the relative absolute emissions, it might be expected that market based structures, such as trading systems, will reflect the fact that the U.S. emissions will account for the majority of the market. Because the U.S. gains relatively less in terms of access to a larger market, it may have less incentive to adjust its domestic programs to meet regional requirements. The carbon intensity numbers, however, suggest that there is significant potential for increased emissions efficiency in both Canada and Mexico.

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<sup>34</sup> Michelle Betsill, "Regional Governance of Global Climate Change: The North American Commission for Environmental Cooperation" (2007) 7 *Global Environmental Politics* 11 at 14.

<sup>35</sup> See George Downs, Kyle Danish & Peter Barsoom, "The transformational Model of International Regime Design: Triumph of Hope or Experience?" (2000) 38 *Colum. J. Transnat'l L.* 458, discussing depth of cooperation in environmental treaties.

<sup>36</sup> This is often referred to as the 'participation' problem.

<sup>37</sup> See Strand, *supra* note 35;

<sup>38</sup> Daniel Bodansky, *International Sectoral Agreements in a Post-2012 Climate Framework* (Washington: Pew Center on Global Climate Change, 2007).

<sup>39</sup> Such arguments were made in connection with the Kyoto Protocol.

Table 1 Basic GHG Statistics for North America

|                                                                                     | Canada | US     | Mexico           |
|-------------------------------------------------------------------------------------|--------|--------|------------------|
| <b>GHG Emissions in 2006<br/>(MtCO<sub>2</sub>e)</b>                                | 721    | 7054   | 548<br>(in 2002) |
| <b>GHG Emissions in 1990<br/>(MtCO<sub>2</sub>e)</b>                                | 592    | 6148   | 425              |
| <b>Change in emissions from 1990-<br/>2004</b>                                      | 22%    | 15%    | 29%<br>(in 2002) |
| <b>Contribution to Global GHG<br/>Emissions in 2004</b>                             | 1.85%  | 19.8%  | 1.4%             |
| <b>GHG emissions per capita<br/>(MtCO<sub>2</sub>e)</b>                             | 22.81  | 23.61  | 5.14             |
| <b>Carbon Intensity<br/>(MtCO<sub>2</sub>e/thousands of US dollars<br/>(GDP))</b>   | 589.29 | 527.60 | 858.64           |
| <b>Carbon Intensity<br/>(MtCO<sub>2</sub>e/\$ Billions of US dollars<br/>(GDP))</b> | 0.59   | 0.53   | 0.86             |

Broken down by sector (see Figure 2), the GHG inventories for Canada, Mexico and the U.S. look fairly similar, with the exception of higher emissions from land use, land use change and forestry in Canada and Mexico, and higher emissions from waste in Mexico. The GHG emissions by gas type reflect similar emission patterns. Given the broad range of activities that occur within each of these sectors, a more exacting analysis is required to assess potential for sectoral programs in North America. Further study should identify, *inter alia*, those sectors that make significant GHG contributions within each state, sectors that have sharp emission rate increases, and also those sectors where GHG intensity levels differ between countries, suggesting opportunities for improvement with existing technology.<sup>40</sup>

<sup>40</sup> See Bodansky, *supra* note 40 at 9-11 also suggesting economic and political (“negotiability and participation”) factors.

Figure 1

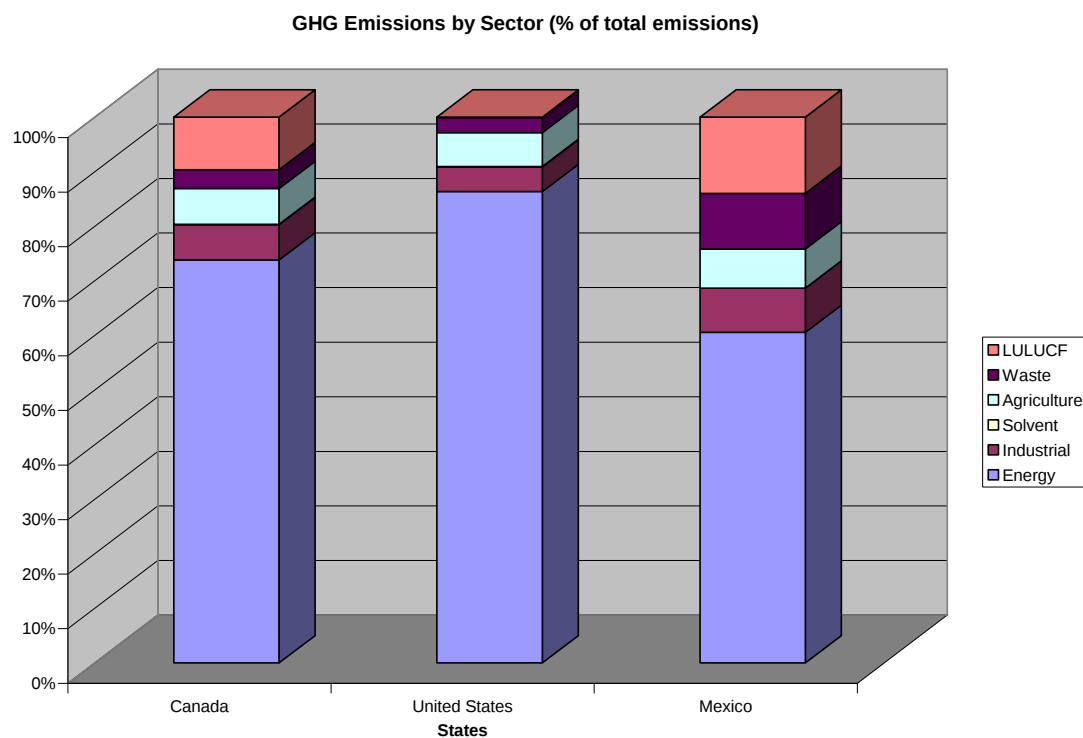
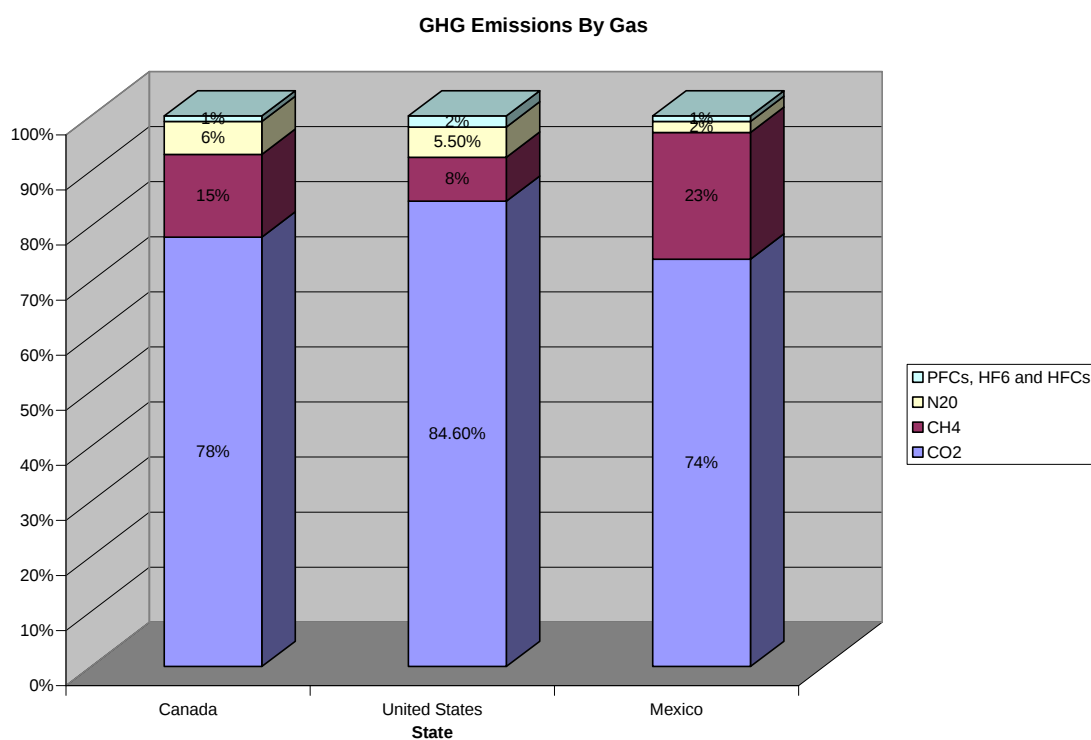


Figure 2



One area where there is a higher degree of difference between Canada, Mexico and the U.S. is their respective vulnerability to the impacts of climate change. Differences in vulnerability are affected by both geographic and economic factors.<sup>41</sup> Quantifying vulnerability to climate change remains difficult, but one global study indicated that Canada was the least vulnerable of all states and showed that Mexico has markedly higher vulnerability.<sup>42</sup> Another study focusing on Mexican vulnerability indicated that infrastructure, human capital and economic factors were strong determinants of vulnerability.<sup>43</sup> The differences in vulnerability have implications for the relative priorities of mitigation and adaptation, with Mexico needing to direct greater resources to improving its resilience towards climate change than Canada and the United States. Such differences do not undermine regional cooperation, but are likely to influence its form.

#### b) International Commitments and Programs

In a table that is appended (Appendix 1) we have set out in comparative form a summary of Canada, Mexico and the U.S.'s respective international commitments and their respective participation in various international programs all relating to climate change. In a separate table (Appendix 2), we have prepared a similar chart comparing each national government's domestic climate change policies. In this subsection and the subsection that follows we draw out the key areas of commonality and difference in climate change policy between these states.

The starting point for each state is their common participation in the *UNFCCC* regime. As a framework treaty, the *UNFCCC* does not impose quantified obligations on the parties, but rather it commits the parties to further cooperative activities in furtherance of the overall objective of stabilizing atmospheric GHGs at non-dangerous levels.<sup>44</sup> Despite the disengagement by the United States in the *Kyoto Process*, the *UNFCCC* has been repeatedly affirmed by Canada, Mexico and the United States as the appropriate forum for continued global negotiation on climate change.<sup>45</sup> The U.S. has, for example, continued in its support for the *UNFCCC* through financial support for the regime itself, the Intergovernmental Panel on Climate Change and through contributions to the Global Environmental Facility.<sup>46</sup> The current significance of the *UNFCCC* is the continued acceptance of the principle of 'common but differentiated responsibilities' that underlies the basic architecture of the *UNFCCC*.<sup>47</sup> In the North American context, Canada and the United States are identified as Annex I states with primary responsibility for addressing climate change.<sup>48</sup> Mexico, as a non-Annex I party, is obligated to undertake mitigation measures taking into account its development goals and national circumstances and to cooperate in addressing global climate change impacts and causes.<sup>49</sup>

The need for integration of regional initiatives within a global framework will require consistency between the *UNFCCC* and any regional framework. The 'broad but shallow' architecture of the *UNFCCC*

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<sup>41</sup> Ibarraran Viniegra and Cossens Gonzalez, "Climate Change Research and Policy in Mexico: Implications for North American security" (2007) 35 *Politics & Policy* 684. See also IPCC, Fourth Report

<sup>42</sup> CSR Europe, media release, "New report assess countries' climate change vulnerability" (12 August 2008) online: <[http://www.csreurope.org/news.php?type=&action=show\\_news&news\\_id=1598](http://www.csreurope.org/news.php?type=&action=show_news&news_id=1598)>

<sup>43</sup> Viniegra and Gonzalez, *supra* note 43 at 691.

