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Comparative Politics of Sub-Federal Cap-and-Trade: Implementing the Western Climate Initiative

David Houle, Erick Lachapelle, and Mark Purdon*

Abstract

Why have only two of the eleven original members of the Western Climate Initiative implemented a cap-and-trade system? This article compares the implementation of cap-and-trade in California and Quebec versus in New Mexico and British Columbia. Ideas around the reality of anthropogenic global warming and the legitimacy of cap-and-trade created favorable context in three jurisdictions, although institutions condition the expression of these ideas in the policy-making process. Since parliamentary institutions concentrate power, elite consensus is more important in Canada, while in the United States public opinion plays a more significant role. However, ideational factors shaped by political institutions do not explain differences in cap-and-trade implementation. Growth in shale gas production, welcomed in British Columbia and New Mexico but resisted by Quebec and marginal in California, further explain different outcomes. Ideas, mediated by institutions, are the necessary prerequisites for action, while material factors influence policy instrument choice.

Increasingly, scholars interested in climate policy focus on developments occurring outside the global regime and beyond the nation-state, at regional and local levels.¹ This growing literature reflects a “bottom up” approach to governing climate change in which sub-national (in the context of North America, sub-federal) governments at the state, provincial and local levels, increasingly now participate. These sub-federal units have jurisdiction over matters that affect emissions and use authority to develop their own climate policy—even in the absence of higher levels of government.² While these policies reflect the entire spectrum of instruments available—ranging from renewable portfolio standards to carbon taxes—a growing number of sub-federal jurisdictions are experimenting with cap-and-trade as a

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1. See Purdon’s introduction to this special issue.
2. Burke and Ferguson 2010; Rabe 2004.

key pillar in their overall climate policy strategy.³ Despite wide and growing enthusiasm for this type of policy approach, implementing emissions trading has in some cases proven politically difficult.⁴

For instance, despite agreeing in 2007 to form a comprehensive cap-and-trade system under the aegis of the Western Climate Initiative (WCI), only two of the eleven original WCI member jurisdictions successfully implemented emissions trading systems as of January 2015.⁵ Beyond California and Quebec, implementation faltered in the nine other original WCI member jurisdictions, and in some cases commitments have been dramatically reversed. This pattern of commitment followed by mass retreat challenges the idea, implicit in much of the climate policy literature, that effective implementation automatically follows policy adoption, and raises important questions concerning the resiliency of climate policy in evolving economic and political contexts.⁶ Indeed, it is increasingly apparent that the implementation of climate policy commitments, once adopted, is by no means guaranteed. Implementation processes are crucial for the continued growth and diffusion of policy innovations.

Why were California and Quebec able to forge ahead with implementing the WCI while similar efforts in partner jurisdictions faltered? Under what conditions were these two sub-federal jurisdictions able to maintain a durable commitment to implementing an ambitious system for regional cap-and-trade? Combining insights from the newly emerging research agendas in comparative environmental politics and multi-level climate governance,⁷ we employ a structured, multi-case comparison⁸ in order to leverage differences and similarities across cases where WCI implementation was successful (California and Quebec) and unsuccessful (New Mexico and British Columbia). Overall, this approach allows us to identify factors shared by implementing jurisdictions absent in cases of failed implementation, while holding constant some aspects of US and Canadian political institutions (e.g., American and Canadian federalism). While debate continues about the explanatory power of small-N research,⁹ our strategy increases the inferential power of our observations beyond what might be afforded by looking only at a single case, and offers new insights that may be tested in future work.

3. Houle et al. 2014; Braathen, 2013; Lamhauge et al. 2013; Lo 2012.

4. Paterson 2012; Rabe 2013.

5. As this article went to press, the government of Ontario made a significant move in April 2015, announcing its intention to join the California–Quebec carbon market designed under the WCI. Though not fully implemented, all signs point to an eventual linking of the Quebec, California, and Ontario carbon markets. This development is consistent with our expectations outlined in this study, and further demonstrates the importance of ideas, interests and institutions, and the interactions among these factors, in the successful implementation of comprehensive climate policy.

6. Purdon, this issue.

7. Selin and VanDeveer 2009; Steinberg and VanDeveer 2012.

8. George and Bennett 2005.

9. Steinberg, this issue.

Employing a framework now common in comparative politics and proposed in the introduction to this special issue, we find that ideational factors and material interests largely explain observed differences in durable commitment for comprehensive cap-and-trade. With the exception of New Mexico, broad agreement on the existence of human-induced climate change is present in all cases examined here. However, we find that policy ideas held by elites and publics vary across cases, and that political institutions mediate these differences. Moreover, ideational conditions are insufficient on their own to explain successful implementation of the WCI. Policy implementation also depends on the material interests within a given political unit, which in the cases of New Mexico and British Columbia were fundamentally transformed with widespread deployment of high-volume hydraulic fracturing technology since 2007. This change reinvigorated interests in the shale gas and oil industry to an extent not seen in California and Quebec. With increasing production of unconventional oil and gas, and government enthusiasm for developing this resource, the WCI's hard cap was increasingly perceived as being at odds with the economic interests of New Mexico and British Columbia.

Our findings should not be construed as indicating that institutions are unimportant. Rather, we suggest that the relative saliency of elite and public ideas is mediated by institutional differences in US and Canadian democracy. In the United States, where institutions enhance the importance of direct democracy, we find that public support can be instrumental in maintaining commitment to the WCI. In Canada, where power is more concentrated, implementation is facilitated by an elite consensus on the legitimacy of cap-and-trade. Similarly, we find that the ideational context may also interact with material interests, which may themselves evolve in such a way as to alter incentives for policy implementation. When this happens, ideas around legitimate policy may also shift, challenging the durability of earlier policy commitments.

The paper is structured as follows. We first provide some brief context of the turbulent history of the WCI. Next, we develop our argument through a comparative analysis of the institutions, ideas and interests relevant to our four cases. We then briefly consider implications of our analysis for out-of-sample cases before concluding with reflections on the limits of our analysis and consideration of prospects for regional cap-and-trade moving forward.

