

Pre-publication draft

Chapter 10

Climate Compared: Sub-Federal Dominance on a Global Issue

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Underestimating the political complexity of enacting and implementing policies to reduce greenhouse gas (GHG) emissions has been a hallmark of social science analysis for more than two decades. Leading social science work on climate change has routinely assumed that nation-states will be dominant political actors, orchestrating any global response and subsequent implementation (Stern 2007; Giddens 2009). The long-standing expectation that a global regime could generate bold national emission reductions, however, now appears decreasingly feasible with the passing of each international climate summit. National governments, whether federal or unitary in structure or based in developed or emerging economies, have struggled both in international bargaining and in delivering unilateral policy commitments. Among the largest national emitters, the federal governments of both Canada and the United States have generally followed this path of policy failure.

Both scholars and policy makers have long gravitated towards a set of priors to guide their thinking about how national governments might join forces to address climate change. This exercise in path dependence drew heavily on the Canadian and American experience in building a cross-continental and, ultimately, international coalition to reduce the release of ozone-depleting chemicals into the atmosphere, leading to the 1987 creation of the Montreal Protocol (Thoms 2002). It also relied heavily upon the innovative American experience with emissions trading for a conventional air pollutant, sulphur dioxide, as a policy tool that offered a cost-effective model for both national and cross-national collaboration on climate change (Raymond 2010). Others have turned to additional precedents, including the Cold War, nuclear arms control, and international trade pacts as possible models for climate governance, all with the hope that these might serve as models for extensive Canadian and American engagement. But more than two decades after the Rio Declaration on Climate Change, neither country has assumed such a role, joined by a chorus of failed efforts from other nations and growing frustrations in international forums.

There have, however, been some important exceptions to this larger pattern as some governments have taken unilateral and multilateral policy steps to reduce their emissions (Lachapelle and Paterson 2013). Led by such countries as Germany, Sweden, and the United Kingdom, the European Union has been most prominent in this regard, through continental strategies such as the Emissions Trading System as well as a mixture of such federal and sub-federal policies as energy taxation and renewable energy mandates (Jordan, et al. 2010). In North America, policy capacity looks considerably more robust when shifting from Ottawa and Washington, DC, to provincial and state capitals. Among the ten provinces and fifty states, one finds virtually every form of

climate policy now operational in some set of jurisdictions (Burke and Ferguson 2010).

Many of these policies remain in early phases of implementation, making it difficult to assess their efficacy or political resiliency. Nonetheless, the flurry of sub-federal mitigation initiatives on both sides of the 49th parallel represents a distinctly unexpected development in climate policy, one that may indicate a possible path towards long-term engagement. The exploration of the origin of these varied policy outputs is the primary focus of this chapter, and it generates two fundamental questions. First, given the global nature of climate change and the predominant expectation that it would be addressed largely at the international and national levels, why have the central governments of Canada and the United States remained such marginal players? Second, absent federal leadership, why have many sub-federal governments unilaterally adopted leading roles?

In response, we offer a comparative analysis of the interplay between federal and sub-federal jurisdictions in Canada and the United States as they address the challenge of mitigating climate change. As noted by Collier (1993), comparison is an essential tool for political analysis, allowing researchers to situate analyses within a larger context, thereby revealing broader patterns and suggestive dissimilarities across cases. By comparing these federations, we hope to offer greater insight into both federalism and climate policy than would be possible by examining Canada on its own. This approach builds on recent work comparing Canada, the United States, and other governments (Harrison and Sundstrom 2010; Lachapelle, Borick, and Rabe 2012; Rabe and Borick 2012). Given their close geographic, economic, cultural, and political ties, comparing dynamics in Canada and the United States offers a deeper and more complete account of the way in which federal institutions mediate the response of two interdependent governments to the climate policy challenge. Moreover, our theoretical understanding of the factors influencing climate policy in Canada is strengthened through comparison with the United States. This provides considerable leverage for ascertaining the importance of different variables and specifying the limits and conditions under which our theoretical arguments may or may not hold.

We begin with an analysis of why climate policy development has proven so problematic for international regimes and national authorities while sub-federal governments have emerged as unexpectedly major players. We also examine key patterns of federal and sub-federal policy development in both countries, highlighting points of distinction and convergence. Despite -- and perhaps as a result of -- important differences in prevailing governance structures and domestic political economies, we find surprising similarities and some intriguing differences across cases. We conclude with a consideration of early lessons from this experience, particularly for Canada, and identify possible avenues for future policy development.

<1>The Intergovernmental Paradox: Global Climate Change as a Sub-Federal Issue

The evolution of climate policy in recent decades, in Canada and the United States as well as globally, reflects some consistent themes

that have emerged in the work of the late Nobel Laureate Elinor Ostrom and a body of scholars who examine environmental federalism and multi-level governance (Ostrom 1990, 2009; Scheberle 2004; Harrison 1996; Rabe 2004). Ostrom long noted a tendency to impose common framing assumptions on diverse environmental problems, often generating presumptions that sub-federal jurisdictions would shirk environmental protection responsibilities. This phenomenon was thought especially likely when environmental contaminants could literally migrate across jurisdictional boundaries. Such conceptualization often presumes that the only feasible response to these problems involves the largest possible governmental scale. This usually entails substantial roles for national governments as well as expectation of multi-national and international action. In turn, sub-federal units are relegated to more peripheral roles, perhaps confined to implementing central government orders.