<sup>44</sup> *UNFCCC*, *supra* note 6 at art. 2

<sup>45</sup> *Major Economies*, *supra* note 15; *Summit Leaders Declaration*, *supra* note 13; and *Bali Action Plan*, *supra* note 13.

<sup>46</sup> U.S., *U.S. Actions to Address Energy Security, Clean Development and Climate Change* (Washington, D.C.: U.S. Department of State, 2008) at 34.

<sup>47</sup> *UNFCCC*, *supra* note 6 at art. 3.

<sup>48</sup> Also Annex II states with further responsibilities to assist developing states with adaptation measures, *Ibid.* at art. 4(2).

<sup>49</sup> *Ibid.* at art. 4(1).

does not impose significant constraints in this regard, and the language of the treaty acknowledges in several provisions the possible role of regional cooperation.<sup>50</sup> The acceptance by all three North American states of a common methodology for calculating national GHG inventories and reporting those to the *UNFCCC* will facilitate integration. The IPCC process also provides a common scientific basis for the development regional policies. The IPCC's work on climate vulnerability has, for example, been undertaken on a regional basis, and may provide an agreed upon starting point for regional approaches to adaptation.

The asymmetrical architecture of the *UNFCCC* was carried over into the *Kyoto Protocol*, with Canada and the U.S. agreeing to economy wide GHG emission reductions of 6 % and 7 %, respectively, but not requiring reciprocal cuts from developing countries. As is well known, the *Protocol* was not ratified by the U.S., and while Canada is a part to the *Protocol* (as is Mexico, as a non-Annex B party), it has acknowledged that it will not meet its *Kyoto* obligations. It is increasingly clear that Canada is moving away from the *Kyoto* 'targets and timetables' model. Canada's most recent domestic policy approach emphasizes emissions intensity, as opposed to absolute reductions and defines its emissions reduction goals in terms of a 2006 baseline, as opposed to 1990. Given the current stance of Canada and the U.S., it is increasingly unlikely that Canada and the U.S. will agree to short to mid-term economy wide emissions reductions. For example, the Bali Action Plan, adopted at the UNFCCC Conference of the Parties 13<sup>th</sup> meeting, simply calls for the adoption of a "long-term global goal for emissions reduction".<sup>51</sup> A similar emphasis on long term goals was made in the Declaration of Leaders Meeting of Major Economies on Energy Security and Climate Change, in which Canada, Mexico and the U.S. participated.<sup>52</sup> In terms of future negotiation, Canada and the U.S. are both members of the Umbrella group, consisting of non-EU, Annex I countries. Mexico is a member of the Environmental Integrity Group, with South Korea and Switzerland. Mexico, as a developing country that is not a member of the G77, may feel less constrained by the more rigid refusal of the G77 to accept binding emission reduction targets.

Both Canada and Mexico have participated in the Clean Development Mechanism under the *Kyoto Protocol*, although to date no CDM projects have been concluded between Canada and Mexico. Canada has not used the joint implementation or emissions trading mechanisms under the *Kyoto Protocol*. Canada's current domestic climate change policy allows for the use of credits generated from CDM projects by private firms to satisfy those firms' domestic emission reduction obligation. However, given Canada's imminent state of non-compliance with the *Protocol*, its continued participation in the CDM process is far from certain. Regardless of precise scheme, through their current participation, Canada and Mexico have developed capacity to design and implement creditable projects. Demonstrable governance capacity in relation to marketable emissions credits is particularly desirable, as it ensures that credits are not granted for unrealized or temporary emissions reductions. The potential for multiple emission credit markets and the possibility of credits being 'double-counted' again underscores the importance of integrating parallel policy frameworks with one another.

From a regional perspective, the move away from short term, economy wide targets at the global level will create more policy space for bottom up approaches that would focus more on creating the conditions for reducing emissions than the top down approach taken in *Kyoto*. The most prominent existing example of a much looser form of international climate change cooperation is the Asia Pacific Partnership on Clean Development and Climate (APP), whose membership includes the U.S. and Canada,

<sup>50</sup> *Ibid.* at arts. 4(1)(b), 6(c), 11(5).

<sup>51</sup> *Bali Action Plan*, *supra* note 13 at para. 1.

<sup>52</sup> *Major Economies*, *supra* note 15.

as well as major Pacific Rim economies.<sup>53</sup> The APP is not a formally binding treaty, but rather provides a framework for exchanging information and other cooperative activity between states with a primary focus on energy cooperation. From a governance standpoint, the APP's voluntary approach allows for broad participation of countries that have traditionally resisted binding emission reductions.<sup>54</sup> The cost of securing participation is that environmental effectiveness of the APP is likely to be much lower than an approach that articulates emission reduction commitments. The APP has no quantified environmental outcomes and has no price driven incentives for technological innovation. The structure of the APP is similarly diffuse, consisting principally of eight sectoral task forces,<sup>55</sup> which include both public and private representation. The agendas for each task force are defined broadly, leaving the considerable scope for task force members to define their respective work plans. To date the outcomes have been non-regulatory, focusing instead on developing industry best environmental practices and moving towards reducing barriers to trade for environmental goods and services.<sup>56</sup>

The APP is best understood as a form of transgovernmental networked governance. Transgovernmental networks are networks of government regulators from different states that form in order to solve common issues. Driven by the increasing need for domestic regulators to coordinate regulatory activity beyond the state, (because regulated entities such as multi-national corporations operate transnationally or due to concerns about the impacts of regulatory externalities, such as transboundary pollution), networks provide opportunities for domestic regulators to exchange information and generate cooperative solutions. Unlike international organizations, networks rarely produce binding international agreements. However, they are governmental in the sense that they often have as their purpose the development of informal norms to address shared problems. These may take the form of guidelines or identification of best practices and best available technology.<sup>57</sup> Moreover because networks are most often constituted by actors that wield domestic regulatory authority, these informal arrangements can be translated into binding regulations domestically.

In addition to the APP, Canada, Mexico and the United States participate in a variety of climate oriented networks.<sup>58</sup> Many of these have a focus on the development and implementation of new technologies, particularly in the energy sector. None of these organizations is intended to develop binding rules, although like the APP, some have produced guidelines and seek to identify best practices. In terms of structure, these groups are often constituted of both public and private sector representatives, as well as civil society organizations. Participation in climate oriented networks includes both developed and developing states, but there are few formal avenues for technology transfer or direct project financing in developing states. While all of these initiatives address various aspects of the climate issue, there is very little evidence that states are concerned with integrating these various initiatives. Indeed, the informal and decentralized structure of this form of governance makes integration more difficult.

In North America, the structure of regional cooperative efforts is similarly diffuse. The most institutionalized set of commitments regarding the environment are found in the regime centered on the *North American Agreement on Environmental Cooperation (NAAEC)*, the so-called *NAFTA*

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<sup>53</sup> *Asia-Pacific Partnership*, *supra* note 7. APP members include: Australia, China, Canada, India, Japan, South Korea, and the United States.

<sup>54</sup> Only Japan and Canada have emission reduction obligations under Kyoto.

<sup>55</sup> Sectoral task forces include: Aluminum, Buildings and Appliances, Cement, Cleaner Use of Fossil Energy, Coal Mining, Power Generation and Transmission, Renewable Energy and Distributed Generation, and Steel.

<sup>56</sup> For example, appliance testing harmonization, enhancing production processes, developing sector-related benchmark and performance assessments, identifying current reclamation activities in partner countries, and enhancing synergy among task force objectives.

<sup>57</sup> *Asia-Pacific Partnership*, *supra* note 7.

<sup>58</sup> See Appendix 1 for list and description.

environmental side agreement).<sup>59</sup> The NAAEC creates the North American Commission on Environmental Cooperation, which is governed by a Council consisting of the environment minister from each state.<sup>60</sup> It also has a permanent secretariat and opportunities for civic engagement.<sup>61</sup> Despite having a broad mandate to improve environmental quality,<sup>62</sup> it has only been engaged in climate change policy in limited ways.<sup>63</sup> In 1995, the Council did adopt a Statement of Intent to Cooperate on Climate Change and Joint Implementation, which set out a number of areas of cooperation for the states to pursue, including joint pursuit of GHG mitigation technologies, conservation and enhancement of carbon sinks, improving GHG emission inventory and forecasting methodologies and climate change research.<sup>64</sup> Significantly, the Statement of Intent specifically references the UNFCCC, including the common but differentiated responsibilities of the parties, and the reference to “joint implementation”.<sup>65</sup> The Statement of Intent appears only to have resulted in a small number of joint projects.<sup>66</sup> There has been no specific mention of climate change in the Council Ministerial Statements/Communiqués since an indication in 1998 that the Parties would work together under the framework of the Kyoto Protocol to develop North American opportunities for the Clean Development Mechanisms, which clearly did not happen. More recent communiqués focus on air pollution, renewable energy, green building and chemical pollutants and, while these issues bear on climate change, they do not make specific links between these issues and climate change.

The other potential vehicle for regional climate change cooperation is the North American Security and Prosperity Partnership (SPP). In an earlier paper, we described the SPP as a form of transgovernmental networked governance.<sup>67</sup> The SPP has no foundational treaty, nor does it have any permanent institutions. Instead, the SPP is an agenda of bilateral and trilateral regulatory initiatives aimed at promoting regional security and regional prosperity. The work program is undertaken by a series of working groups established under the SPP, including an environmental working group and an energy working group. The working groups themselves, consistent with the SPP’s transgovernmental form, are made up of government officials. Climate change law and policy in the SPP was noticeable only in its absence.<sup>68</sup> Some of the agenda items focus on clean energy and energy efficiency measures,<sup>69</sup> but there has been no overall intention on using the SPP to address climate change in a comprehensive manner. However, after the most recent Leaders Meeting, the joint statement included the following reference to climate change:

We reiterate our support for the Bali Action Plan and stress the urgency of reaching agreement to ensure the full, effective and sustained implementation of the U.N. Framework Convention on Climate Change now, up to and beyond 2012. We believe that the Major Economies Leaders Meeting should make a contribution to that outcome. All should redouble efforts to address climate change and to establish nationally appropriate programs and goals to be reflected in

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<sup>59</sup> (1993), 32 ILM 1480.

<sup>60</sup> *Ibid.* at art.9.

<sup>61</sup> The structure of the CEC includes the Joint Public Advisory Committee, and, from a process perspective allows for citizen initiated reviews of enforcement failures.

<sup>62</sup> *Ibid.* at art. 1.

<sup>63</sup> See discussion in Betsill, *supra* n.34.

<sup>64</sup> North America Council for Environmental Cooperation, Council Resolution #95-6, *A Statement of Intent to Cooperate on Climate Change and Joint Implementation* (13 October 1995).

<sup>65</sup> *Kyoto*, *supra* note 1 at 22(2).

<sup>66</sup> Early projects supported by the CEC under this mandate included reforestation and renewable energy initiatives in Mexico, in partnership with the U.S. private sector.

<sup>67</sup> Craik and DiMento (2008), *supra* note 34, at 492.