The Turbulent Politics of the Western Climate Initiative

Created in 2007, the WCI is a voluntary partnership among sub-federal member jurisdictions in the US and Canada intent on establishing a regional cap-and-trade system to coordinate emission reductions in their respective jurisdictions.¹⁰ While the idea of a regional cap-and-trade system occupies a central

10. The WCI also at one point included states and provinces that did not formally become members but who "observed" developments happening in the partnership. Observers included Alaska,

place in the original agreement, the WCI also explicitly promoted collaboration in other areas including energy efficiency, the deployment of renewable energy, and climate change adaptation.¹¹ Initially, much hope was put in the WCI, as members collectively committed to a 15-percent reduction in emissions below 2005 levels by 2020, which would make it the largest market of its kind in North America.¹² Indeed, at its peak, the WCI was composed of eleven members formally committed to establishing a regional market for cap-and-trade: Arizona, California, Montana, Utah, New Mexico, Washington and Oregon in the United States, and British Columbia, Manitoba, Ontario and Quebec in Canada. But as early as 2009, progress toward WCI establishment increasingly came into doubt in Washington and Oregon, while serious concerns were raised among other WCI members.¹³ By 2014, only California and Quebec had enacted cap-and-trade legislation and officially linked their market by holding a first successful joint auction on November 25, 2014.¹⁴

Since its partial collapse, several explanations have been offered to account for the troubled politics of the WCI. Casual knowledge suggests that the Great Recession of 2008, in combination with changes in government—notably Republican gains in the 2010 gubernatorial elections—and the dramatic failure of cap-and-trade legislation at the federal level in both the US and Canada led to the near-total implosion of the WCI.¹⁵ Such explanations, however, do not fully account for observed patterns of WCI implementation and non-implementation. For instance, of the seven US partners, only California implemented a system of cap-and-trade, despite being particularly hard hit by the great recession. Meanwhile, New Mexico's economy actually grew from 2007 to 2012, which did not prevent the state from rescinding its WCI commitment.

Similarly, arguments regarding partisan shifts in government are incomplete. California's political elite demonstrated unwavering commitment to cap-and-trade and the WCI despite a change in leadership from governor Schwarzenegger, a Republican, to governor Brown, a Democrat. In Quebec, the commitment to the WCI was not even questioned during provincial elections in either 2012 and 2014, which saw two changes in government: from a center-right *Parti Liberal* government to center-left *Parti Québécois* minority government and back again. While newly elected Republican governors Jan Brewer (Arizona), Gary Herbert (Utah) and Susan Martinez (New Mexico) certainly had a say in pulling their states out of the regional partnership, implementation faltered in other WCI jurisdictions where no major partisan shift occurred

Colorado, Idaho, Kansas, Nevada, and Wyoming in the US, Saskatchewan in Canada, as well as six Mexican states.

11. WCI 2007.

12. WCI 2010.

13. For a detailed account of the WCI's troubled history, see Klinsky 2012.

14. Klinsky 2012.

15. *New York Times*, February 19, 2009; *InsideClimate News*, February 12, 2010; *Platts, McGraw Hill Financial*, November 18, 2011.

(e.g., British Columbia). On the whole, evidence suggests that the partisan composition of government is insufficient for explaining observed patterns in implementing (and failing to implement) emissions trading under the WCI framework.

Finally, ideas of California and Quebec exceptionalism also offer insufficient analytical traction. To be sure, California and Quebec are generally understood as being more interventionist in their respective economies (as opposed to laissez-faire) relative to other governments in their respective federations.¹⁶ And both jurisdictions have a long history of being more progressive on environmental issues.¹⁷ This is perhaps most obvious in the case of California, which has historically acted more quickly on air pollution and energy efficiency regulation than other states and has won the right alone among US states to implement environmental regulations more stringent than national standards.¹⁸ Meanwhile Quebec is widely acknowledged as a “distinct society” within the Canadian federation, and is known for certain environmental policy innovations, including its public consultation mechanism for environmental issues.¹⁹

However, the pioneering behavior of California and Quebec should not be overstated. In the US, progressive states in the northeast initiated a less comprehensive cap-and-trade system well before the WCI was conceived; in Canada, other provinces (notably Alberta and British Columbia) implemented more limited forms of carbon pricing in 2007 and 2008. Thus, experience with carbon pricing in California and Quebec is by no means unique. In order to fully account for the differences in durability of commitment to the WCI, we now consider the relevance of political institutions, ideas and interests—as well as the interaction between them—in order to discern the factors contributing to the resiliency of California and Quebec’s commitment to regional cap-and-trade.

Institutions

Typically understood as the norms, rules and strategies that define patterns of regularized human behavior,²⁰ institutions often provide a point of departure for studies of comparative public policy, particularly in the developed world.²¹ Institutions may exert direct and indirect forms of influence on the interests and strategies of political actors as well as their access to centers of decision-making authority. With regard to the implementation of the WCI’s cap-and-trade provisions, we find that institutional differences between the US and Canadian systems of government are insufficient to explain patterns of implementation within the

16. Montpetit 1999; Stansel et al. 2014.

17. Harrison 2013a; Houle et al. 2014.

18. Hanemann 2007; also see Vogel 1995.

19. Lepage and Simard 2004.

20. North 1990; Ostrom 2005.

21. See articles by Kashwan, Barrett, and Hochstetler and Kostka, all in this issue, about climate policy institutions in least developed countries and emerging economies.

WCI framework. Indeed, to the extent that cases of successful implementation are found in both countries, broad systemic differences between the US and Canada in terms of property regimes, constitutional authority, and federal climate policy offer limited analytical leverage for explaining why some states and provinces have been successful in implementing the cap-and-trade provisions of the WCI while others have not.

For instance, emphasis on differences between US and Canadian institutions overlooks the policy autonomy inherent in both federal systems. Canadian provinces have constitutional jurisdiction over many areas relevant to climate change policy including transportation, natural resources, and energy. Though formal authority in US federalism is relatively more centralized than in Canada, US states also play an important role in the implementation of environmental policy and have regulatory authority over the electricity sector.²² Policy latitude inherent in US and Canadian federal systems is further buttressed by the fact that both the US and Canadian federal governments have failed in their efforts to implement carbon pricing policies.²³ Indeed, federal carbon pricing mechanisms would have created many barriers to the implementation of sub-federal carbon pricing.²⁴

That broad institutional differences are insufficient on their own is not to say that they do not matter for patterns of sub-federal climate policy in the US and Canada. Institutions can play a more indirect role. As we demonstrate below, there is some evidence that particular institutional characteristics of the US and Canadian governments give variable expression to the ideational and material factors that create favorable conditions for climate policy resilience. The additional checks and balances inherent in the US political system, including popular referenda and a culture of judicial wrangling observed in California and New Mexico, make the implementation of cap-and-trade more complex and challenging than the Canadian experience. The high veto context characteristic of US politics is much less present in the Canadian Westminster system of parliamentary democracy, where political authority is concentrated in the hands of the government of the day. In such a context, ideas held by elites are more determinant, as decision-makers in these systems tend to be more insulated from the vagaries of public opinion. These institutional differences suggest an interaction between institutions and ideas held by elites and by the public.