Ostrom (1990) routinely questions the viability of centralized environmental governance arrangements and the capacity of large-scale governments to establish functional oversight. Instead, she counters that it is often possible for particular jurisdictions to tailor strategies plausible for their particular circumstances. This occurs especially when these strategies support full disclosure and sharing of information, sanction non-compliance, foster some degree of familiarity and trust among key actors, and feature a common (albeit not universal) understanding that such steps make sense. It is often difficult to find these policy "sweet spots," and climate change policy development may be a particular stretch for many polities, possibly fostering intergovernmental "passing-the-buck" (Harrison 1996). Any local GHGs contribute to global emission levels and will cause differential effects around the world. This could create considerable incentives to shirk from any unilateral reduction. But Ostrom (2009) argues that climate change may more closely fit a polycentric model than initially realized, with multiple jurisdictions taking concerted action tailored to their own particular situations in the absence of a grand international bargain. This closely parallels federalism scholarship that explores the conditions that lead to a "robust federation" with functional roles divided across respective governmental levels (Bednar 2009).

Our analysis of Canadian and American climate policy offers some support for Ostrom's views. We argue that perceptions of local benefits help explain much of the sub-federal action in both nations. While such action leaves considerable uncertainty about whether emission levels can be reduced sufficiently to mitigate the worst threats of climate change, it also suggests one path towards "governing the climate" that builds on more localized responses, based in public ascent and holding out the possibility of sustaining transparency and trust. It could also facilitate considerable policy diffusion and learning across jurisdictional boundaries, including possible vertical movement to federal levels.

Given substantive differences in Canadian and American governance structures -- notably in Canada's parliamentary system of government, which concentrates power in the executive -- one might expect substantial differences in policy output. Indeed, Prime Minister Jean

Chrétien, leader of a majority government in a Westminster parliamentary democracy, possessed sufficient power to ensure the ratification of the Kyoto Protocol. President Bill Clinton was equally enthusiastic about forging a global deal but faced overwhelming Senate opposition to ratification and lacked constitutional authority to proceed. Notwithstanding these differences, leaders in both countries face enormous challenges in reconciling often contradictory regional interests within their respective federations. Whereas the separation of powers and the uniform distribution of American Senate seats empower even the smallest US states with considerable influence over federal policy, Canadian federalism delegates to provinces extensive powers in such areas as natural resources, transportation, buildings, waste, land use, and environment, leaving them with important climate policy-making roles. Faced with opposition from the more GHG-intensive provinces, central government authority to regulate emissions is thus similarly constrained by regionalism. As a result, both Canada and the United States have so far been unable to take significant and coordinated federal action, remaining largely confined to more symbolic efforts.

In this context, the anticipated benefits of climate change mitigation at local, provincial, or state levels become important for uncovering the incentives for sub-federal action. These benefits are numerous and transcend direct impacts on climate change. They include: promotion of economic development through new environmental and energy industries, reduced non-GHG atmospheric pollutants with impacts on related morbidity and mortality, early engagement in emerging carbon markets, and potential influence on future federal actions (Rabe 2004). Moreover, provinces and states are relatively more homogenous in terms of both public opinion and the various interests vying for political representation, thus reducing points of potential conflict and facilitating formulation of a more tailored climate change policy (Lachapelle, Borick, and Rabe 2012). Each of these factors is consistent with an understanding that sub-federal units of government will pursue their self-interest, even in the absence of federal coercion or incentives to act (Peterson 1995).

Collectively, these factors can converge to create considerable opportunity for sub-federal climate policy development. Of course, this process is not unique to climate policy, given numerous comparable examples in both Canada and the United States in such policy areas as health care and education (Boyчук 2008; Vergari 2010). But it has emerged with unexpected vigour in the climate context despite widespread expectations that the global nature of climate change, both in its causes and consequences, would marginalize sub-federal governments. We now turn to a more detailed review of Canadian and American climate federalism, highlighting key points of development and transition.

<1>Climate Policy in Canada

Initially, Canada's federal government took an early lead in climate policy, largely through international negotiations and the hosting of major international climate meetings in 1988 (Toronto) and 2005 (Montreal). Subsequently, however, federal action was mostly confined

to voluntary measures and modest spending initiatives (Macdonald, VanNijnatten, and Bjorn 2004; Rivers 2010) that were widely criticized for being ineffectual (Bramley 2002; CESD 2006). Despite repeated proposals for a cap-and-trade system for large emitters and proposals for a broad-based, national-level carbon tax, no such instruments have been implemented to date. Only in 2013 did the Canadian federal government move beyond non-binding emission reduction pledges towards a sector-by-sector regulatory approach imposing performance standards in the areas of coal-fired electricity generation, oil and gas, and transportation set to take effect in 2014-15.

In contrast, provinces have taken the lead on climate change policy, albeit at uneven rates and with widely varying initiatives. Over the last decade, they have implemented a broad range of innovative policy instruments in the energy, transportation, and industrial sectors (Winfield, Demerse, and Whitmore 2008; Rivers 2010; Houle 2014). Canada's Constitution and its decentralized system of governance offer one explanation for the lack of substantial federal intervention on this issue. Constitutional responsibility for the environment in Canada is shared between both levels, making it difficult for the federal government to unilaterally implement international commitments (Muldoon et al. 2009). Although shared responsibility does not inherently preclude federal leadership, it does create the potential for "passing the buck" (Harrison 1996) and a "joint decision trap" (Scharpf 1988). Moreover, article 92A of the Constitution gives Canadian provinces considerable jurisdiction over matters such as natural resources, the exploitation of which is often a central provincial economic development concern (Harrison 1996).