<sup>68</sup> For example, an influential background report prepared by the Council on Foreign Relations does discuss climate change as part of a broader North American resource strategy, see “Building a North American Community” (Council on Foreign Relations, 2005)

<sup>69</sup> See Agenda of Energy Working Group, available online: <<http://www.spp-psp.gc.ca/about/energy-en.aspx>>.

binding international commitments based on the principle of common but differentiated responsibilities and respective capabilities, to contribute to ensuring global greenhouse gas emission reductions, adaptation measures, energy security, and sustainable development. We are determined to work together to further explore regional cooperation in climate change efforts, including, but not limited to, advancing innovative and suitable clean energy technologies, building the capacity to adopt and deploy them and developing appropriate financial and technical instruments. We reaffirm our shared conviction that increased trade in environmental goods, services, and technologies can have a positive impact on global climate change efforts and encourage the removal of barriers to such trade.<sup>70</sup>

This statement is of note for several reasons. First, it reiterates the commitment of the leaders to addressing climate change through international negotiation in accordance with the underlying principles of the *UNFCCC*, including the principle of common but differentiated responsibilities. Second, it acknowledges the potential for regional cooperation to address climate change. Thirdly, it indicates that such cooperative efforts may focus on promoting technological innovation and capacity building. Finally, the statement also includes a reference to ‘energy security’, a matter of increasing domestic importance in the United States. The deliberate inclusion of energy security (and the specific reference to the Major Economies Leaders Meeting) within a statement on climate policy ties the regional process to the broader issue of energy security and to the approach adopted at the Major Economies Leaders Meeting. This approach is also consistent with the approach advocated by an Independent Task Force on North American integration, which ties climate change to a regional resource strategy.<sup>71</sup>

Finally, the U.S. and Mexico have developed a number of bilateral climate change projects under the auspices of the USAid Global Climate Change Program. The funding is largely project based and has focused on land use improvements and clean energy production.<sup>72</sup> Canada and Mexico also signed a Joint Statement on Strengthened Dialogue and Cooperation on Climate Change at the United Nations Climate Change Conference in Montreal on December 8, 2005.<sup>73</sup>

### c) Domestic Policies<sup>74</sup>

Appendix II summarizes the prevailing domestic policies of the federal governments in Canada, Mexico and the U.S. In each of these countries, sub-national governments have important constitutional controls over the environment and natural resources. Consequently, sub-national governments are increasingly becoming an important source of domestic climate change policy themselves. The respective roles of federal and sub-national governments continue to evolve, but as noted there is increasing evidence that sub-national governments are not willing to leave transnational cooperation in the hands of their respective federal governments, and are entering into trans-boundary cooperative arrangements with one another.

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<sup>70</sup> Security and Prosperity Partnership, *Joint Statement by President Bush, President Calderon, Prime Minister Harper – North American Leaders’ Summit* (22 April 2008). Available online: <[http://pm.gc.ca/includes/send\\_friend\\_eMail\\_print.asp?URL=/eng/media.asp&id=2074&langFlg=e](http://pm.gc.ca/includes/send_friend_eMail_print.asp?URL=/eng/media.asp&id=2074&langFlg=e)>

<sup>71</sup> “Building a North American Community” (Council on Foreign Relations, 2005) at 172, suggesting that a “North American energy and emissions regime could offer a regional alternative to Kyoto that includes all three countries”.

<sup>72</sup> USAID Environment, *Global Climate Change Brochure: USAID’s Global Climate Change Program*, online: USAID Environment < [http://www.usaid.gov/our\\_work/environment/climate/pub\\_outreach/gcc\\_brochure.html](http://www.usaid.gov/our_work/environment/climate/pub_outreach/gcc_brochure.html)>

<sup>73</sup> Environment Canada, Media Release, “Canada-Mexico Sign Joint Agreement on Climate Change Cooperation During the United Nations Climate Change Conference in Canada” (8 December 2005), online: Environment Canada < [http://www.ec.gc.ca/media\\_archive/press/2005/051208-4\\_n\\_e.htm](http://www.ec.gc.ca/media_archive/press/2005/051208-4_n_e.htm)>

<sup>74</sup> The discussion of Canadian domestic policy in this section draws from Neil Craik, “Segnali contraddittori: evoluzione della politica climatica canadese” (2008) 3-4 *Rivista Giuridica Dell'Ambiente* 695.

As Table 1 indicates, neither Canada nor the U.S. has come close to achieving its *Kyoto* commitments. Indeed, emissions have risen steadily since the 1990 baseline. A less ambitious approach is currently taken in the domestic climate change policies of both. For its part, Canada has indicated a GHG emission reduction target of 20% from its 2006 emission levels by the year 2020. This amounts to a project total emissions of 600Mt in 2020, an amount that is still higher than Canada's 1990 emission levels. In the longer term, Canada has indicated a willingness to reduce its GHG emissions by 60 to 70% by 2050 based on a 2006 baseline.<sup>75</sup> The only quantified emission target the U.S. government has announced is an 18% reduction in GHG intensity levels from 2002 levels by 2012. Mexico has not yet announced reduction targets as such, but it has indicated that it has the potential to reduce its emission by more than 140 Mt by 2014.<sup>76</sup>

The emission reduction targets announced are not science-based in the sense that they were arrived at by first determining the reductions that need to be achieved to stabilize GHGs at safe levels. There is growing scientific consensus that in order to keep global temperature rises from exceeding 2°C from pre-industrialization levels, atmospheric levels of GHGs need to be limited to between 450 and 550 ppm CO<sub>2</sub>e, which in turn would require global emission reductions of 50% of 1990 levels by 2050.<sup>77</sup> The EU has taken note of the scientific evidence and has specifically linked its reduction targets to achieving the long term goal of GHG stabilization, with specific reference to limiting climate change to a 2°C rise.<sup>78</sup> Mexico is the only North American state that appears ready to accept a quantified long term goal ("of an indicative non-binding nature") expressed in terms of GHG concentration levels (at 550 ppm CO<sub>2</sub>e).<sup>79</sup> Canada and the U.S. make no reference to science based goals.

The clearest example of the priority given to economic growth in North American climate policy is the use of intensity based targets by both Canada and the U.S. The Canadian policy has identified sixteen sectors which must reduce their emissions intensity by 18% (from a 2006 baseline) by 2010 and 2% a year thereafter until 2020, at which time the government has indicated its willingness to move to fixed emission limits. The difficulty is that predictions about absolute future emission levels are dependant upon productivity levels, and absolute levels may still increase if there is strong growth.

Reductions in carbon intensity will be attractive in sectors where intensity levels are high and there exists technological solutions for reducing GHG emissions, for example where old stock needs to be replaced. However, in order to make significant emission cuts, considerable investment will need to be made in research and development of new technologies, particularly in the energy sector.<sup>80</sup> The Canadian reduction targets are based heavily on the development of carbon capture and storage technology (CCS), which is highly compatible with fossil fuel extraction and production, key sectors in the Canadian economy. CCS is also seen as a technology that would allow for the continuing use of coal fired electrical generating plants, a predominant form of electrical production in the U.S. In order to provide the needed funding for technological innovation, the Canadian policy foresees the creation of a technology fund, in which firms with reduction requirements can make contributions in exchange for credits. The contribution amount starts out very high allowing for firms to meet 70% of their target

<sup>75</sup> This is equivalent to a 40%-52% reduction from 1990 baseline levels.

<sup>76</sup> The calculation of a 140 Mt emissions reduction was determined by adding the estimated emissions reduction, as determined by the Mexican government, for each policy goal included in Mexico, Intersecretarial Commission on Climate Change, *National Strategy on Climate Change*, (Mexico: Secretary for Planning and Environmental Policy, 2007) at 4, 7 [Mexico NSCC].

<sup>77</sup> *Limiting Global Climate Change*, *supra* note 32 at p. 3; see also Intergovernmental Panel on Climate Change, *Climate Change 2007*, IPCC Plenary XXVII (17 November 2007).

<sup>78</sup> *Limiting Global Climate Change*, *ibid.*

<sup>79</sup> Mexico NSCC, *supra* note 77 at 14.

<sup>80</sup> Scott Barrett, "A Proposal for a New Climate Change Treaty System" in Steven Bernstein et al., *A globally Integrated Climate Policy for Canada* (Toronto: University of Toronto Press, 2008) 315.

through contribution credits in 2010, but falls rapidly to 0% by 2018.<sup>81</sup> The contribution rate has been set at \$15/tonneCO<sub>2</sub>e and will rise with growth in GDP (but does not appear to be tied to the market price of carbon emission credit units). The framework also contemplates the generation of credits through offsets, early action and the use of the Clean Development Mechanism (CDM). The credits generated will be available for domestic inter-firm trading.

The U.S. federal climate change policies similarly rely on the development and deployment of new technologies, although funding for research and development has not been tied to emissions, nor are there opportunities for firms to receive credits for research and development activities. Instead the U.S. has relied on voluntary programs of emission reduction and tax incentives to promote innovation.<sup>82</sup> The reliance on voluntary measures inhibits the development of a carbon market, since the price of carbon emission credit reduction units will be effected by the demand for reduction created by binding obligations. As such neither Canada nor the U.S. has any clearly articulated vision for an emission trading system operating either domestically or linked to global markets. There is a private carbon exchange that operates out of Chicago that relies on voluntary but legally enforceable emission reduction commitments.<sup>83</sup> There is also a carbon exchange operating in Montreal that will trade credits generated under the Canadian regulatory framework.<sup>84</sup> Mexico has indicated a desire to develop price signals for carbon use through the gradual development of an emission trading system.

There appears to be a fair amount of overlap among all three countries in terms of the areas identified for emission reductions. All three countries place some emphasis on the further development of renewable energy supplies and the increased use of combined heat and power plants. Improving energy efficiency and fuel efficiency for vehicles is also addressed by all three countries, but again the approach is to promote improvements largely through voluntary policies, not through regulation. The Mexican plan places emphasis on land use issues, which get little attention in Canadian and U.S. policies. Similarly, adaptation is largely ignored in Canada and the U.S., but forms an important part of the Mexican policy strategy.

In the U.S., the absence of a strong federal strategy to address climate change has lead to sub-national activity, where there has been a greater willingness to accept binding GHG emission reductions. These reduction commitments have been accompanied by further programs, such as renewable portfolio standards, state based mandatory fuel efficiency requirements and intra-state emission trading programs. In Canada, every province has climate change policies, all of which include specific GHG reduction targets, most of which are more ambitious than those announced by the federal government. However, Canadian provinces are only now moving to implement their GHG policies into law and have less well developed mechanisms than those of their sub-national counterparts in the U.S.<sup>85</sup> There remain significant differences between sub-national jurisdictions in North America, with oil and gas producing jurisdictions such as Alberta being viewed as policy laggards compared to leaders such California, New York, and British Columbia. Many North American cities also have GHG emission reduction targets and accompanying programs.<sup>86</sup> The city level initiatives are supported through a number of networks

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<sup>81</sup> There are, however, opportunities for more generous credit allowances (up to 100% of a firm's reduction obligation to 2018) for "pre-certified" investments in CCS.

<sup>82</sup> Hunter, *supra* note 10.

<sup>83</sup> Chicago Climate Exchange, *Overview* online: Chicago Climate Exchange <<http://www.chicagoclimatex.com/>>

<sup>84</sup> Montreal Climate Exchange, *Home*, online: Montreal Climate Exchange <[http://www.mcx.ca/index\\_en](http://www.mcx.ca/index_en)>

<sup>85</sup> Barry Rabe, "Beyond Kyoto: Climate Change policy in Multilevel Governance Systems" (2007) 20 *Governance: An International Journal of Policy, Administration, and Institutions* 423 at 424; *Carbon Tax Act*, S.B.C. c. 40.