Ideas

Defined simply as beliefs held by individuals,²⁵ ideas carried by elites and shared by the public influence the way risks are perceived, the way problems are defined, as well as the types of solutions policy actors perceive as appropriate

22. Houle et al. 2014, 235.

23. Harrison 2013a.

24. Engel 2009.

25. Goldstein and Keohane 1993.

for a particular problem. For our purposes, we distinguish between ideas held by elites and those held by members of the public. While treating public opinion and elite ideas as conceptually distinct, however, we note that they provide a similar function in terms of legitimating what constitutes appropriate policy.

We submit that two intertwined sets of ideas are relevant for the implementation of cap-and-trade systems. The first concerns ideas around anthropogenic global warming (AGW)—the belief that observed changes in climatic conditions are caused by greenhouse gas emissions generated by human activities. Although many policy actors—including segments of the public—agree with the near universal scientific consensus on the question of AGW,²⁶ some degree of scepticism persists in the US and in Canada.²⁷ Moreover, perceptions of vulnerability to a changing climate provide additional motivation for both elites and members of the public to demand action. In a sense, such beliefs constitute the background conditions framing mitigation efforts within a given jurisdiction.

Once agreement is reached on how to characterize the problem, the debate moves to one of means, or policy. A second set of ideas important for the implementation of cap-and-trade thus relates to economic policy preferences, ideas about the role of the government in the economy, and the appropriateness of carbon pricing.²⁸ While there has been considerable expert debate about the virtues and vices of cap-and-trade systems versus a carbon tax,²⁹ belief in the appropriateness of such market-based instruments over “command-and-control” regulation are nearly consensual among policy experts.³⁰ Though market-based, however, these instruments still represent a significant government intervention in the economy, because, left to its own devices, the market consistently treats carbon pollution as an “externality.” Thus, it can be expected that carbon taxes and emissions trading are likely to garner greater support in places where a strong commitment to liberal market ideology is less institutionally embedded. This idea is consistent with research on the comparative politics of climate instrument choice, which has found that “liberal” market economies are less inclined than more “corporatist” states to adopt market-based instruments for climate policy.³¹ To the extent that Quebec and California are, relative to others in their national context, more interventionist in the coordination of their economies,³² we find a similar pattern in their WCI implementation.

General Differences in Public Opinion

In the area of environmental policy, public opinion is often conceptualized as playing a role on the “demand” side, affecting the political feasibility of

26. Cook et al. 2013; IPCC 2014.

27. Lachapelle et al. 2012; Lachapelle et al. 2014.

28. Bernstein 2001; Mol 2002; Lachapelle and Paterson 2013; Purdon, forthcoming.

29. Stern 2007; Hepburn 2006.

30. Holladay et al. 2009.

31. Lachapelle and Paterson 2013.

32. Montpetit 1999; Harrison 2013a; Stansel et al. 2014.

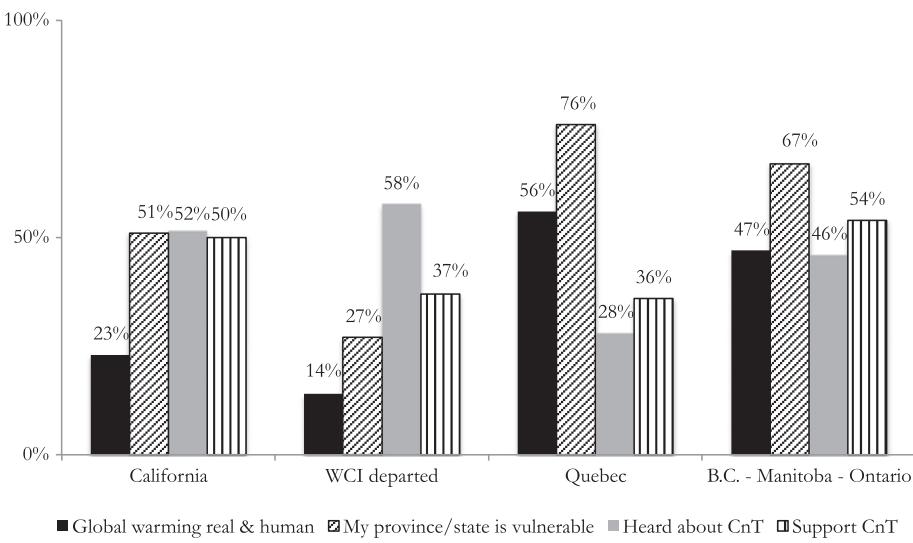


Figure 1
Public Opinion on Climate Change and Policy in 2013

Source: Lachapelle et al. 2014.

alternative policy options. In order to be successful, we might expect that policies benefit from broad public support. Examining recent evidence from the *National Surveys on Energy and Environment*³³ we find that the proportion of residents living in California who perceive “that the average temperature on Earth has been getting warmer over the past four decades” and that such warming is primarily caused by “human activity such as burning fossil fuels” is higher than what is observed in non-implementing WCI member states. Similarly, Californians are more likely than residents in non-implementing WCI members states to agree that their “state has already felt the negative effects of global warming.”³⁴ In terms of climate policy, support for cap-and-trade is significantly higher in California (50%) when compared with other US states (37%) once involved with the WCI. This distribution is consistent with the idea that a favorable public mood bodes well for climate policy durability (Figure 1).³⁵

Results from identical questions asked in Canada suggest public preferences for particular policies is perhaps less important. To be sure, residents of Quebec are more likely than residents in British Columbia, Manitoba, and Ontario to have views in line with the scientific consensus around AGW. Moreover,

33. We thank Christopher Borick for providing access to some of the NSEE data at <http://closup.umich.edu/national-surveys-on-energy-and-environment/>.

34. This is true at conventional levels of significance ($p < 0.05$) even with a small sample size in California (n=110), former WCI states (n=65), and residents in all other states (n=783). Based on an adjusted Wald test following survey proportion estimation.

35. This is true at conventional levels of significance (i.e., $p < 0.05$).

like their counterparts in California, Quebecers are also significantly more likely than residents of non-implementing provinces to say they believe their province is vulnerable to the negative consequences of climate change (Figure 1).³⁶ However, in the year the Quebec system was launched (2013), the idea of cap-and-trade did not garner much support in Quebec (36%) relative to support in the three other WCI members found in Canada (54%). Though support increased sharply by 2014 (to 71%), originally low levels of support did not threaten the durability of the policy while it was being implemented in Quebec.