Consequently, those provinces that have promoted energy production and economic development in GHG emission-intensive sectors (such as oil and gas, aluminum, forestry, and mining) have an interest in protecting them. Indeed, these industries have generated economic prosperity and additional fiscal resources for provincial governments. In some instances, opposing the adoption of potentially threatening federal policies can be seen as a necessary step towards protecting these important economic sectors. This has been especially evident in such oil-producing provinces as Alberta and Saskatchewan, which have fervently resisted federal engagement in this area (Macdonald 2009).

In other cases, provinces responded to early federal engagement with the climate issue by attempting to maximize benefits from potential policies. For instance, Quebec developed a climate policy based on various instruments aimed first at securing federal recognition of early actions by its industry and hydroelectric investments. The province then pursued a market-based approach to further GHG emission reductions and to benefit from economic opportunities associated with the development of carbon trading. Such actions are intended to assist Quebec in meeting its GHG mitigation targets, which are one of the most ambitious in the industrialized world.

In light of varying interests and political economies, the provinces have taken different stands in various debates over climate policy, including the debate over Kyoto ratification (with Quebec supportive and others, such as Alberta, opposed) as well as those more

domestically focused on the adoption of a national cap-and-trade system for large industrial emitters and transportation sector emissions standards. While some provinces have played a veto role at times (Macdonald 2009; Harrison 2010), others assumed an increasingly active role in climate policy, thus challenging federal leadership on this issue.

<2>Emergence of the Issue and Federal Dominance, 1988-95

Climate change first emerged as a policy issue in Canada in 1988. Under the leadership of Progressive Conservative prime minister Brian Mulroney, Canada hosted the World Conference on the Changing Atmosphere. Forty-eight nations participated in this first major intergovernmental conference on climate change, which endorsed a 20 percent reduction in GHG emissions from 1988 levels by 2005.

Two years later, the Mulroney government presented Canada's Green Plan for a Healthy Environment. The federal plan accepted international climate science findings that global warming constituted a pressing issue with potentially destabilizing impacts for Canada. It also stated the objective to stabilize GHG emissions to 1990 levels by 2000. These bold objectives, however, were not paired with concrete policy measures, beyond a commitment to provide \$85 million over six years to fund climate change research (Simpson, Jaccard, and Rivers 2007).

In subsequent years, Canada played an important role in the negotiation of the 1992 United Nations Framework Convention on Climate Change (UNFCCC), agreeing to stabilize Canadian emissions at 1990 levels by 2000. To support this policy, the federal government (then controlled by Liberal prime minister Chrétien) and the provinces adopted the National Action Plan on Climate Change in 1995. Among the plan's most comprehensive initiatives was the Voluntary Challenge and Registry (VCR) program. Though widely criticized (Bramley 2002; Rivers and Jaccard 2005), the VCR compelled Canadian industry to volunteer information on GHG emissions and take early actions to reduce them (Macdonald, Houle, and Patterson 2011). All Canadian provinces participated in this effort, except for Quebec, which boycotted the VCR and launched its own voluntary registry, ÉcoGESTe, the following year. Despite a relatively minor role during this period of federal dominance Quebec and British Columbia adopted their first climate action plans in 1995. Though short on substantial actions, both plans foreshadowed growing provincial engagement with climate change.

<2>Contested Federalism: Federal and Provincial Disputes, 1996-2005

Following the federal government's first major policy on climate change, its disagreement with the provinces became increasingly apparent, especially in the shadow of the Kyoto Protocol negotiations. These disagreements were primarily rooted in the distinct emissions-profiles of each Canadian province: the large discrepancies in the distribution of emissions and their growth rates among provinces created differential costs for various governments (Rivers 2010) and fostered divergent climate policy interests and preferences across provinces. For instance, given the emissions intensity of economic production in Alberta, a given level of Canadian GHG reduction imposes

comparatively greater costs on that province. As a result of this concentrated burden, Alberta and its premier Ralph Klein were opposed to the ambitious commitment the federal government finally negotiated at Kyoto -- a decrease of 6 percent from 1990 levels during the period between 2008 and 2012. Meanwhile, other provinces, such as Ontario and British Columbia, at times appeared to side with Alberta's opposition to Canadian participation in Kyoto out of similar concerns for local industry. In Quebec, one of the few provinces to see their emissions decline (albeit modestly), the situation was quite the opposite. Owing to its large-scale hydroelectric resources, the province supported federal agreement to an ambitious target, anticipating economic benefits from a likely shift towards renewable energy.

During the negotiation period, the federal government was primarily concerned with Kyoto details, while provinces responded -- both proactively and reactively -- to a sense that the federal government was invading provincial prerogatives. Once the federal government's unilateral decisions to sign (1997) and ratify (2002) the Kyoto protocol were taken -- expedited by the majority status of the Liberal Party in the Canadian Parliament -- federal-provincial discussions on climate change experienced an abrupt end, despite the tacit requirement of provincial consensus for a coordinated policy response (Simpson, Jaccard, and Rivers 2007).

Early indication of the eventual demise of federal leadership came with the rejection of a national carbon tax. In the months preceding the signing of Kyoto, a tax was contemplated by then high-profile Liberal minister of the environment Sheila Copps and was opposed by such advocates of a voluntary approach as federal natural resources minister Anne McLellan (Rivers and Jaccard 2005). Other proposals, notably on the establishment of emissions regulation for large final emitters, met a similar fate. Although plans for comprehensive emissions regulations were rendered public by former Environment Minister Stéphane Dion's Project Green in April 2005, such policy proposals were shelved following the electoral defeat of the Liberal Party under Paul Martin.