<sup>86</sup> City initiatives include Cities for Climate Protection, US Conference of Mayors Climate Protection Agreement (2005) and the C40 Climate Initiative.

providing opportunities for cities to exchange information, but also serving as forums for cities to make emission reduction pledges and to monitor and verify emissions.<sup>87</sup>

One of the most significant developments at the sub-national level is the growth of sub-regional governance structures, such as the Regional Greenhouse Gas Initiative and the Western Climate Initiative. Not only are sub-regional initiatives identifying targets and providing forums for voluntary coordination, but they are also creating more institutionalized governance structures, such as cap and trade programs.<sup>88</sup> Sub-regional initiatives are now expanding transnationally, and are actively exploring opportunities to integrate their own activities with other groups, including linking trading programs. Not only does the WCI framework include participants and observers from Canada and Mexico, but the Draft design of the Regional Cap-and-Trade Program specifically allows for offset programs located in Canada, the U.S. or Mexico to be certified for use within WCI jurisdictions. One challenge to the continued expansion of these sub-regional initiatives will be the respective constitutional constraints placed on sub-state governments to engage in foreign relations and to build sub-regional institutions.<sup>89</sup>

### Part 3                      Prospects for North American Regional Cooperation

Climate change is not a regional problem. Nor can it be said that North American states can, without the cooperation of other major GHG emitter states, solve the climate change problem. North American emissions make up approximately 23% of the global total emissions, with that relative share decreasing as developing states with higher rates of emissions growth increase their relative contribution to global totals. Yet, as discussed in Part 1, there may nevertheless be advantages to regional cooperation in solving a global problem. There are at least four factors that are salient to climate change.

First, regional cooperation allows for like-minded states to maximize their depth of cooperation, where agreement cannot be met on a global level. Europe, for example, has adopted regional commitments to reduce GHG emissions, in the absence of (but clearly in the hope of affecting) broader global commitments on deeper, economy wide reductions. A similar dynamic is evident in the sub-regional cooperation in the U.S., where like-minded states have developed cooperative institutions in the absence of agreement at the national level. In North America, the most striking commonality (at least between Canada and the U.S.) is the move away from the fixed, economy wide emission reduction commitments found in the *Kyoto Protocol*, while still accepting the broader global objectives and principles found in the *UNFCCC*. The levels of commitment that Canada and the U.S. are prepared to agree to, particularly in the short and medium term, are similar, in that both countries prefer shallow reduction commitments deepening over time. There is a strong premium on economic certainty in both countries, as demonstrated by the preference for intensity based targets. Mexico maintains a strong commitment to the principle of differentiated responsibilities, but nevertheless appears to be prepared to identify emission reduction targets. Canada and the U.S. have repeatedly affirmed their own commitment to this principle, but have insisted that major developing economies take some steps towards reduction, which is consistent with the Mexican position.

<sup>87</sup> For example, under the Cities for Climate Protection Program, which includes 166 cities from Canada, 466 from the U.S. and 4 from Mexico, participating cities make reduction pledges, develop a local plan to achieve those targets and monitor the results. See ICLEI Local Governments for Sustainability, *Cities for Climate Protection (CPP)* online: ICLEI Global <<http://www.iclei.org/index.php?id=800>>.

<sup>88</sup> See Western Climate Initiative, "Draft Design of the Regional Cap-and-Trade Program" (23 July 2008), online: WCI <<http://www.westernclimateinitiative.org/ewebeditpro/items/O104F18808.PDF>>.

<sup>89</sup> See Douglas Kysar and Bernadette Meyer, "Like a Nation State" (2008) UCLA L.R. 1, discussing constitutional challenges to state based climate policies in the U.S. See also Chemerinsky, Brigham Daniels, Brettny Hardy, Tim Profeta, Christopher H. Schroeder, and Neil S. Siegel, California, "Climate Change, and the Constitution", (2008) 24:4 The Environmental Forum.

A second advantage to regional climate change cooperation is that cooperation is likely to provide greater opportunities for cost-effective reductions. The most prominent examples of this are the use of emissions trading and joint implementation, which are used as a means to increase cost effectiveness on a regional (Europe) and sub-regional (RGGI and WCI) basis. While there exists at present no national emissions trading systems, sub-regional systems are anticipated to operate on a regional basis. Canadian policies anticipate the creation of tradable credits, as does the Mexican policy. Both Canada and Mexico have had experience with using international credits under the CDM and Canada continues to rely on CDM type credits into the future. In the event that Canada does not agree to continue within the *Kyoto* framework, there will be a demand for an alternative mechanism to generate credits.

A necessary condition for establishing market mechanisms to trade emission credits is a robust system of GHG emission tracking in order to ensure that credits granted are genuine reductions and permanent in nature. Strong emissions inventory capacity will also facilitate the integration of multiple crediting systems, which allows different regional actors to pursue a variety of approaches, but also allows for flexibility through trading. As an example, the WCI draft trading regime anticipates developing rules for the incorporation of British Columbia's carbon tax into its system of credits.<sup>90</sup> In this regard, North America is well positioned as a region, as each country has well developed capacities in emission calculation and inventory tracking. The GHG inventories are all based on *UNFCCC* methodologies and should be compatible.

It may be that development of integrated carbon markets on a regional scale offers less flexibility than global markets. However, regional transaction costs may make the development of smaller markets, which may be linked to other markets in the future, a preferable strategy. Again there is some evidence that this is in fact the preferred direction of North American states. Mexico's description of the development of its domestic carbon market indicates a progressive movement from a price controlled system to one that is eventually integrated with international markets. Canada also appears set to use centrally controlled carbon prices (to be used to determine a firm's contribution rate to the technology fund, as an alternative to mandated reductions), with future integration. At the present time, the Canadian offset system does not allow for the use of offsets or allowances from projects outside Canada, but cooperative efforts could provide opportunities for regional offsets. For example, the proposed structure of the WCI cap and trade program allows for up to ten percent (per regulated entity) of a reduction obligation to be satisfied by offsets or allowances from other systems, so long as those projects are subject to "comparably rigorous oversight".<sup>91</sup>

A third benefit that arises from regional cooperation is that policy harmonization prevents leakage of economic activity to areas with lower regulatory burdens. Leakage is more likely to occur in areas where capital is mobile and market access is unaffected. Theoretically, these conditions would appear to militate in favour of regional cooperation in North America given the open market access and strong investor protection measures available under NAFTA. Whether the gains from shifting GHG intensive activity to areas with less onerous GHG regulation are sufficient to incur the attendant costs would need to be studied on a sectoral basis. Competitiveness concerns in relation to environmental matters have influenced U.S. decisions to seek international agreements on other environmental issues,<sup>92</sup> and are raised by industry groups as a particular concern.

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<sup>90</sup> *Ibid.*

<sup>91</sup> *Ibid.* at s. 9.5.

<sup>92</sup> Beth DeSombre, *Domestic Sources of International Environmental Policy: Industry, Environmentalists, and U.S. Power* (Cambridge, Ma.: MIT Press, 2000)

A final factor that will militate in favour of regional climate change cooperation is the presence of pre-existing governance institutions, of both a formal and informal nature. Regional environmental governance in North America is weak. There are few regional environmental institutions and those that exist do not operate autonomously from national governments. As noted, the most prominent among these is the CEC. However, the CEC at this time is poorly suited as a forum for climate governance because the Council is made up exclusively of environment ministers. In each of the three North American states, climate change policy is not the exclusive responsibility of environment ministries, and there has been a considerable amount of inter-ministry competition over climate change.<sup>93</sup> Given the cross-cutting nature of climate change, it is unlikely that national governments will confer significant policy functions on the CEC in the area of climate change.<sup>94</sup> In many ways the CEC is an anomalous institution in North America, where the preference has been to resolve environmental concerns bi-laterally and without the creation of institutions. In those instances where institutions have been created, such as the International Joint Commission, there has still remained a preference not to delegate policy making and dispute resolution functions to international bodies.<sup>95</sup>

The SPP provides an alternative forum and model for regional cooperation; one that is more decentralized and sectorally driven. If the Joint Leaders statement from New Orleans (quoted above) is an indication of the kind of cooperative measures that might be undertaken through the SPP, then one would expect cooperative efforts to be discrete and conducted with little attention to broader integration. For example, the Energy Working Group's agenda does include matters relating to climate change, such as enhanced research and development cooperation on clean technologies and energy efficiency. But it also includes measures to increase oil sands production (presumably as a matter of energy security).<sup>96</sup> To date the outcomes of the SPP process relating to clean energy have been modest, although in 2007, the three governments did enter into an agreement on energy research and development cooperation.

The form of cooperation under the SPP to date suggests that it may be ill-suited as a governance structure for comprehensive climate change regulation. VanNijnatten rightly argues that the environmental objectives of the SPP are insufficiently linked with the broader economic agenda of the SPP, creating barriers to comprehensive and sustainable decision-making.<sup>97</sup> The economic bias of the SPP is also evidenced in the privileged position that business and industry leaders are given within the broader SPP structure through the North American Competitiveness Council, which provides guidance directly to the ministers responsible for the SPP agenda. There is no comparable avenue of consultation for civil society groups.<sup>98</sup> Reportedly the small academic representation is somewhat marginalized.<sup>99</sup> The result is that at this time the SPP suffers from considerable legitimacy deficit. A potential structural advantage of the SPP is that the process has been subject to strong executive oversight, which allows for regional priorities to be set and for central governments to consider the broader implications of sectoral

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<sup>93</sup> Simone Pulver, "Climate politics in Mexico in a North American perspective", (Paper presented at Climate Change Politics in North America, Woodrow Wilson International Center for Scholars, May 2007) available online: < <http://www.wilsoncenter.org/events/docs/Paper%20Pulver%20%5BRevised%5D1.pdf>>; Stephen Bernstein, "International Institutions and the framing of domestic policies: The Kyoto Protocol and Canada's response to climate change" (2002) 35 Policy Sciences 203.

<sup>94</sup> For discussion of CEC as a forum for emissions trading, see Michele M. Betsill, "Regional Governance of Global Climate Change: The North American Commission for Environmental Cooperation" (2007) 7 Global Environmental Politics 11.

<sup>95</sup> Jutta Brunnée and Stephen Toope, "Freshwater Regimes: The Mandate of the International Joint Commission" (1998) 15 Arizona J. Int'l & Comp. L. 273.

<sup>96</sup> Security and Prosperity Partnership of North America, Oil Sands Experts Group Workshop, *Oil Sands Workshop SPP Report* (Washington, D.C.: U.S. Department of Energy, 2006).

<sup>97</sup> Indicator Species

<sup>98</sup> Craik and DiMento, *supra* n.31

<sup>99</sup> Personal communication with one of the authors.

initiatives. It also provides opportunities for central governments to better integrate climate policies across different sectors.

Despite the relatively weak formal environmental institutions in North America, there remain, at more informal levels, strong institutional connections among the three American states addressing climate change. As indicated in Table 1, Canada, Mexico and the U.S. participate in a significant number of common initiatives internationally, many of which are structured as loose networks set up for the purpose of exchanging information. There are increasing examples of sub-national environmental cooperation, such as the New England Governors – Eastern Canadian Premiers, which established a climate change action plan in 2001, and the expansion of the WCI to include Canadian provinces. Outside the climate change area, there are examples of multi-level governance structures. For example, the Canada U.S. Air Quality Committee, a bi-lateral committee created to implement the *Canada-U.S. Air Quality Agreement*, is comprised of both federal officials and officials from several border states and provinces. The result is a dense web of overlapping policy initiatives and a growing network of officials familiar with climate change initiatives and broader sustainability agendas within North America. This, in turn, improves opportunities for policy diffusion and allows bureaucrats to exercise influence over the broader policy agenda by linking initiatives.<sup>100</sup> Given that many of these initiatives have a regional or sub-regional orientation, there is likely to be a path dependant bias in favour of continuing these arrangements at the same scale, with opportunities for incremental enlargement. This appears to be the trajectory of the sub-regional climate change initiatives.