Overall, we find some support for the claim that public opinion plays out differently in the US and Canadian contexts. In a high veto context where direct democracy via ballot propositions is common (like California), greater public support may end up being instrumental for enhancing policy resilience. In Canada, public opinion does not appear as important, or at the very least, relatively low public support for cap-and-trade will not easily overturn elite commitment for full implementation. We note, however, that the public in non-implementing US (58%) and Canadian (46%) jurisdictions are at least as likely (if not more likely) to report having heard about the WCI relative to residents of California (52%) or Quebec (28%), suggesting that an increased level of issue saliency accompanied non-implementation.

Quebec: Broad Inter-Party Consensus

WCI implementation in Quebec has, at least up until now, been an elite-driven and relatively quiet process. Compared to the other three cases we examine, Quebec is characterized by a far-reaching elite consensus among the main political parties about the scientific basis of human-induced climate change and on the legitimacy of market-based instruments. In Quebec, emissions trading was first mentioned in the *2000–2002 Climate Change Action Plan*, while the center-left *Parti québécois* (PQ) was in power, prompting a modification of Quebec's environmental legislation to enable market-based instruments. At that time, the Quebec Ministry of Environment also proposed the creation of a pilot emissions trading program. However, confronted with a lack of industry cooperation, the pilot program was never launched.

Only after an initiative to create a federal cap-and-trade program stalled did Quebec, now governed by Premier Jean Charest, leader of the center-right *Parti libéral du Québec* (PLQ), join the WCI in April 2008. At that point, the Quebec government had already implemented a modest carbon tax in 2007. In June 2008, Premier Charest also signed a memorandum of understanding with Ontario Premier Dalton McGuinty to develop an emissions trading program. However, four years later—after much of the legislation and regulation necessary for the

36. This is true at a confidence level of $p < 0.01$. Given the fewer number of provinces and some regional oversamples included in this wave of the Canadian survey, sample sizes are considerably larger for Quebec ($n=330$) and the non-implementing Canadian jurisdictions of B.C. ($n = 322$), Manitoba ($n = 42$), and Ontario ($n = 390$).

implementation of a cap-and-trade system was adopted, Premier Charest's PLQ was defeated by the PQ, which won a minority government in the 2012 provincial election.

Despite this partisan shift, the PQ proceeded with the implementation of the emissions trading system. Indeed, demonstrating a rare inter-party consensus, all members of Quebec's National Assembly voted unanimously in favor of Liberal government legislation enabling cap-and-trade in June 2009. In November 2013, a motion tabled by the PQ government, this time to harmonize and link Quebec's market to California, passed, once again, unanimously.³⁷

Further reflecting the elite consensus in Quebec, implementation of the WCI's cap-and-trade provisions has been undertaken with little public awareness and was barely mentioned in provincial elections in 2012 and 2014. In an attempt to assuage concerns stemming from expansion of the market to cover oil and gas distributors in early 2015, the Minister of Sustainable Development, the Environment and the Fight Against Climate Change explained that the program would have only modest effects on the price of motor fuels.³⁸ The impact of the increase in carbon market coverage was also mitigated by the drop in oil prices in late 2014, just before it took effect.

California and British Columbia: Unsuccessful Contestations

In contrast to elite consensus in Quebec, ideas around climate change and appropriate policy responses have been more contested in California and British Columbia. In 2006, California adopted the *California Global Warming Solutions Act*, or Assembly Bill 32 (AB32), under the leadership of Republican governor Arnold Schwarzenegger. AB32 mandates a return to 1990 emission levels by 2020 and has served as the basis of the California's climate mitigation efforts. However, AB32 only sets an emission reductions target, not the means to achieve it. Though interviews with Californian elites indicated that governor Schwarzenegger personally preferred a carbon tax, it was considered politically infeasible—as is generally the case in United States.³⁹ In this context, cap-and-trade became the default policy instrument for implementing AB32, despite not being explicitly mentioned in the legislation.

AB32 faced other significant legal and political obstacles, proving remarkably resilient. The most significant was Proposition 23 in 2010. It called for the suspension of AB32 until California's unemployment rate fell to below 5.5 percent for four consecutive quarters, an unlikely event given prevailing economic forecasts for the state.⁴⁰ Unsurprisingly, several oil and gas companies supported the proposition, spending a total of \$9.1 million. However, they were outspent by organizations and industries in favor of implementing AB32.

37. Assemblée Nationale du Québec 2013.

38. *La Presse*, December 3, 2014.

39. Purdon et al. 2014; Rabe 2010.

40. Farrell and Hanemann 2009.

The campaign “No On 23—Californians to Stop the Dirty Energy Proposition Committee” alone received \$31.5 million.⁴¹ Illustrating the extent to which Californians believe in taking a leadership role on climate change, a resounding 62 percent voted against the proposition.⁴²

The lack of elite consensus on climate change was obvious in the 2010 gubernatorial election campaign to succeed Governor Schwarzenegger, in striking contrast to the Quebec case. This election featured Republican Meg Whitman who promised to freeze WCI implementation if elected.⁴³ In the end, the former governor, Democrat Jerry Brown, took office in 2011 and forged ahead with plans for a regional carbon market.

The resiliency of cap-and-trade in California is not mirrored in British Columbia. Despite consensus on the need to act on climate change between its three main political parties, there was considerable debate on the appropriateness of specific policy instruments, focusing mostly on carbon taxation. Under the leadership of Gordon Campbell, the B.C. government adopted a series of climate change initiatives that included an ambitious commitment to reduce emissions 33 percent below 2007 levels by 2020 under the *2007 Greenhouse Gas Reduction Targets Act*, followed by, in 2008, a revenue-neutral carbon tax as well as plans for an emissions trading system.⁴⁴ The original intent was to supplement the carbon tax with a broader cap-and-trade system, in order to extend the coverage of British Columbia’s climate policy. The much-heralded British Columbia carbon tax currently covers about 70 percent of the province’s emissions—with the notable exclusion of non-combustion industrial process emissions and fugitive emissions in the oil and gas sector and other industrial sectors.⁴⁵

The tax became a major electoral issue in 2009 provincial elections. Paradoxically, the leftist New Democratic Party (NDP) opposition made its “axe the tax” slogan a central pillar of its platform, alienating its traditional allies in the environmental movement. The re-election of the Campbell government in 2009 saw the continued implementation of the carbon tax and the opposition eventually rallied behind it; implementation continued despite a change in leadership within the *British Columbia Liberal Party* in early 2011. Yet since then, plans for implementing cap-and-trade have come to a halt. This development is especially surprising given the fact that contrary to the revenue-neutral carbon tax, the province’s plan to implement a cap-and-trade system had begun to garner support among the opposition.