The newly elected Conservative government subsequently demonstrated little interest in climate policy. For instance, publication of its regulatory framework, entitled *Turning the Corner*, offered a watered-down version of Liberal policy centred on intensity-based emissions targets for large industrial emitters that would allow continued GHG growth. The framework was never acted upon and was replaced by the Harper government's subsequent "wait-and-see" policy of harmonizing with whatever American policy emerged. In light of developments south of the border, the harmonization approach enabled Harper's Conservative government to delay Canadian federal action and, ultimately, led to Canada's dramatic withdrawal from Kyoto following the seventeenth Conference of the Parties in Durban, South Africa, in December 2011. Throughout these developments, the Conservative argument has remained consistent: Canada will not act independently of the United States since any such action would be futile and place Canadian industry at a competitive disadvantage with its largest and most important trading partner.

<2>Provincial Supremacy, 2006-14

While the federal government's retreat from the climate file coincides with the election of a minority Conservative government in 2006, the roots of provincial climate policy precede this important landmark. Indeed, months before the 2002 federal ratification of Kyoto, Alberta developed a climate action plan that included, among other things, the adoption of far-reaching legislation with the objective of regulating GHG emissions from the industrial sector. By 2007, Alberta had implemented its own GHG reduction program, requiring facilities emanating in excess of 100,000 tonnes of carbon dioxide equivalent (CO₂e) to reduce their emissions intensity by 12 percent.¹ Included in Alberta's Specified Gas Emitters Regulation are three compliance options available to those regulated entities that fail to meet the 12 percent intensity target. Non-complying firms may: pay a fee equal to fifteen dollars per tonne of CO₂e to a technological fund, purchase carbon offsets on the Alberta-based offset credit system, or acquire emission performance credits from other regulated companies that have reduced their emissions beyond the intensity target. The former option effectively institutionalized a promise made by then prime minister Chrétien to industry, confirmed in a 2003 letter from Natural Resource Minister Herb Dhaliwal to the Canadian Association of Petroleum Producers, that oil companies would be able to meet their emission reduction responsibilities under Kyoto at a price of no greater than fifteen dollars per tonne. By March 2012, this hybrid pricing mechanism helped Alberta avoid 32 million tonnes of emissions while raising \$312 million for the Climate Change and Emissions Management Fund, of which \$161 million was invested in clean energy projects undertaken by the province.

These early actions in Alberta reflect an explicit attempt to protect local industry, suggesting a defensive measure against pending federal regulation in the shadow of Kyoto (Courchene and Allan 2010) and an attempt to pre-empt any federal effort to intervene on climate change. Efforts to reduce the climate impact of oil production in the province also coincided with protectionist threats in some US states against the importation of GHG-intensive Alberta oil. The resulting Alberta Climate Change and Emissions Management Act was passed in 2003, followed by the implementation of regulations in 2007, in an effort to be first out of the gate for climate regulations. More recently, uncertainty regarding the approval of the Keystone pipeline, which would carry Alberta oil sands crude to the Gulf of Mexico, has caused the province to consider increasing its intensity-based emissions target and carbon price to 40 percent and forty dollars per

¹ Instead of setting an absolute emissions cap, intensity-based norms limit the quantity of emissions allowed for a given quantity of industrial output. Applied to the oil industry, for example, intensity-based norms require only that the amount of GHG emissions generated by the production of one barrel of oil decreases over time (by 12 percent from 2003 levels) rather than demand absolute emissions reductions. As a result, emissions may actually rise if production increases at a greater rate than the specified emissions-to-production ratio. This policy ensures that exploitation of Alberta's fossil fuel resources may continue unabated.

tonne, respectively. Further reflecting a defensive posture, the province is also actively pursuing an equivalency agreement with Environment Canada on its coal-fired electricity generation, which makes up nearly half of its total electricity mix.²

As was the case in Alberta, other provinces also appeared to react to the prospect of federal regulations as well as developments in the United States. In an attempt to help industry seize opportunities related to climate change mitigation, for instance, Quebec signed voluntary agreements with the aluminum industry in 2002 and 2007, committing the industry to reduce its GHG emissions. It was also designed to secure recognition of early action taken by the aluminum industry in the event of any future federal policy (Macdonald, Houle, and Patterson 2011). In 2007, the province was also first to explore a form of carbon pricing in the form of a levy payable to a provincial Green Fund, imposed on the roughly fifty energy importers and distributors in the province. Though translating into a very modest tax, equivalent to fewer than ten cents per litre on gasoline and diesel fuel, the levy raises \$200 million per year and is used to fund measures outlined in the first (2006-12) and second (2013-20) provincial climate change action plans. The levy, scheduled to be applied only until September 30, 2013, has since been extended to December 31, 2014. In order to avoid double taxation, however, major industrial emitters, now covered by Quebec's newly created emissions trading system linked to the US-based Western Climate Initiative, are now exempted.

In 2008, British Columbia also introduced a carbon tax following its third action plan and the adoption of the Greenhouse Gas Reduction Targets Act, 2007. Unlike Quebec's carbon fee, British Columbia's tax is applied downstream, at the point of consumption, levied on all fossil fuels consumed in the province and covering about 70 percent of total provincial emissions. Initially set at ten dollars per tonne of CO₂e, the BC tax increased yearly to a level of thirty dollars in 2012, which is where it currently stands after the most recent 2013 provincial election. The tax currently raises over \$1.2 billion in revenue per year, which is used to offset personal and corporate taxes and to fund tax credits for low-income earners. When compared to carbon fees operational in other OECD jurisdictions, the BC tax is one of the most comprehensive of its kind and is the first broad-based, revenue-neutral carbon tax to be implemented outside of Europe.