Flowing from this discussion, there are a number of characteristics that North American climate change governance structures are likely to exhibit. Firstly, the approach taken to climate regulation is likely to be ‘bottom up’, in the sense that individual jurisdictions, at both the federal and sub-national level will put forward commitments based on their particular circumstances. Regional initiatives will be directed at coordinating those efforts by promoting comparability of emissions, sharing expertise and enhancing the efficiency of emissions reduction through market mechanisms. A bottom up approach suggests that North American climate policy will be more focused on implementation than commitment creation. A bottom up approach does not necessarily mean that national governments will not agree to some form of binding emission reduction targets, but these are more likely to occur in the context of multi-lateral negotiations. The absence of hierarchical regional governance structures strongly militates against binding regional commitments or highly institutionalized approaches to implementation at the regional level, such as exist in the EU. Unlike the EU, there are no institutions that would provide compliance or dispute settlement functions, and such institutions are not likely to develop.<sup>101</sup>

Bottom up approaches will be better able to account for the division of legislative authority over climate change that exists in North America and will allow existing sub-regional initiatives to continue to develop. In Canada, the federal climate change policy has been developed so as to co-exist with provincial initiatives. The U.S. federal government has not to date sought to play a coordinating role among states, but this may emerge with the election of a federal executive that is more engaged in domestic climate policy.<sup>102</sup> A bottom up approach may also appeal to the Mexican government, which appears set to define reduction targets, but is unlikely to accept binding targets. Because the degree of environmental policy centralization differs in each North American state, there may also be a need to accommodate different governmental levels within single governance structures.

<sup>100</sup> See Henrik Selin and Stacey Vandever, “Climate Leadership in Northeast North America” (Paper presented at Climate Change Politics in North America, Woodrow Wilson International Center for Scholars, May 2007) at 28. See also Anne Marie Slaughter, *A New World Order* (Princeton, N.J.: Princeton University Press, 2004) at 172-177.

<sup>101</sup> Even in the highly legalized area of North American trade law, the preference has been not to create permanent dispute settlement bodies.

<sup>102</sup> See discussion by Hunter, *supra* n.6.

A bottom up strategy also allows for the continued development of multiple approaches to emissions mitigation and adaptation measures. Thus a second characteristic is that North American climate governance will continue to accommodate multiple approaches, allowing states and sub-national governments to choose those that suit their circumstances. Again, this is already evident within sub-national governments. British Columbia has chosen, for example, to use a carbon tax, while California has enacted carbon dioxide limits for motor vehicles, an approach that is less likely to be embraced in jurisdictions with strong automobile manufacturing sectors.<sup>103</sup>

Maintaining this high degree of flexibility is not without costs. The environmental effectiveness of allowing for multiple approaches, many of which have low levels of stringency, will be less certain than a hard targets and timetable approach. That said, there are few indications that North American jurisdictions are prepared to accept short term, economy wide targets. The advantage in using regional and sub-regional approaches is that jurisdictions and sectors that are policy leaders can be exemplars for policy experimentation, which can provide greater certainty to reluctant jurisdictions or sectors by demonstrating how reductions may be made without unacceptable economic impact, leading to diffusion and enlargement.<sup>104</sup>

A third characteristic of regional climate governance in North America is that it is likely to include sectoral approaches. Sectoral approaches are currently used in both the APP and the SPP; as a result there may be a path dependent bias in favour of taking advantage of these existing sector based networks. Both Canada and Mexico have identified specific sectors for emission reductions. Determining which sectors may be amenable to regional agreements requires further research assessing, *inter alia*, the degree to which the sector operates within a distinct regional market, whether the sector accounts for significant amounts of regional GHGs, the extent to which the sector's capital stock will require renewal, and ability to reduce emissions costs effectively.<sup>105</sup>

A fourth characteristic is the reliance on research and development based approaches. Funding research and development has been a significant part of existing federal climate change policies, both domestically and internationally. Research and development cooperation on a regional scale, as opposed to a global scale, would likely require additional factors to be present, since the major advantage of research cooperation is being able to pool funds from as many countries as possible, (with a particular emphasis on including technologically advanced countries). For example, both Canada and the U.S. have a particular interest in developing CCS technology, which may itself be deployed on a regional or sub-regional scale, since capture opportunities may not be located near storage opportunities.<sup>106</sup> CCS may also be an example of a technology that has regional political advantages that favour its development in North America more than elsewhere. In the U.S. CCS would allow for the continued use of coal and in Canada

<sup>103</sup> For example, Ontario has joined the WCI without accepting the California auto emission requirements. See Karen Howlett and Greg Keenan, "Deal lets Ontario join Climate-change Drive", *Globe and Mail*, August 4, 2008

<sup>104</sup> See Barry Rabe, "Second Generation Climate Policies in the States: Proliferation, Diffusion, and Regionalization" (Paper presented at Climate Change Politics in North America, Woodrow Wilson International Center for Scholars, May 2007) at 20.

<sup>105</sup> See Bodansky, *supra* n.38.

<sup>106</sup> See Weyburn project

it would allow for the continued development of the oil sands, satisfying perhaps the demands to two powerful sectoral lobbies, both of which have sub-regional power bases.<sup>107</sup> Research and development approaches may be used in conjunction with sectoral approaches that would lead to cooperation on a regional scale. Barrett argues that the benefits from research based approaches can be better realized where there is standardization allowing participants to take advantage of economies of scale and network effects.<sup>108</sup> Standardization on a regional level, such as renewable portfolio standards, could then be coupled with research and development cooperation, in renewable energy technologies.

Funding for research and development on climate change is unlikely to be centralized at a regional level in the short or medium term. The North American Development Bank, created as part of the U.S. Mexico Border Environment Cooperation Commission has not to date focused on climate on energy related projects.<sup>109</sup> Mexico is a participant in the Inter-American Development Bank that does have a climate change program,<sup>110</sup> but Canada and the U.S. are not partners in that institution. In the absence of a regional equivalent of the Global Environment Facility, research and development funding is more likely to continue on its current project or sector based trajectory.<sup>111</sup>

A final point regarding regional climate governance is the critical requirement for integration. Regional climate governance is not an alternative to global solutions, but rather must be understood chiefly as a scale for implementation. In the case of North America, where there is a high premium placed on short term flexibility, the environmental integrity of such an approach depends upon both vertical integration with multi-lateral commitments and processes and horizontal integration across regional and sub-regional programs and policies. In the absence of strong regional institutions, the form of integration is unlikely to be hierarchical and coercive.<sup>112</sup> Instead, integration efforts will need to focus on comparability and complementarity. Comparability is crucial to promote reciprocity among governance units at various scales. To a large degree the acceptance of *UNFCCC* methodologies in emissions inventories and accounting facilitates comparisons between governance units, but as forms of emissions regulation proliferate, more program and project specific forms of accounting will need to be developed and adopted. For example, the International Organization for Standards provides an important source of GHG accounting and verification tools that could be incorporated into a wide variety of instruments.<sup>113</sup>

The greater challenge with integration in a decentralized regulatory architecture is promoting linkages between various programs. One example of this challenge is the different forms of eligible renewable energy that may form part of a renewable portfolio standard. There

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<sup>107</sup> Barrett, *supra* n.17 at 253, makes this point in relation to coal.

<sup>108</sup> Barrett, "A multi-track Climate System" in Aldy and Stavins at 251

<sup>109</sup> Agreement Between the United States and Mexico Establishing the Border Environmental Cooperation Commission and the North American Development Bank, 16 November 1993, in force 1 January 1994; reprinted in (1993) 32 *International Legal Materials* 1545.

<sup>110</sup> See online: <http://www.iadb.org/secci/aboutus.cfm?language=English>

<sup>111</sup> As seen in the APP, for example.

<sup>112</sup> For example, in EU is able to aggregate and reallocate individual emissions commitments (the EU bubble) through regional legal instruments.

<sup>113</sup> See online: [http://www.iso.org/iso/hot\\_topics/hot\\_topics\\_climate\\_change.htm](http://www.iso.org/iso/hot_topics/hot_topics_climate_change.htm)

remains considerable controversy over the role of large scale hydro and nuclear energy within renewable portfolios.<sup>114</sup> Ensuring that emissions reduction projects are creditable within various emission trading systems (and ensuring that projects do not get double counted) will also require a high degree of cooperation between market operators.<sup>115</sup> Coordination at the regional level can develop key standards for accounting and for transparency with a view to maximizing the possibility of increasing the scope of emission trading and other credit based systems, both within the region and with market instruments outside the region.

#### Part Four

#### Implications for Developing Countries

In many respects the position of Mexico differs from that of its North American partners, with different international commitments and a greater emphasis on continued economic development and adaptation. These differences are not, however, incompatible with regional climate governance. On an abstract level, the participation of a developing country in emission reduction initiatives provides an important signal to other developing economies that emission reduction is not incompatible with development goals. Given the U.S. government's strong insistence that other major emitters, such as India and China, need to begin taking steps to reduce these business as usual emissions, Mexican involvement ought to be politically attractive.

Symbols aside, regional cooperation will need to provide suitable incentives in order to address Mexico's development and adaptation needs. Important initial steps will be the identification of emissions reduction targets and continued development of national emissions inventory and accounting systems.<sup>116</sup> If Mexico can identify opportunities for efficient reductions, it should be able to attract investment in order to realize those mitigation opportunities. Mexico's current experience with generating CDM credits under the *Kyoto Protocol* indicates a strong existing capacity, but it will need to build on that to continue to attract those investment funds in a more competitive environment. A regional climate change framework that provides for the transfer of credit reduction units between countries presents a potential advantage to Mexico in that under a regional system Mexico is the sole developing country and should be able to attract strong investment from the U.S. and Canada. In the event that Canada no longer continues within the *Kyoto* framework post 2012, the Canadian government will need to replace the CDM credits is currently included in its own GHG reduction plan with an alternative.

The structure of a regional trading and credit system is difficult to predict. However, Mexico would likely want to ensure that a regional system is supplemental to the CDM under *Kyoto* since Mexico has been able to attract a high proportion of investment under the CDM.<sup>117</sup>

<sup>114</sup> CEC, 2003 "What is Renewable?: A summary of Eligible Criteria Across 27 Renewable Portfolios Standards", online at CEC; See also Ian Rowlands, "Renewable Electricity Politics Across Borders" (Paper presented at Climate Change Politics in North America, Woodrow Wilson International Center for Scholars, May 2007) at 64-67, discussing trade law implications of treating different sources of renewable energy unequally.

<sup>115</sup> Eg. WCI Agt., s.9.5, stressing rigorous accounting for credits

<sup>116</sup> Already recognized internationally as strong, see Germanwatch Climate Change Performance Index, online: <http://www.germanwatch.org/klima/ccpi.htm>

<sup>117</sup> Mexico has attracted 9.2% of the registered projects under the CDM; an amount only exceeded by India (30.9), China (22.6) and Brazil (12.6). Note these statistics measure only project numbers and not the total amount of

Ensuring that North American initiatives use similar methodologies to those accepted under the CDM should help attract investment under both a regional system and under *Kyoto*. A regional system may provide opportunities for credits in areas such as land use change, which Mexico has identified as being a significant source of net GHG reductions, but are not currently available for credit under the CDM.