41. *New York Times*, July 6, 2010.

42. California Secretary of State 2010.

43. Rabe 2013.

44. Though these plans were passed in the legislature, the regulation to set up cap-and-trade was subsequently never adopted.

45. When first implemented in 2008, the carbon tax covered 77 percent of the economy, but growth of non-combustion emissions from natural gas brought its coverage down slightly (see Harrison 2013b, 9).

New Mexico: Changes in Leadership and Ideas

Like California, New Mexico was an original WCI member, and initially embraced the idea of contributing to a regional system of cap-and-trade system—efforts which nearly succeeded under the Democratic governor Bill Richardson. However, the election of Republican governor Susana Martinez in late 2010 led to New Mexico's formal withdrawal from WCI by November 2011.⁴⁶

Governor Martinez' election gave expression to important doubts about AGW and the economic impact of cap-and-trade. For example, during the 2010 gubernatorial campaign, Martinez contended that "there is disagreement in the science community concerning the causes of global warming"⁴⁷ and opposed the WCI on the grounds that it "would impose a new energy tax on businesses and families in New Mexico" and make the state "anti-business."⁴⁸ As we discuss below, these ideas about the cap-and-trade found fertile ground as the revolution in unconventional oil and gas saw the state's oil and gas sector expand significantly.

Nonetheless, the relative power of ideas surrounding AGW can be appreciated when realizing just how close New Mexico came to implementing the WCI's cap-and-trade provisions. Before governor Martinez was set to take office in January 2011, the exiting Richardson administration sought to push through its climate change agenda. New Mexico's Environmental Improvement Board adopted a regulation setting emission reduction targets for power plants and other major carbon sources in December 2010, though conditional on the state involvement in other regional or national emissions trading systems.⁴⁹ Governor-elect Martinez reacted by contending that "passing yet another cap and tax regulation will do nothing to create jobs and get New Mexicans back to work."⁵⁰ Indeed, under the leadership of Susana Martinez, Republicans have promoted a narrative linking cap-and-trade to a "closed for business" style of government. Upon assuming office, Martinez also announced that she would be reviewing "all regulations and will make recommendations concerning each in the future."⁵¹

Finally, in November 2011, New Mexico joined Arizona, Washington, Oregon, Montana, and Utah in formally halting their plans to join WCI. On this occasion, the New Mexico Environment Department official contended, "Cap-and-trade regulations passed during the Richardson administration put the state [at] an economic disadvantage...The rules create an uneven playing field for [New Mexican] businesses, which are now subject to more stringent regulations than their competitors in surrounding states."⁵² This statement represented an important shift in the Department's thinking on emissions trading, and suggests that economic interests, in the form of natural gas fracking, indeed had an

46. *Platts, McGraw Hill Financial*, November 18, 2011.

47. *The Hotline*, August 19, 2010.

48. *Carbon Control News*, December 27, 2010.

49. *New Mexico Business Weekly*, February 6, 2012.

50. *Electric Utility Week*, December 13, 2010.

51. *Global Power Report*, December 9, 2010.

52. *Platts, McGraw Hill Financial*, November 18, 2011.

impact on the implementation of cap-and-trade in the state. We address these economic interests more fully in the section below.

Interests

In addition to institutions and ideas, material interests are often important for explaining policy outputs. While not the only relevant group, an obvious economic interest to consider in the case of climate policy is the oil and gas sector, whose economic output is directly related to emissions, and whose interests are thus at odds with carbon regulations.⁵³ While opposition from oil and gas in climate policy has long been recognized, it is important to note that interests evolve over time, in response to changing material conditions. For instance, thanks to the widespread application of high-volume hydraulic fracturing to extract oil and gas from unconventional reserves, the industry has witnessed a renaissance of sorts since 2007. As a consequence, interest in fossil fuel extraction has been revitalized in several jurisdictions, where the sector is undergoing a dramatic phase of expansion and renewal, creating a challenge for continued commitment to the WCI's relatively ambitious "hard" emissions cap.

Since 2007, production of unconventional gas has increased dramatically in British Columbia as well as in the states of New Mexico, Montana, and Utah, which were once committed to the WCI but have since fallen short of implementing emissions trading (Table 1). However, in other states and provinces party to the WCI, with the exception of Manitoba, the oil and gas industry represents a marginal economic activity—including California, Quebec, Ontario, Washington, Oregon, and Arizona, accounting for no more than 1 percent of GDP.

To be sure, many important players in the fossil fuel industry are not opposed to carbon pricing in principle, though they do have strong preferences for different policy instruments. For example, in Alberta—home to Canada's oil sands—the fossil fuel industry has demonstrated itself capable of working constructively under an intensity-based emissions trading system but has not participated in efforts towards the WCI on the grounds that such a system relies on the implementation of a hard cap on emissions.⁵⁴ Moreover, the mere presence of oil and gas in a jurisdiction does not necessarily imply that no climate policy will be implemented. We suggest that in states and provinces lacking significant fossil fuel resources, or where fossil fuel resources are not considered crucial for economic growth, a durable commitment to climate policy is more likely.

California and Quebec: Marginal Oil and Gas Sector

While the oil and gas industry is present in California and Quebec, its marginal economic status makes it less influential in the policy-making process. While

53. Implementing the Western Climate Initiative.

54. Houle 2014.

Table 1

Importance of Shale Gas and Oil & Gas Industry in WCI jurisdictions

States/ Provinces	Production of Unconventional Gas (MMcf)						Oil & Gas industry percentage of total GDP (2012)
	2007	2008	2009	2010	2011	2012	
Arizona	0	0	0	0	0	0	0.0
British Columbia	36,500	73,000	146,000	292,000	620,500	912,500	3.1
California	129,488	119,215	102,027	95,505	94,349	87,854	1.0
Manitoba	0	0	0	0	0	0	2.5
Montana	14,587	14,509	13,957	12,937	13,101	15,619	1.0
New Mexico	54,020	57,462	60,590	71,867	93,071	127,548	4.4
Ontario	0	0	0	0	0	0	0.0
Oregon	0	0	0	0	0	0	0.0
Quebec	0	0	0	0	0	0	0.6
Utah	0	0	0	0	0	1,333	1.0
Washington	0	0	0	0	0	0	n/a

Sources: Production data from EIA; economic data from Bureau of Economic Analysis (US) and Statistics Canada.