Though multiple provinces have taken climate policy steps, including in the difficult area of carbon pricing, individual provinces appear to have been motivated by different factors. Unlike Alberta, which acted quickly to pre-empt potentially costly federal and cross-border measures, other provinces (such as Quebec and British Columbia) appear more proactive, perceiving climate change as an

² Under section 10 of the *Canadian Environmental Protection Act, 1999*, a province may be exempt from federal regulation if a similar instrument already exists in the province that achieves the same environmental outcome as the federal legislation. In order to be eligible, the province or territory must enter into an equivalency agreement with the Government of Canada.

environmental threat and, later, an economic opportunity to develop new industries and to promote their pre-existing renewable energy sectors. The latter provinces have also gone further in their actions on climate change and, at times, pressed the federal government to take a more substantial role. Jointly with Ontario and Manitoba, Quebec and British Columbia are participants in the Western Climate Initiative (WCI), with the objective of implementing a regional cap-and-trade system in 2013. In conjunction with several US states, this cross-border cap-and-trade system has committed the four Canadian provinces -- home to over 75 percent of the Canadian population -- to the goal of a 15 percent reduction in 2005 emissions by 2020. In light of repeated federal policy failures, the WCI provides a possibility for policy coordination among provinces absent federal leadership, although state and provincial commitment appears increasingly uncertain. While both Quebec and California are entering the first compliance period under the WCI (as of January 1, 2013), remaining Canadian partners -- Ontario, British Columbia, and Manitoba -- have yet to complete the regulatory framework supporting their regulatory carbon markets. The link between California and Quebec emissions trading markets has been approved by both jurisdictions and a joint auction will be organized in the near future. Both California and Quebec should benefit from the arrangement. Quebec's businesses are expected to reduce their mitigation cost. Meanwhile, California's auction participants could face a slightly higher allowance price as a consequence of the linkage. However, the increase should be compensated by substantial investments from Quebec in California's carbon market, which have been estimated between 284 and 442 million dollars (Purdon, Houle et Lachapelle 2014). Quebec held on December 3, 2013 its first carbon allowance auction. For now, prices achieved during the first Quebec's auction were slightly lower than allowance prices on the California's carbon market (Air Resources Board 2013). California's auctioning process began one year earlier, with anticipated annual revenues of more than \$1 billion per year and a consistent bid price in the first year above \$10 per ton.

Despite divergent interests and the varying pace of implementation, a pattern of policy diffusion is apparent across the Canadian provinces, especially in terms of the adoption of market-based instruments (e.g., carbon taxes and emissions trading). Given regional disparities and substantive provincial powers in a range of policy areas with implications for climate change, it increasingly appears as though climate policy will continue to be influenced by the provinces. Indeed, even courageous efforts by federal leaders to propose far-reaching reforms have failed dismally. Due in part to the onset of a severe recession, and to the Conservative Party's effective counter-framing, Liberal leader Stephane Dion's Green Shift, which included a carbon tax, ultimately failed to mobilize voters in an election that quickly became focussed on the Great recession in Fall 2008. The legislative majority enjoyed by the current Conservative government has so far ensured the continued absence of federal action on climate change, though this posture is now being increasingly challenged by developments in the United States, which may work to reignite action on climate at the federal level in Canada.

<1>Climate Policy in the United States

There are numerous parallels between Canadian and American attempts to develop climate policies. This issue long ago reached the agendas of both federal and sub-federal governments, though translation into formal policy commitments has proven contentious and uneven. Both countries share a pattern of relatively high per capita emissions when compared to other developed nations, positioning them somewhat similarly in international deliberations and often challenging them with global expectations that they take a lead role in pursuing dramatic emission reductions. Their engagement in, and even understanding of, this issue has been supported by a wide body of collaborative research in the natural and physical sciences that has examined patterns of climate change in North America and attempted to gauge longer-term threats from increased atmospheric GHG levels.

The United States has taken many parallel steps with Canada on the world climate policy stage, including early support for the 1992 UNFCCC, initial endorsement of similar emission reduction targets under the Kyoto Protocol, and taking comparable positions into subsequent global climate summits. But treaty ratification by the US Senate or development of federal climate legislation has proven highly difficult in the United States, given the multiple veto points of the American federal government. States have very different levels of representation in the two chambers of Congress: those possessing smaller populations have considerable potential veto power in the Senate, given super-majority rules that require 60 percent support for passage. This can prove particularly contentious in climate policy given the tendency for sectors that generate considerable GHG emissions (such as electricity and transportation) to fracture along regional lines.

In turn, the American federal system has generally operated under shared party governance for most of the past thirty-five years, involving some degree of divided control of the two Congressional chambers and the separate executive branch. Scholars have increasingly questioned the capacity of balky federal institutions to come together and address challenging societal problems (Mann and Ornstein 2012). This is because they require a complex convergence of factors (Kingdon 1984) that, with regard to climate change, have thus far proven highly elusive (Klyza and Sousa 2008).