Given their affirmation of common but differentiated responsibilities, Canada and the U.S. are not likely going to insist that Mexico accept binding reduction targets, but “no lose” targets or targets that are linked to increases in GDP or carbon intensity levels may provide opportunities for joint implementation. The acceptance of targets by Mexico may facilitate investment because the presence of targets allows for better demonstration that reductions are real (and not so-called “hot air”).<sup>118</sup> One possible option that may make the acceptance of targets more feasible in Mexico is the negotiation of some form of side payment. A side payment could be linked to capacity building, technology acquisition or adaptation requirements. Negotiating side payments may be easier in a regional context where the case can be made that such payments have mutual benefit by strengthening the region as a whole.

At present there is no regional equivalent to the Global Environment Facility that provides climate change project financing. The individual development agencies in Canada and the US have provided climate change related funding. For example, the Canadian International Development Agency has a climate change development fund and USAid has a similar program. Given the overlapping mandates of these development related climate change programs there may be opportunities for regionally focused cooperation.

The decentralized nature of climate change governance in North America may present some additional challenges in Mexico where state governments and cities are likely to have different capacity levels among one another and lower capacity levels than their North American counterparts. The result may be the development of greater ties between the Mexican federal government and sub-state governments and sub-regional climate institutions. Another possibility is direct engagement by private sector actors in sub-regional climate programs. For example, many of the current cooperative initiatives are structured around sectoral working groups. These working groups are not currently set up to facilitate capacity building, at least not explicitly, which may hamper their effectiveness. The ability for Mexico to link GHG mitigation with development and adaptation will also be impacted by the decentralized structure of climate governance, as sub-national actors in Canada and the U.S. will have different levels of interests in Mexican economic affairs. Decentralized governance may also present opportunities for the Mexican government to develop cooperative arrangements with U.S. states that face similar climate change impacts, such as increased water stress and impacts from sea level rises.

Thus for Mexico the need for integration operates on a variety of levels. First, in order to maintain the current flow of benefits through the *Kyoto* mechanisms, Mexico will want to ensure that regional climate change programs are compatible with international credit based programs.

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investment. In this latter regard, Mexico has a much smaller share of the global CDM market compared with China and India.

<sup>118</sup> “Hot air” is the term often given to projects that do not meet the requirement of additionality; that is, that the reductions go beyond business as usual reductions.

Horizontal integration is also important because integration of different programs will facilitate issue linkage, and that may better enable Mexico to leverage its involvement in mitigation measures in order to achieve its other climate related goals.

## Part 5 Conclusion:

This paper has sought to examine the potential for regional climate change governance in North America and to further consider the possible approaches to climate change regulation that are more likely to be pursued in the short and medium term. Our conclusions suggest that regional climate governance is likely to arise, but in a decentralized fashion and oriented more towards implementation than commitment creation. Unlike Europe, the absence of strong regional institutions and a fragmented system of resource and environment regulation militates against a legalized and hierarchical system of regional climate governance. However, a regional approach may be attractive in those sectors that are highly integrated within the *NAFTA* trade area, where leakage and competitiveness concerns are higher. Additionally, the common focus on developing innovative technologies through direct research and development funding provides further opportunities for cooperation.

Despite the preliminary nature of this discussion, we are confident that regional cooperation deserves further study and consideration by policy officials in North America. Because this is the beginning of a program of study, we have identified (non-exhaustively) several areas relating to regional climate governance that in our view require further attention. First, greater consideration needs to be given to the impact that the distribution of legislative authority over key climate-related areas in each state may have on the structure of cooperation. While all three states have a federal structure, the distribution of powers differs from state to state, as does the ability of sub-national actors to engage in cooperative activities within and beyond the state. Second, the contribution of existing regional environmental institutions to climate governance needs to be better understood. New institutions are costly to create, but delegating authority to ill-suited institutions also has costs associated to it. Here there will be a need to consider, *inter alia*, the principal actors engaged within the institution, existing levels of expertise in climate change, the kinds of cooperative activities the institution can engage in, and the form of decision making processes available to the institution. The last point is particularly important as legitimacy questions, which tend to arise as institutions take on more prominent governmental roles, have been raised in relation to existing regional arrangements.<sup>119</sup> Third, methodologies for identifying those sectors which may be amenable to regional climate change cooperation need to be developed and then applied to leading sectoral candidates. We expect that sectoral analysis will be principally an economic undertaking, but there are also important governance related questions regarding the nature and form of sectoral cooperation. Lastly, further consideration must be given to the governance of integration. A principal form of regional governance may be a form of meta-cooperation, whereby different programs and tracks are linked with one another vertically and horizontally. More ambitious forms of integration may provide greater benefits in terms of efficiency, but may be in tension with the desire for flexibility.

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<sup>119</sup> Craik and DiMento, *supra* n.31

## Appendix 1

|                                   | Canada                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | US                                                                                                             | Mexico                                                                                                                                                                                                      |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GLOBAL INITIATIVES</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                |                                                                                                                                                                                                             |
| <b>UNFCCC</b>                     | <ul style="list-style-type: none"> <li>– Submitting a national inventory of emissions and removals of greenhouse gases.</li> <li>– Implementing national programmes to mitigate climate change and adapt to its impacts</li> <li>– Strengthening scientific and technical research and systematic observation related to the climate system, and promoting the development and diffusion of relevant technologies.</li> <li>– Promoting education programs and public awareness about climate change and its likely effects.</li> <li>– Periodically submitting comprehensive National Communications (ie reports) on activities to implement commitments under the Convention.</li> <li>– Developing a national policy and specific commitments.</li> <li>– Assisting developing countries to meet their goals through financial aid, technology transfer and research support.</li> </ul>                                                                                                                                             |                                                                                                                | Same as Canada and the US, however Mexico is NOT required to develop a national policy and specific commitments nor to assist developing countries through financial aid, tech transfer or research support |
| <b>Kyoto Protocol</b>             | -6% below 1990 levels by 2008/2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -7% below 1990 levels by 2008/2012<br><br>[has not yet ratified Kyoto Protocol so not legally bound by target] | NONE                                                                                                                                                                                                        |
| <b>CDM</b>                        | Assisting with 22 projects, none with Mexico (11 in South America, 4 in China, 6 in Malaysia and 1 in Egypt)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | None                                                                                                           | 118 projects, most in conjunction with UK and Switzerland, some with Spain and 14 simply Mexico<br><br>[11 climate change projects approved through GEF]                                                    |
| <b>Bali Action Roadmap</b>        | Calls for enhanced action on all of the UNFCCC points from all parties<br><br>Indicates final negotiations/decisions will take place at COP-15 in 2009                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                |                                                                                                                                                                                                             |
| <b>Ozone</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                |                                                                                                                                                                                                             |
| <b>NORTH AMERICAN INITIATIVES</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                |                                                                                                                                                                                                             |
| <b>NAAEC</b>                      | The NAAEC requires that each Party ensure its laws provide for high levels of environmental protection without lowering standards to attract investment. Each Party agrees to effectively enforce its environmental laws through the use of inspectors, monitoring compliance and pursuing the necessary legal means to seek appropriate remedies for violations. Each Party must also provide a report on the state of its environment, develop environmental emergency preparedness measures, promote environmental education, research and development, assess environmental impacts and promote the use of economic instruments. Parties may also appoint National Advisory Committees composed of private sector representatives to assist in implementing the Agreement domestically. [from Canadian website]<br><br>Article 2 of NAAEC:<br>1. Each Party shall, with respect to its territory: <ul style="list-style-type: none"> <li>a. periodically prepare and make publicly available reports on the state of the</li> </ul> |                                                                                                                |                                                                                                                                                                                                             |

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|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                        | <p>environment;</p> <ul style="list-style-type: none"> <li>b. develop and review environmental emergency preparedness measures;</li> <li>c. promote education in environmental matters, including environmental law;</li> <li>d. further scientific research and technology development in respect of environmental matters;</li> <li>e. assess, as appropriate, environmental impacts; and</li> <li>f. promote the use of economic instruments for the efficient achievement of environmental goals.</li> </ul> <p>2. Each Party shall consider implementing in its law any recommendation developed by the Council under Article 10(5)(b).</p> <p>3. Each Party shall consider prohibiting the export to the territories of the other Parties of a pesticide or toxic substance whose use is prohibited within the Party's territory. When a Party adopts a measure prohibiting or severely restricting the use of a pesticide or toxic substance in its territory, it shall notify the other Parties of the measure, either directly or through an appropriate international organization.</p> <p>Otherwise, laws must be made available, and there must be remedies available to citizens of other parties and the judicial system must be open, fair, efficient. Government must also monitor compliance with domestic legislation</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>SPP</b>                             | <ul style="list-style-type: none"> <li>– working towards a joint vision of biofuels for transportation by 2020</li> <li>– shared information on policies and programs on vehicle fuel efficiency, standby power consumption, and the potential for natural gas to support optimal energy use for the future</li> <li>– harmonize a number of energy-using consumer products, such as central air conditioners.</li> <li>– new suite of products, including clothes washers and water heaters, are being assessed under the new framework to systematize energy efficiency harmonization between all three countries</li> <li>– undertook a comprehensive analysis of various emissions inventories among the three countries to prepare a trilateral strategy to achieve comparability</li> <li>– road tested emissions estimation methodologies for nine energy generating facilities to improve and harmonize emissions calculations in the energy power</li> <li>– enhance our electricity networks</li> <li>– collaboration to further reduce barriers to expanding clean energy technologies, especially carbon dioxide capture and storage to mitigate greenhouse gas emissions</li> <li>– working together to improve the safety of chemicals in the marketplace</li> <li>– We reiterate our support for the Bali Action Plan and stress the urgency of reaching agreement to ensure the full, effective and sustained implementation of the UNFCCC now, up to and beyond 2012</li> <li>– believe that the Major Economies Leaders Meeting should make a contribution to that outcome</li> <li>– all should redouble efforts to address climate change and to establish nationally appropriate programs and goals to be reflected in binding international commitments based on the principle of common but differentiated responsibilities and respective capabilities, to contribute to ensuring global greenhouse gas emission reductions, adaptation measures, energy security, and sustainable development</li> <li>– reaffirm our shared conviction that increased trade in environmental goods, services, and technologies can have a positive impact on global climate change efforts and encourage the removal of barriers to such trade</li> </ul> <p>[from “Bali Action Plan” down from Orleans meeting; first section from “key accomplishments since 2007”]</p> |
| <b>OTHER INTERNATIONAL INITIATIVES</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Asia Pacific</b>                    | <ul style="list-style-type: none"> <li>– In accordance with our respective national</li> </ul> <p>Not a member</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Partnership | <p>circumstances, develop, deploy and transfer cleaner, more efficient technologies and to meet national pollution reduction, energy security and climate change concerns, consistent with the principles UNFCCC</p> <ul style="list-style-type: none"><li>– Areas for collaboration may include, but not be limited to:<ul style="list-style-type: none"><li>o energy efficiency,</li><li>o clean coal,</li><li>o integrated gasification combined cycle,</li><li>o liquefied natural gas,</li><li>o carbon capture and storage,</li><li>o combined heat and power,</li><li>o methane capture and use,</li><li>o civilian nuclear power,</li><li>o geothermal, rural/village energy systems,</li><li>o advanced transportation, building and home construction and operation,</li><li>o bioenergy,</li><li>o agriculture and forestry,</li><li>o hydropower, wind power, solar power, and other renewables.</li></ul></li><li>– will also cooperate on the development, diffusion, deployment and transfer of longer- term transformational energy technologies that will promote economic growth while enabling significant reductions in greenhouse gas intensities</li><li>– Areas for mid- to long-term collaboration may include, but not be limited to:<ul style="list-style-type: none"><li>o hydrogen,</li><li>o nanotechnologies,</li><li>o advanced biotechnologies,</li><li>o next-generation nuclear fission,</li><li>o fusion energy.</li></ul></li><li>– share experiences in developing and implementing our national sustainable development and energy strategies, and explore opportunities to reduce the greenhouse gas intensities of our economies</li><li>– non-binding compact in which the elements of this shared vision, as well as the ways and means to implement it, will be further defined</li><li>– we will consider establishing a framework for the partnership, including institutional and financial arrangements and ways to include other interested and like-minded countries</li></ul> |  |
| OAS         | <p>Resolution adopted by the General Assembly in 2002 to support the CARICOM countries and help their mitigation efforts with respect to climate change. Canada and the US have done so through support for climate change projects in Carribean</p> <p>Does not seem to be any focus on climate change outside of the concerns of small island states in the Carribean</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |

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| <b>G8</b>                                                  | <p>No specific targets in G8 action plan: US President Bush did agree economy-wide approach needed to achieve absolute emission reductions [agreed to seriously consider 50% by 2050]</p> <p>Action Plan included following elements:</p> <ul style="list-style-type: none"> <li>– Reviewing building codes, appliance standards, and vehicle standards to identify best practices and opportunities for coordination;</li> <li>– Extending the use of labeling on vehicles and appliances to raise consumer awareness of energy consumption;</li> <li>– Encouraging multilateral development banks to expand the use of voluntary energy savings assessments of proposed investments in energy-intensive sectors; explore opportunities to increase investments in renewable energy and energy efficiency technologies; and work with borrower countries to identify less greenhouse gas-intensive growth options.</li> <li>– Inviting the World Bank to develop and implement “best practice” guidelines to assess and manage climate risks associated with new investments in climate-sensitive sectors;</li> <li>– Adopting, where appropriate, market-based policy frameworks to finance the transition to cleaner energy; and</li> <li>– Promoting dialogue on potential policy approaches such as long-term sectoral, national or international policy frameworks; market-based instruments for the development and deployment of technologies; and the trading of credits for greenhouse gas reductions.</li> </ul> <p>[All from Pew Centre summary; available on G8 website at <a href="http://www.g8summit.go.jp/eng/doc/doc080714_en.html">http://www.g8summit.go.jp/eng/doc/doc080714_en.html</a>]</p> | <p>Not a member but participated in summit</p> <p>Called for stronger action by developed countries and more financial/technical assistance for developing countries</p> |
| <b>Washinton International Renewable Energy Conference</b> | <p>Wirec 2008 was the third international ministerial level conference on renewable energy. It was hosted in Washington on March 4-6, 2008. Ministers from federal and local governments, industry leaders and civil society representatives met to focus on R&amp;D issues, rural development and financing of renewable energy sources. There was also a focus on sharing best practices.</p> <p><a href="http://www.wirec2008.gov">http://www.wirec2008.gov</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |
| <b>Methane to Markets Partnership</b>                      | <p>21 partners and over 600 private sector and civil society organizations are members. The Partnership’s goal is to encourage “waste” methane recovery and to re-use it as a clean energy source. Currently focuses on four areas of methane management: agriculture; coal mines; landfills; and, oil and gas systems.</p> <p><a href="http://www.methanetomarkets.org">http://www.methanetomarkets.org</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                          |
| <b>International Partnership for the Hydrogen Economy</b>  | <p>17 government members, including the EC, have partnered to improve the development of hydrogen and fuel cells as a alternative clean energy source. Focussed on R&amp;D and commercial utilization activities. Founded in 2003.</p> <p><a href="http://www.iphe.net">http://www.iphe.net</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Not Involved.                                                                                                                                                            |
| <b>Carbon Sequestration Leadership</b>                     | <p>22 governments partnered since 2003 to develop carbon sequestration and carbon capture techniques for long-term storage and transportation. The group includes six task forces: risk assessment, storage capacity estimation, projects interaction and review, legal issues, capacity-</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                          |

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|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Forum                                                            | building in emerging economies and financial issues.<br><br><a href="http://www.cslforum.org">http://www.cslforum.org</a>                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
| Group on Earth Observations                                      | Over 70 countries and 40 international organizations participate in GEO. The initiative aims to collect climate change data, general weather and atmospheric data, and other environmental statistics. The partnership helps members coordinate efforts and share information.<br><br><a href="http://earthobservations.org">http://earthobservations.org</a>                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
| Generation IV International Forum                                | Partnership of ten countries and Euratom to encourage the development of safer, proliferation-resistant nuclear energy technologies.<br><br><a href="http://nuclear.energy.gov/GenIV/neGenIV2.html">http://nuclear.energy.gov/GenIV/neGenIV2.html</a>                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Not Involved |
| Global Nuclear Energy Partnership                                | Canada joined in Nov. 2007. In Sept. 2007, 16 states signed a Statement of Principles to cooperate to develop and encourage the use of peaceful nuclear energy technologies<br><br><a href="http://nuclear.energy.gov/GenIV/neGenIV2.html">http://nuclear.energy.gov/GenIV/neGenIV2.html</a>                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Not Involved |
| ITER                                                             | Not involved                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Research project initiated by the US aimed at harnessing the potential of fusion energy. China, Russia, India, Japan, Korea and the EU are also involved.<br><br><a href="http://www.iter.org">http://www.iter.org</a>                                                                                                                                                                                                                                                                             | Not involved |
| Global Bioenergy Partnership                                     | The GBEP Secretariat is managed by the FAO. A combination of country and NGO partners are cooperating to develop cost-effective biofuels and implement them, particularly in developing countries.<br><br><a href="http://www.globalbioenergy.org">http://www.globalbioenergy.org</a>                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
| Renewable Energy and Energy Efficiency Partnership               | Multilateral initiative that aims to develop policy and legal mechanisms that will assist in renewable energy implementation and to facilitate financing for clean energy projects. Also helps to share best practices and energy smart community planning models. The organization is comprised of 8 regional secretariats that include government actors, NGOs, business and development banks.<br><br><a href="http://www.reeep.org">http://www.reeep.org</a> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
| Renewable Energy Policy Network for the 21 <sup>st</sup> Century | Global policy network that aims to develop leadership in clean energy technologies. Focusses on policy development at sub-national, national, regional and international levels to encourage the rapid expansion of renewable energy technology use. Neither Canada nor Mexico appear to be directly involved, but UNDP, UNEP and the IEA are all members, as well as the GEF and the World Bank.<br><br><a href="http://www.ren21.net">http://www.ren21.net</a> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
| BILATERAL INITIATIVES                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
| USAid Global Climate Change                                      | NOT INVOLVED IN BILATERAL AGREEMENT                                                                                                                                                                                                                                                                                                                                                                                                                              | In 2005, U.S. and Mexico agreed to: <ul style="list-style-type: none"><li>Continued cooperation on the Methane to Markets Initiative (M2M)</li><li>Technical assistance for the periodic updating of greenhouse gas inventories and development of economic/environmental models to support decision-making;</li><li>Cooperation through the Carbon Sequestration Leadership Forum (CSLF) and development of projects in geologic sequestration for consideration by CSLF (including the</li></ul> |              |

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|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>nomination of the Campo Carmito project for certification by the CSLF);</p> <ul style="list-style-type: none"> <li>– Cooperation in development of integrated carbon cycle research, building toward coordination through the North American Carbon Program; and</li> <li>– A robust program of clean production initiatives, including activities designed to promote energy efficiency and the use of renewable energy.</li> </ul> <p>Additionally, the United States and Mexico agreed to consider joint projects to:</p> <ul style="list-style-type: none"> <li>– Engage in public outreach describing U.S.-Mexico cooperation in the area of climate change through a joint brochure reflecting quantifiable projects;</li> <li>– Carry out additional joint planning for the July, 2005 economic-environmental modeling workshop to be held in Mexico City;</li> <li>– Identify ways to move forward in the North American Carbon Program;</li> <li>– Discuss possible future cooperation in the area of biofuels;</li> <li>– Extend existing joint modeling programs and consider economic factors in methane recovery; and</li> <li>– Discuss additional collaborative studies in the area of adaptation, such as the recently completed Hermosillo, Sonora study.</li> </ul> |              |
| <b>Debt-for-Nature Agreements</b>                     | Canada, the US and a number of European countries have independently initiated debt-for-nature agreements whereby they forgive debt owed to them by developing countries in exchange for the latter undertaking environmental initiatives. Mexico has participated in various debt-for-nature swaps with other governments and international organizations. The US was a global leader in initiating such agreements. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |
| <b>President’s Initiative Against Illegal Logging</b> | Not involved                                                                                                                                                                                                                                                                                                                                                                                                          | <p>The US partners with developing countries on a bilateral basis to assist them put a stop to illegal logging.</p> <p><a href="http://www.whitehouse.gov/ceq/initiative_against_illegal_logging.pdf">http://www.whitehouse.gov/ceq/initiative_against_illegal_logging.pdf</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Not involved |
| <b>Public-Private Forest Partnerships</b>             | Not involved                                                                                                                                                                                                                                                                                                                                                                                                          | Similar to the above initiative, the US partners with developing countries on a bilateral basis to encourage reforestation and sustainable forest management.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Not involved |
| <b>Clean Energy Initiative</b>                        | Not involved                                                                                                                                                                                                                                                                                                                                                                                                          | US program designed to fund clean energy initiatives in developing countries. Coordinated by USAid.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Not involved |

|                                         |              |                                                                                                                                              |              |
|-----------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Millennium Challenge Corporation</b> | Not involved | US program designed to link funding for developing nations to increased responsibility for climate change. Indirectly associated with USAid. | Not involved |
|-----------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------|

**APP:** eight public-private sector task forces (so take a look at these sectors for sectoral agreements)

- Aluminum
- Buildings and appliances
- Cement
- Cleaner use of fossil energy
- Coal mining
- Power generation and transmission
- Renewable energy and distributed generation
- Steel

**SPP:** The Prosperity working groups established cover a wide range of issue areas:

- Manufactured Goods & Sectoral and Regional Competitiveness
- Movement of Goods
- Energy
- Environment
- E-Commerce & Information Communications Technologies
- Financial Services
- Business Facilitation
- Food and Agriculture
- Transportation
- Health