unconventional gas represents 1 percent of GDP in California, production has declined 32 percent since 2007 (see Table 1). Moreover, California is highly dependent on energy outside of its borders. As one California official explained during a 2013 interview, “We do not have coal within the state...we do have some oil and gas extraction in the south, but we import all our natural gas, we import all our oil. So we’re kind of a resource poor state.”⁵⁵ In such a context, the incentive provided by the cap-and-trade system to develop renewable and, ideally, California-based energy appears particularly appealing. Among California’s government elite, there has been an assumption that if a clean technology industry were to exist in North America, it would probably exist in California.⁵⁶ Nonetheless, despite its marginality, the California oil and gas industry has been granted assistance in California’s cap-and-trade system in the form of free allowances,⁵⁷ a provision usually reserved for energy intensive and trade exposed industries.⁵⁸ These provisions, we submit, serve as something of an

55. Purdon et al. 2014, 9.

56. Purdon et al. 2014, 38.

57. Both Quebec and California emissions trading systems relies on two methods to grant most of the allowances created under the cap-and-trade system. The first method is through regular auctions while the second method is to grant allowances for free on the basis of each facility or sector historical performance. However, only a limited number of sectors can receive free allowances (e.g., the manufacturing sector). Fossil fuel distributors, included in the second phase of the cap-and-trade systems that started in January 2015, do not receive free allowances.

58. State of California 2010, section 95870.

insurance policy, in case the state ever sees a rapid development of its sizeable shale deposits, which are not economically viable at current prices. Notably, no such treatment is granted under Quebec's cap-and-trade regulation.

Although large shale gas reserves have been found in Quebec, 60 percent of its population is opposed to their development.⁵⁹ A quasi-moratorium on commercial drilling was adopted in 2013 that has effectively halted the industry's development. Recently, in December 2014, newly minted Liberal Premier, Philippe Couillard, reiterated that his government was in no rush to exploit its shale gas reserves. While coinciding with a dramatic drop in global oil and gas prices, the Premier made this statement after the publication of a government consultation report which concluded that the industry was not supported by the public, unlikely to be economically beneficial, and would increase the province's emissions substantially.⁶⁰

While several oil extraction projects have been considered in Quebec, they face multiple difficulties and have only advanced slowly under intense public scrutiny. There is also less perceived need for shale gas in Quebec, as the province produces large electricity surpluses from its vast hydroelectric resources.⁶¹ Thus, while Quebec's shale gas reserves are not trivial, the ideational context is such that, for the moment, Quebec prefers to leave its resources in the ground. The oil and gas industry has had little influence over Quebec's climate policy, though representatives of oil refiners and petroleum and gas distributors have argued that cap-and-trade is not in Quebec's economic interests.⁶²

New Mexico and British Columbia: The Growing Importance of Oil and Gas

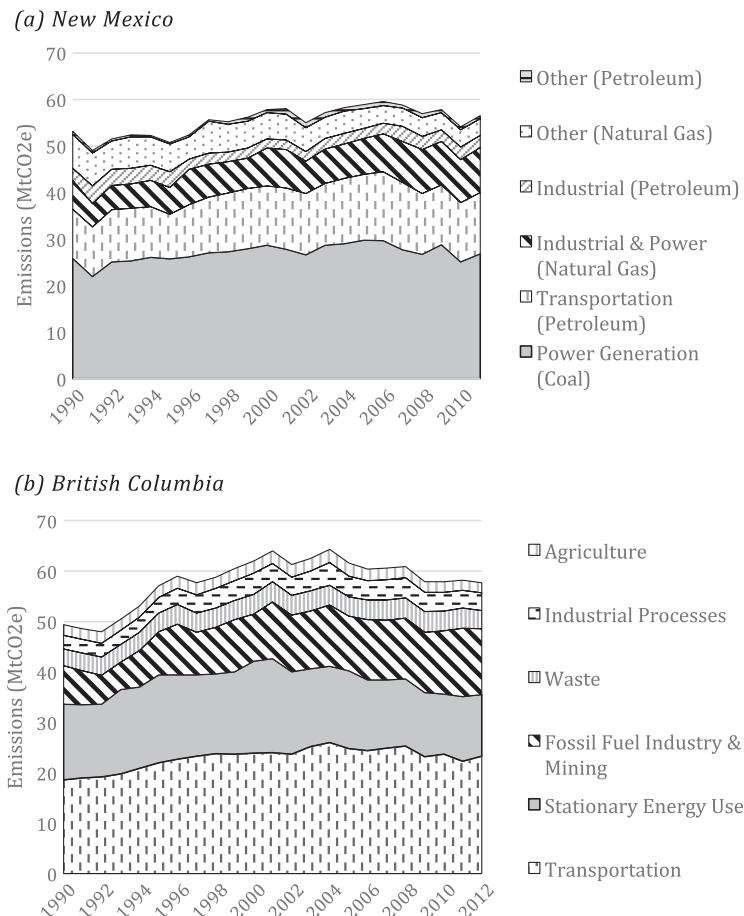
In contrast to the situation in California and Quebec, the oil and gas sector in the resource-oriented economies of New Mexico and British Columbia is much more important. After a period of declining production in these two jurisdictions due to dwindling conventional resources, exploitation of unconventional gas has led to a rapid expansion in natural gas production and associated emissions. Between 2007 and 2012, production rose substantially in both New Mexico and British Columbia (Table 1). This five-year period of consistent growth is particularly impressive in British Columbia—the province is now the single largest producer of natural gas from shale rock formations in the WCI and the largest single such producer in Canada. Such production, however, has also created externalities. Since 2007, emissions associated with natural gas exploitation (and in New Mexico's case also consumption) have risen 111 percent and 110 percent

59. Lachapelle and Montpetit 2014.

60. *Radio-Canada*, December 16, 2014. BAPE 2014, 275.

61. MDDEFPQ 2006.

62. As reported to the *Commission sur les enjeux énergétiques* (2014: 98), this sector is concerned that cap-and-trade will introduce uncertainty in Quebec's oil and gas distribution market, lacks the transparency of an increased fuel tax, and could hurt Quebec's competitiveness relative to neighboring Ontario.

**Figure 2**

Emissions by Sector in New Mexico and British Columbia, 2007–2012

Note: Neither New Mexico nor British Columbia data includes emissions associated with afforestation and deforestation.