Much like Canada, the United States also maintains a decentralized system for environmental and energy governance. Although it does not devolve this authority to states to the same extent as does Canada to its provinces, states hold considerable authority for many key areas of policy directly relevant to GHG emissions. Even areas of federal jurisdiction, such as air quality control, remain largely implemented through an intergovernmental compact that generally gives individual states day-to-day control over implementation and considerable latitude in interpreting federal legislation (Lowry 1997).

States lack exclusive jurisdiction over energy sources and most other natural resources but have enacted diverse laws designed to promote and protect them. States retain substantial regulatory authority over the electricity sector and can promote new sources.

Moreover, states reserve considerable capacity to promote their own economic development, though they are constrained by the US Constitution from policies that restrict the movement of "commerce" across borders. Once deemed laggards in the American federal system, states in recent decades have developed considerable reputations as innovators in environmental and energy policy. There is also considerable opportunity for multiple states to work in a collaborative fashion, with a particularly strong tradition of "regional governance" in environmental protection in areas such as the Northeast.

Federal and state roles in policy development have passed through distinct stages, reflecting highly varied degrees of engagement. An underlying assumption throughout these decades has anticipated that the federal government would eventually take a lead, and perhaps even dominant, role. There have been instances, including the 111th Congress during 2009-10, when this appeared a distinct possibility. The federal government took only modest policy steps, although this appeared to begin to shift somewhat in 2012-14 through some Obama administration actions. Most notably, the President continued to support reinterpretation of 1990 clean air legislation to greenhouse gas emissions from electricity plants using fossil fuels, beginning with newly-proposed facilities but expanding to established ones. Nonetheless, far more than a passing fad, sub-federal climate governance appeared to endure over the longer haul, much as what appears to be emerging in the Canadian case. Indeed, one further incentive for states to remain engaged was the possibility of negotiating favorable terms under emerging federal regulations.

<2>Emergence of the Issue, 1988-2001

At the same time that Toronto hosted a major international climate meeting, the 1988 presidential candidacy of George H.W. Bush represented the first time that an American presidential candidate vowed to address climate change if elected. Bush promised to bring the "White House effect to the greenhouse effect" and signed into law far-reaching air quality legislation enacted by a Democratic Congress in 1990. This law did not expressly regulate GHG emissions but it did launch the first national system for emissions trading of conventional pollutants. This would later serve as a centerpiece in the global climate debate.

Moreover, the Bush administration signed and the Senate ratified the 1992 UNFCCC. Bush initially balked at more binding emission reduction commitments but nonetheless supported the agreement. This set the stage for a possible expanded federal role in the Clinton presidency, given the election of Al Gore as vice-president, an outspoken advocate for and author on climate change. However, initial plans to begin to reduce GHG emissions through enactment of a tax on the BTU content of fossil fuels triggered massive Congressional opposition and was ultimately pared back to a modest increase in the federal gasoline excise tax. In turn, the absence of formal reduction requirements under the UNFCCC rendered it largely meaningless amid a large jump in GHG emissions fuelled by significant American economic growth during the 1990s.

The boldest climate initiative of the Clinton era was Kyoto. Gore dramatically travelled to Kyoto late in the deliberations and agreed to a far more robust American commitment than originally anticipated in forging a last-minute agreement. This produced differential commitments for Europe, North America, and Asia and largely exempted emerging nations. While Clinton promptly signed the agreement, it was quickly evident that the Senate would not ratify the treaty, and, hence, it was never formally submitted for approval. In many respects, the decision of George W. Bush to withdraw the treaty from formal consideration in 2001 was a formality. Until the Kyoto collapse, states moved only at a very cautious pace, in part positioning themselves for what might be required if the federal government were to embrace a large climate policy commitment. There was no intergovernmental transfer funding available for them to launch new policy initiatives and no active encouragement from either the Clinton or Bush administrations to take a lead role. This created a real possibility of prolonged inertia on climate change across various levels of American government during the late 1990s and beyond.

<2>Enter the States, 2002-08

The rapid collapse of Senate support for Kyoto opened a considerable window for states to consider taking a lead role in climate policy development. An unexpectedly large number of states ultimately found it politically appealing to take unilateral emission reduction steps. Much of this activity began among coastal states in the east and west, many of which faced early climate threats and had long-standing traditions of policy innovation in environmental protection and energy conservation. But this ultimately expanded over the next decade to include a much wider range of states and regions.

Much like the provinces, no two states followed an identical path. Consequently, one can find some development of virtually every kind of policy imaginable. From this mélange of policies, three distinct patterns emerge. First, many policies did tend to diffuse, whereby a policy cultivated initially in one state would be replicated (with local modifications) in multiple jurisdictions. In the case of renewable energy mandates, the number of states pursuing this approach grew steadily from one in 1991 to twenty-nine by early 2013. These "portfolio standards" set a statutory mandate requiring any entity providing electricity within its boundaries to steadily increase the electricity that it provided from renewable sources. Such programs now operate in every corner of the United States.

Second, the possibility of two or more states joining common cause in policy development was pursued in three distinct regions in the area of cap-and-trade for GHGs. By 2007, twenty-three states had committed to some version of cap-and-trade that would operate across state boundaries, with regional centres of gravity in New York City, Chicago, and Sacramento. These states were also open to the possibility of working with partners outside of the United States and interacted intensively with Canadian provinces. The first operational zone for trading carbon allowances in North America, the Regional Greenhouse Gas Initiative (RGGI), involved ten northeastern states that began auctioning nearly all of their emission allowances on a

quarterly basis in 2008 and generated over \$1 billion for clean-energy initiatives by early 2013.