## Appendix 2

|                       | Canada                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US                                                                                                                                                                                                                                                                                                       | Mexico                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Targets</b>        | <p>Absolute 20% reduction from 2006 levels by 2020 [this will bring emissions to approx. 600 Mt which is still above 1990 levels]</p> <p>Turning the Corner<br/>(<a href="http://www.ec.gc.ca/default.asp?lang=En&amp;n=75038EBC-1">http://www.ec.gc.ca/default.asp?lang=En&amp;n=75038EBC-1</a>)</p>                                                                                                                                                                                                                                                                                                                                                                                                    | <p>Cut GHG intensity by 18% by 2012 [announced as goal in 2002]</p> <p>U.S. Action to Address Energy Security, Clean Development and Climate Change<br/>(<a href="http://www.state.gov/g/oes/rls/or/97380.htm">http://www.state.gov/g/oes/rls/or/97380.htm</a>)</p>                                      | <p>National target to be set in 2008<br/>Special program on cc</p> <p>Focus on establishing performance standards, reporting emissions and doing economic assessments</p> <p>National Climate Change Strategy<br/>(<a href="http://www.semarnat.gob.mx/queesemarnat/politica_ambiental/cambio climatico/Pages/estrategia.aspx">http://www.semarnat.gob.mx/queesemarnat/politica_ambiental/cambio climatico/Pages/estrategia.aspx</a>)</p> |
| <b>Industry Goals</b> | <p>Reduce emissions by 165 Mt from projected levels by 2020</p> <p>50% decrease in HFCs by 2020</p> <p>Regs for GHG emissions apply to 16 sectors</p> <p>Credit program for early action (prior to 2006) and offset program for projects post Jan. 1, 2008</p> <p>Firms may contribute to a technology fund as a means of compliance for the 2010-2017 period, subject to limits</p> <p>A further 5 Mt/year of credits will be available through the research and development component</p> <p>Technology fund will take a portfolio approach to investment in a range of deployment and development projects</p> <p>Fund will seek ownership of resulting emission reductions based on project cost</p> | <p>Direct carbon intensity reduction of 53% from 1990 levels by 2010</p> <p>Reduce HFCs by 50% and improve fuel efficiency by 30%</p> <p>Reduce PFCs by 10% below 1995 baseline by 2010</p> <p>Eliminate SF6 emissions by 200</p> <p>Tax incentives from 2005 to 2015 for reduction of GHG emissions</p> | <p>Develop the combined heat and power potential of the national cement, steel and sugar industries</p> <p>Eliminate subsidies for fossil fuel energy consumption and production</p> <p>Implement compulsory and voluntary standardization of equipment, vehicles, power generation systems and consumption in homes, offices and industry</p>                                                                                            |
| <b>Oil and Coal</b>   | <p>Mandatory emissions reductions in 2010 and getting tougher every year (especially for coal-fired plants and oil sands); new plants between 2004 and 2011 have tougher</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>Install highly efficient CHP plants</p>                                                                                                                                                                                                                                                               | <p>Install CHP (combined heat and power) plants in PEMEX facilities</p> <p>Substitute individual generation plants for a 15 MW combined cycle plant connected to offshore</p>                                                                                                                                                                                                                                                             |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <p>emission standards; plants built post 2011 will end construction of dirty coal-fired plants and mandatory CCS/other green technology in oil sands</p> <p>Tougher standards tied to CCS</p> <p>Cut GHG emissions from coal processing (for energy and cement industries) by more than 50%</p>                                                                                                |                                                                                                                                                                 | <p>platforms</p> <p>Increase PEMEX's energy efficiency target by 5%</p> <p>Reduce fugitive NH4 emissions from natural gas production, transportation and distribution, increase efficiency of flares on offshore platforms</p> <p>Reduce the dependence on oil</p> <p>Increase thermal efficiency of fuel oil-fired thermoelectric plants by 2%</p> <p>Phase out and reorient fuel oil production incentives; install on the Pacific coast a gasification terminal for imported liquefied natural gas and convert fuel oil-fired thermoelectric plants to combined cycle</p> |
| <b>Electricity Sector</b> | <p>Establishing a clean electricity task force to work with provinces and industry to meet goal of cutting emissions by 25 Mt by 2020</p> <p>Create 90% of electricity from sources that do not emit GHGs</p> <p>40% of all new electricity capacity should be from renewables</p> <p>Increase electricity from wind and water by 20x</p> <p>1.48 billion invested for cleaner electricity</p> | <p>Green Power Partnership provides incentives to companies to purchase green electricity</p> <p>Efficiency improvements in hydroelectric dams [from WIREC]</p> | <p>Encourage the regulated participation of private enterprise in low carbon energy generation (particularly in CHP and renewables)</p> <p>Increase efficiency of transmission and distribution lines by 2%</p> <p>Facilitate connection of independent suppliers to the national grid</p>                                                                                                                                                                                                                                                                                   |
| <b>Energy Efficiency</b>  | <p>New EE requirements for commercial/consumer products</p> <p>Ban inefficient incandescent lightbulbs</p> <p>Improve EE by 20% including buildings</p>                                                                                                                                                                                                                                        | <p>Maintain the Energy Star program including the EPA recent revisions to standards</p> <p>More energy efficient schools</p>                                    | <p>Continue application of current energy efficiency standards and develop new ones</p> <p>Strengthen current Trust Fund for Energy Savings (FIDE) programs and promote new ones</p>                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Renewable energy</b>   | <p>Inclusion of renewable tax incentives in 2008 budget [WIREC]</p>                                                                                                                                                                                                                                                                                                                            | <p>Promote renewable energy and biofuels to reduce gasoline use by 20% in ten years (cellulosic ethanol is big one)</p>                                         | <p>Promote renewable energy sources, including sustainably produced biofuels, and low carbon technology</p> <p>Amend the proposed Law on the</p>                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                       |                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       |                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>Use of Renewable Energy Sources to increase renewables in overall power generation above the present target of 8%</p> <p>Install 7000 MW of renewable energy capacity to generate 16,000 GWh per year (additional to the two current plants)</p> <p>Introduce 500,000 high efficiency wood burning stoves in rural communities</p>                                                                                                    |
| <b>Transportation</b> | <p>Mandatory renewable fuel content in gasoline, diesel and heating oil (ethanol up to 5%)</p> <p>Fuel consumption standards for cars, light trucks and sport utility vehicles</p> <p>Increase fuel efficiency in new cars by more than 20%</p> <p>New fleet management techniques, harmonizing trucking practices and cost-sharing for improved technologies</p> | <p>Increase supply of renewable and alternative fuels by setting mandatory fuel standard to require 35 billion gallons of renewable/alternative fuels in ten years</p> <p>Reform and modernize Corporate Average Fuel Economy standards for cars and extend the current light truck rule</p> <p>Slowing projected growth of carbon dioxide emissions from cars, light trucks and SUVs</p> <p>SmartWay Transport Partnership; improving energy security and reducing fuel consumption as well as idling</p> <p>30% efficiency improvement in airline engines</p> | <p>Replace freight trucks and diesel busses more than 10 years old from 2008 onwards</p> <p>Increase the performance of the motorized transport fleet by promoting the acquisition of vehicles with low GHG emissions</p> <p>Implement policies to promote low carbon emissions in public transport and increased use of rail for freight</p> <p>Increase rail coverage for freight transportation by 10%</p>                            |
| <b>Agriculture</b>    | Encourage emission reductions                                                                                                                                                                                                                                                                                                                                     | <p>Reduce use of nitrogen fertilizers</p> <p>Remove environmentally sensitive cropland from production and install vegetative cover to sequester carbon</p> <p>Sell carbon credits generated from lands enrolled in CRP program</p> <p>Grants for agricultural producers and rural small businesses to purchase renewable energy systems</p> <p>Promote methane reductions</p>                                                                                                                                                                                  | <p>Develop standards for fertilizer use according to region and crop</p> <p>Promote the reconversion of agricultural land to perennial and mixed crops in 900,000 hectares</p> <p>Promote alternatives to slash and burn agriculture in 100,000 hectares to reduce related forest fires</p> <p>Employ conservation tillage and foster cover crops in 200,000 hectares</p> <p>Rehabilitate 450,000 hectares of grazing and rangelands</p> |
| <b>Forestry</b>       | Encourage emission reductions                                                                                                                                                                                                                                                                                                                                     | Discouraging illegal logging                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Increase the area under sustainable                                                                                                                                                                                                                                                                                                                                                                                                      |

|                                 |                                           |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------|-------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | and use as credits                        | (President's Action)                      | <p>forest management by 2.6 million hectares per year</p> <p>Expand coverage of current programmes of payment for environmental services to accumulatively reach 2.49 million hectares by 2012</p> <p>Increase coverage of Protected Areas by 500,000 hectares par year to accumulate 3 million hectares in the National Protected Areas System</p> <p>Integrate approximately 6 million hectares of tropical, temperate and arid zone ecosystems within Wildlife Management Areas</p> <p>Carry out phytosanitary diagnosis and treatment in approximately 640,000 hectares of forest per year</p> <p>Reforest 285,000 hectares a year to accumulate 1.71 million hectares by 2012</p> <p>Restore and reforest degraded soils in an aarea of 115000 hectares annually to accumulate 690000 hectares</p> <p>Expand the area in commercial plantations at a rate of 10000-hectares per year to accumulate another 600000 hectares</p> <p>Identify opportunities for carbon capture projects in forest ecosystesm under the CDM</p> |
| <b>Emissions Trading Scheme</b> | Not mentioned in federal policy documents | Not mentioned in federal policy documents | <p>Establishment of an integrated national scheme for emissions trading through medium term</p> <p>Increasing number of participating sectors and the value of the carbon traded in phases</p> <p>Operate with controlled carbon prices which would be subject to periodic review until reaching equilibrium with international market prices</p> <p>Coupling the national scheme with</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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|                                           |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                  | international schemes and commitments<br><br>Bring PEMEX (national oil company) into the scheme                                                                                                                                                                                                                                                                        |
| <b>Adaptation</b>                         | Not mentioned in federal policy documents                                                                                                                                                                     | Not mentioned in federal policy documents                                                                                                                                                                                                                                                                        | Policy includes adaptation priorities; focus on public information and institutional capacity to monitor and manage risk due to climate change                                                                                                                                                                                                                         |
| <b>Research</b>                           | 4 billion for research of renewable energies<br><br>Technology fund seems focussed on clean energy technology and CCS techniques                                                                              | Committed \$50 billion to research and \$86 billion to R&D tax incentives<br><br>Research to focus on clean energy technology including renewable sources<br><br>Additional research focii include; carbon sequestration, coal-fired, near-zero emissions power generation, hydrogen, nuclear fission and fusion | Building research programs focussed on energy generation/use; forest resources conservation and management; crop production; livestock production; hydrometeorological risk and water resource management; biodiversity; agriculture; coasts; human settlements; energy generation and use; human health<br><br>Also focus on low carbon energy sources and renewables |
| <b>Support for Subnational Agreements</b> | 1.5 billion in funding for provincial/territorial initiatives<br><br>Provincial success could be beyond the 20% absolute reduction called for by federal government (but not budgeting for that specifically) | Partner with states to adopt a variety of clean energy policies and programs                                                                                                                                                                                                                                     | Not mentioned in federal policy document                                                                                                                                                                                                                                                                                                                               |

US programs include:

- Climate change science program [domestic]
- Climate change technology program [domestic]
- Advanced energy initiative [domestic]
  - o Carbon sequestration
  - o Coal-fired, near-zero emissions power generation
  - o Energy efficiency and renewable energy
  - o Hydrogen
  - o Nuclear fission
  - o Fusion energy

International

- Major economies meeting [Canada, Mexico]
- Asia-Pacific Partnership on Clean Development and Climate [Canada]
- Washinton International Renewable Energy Conference [Canada, Mexico]
- Methane to Markets Partnership [Canada, Mexico]
- International Partnership for the Hydrogen Economy [Canada]
- Carbon Sequestration Leadership Forum [Canada, Mexico]
- Group on Earth Observations [Canada, Mexico]
- Generation IV International Forum [Canada]
- Global Nuclear Energy Partnership [Canada]
- ITER
- US Global Biofuels Engagement [Unknown]

Bilateral

- USAID's Global Climate Change Program [**Mexico**]
- Debt-for-Nature Agreements [**Canada, Mexico**]
- President's Initiative Against Illegal Logging
- Public-Private Forest Partnerships
- Global Environmental Facility [**Canada, Mexico**]
- Millennium Challenge Corporation
- Clean Energy Initiative
- Renewable Energy and Energy Efficiency Partnership [**Canada**]
- Renewable Energy Policy Network for the 21<sup>st</sup> Century [**unclear but Canada referred to on website**]