Sources: British Columbia 2014a, 2014b, EPA 2014.

in New Mexico and British Columbia, respectively. Such emissions currently constitute the third largest source of emissions in New Mexico and second largest in British Columbia (Figure 2). Furthermore, amounts reported in Figure 2 are likely conservative as fugitive emissions of natural gas from fracking are likely underestimated in official accounts.⁶³

63. Tollefson 2013.

We contend that, in part because of growth in this sector, British Columbia pulled back from the implementation of cap-and-trade under the WCI. Up until 2010, British Columbia was making substantial progress in adopting the necessary legislative and regulatory framework for implementing cap-and-trade. In addition to the *2007 Greenhouse Gas Reduction Targets Act*, British Columbia adopted its *Greenhouse Gas Reduction (Cap and Trade) Act* in May 2008, approved a *Reporting Regulation* in November 2009, and launched consultations on a proposed *Emissions Trading Regulation* in October 2010. However, this latter regulation never moved past the draft stage. The *2007 Greenhouse Gas Reduction Targets Act* itself includes general reduction emission targets for the province and creates an obligation of carbon neutrality for the public sector. However, the legislation does not impose specific targets for other sectors. Significantly, without the implementation of a cap-and-trade system, British Columbia's current climate policy does not offer much constraint on the development of the oil and gas industry, since it does not impose an obligation to limit this sector's emissions.

Implemented in 2008, at the very beginning of growth of natural gas fracking, the British Columbia carbon tax appears to have been adopted when there was little awareness of fracking's potential in the province nor its carbon footprint.⁶⁴ Certain features of a carbon tax might explain why it was retained as fracking emerged on the political landscape. First, as is well known, a tax does not guarantee that a particular emission reductions target will be achieved.⁶⁵ Furthermore, British Columbia's carbon tax does not cover non-combustion industrial process emissions and fugitive emissions of the oil and gas sector and other industries. Importantly, legislation has recently been proposed to address this problem for liquefied natural gas facilities by imposing an intensity-based target. Facilities that cannot meet this target would also have the option to contribute to a technology funds or purchase offsets.⁶⁶ Strikingly, this system is quite similar to the approach already implemented by Alberta, which also does not constrain the growth of the oil and gas sector and its emissions.

The British Columbia government's recoil from cap-and-trade may thus be interpreted as a response to the significant increase in the production of shale gas. In principle the expansion of emissions in British Columbia's fossil fuel and mining sector could be compensated by reductions in other sectors. Indeed, British Columbia's overall emissions (excluding deforestation) peaked in 2004 and have been on the decline, largely due to emission reductions among stationary installations (Figure 2b). However, this decline has *decelerated* significantly since 2007 as emissions in the fossil fuel industry and mining sector—particularly natural gas—have increased.

64. See Harrison 2013b, 11–14, for discussion of the political conditions that saw the carbon tax implemented.

65. Hepburn 2006, 230.

66. British Columbia Ministry of Environment, 2014b.

The British Columbia government does not currently envision further tightening of mitigation efforts in these sectors, for example through expansion of the carbon tax, though it is tinkering with more stringent regulations associated with the liquefaction and export of natural gas.⁶⁷ Thus while expansion of natural gas production is not incompatible with the WCI's emissions reduction goal—as we noted, California offers free allowances to its marginal oil and gas industry⁶⁸—its importance in British Columbia makes it significantly more difficult.

In New Mexico, where there is a palpable degree of climate scepticism, concerns about forgoing economic benefits in the unconventional shale gas sector made it politically feasible to completely withdraw from the WCI. At the same time, shale gas has been presented as key to reviving New Mexico's economy. New Mexico has increasingly come to rely on natural gas for power generation, which appears to have allowed the state to reduce its reliance on heavily polluting coal (Figure 2). For example, Carlsbad Mayor Dale Janway has stated: "If done properly, fracking can be the vehicle that drives the economic recovery and long-term growth for our country. We need to move forward."⁶⁹

Following the change in governorship discussed above, in February 2012 a newly appointed New Mexico Environmental Improvement Board repealed by a 5-0 vote the regulation that would have provided the framework for the cap-and-trade program and participation in the WCI.⁷⁰ The regulation setting emissions reduction targets for the state's main carbon emitters, as proposed by the environmental group New Energy Economy, was repealed at an EIB meeting in March 2012.⁷¹

Ideas, Interests, and Institutions in Explaining WCI Success

Applying our framework to our out-of-sample cases (i.e., other one-time partners in the WCI) suggests that further observations converge with the argument made here. Essentially, all WCI partners can be differentiated in terms of two main factors: the extent to which AGW and cap-and-trade are contested, and the degree to which sub-federal jurisdictions attach their economic fortunes to the development of hydrocarbons.

A first group of jurisdictions clusters around low contestation and marginal oil and gas. Indeed, the WCI was only implemented in cases where the level of contestation around AGW and cap-and-trade was relatively low and where the oil and gas industry played a marginal role in current overall economic activity—California and Quebec. Despite the fact that ideas surrounding AGW and cap-and-trade are relatively more contested in California, legal interventions and

67. Horne 2014.

68. State of California 2010, section 95870.

69. *Albuquerque Journal*, January 6, 2014.

70. *Reuters News*, February 8, 2012; *New Mexico Business Weekly*, February 6, 2012.

71. *Associated Press*, March 17, 2012.

other attempts to contest climate change policy have been unsuccessful, thanks to relatively high levels of public support.

A second category of cases includes British Columbia and Manitoba. In both cases AGW does not appear to be up for debate. We have discussed British Columbia's climate policy in detail already. Less well known is that Manitoba adopted a much narrower tax for coal.⁷² Both Manitoba and British Columbia followed through with a carbon tax, though to quite different levels of stringency, because it does not constrain the production of unconventional oil and gas as a cap-and-trade system with a hard cap would.

The third category encompasses the US states of New Mexico, Montana and, more staunchly conservative, Utah. In these states, the pressure of increasing shale gas production is important and may have contributed to radical views on climate change policy among Republicans. In two of these states, New Mexico and Utah, climate sceptics have since replaced former governors committed to the WCI. In Utah, these views strongly resonated with the Republican-controlled state legislature, which adopted a resolution openly questioning AGW in February 2010 while asking the US Environmental Protection Agency to "cease its carbon dioxide reduction policies, programs, and regulations until climate data and global warming science are substantiated."⁷³ In Montana, despite the fact that the state elected Democrat governors over the recent period, the State legislature remains firmly controlled by Republicans increasingly vocal about their opposition to carbon trading and its impact on Montana's economic growth.⁷⁴ While in a category of its own, Arizona is similar to Utah in being staunchly conservative, though not possessing a significant unconventional oil and gas industry. Here a Republican governor has recognized the issue of AGW, though nonetheless adopting an executive order in February 2010 announcing that the state would not implement a cap-and-trade program⁷⁵—a move welcomed by the state Republican-controlled legislature.⁷⁶

Finally, a last category accounts for the three remaining cases of Ontario, Washington and Oregon, which, we suggest, are the most likely candidates to implement the WCI in the short term because of the marginality of the oil and gas sector. In Ontario, the provincial Liberal government initially demonstrated a strong interest in emissions trading, as indicated by an initial, ephemeral agreement with Quebec in 2008, and passed enabling legislation in 2009. However, a policy shift occurred shortly after 2011 provincial elections, in which the Liberals achieved only a minority government. During the campaign, energy issues were highly salient and the conservative opposition framed the cap-and-trade program as a carbon tax in a series of negative attack adds.⁷⁷ Similarly, in

72. Houle 2015.

73. *Deseret News*, February 10, 2010.