Third, some states pursued their time-honoured strategy of challenging the federal government. Litigation via the federal courts has long been one method. In the mid-2000s, a coalition of twelve states sued the federal government, seeking a reversal of its refusal to define carbon dioxide as an air pollutant and demanding that it begin to take steps to reduce emissions. In 2007, the US Supreme Court embraced the state position (*Massachusetts v. Environmental Protection Agency*) and attempted to force the federal hand. It should be noted that ten states formally opposed this decision, reflecting sub-federal diversity comparable to the provinces. In response the Bush administration refused to budge, but the decision set the stage for a possible expansion of the federal role, with uncertain prospects for what this might mean for states.

<2>Intergovernmental Conflict, 2009-14

The Supreme Court decision's pressure on the executive branch coincided with renewed Congressional interest in climate change. The number of Congressional hearings on this issue proliferated and increasingly turned to consideration of a range of policy tools that might be used; most of these were already in operation to varying degrees at the state level (Rabe 2010). However, much Congressional attention gravitated towards some version of cap-and-trade, borrowing from the early federal experience for sulphur dioxide and potentially building on early state (and regional) experimentation. All of these discussions only accelerated with the November 2008 election, whereby Democrats solidified their control of Congress and Barack Obama succeeded George W. Bush.

There was indeed a wide range of other issues facing the 44th president and the 111th Congress in early 2009. But climate change appeared to be quite high on the national political agenda, and Obama quickly endorsed a version of cap-and-trade that would borrow from the RGGI model and auction allowances. If enacted, this would establish a carbon price to deter consumption and generate substantial revenues that might support more carbon-friendly activities. The House responded with an ambitious effort to assemble a comprehensive climate bill. Known as the American Clean Energy and Security Act, the massive bill passed on a 219-212 vote in June 2009. This called not only for a national cap-and-trade program but also for many other provisions related to renewable energy, energy efficiency, and subsidies for new technologies and approaches to the use of energy. The vote on the bill proved highly partisan and contentious, but the relatively rapid movement to a broad piece of legislation suggested a strong likelihood that the Senate would take some comparable step during the remaining eighteen months of its term.

The House action, however, proved the high-water mark for Congressional consideration of comprehensive climate legislation as the Senate never brought a bill to its floor for a vote. Prioritization of other major federal initiatives, including reform of medical care, response to the Great Recession, and the regulation of financial institutions, served to push climate down the agenda. A

series of controversies surrounding the integrity of climate science coincided with a significant drop in public opinion surveys that registered whether or not Americans believed that climate change was occurring and, if so, how serious a problem it was (Rabe and Borick 2013). In turn, individual members of the Senate began to demand most favourable terms for their particular states, such as extensive subsidies for clean coal technology in states such as West Virginia and Wyoming and a very expansive inclusion of agricultural offsets in states such as Iowa and Kansas. Finally, the retaking of the House of Representatives by the Republicans in 2010 provided the final obstacle to the climate change agenda. Collectively, there were simply too many veto points to secure the sixty Senate votes (out of a total of one hundred) needed to pass any climate legislation.

The removal of climate legislation from the Congressional agenda, however, did not mean a complete end to a continuing federal role in climate policy. Three separate policies continued to move forward, albeit all with some degree of controversy and opposition. First, the Environmental Protection Agency under President Obama launched a review whereby the agency began an "endangerment process" and took initial steps to begin to regulate carbon emissions from major industrial sources under the 1990 air legislation. This began with stringent carbon caps for proposed fossil-fuel power plants in 2012, followed by a 2013 proposal to extend these to all existing facilities. In both cases, the president proposed working collaboratively with states, offering possible incentives for those that took unilateral early actions to reduce emissions. Second, the federal government approved a wide range of policies designed to promote renewable energy, including subsidies, tax incentives, and a mandate for expanded use of biofuels. Third, Obama negotiated an agreement with California and other lead states in establishing a series of national plans for major increases in vehicular fuel efficiency over subsequent decades.

<2>Back to the States?

This trio of federal policies did not replace the set of state and regional climate policies already in place; instead, the continued pattern of Congressional inaction served to shift the centre of American climate policy gravity back to the states, despite signs of some uptick in the federal role. It also removed the long-standing threat of federal pre-emption of existing state and regional programs, at least for the near term (Engel 2009). In many respects, state policies enacted in the mid-2000s were just beginning to move into full implementation by 2014, free to move forward after prolonged uncertainty about possible federal encroachment on their operation. Combined with the significant decline in American GHG emissions attributable to the recession of 2008-10, it is possible that the implementation of these state and regional policies, albeit patchy, could move the United States quite some distance towards reaching the level of emissions reductions for future years envisioned in comprehensive federal proposals. In turn, many states were expanding their use of natural gas derived from shale deposits, linked to

significant reduction of coal use and its higher GHG emissions content.

There was no guarantee, though, that states would sustain their commitment into advanced stages of implementation. The American recession wreaked havoc on state and local government finances, prompting many states to explore dramatic budget reductions. This included the possibility of trimming staff positions vital to honouring climate policy commitments. Perhaps more significantly, political opposition to some of these policies reached new saliency in 2010 elections. This was most notable in California, where a ballot proposition moved forward that would effectively halt implementation of the 2006 California climate legislation. It was decisively defeated in November 2010, though the future of the WCI was subsequently clouded after a cohort of new Republican governors were elected in 2010, which coincided with declining support for unilateral policy initiatives in the American states (Lachapelle and Borick 2014) and the subsequent withdrawal of the other WCI partner states (Rabe 2013).

In contrast, the northeastern region's cap-and-trade program continued to operate, and many other state programs moved forward. RGGI states formally tightened their emissions cap in 2013, at about the same time that California began to auction its own carbon allowances. This suggested that a sub-federal role would continue to be central in American climate policy for some time to come. Indeed, one further factor contributing to possible state expansion on the climate policy front involves considering the use of energy taxes as a way to boost sagging state coffers. No state has been as bold as British Columbia in proposing a broad-based carbon tax, but a growing number of states began reviewing both their overall sales tax structures, gasoline excise taxes, and oil and gas "severance" taxes in concert with possible tax system overhauls, potentially influencing future steps in state-level climate policy.

<1>Conclusion

As global GHG emissions continue to rise, the schism that now exists between scientific calls for rapid mitigation efforts and the apparent inability of many national governments to respond is increasingly salient. This chapter examines climate change policy and intergovernmental dynamics in two federations, documenting the constraints that these federal governments have faced in responding to a global problem. In both Canada and the United States, federal governments have so far proven unable to move beyond modest efforts to reduce emissions or to reconcile divided regional interests within their borders. Indeed, a clear division among sub-federal units -- between those that are relatively more dependent on fossil fuel industries and those perceiving economic opportunity in shifting towards a less carbon-intensive economy -- has led to periodic bouts of intergovernmental conflict and handcuffed federal governments on both sides of the 49th parallel. In contrast, sub-federal entities have been relatively more successful in implementing comprehensive regulations (including a price) on carbon. The motivation underlying distinctive policy choices are closely associated with perceptions of

the opportunities and challenges presented by the issue of climate change at this level.

To be sure, an important difference in climate change policy in Canada and the United States lies in the context of mass public opinion. Generally, public opinion on climate converge much more readily at state/provincial levels than at the national aggregate, making it easier to foster a more local response. However, when compared cross-nationally, climate change is much less controversial and a range of policies receive more public support in Canada than in many parts of the United States (Lachapelle, Borick, and Rabe 2012). Therefore, some Canadian provinces may in fact have more room for climate policy manoeuvring, whereas many of their American counterparts have turned to different policy frames (e.g., energy security) in order to advance policies that also reduce GHG emissions (Rabe and Borick 2012). Moreover, to the extent that Canadian climate policy is influenced by American developments, federal action on climate change in Canada may also be driven as much by the vagaries of public concern south of the Canada-US border.

Another important element is found in substantive differences in governance structure (e.g., parliamentary versus presidential regimes), which at first blush suggests that climate policy formation should be easier in Canada. However, regionalism and regional alienation play a determining role in deterring federal policy development in both nations.

In Canada, despite the concentration of federal power in the hands of the prime minister, the provinces play an important role in climate change policy implementation due to the shared jurisdiction of the environment and exclusive provincial jurisdiction in related policy domains. Moreover, the growing influence of the oil and gas industry in western Canada and the electoral successes of the western-based federal Conservative Party provide additional mechanisms through which regional interests have succeeded in stalling the development of stringent national regulation.

In the United States, court challenges and the Senate are two primary mechanisms through which regionalism influences the development of federal policy. Clusters of states can form to bring challenges in the federal courts, whether trying to prod or deter action by other federal branches. In turn, the Senate was unable to match the actions of the House in approving far-reaching federal climate legislation in 2009-10 and has regularly been a graveyard for environmental proposals given its super-majority provisions and its equal empowerment of all states with two members apiece regardless of population.

Returning to the theoretical framework outlined at the beginning of the chapter, robust sub-federal action is consistent with Ostrom's (2009) polycentric model, suggesting that anticipated benefits from GHG mitigation emerge at multiple levels. In turn, a more homogenous set of interests, understandings, and actors facilitates the ability to adopt climate policy at smaller government scales. This suggests a more longitudinal pattern of policy development, one with many iterations and trials and errors. At the same time, it does indicate

one path towards climate governance that reflects serious experimentation with alternative policy tools.

When considering lessons learned from the Canadian experience on climate change policy and comparing them to the American experience, our findings suggest that Canada may not be unique. In both countries, federalism appears to impede centralized governmental action on climate change. At the same time, decentralized federalism also allows sub-federal governments to play a significant role in climate change policy, though motivations vary. These may include: (1) to pre-empt or influence the development of federal policy; (2) to benefit from new economic development opportunities, such as expanding renewable energy and low carbon technologies; and (3) to protect their most important industries. Substantial cross-jurisdictional dynamics characteristic of the interdependent Canada-US relationship also emerge, with evidence of policy cooperation and diffusion across states and provinces, and efforts by Canadian governments to offset any threat of protectionism by adopting stricter carbon regulations in line with the United States.

Looking forward, we anticipate continued sub-federal policy innovation and implementation. There are legitimate concerns about the ability of sub-federal policies to endure politically and deliver substantial emissions reductions. There is also fear that the uncoordinated and conflicting policies may create intergovernmental tensions and higher costs for business. However, the alternative -- waiting for decisive federal action or formation of a robust international regime, neither of which may ever materialize -- appears to be unacceptable for some political leaders, given the urgency of preventing the most damaging impacts of climate change and the desire of some to exploit the potential benefits of localized action. In the end, whether such efforts will result in overall emissions reductions, and the extent to which federal governments might be able to impose some degree of harmonization and coherence among the emerging tapestry of sub-federal policy, remains to be seen.

<1>Notes [<to go here>](#)

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