74. Montana Legislature 2011.

75. State of Arizona 2010.

76. Klinsky 2012; Rabe 2013, 10.

77. Houle 2015.

2010, both Oregon and Washington state legislatures failed to pass legislation supporting the cap-and-trade program pushed by their governors,⁷⁸ which brought to light a lack of elite consensus on the use of this instrument.

Will these three jurisdictions follow through with cap-and-trade? What will be important are changes at the level of ideas, such as the acceptance that cap-and-trade will not be ruinous to their economy. Somewhat reflecting this, Washington's governor proposed legislation for establishing a carbon pricing mechanism in late 2014. Similarly, Ontario, where the Liberal party secured a majority government in the 2014 election, has indicated that it now plans to join Quebec and California's carbon market.⁷⁹

Conclusions

Overall, the interaction among the ideational, material and institutional contexts in which US states and Canadian provinces find themselves provides considerable insight into why California and Quebec were able to fully implement cap-and-trade under the WCI, while New Mexico and British Columbia were not. We find that cases of successful implementation of market-based climate policy instruments, whether cap-and-trade or carbon tax, share a high degree of commitment to the idea that climate change is an important problem as well as relative faith in the capacity of government to intervene effectively in the market. However, an important interaction occurs between interests at play and the type of market-based instrument adopted in a particular jurisdiction. Even if actors embrace AGW, sub-federal governments will not implement a jurisdiction-wide emissions trading system if it places too much of a burden on the growth of important carbon-intensive industries, such as the oil and gas sector. Thus, despite growing enthusiasm for cap-and-trade programs in North America, implementation in some cases has proven politically difficult.

Our argument contributes to existing literature on sub-federal climate policy and the politics of cap-and-trade in important ways. First, in moving the analytical focus from policy formulation and adoption to policy implementation, we highlight conditions and challenges that are specific to this crucial phase in the policy process. These challenges include public ballot propositions, court cases, and changes in material economic conditions. Second, despite growing enthusiasm for carbon markets, we highlight important factors that may adversely affect the ability of states to fully implement this type of instrument. In so doing, we qualify simpler notions regarding partisan shifts, and point to the role of ideas held by individuals as a driving force.

Third, we supplement existing explanations, which typically emphasize the role of policy entrepreneurs and issue framing,⁸⁰ by highlighting how institutions, ideas, and material interests interact over time. We thus refine existing

78. Klinsky 2012, 152; Rabe 2013, 8–9.

79. Government of Ontario 2015.

80. Rabe 2004; Rabe 2010.

arguments regarding the role of fossil fuel producer groups,⁸¹ and demonstrate how the influence of these interests vary over time (according to dominant patterns in energy production markets) and across cases (that are more or less fossil fuel dependent). We also show how changing material conditions (spurred by technological innovation) can condition ideas of what constitutes appropriate policy, and further demonstrate how the capacity for public and elite ideas to support a continued commitment to cap-and-trade is itself conditioned by the political institutional context. Overall, we demonstrate not only if, but how fossil fuel interests, partisanship, and public support play a role in shaping climate policy outcomes. This contributes to the literature on sub-federal climate policy by highlighting the conditioning role of institutions and technological innovation in shaping the relative influence of ideas and material interests over time.

While providing new insight into the relative durability of climate policy in California and Quebec, our analysis is limited to a small number of cases. It would be interesting to make further distinctions between the role played by different types of oil and gas activities in each province and state considered, which would require more in-depth case research. Nevertheless, analysis here provides an opportunity to consider other former WCI partners, who now appear closer to implementation. Our analysis also points to complementary factors, such as the underlying political economy traditions—and tolerance for government intervention in the economy—as factors that may facilitate the durability of instruments like cap-and-trade. To some extent, the interaction among institutions, ideas and interests that we point to here may be complementary to general political economy inclinations, which might be teased out in future work.

To be sure, none of this is deterministic. Climate policy is a fast moving object of study. We acknowledge the possibility that some identified factors will change, and that some states and provinces are likely to reconsider their position on cap-and-trade. Our analysis, however, suggests that some factors, including the development of the oil and gas industry and the ideational context, in terms of the acceptance of AGW and cap-and-trade among political elites and public opinion, deserve attention. Scholars should expect these factors to have different impacts depending on the specific institutional context in which climate change policy-making takes place.

Looking forward, three important changes might have a positive incidence on the resilience of emissions trading programs and contribute to future WCI expansion. First, in addition to recent developments which have seen Ontario commit to joining Quebec and California's carbon market, Ontario's Premier Kathleen Wynne also signed a joint statement (with British Columbia, California, and Quebec) during the 2014 UN climate change conference promising more action on climate change.⁸²

81. Paterson and Grubb 1992; Giddens 2009.

82. State of California et al. 2014.

Second, the recent drop in oil and gas prices might lead elected officials and investors to reconsider viewing this sector as a source of economic opportunity. Indeed, the auctioning of emission allowances under a cap-and-trade program like the WCI might prove attractive for governments desperate for revenue. In addition, lower prices for oil and gas might provide some political cover to offset any increases in prices at the pump brought about by cap-and-trade. Should the oil and gas prices further decline, our framework would predict less resistance to the implementation of emissions trading in places like Manitoba and British Columbia and perhaps a renewed engagement in New Mexico and Montana. Third, recent EPA regulations (i.e., section 111d of the *Clean Air Act*, which requires states to comply with emission reduction targets not dissimilar from the cap of an emissions trading system), might alter the incentives for states to consider cap-and-trade. If proven to work, the WCI could serve as a model for governments seeking to find ways to reduce mitigation costs by linking their programs with other jurisdictions party to a similar approach.⁸³

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