

■ synthesis article

# Bottom-up policy lessons emerging from the Western Climate Initiative's development challenges

SONJA KLINSKY<sup>1,2\*</sup>

<sup>1</sup> Cambridge Centre for Climate Change Mitigation Research, University of Cambridge, 19 Silver Street, Cambridge, CB3 9EP, UK

<sup>2</sup> Institute for Resources, Environment and Sustainability, University of British Columbia, 2202 Main Mall, Vancouver, British Columbia, V6T 1Z4, Canada

---

Cap-and-trade has become a key climate policy strategy, in part due to concerns about the political feasibility of carbon taxes. However, federal cap-and-trade legislation remains elusive within North America, and it is increasingly likely that a global carbon market will be composed of a patchwork of regional bottom-up schemes. The challenges faced by the Western Climate Initiative (WCI), the most comprehensive GHG trading system currently being developed in North America, are examined. The WCI has had mixed success and several lessons concerning the political and technical requirements for bottom-up, regional GHG trading are offered. Although substantial administrative progress has been achieved, only two of its original eleven partners will be ready for trading in 2013. Creating a carbon market is more than a technical or political challenge – it is a social process. The WCI experience highlights the importance of the logic of collective action, the need for jurisdictions to see individual benefits, the role of evidence from other policy contexts, and the need for broad agreement about the purpose of policy. These factors can significantly shape the chances of survival for the carbon market even before actual trading begins.

## Policy relevance

An analysis is provided of the political and administrative challenges facing the creation of the Western Climate Initiative, the largest multi-jurisdictional sub-national North American GHG cap and trade system initiated to date. Policy factors for both the coalescence and partial disintegration of the system are discussed for all 11 original partner jurisdictions. Key lessons are highlighted for policy and strategy that may be of use in other bottom-up initiatives of this type: acknowledging the multi-level governance aspects of climate policy (including the need for jurisdictions to see individual benefits), paying attention to the dynamics of collective action, the centrality of broader political and economic discourse in defining interpretations of the opportunities and costs of cap-and-trade, and the need for broad agreement about policy purpose.

*Keywords:* cap-and-trade; domestic policy instruments; multi-level governance; policy formation; political processes; Western Climate Initiative

---

## 1. Introduction

Establishing a carbon price has arguably become the leading strategy for climate change mitigation. The rationale is simple, elegant, and well established in economic theory – because GHGs are negative externalities, internalizing emissions costs will incentivize actors to reduce their emissions. Two strategies for achieving this are establishing a carbon tax and creating a cap-and-trade mechanism.

■ \*E-mail: [sonjaklinsky@gmail.com](mailto:sonjaklinsky@gmail.com)

Many economists prefer carbon taxes to cap-and-trade mechanisms because of their comparative simplicity, but they have remained political non-starters. As Barry Rabe has wryly noted,

there appears to be a nearly inverse relationship between those policies that policy analysts tend to endorse as holding the greatest promise to reduce emissions in a cost-effective manner and the political feasibility of respective policy options. (Rabe, 2008, p. 106)

After years of attempting to establish a carbon tax within the EU, policy makers instead initiated the EU Emissions Trading Scheme (EU ETS) (Skjaereth & Wettestad, 2007; Convery, 2009). Following its implementation, other diverse schemes have been developed or discussed, e.g. in China, Australia, New Zealand, Japan, South Korea, and India. There are two schemes within North America: the Regional Greenhouse Gas Initiative<sup>1</sup> (RGGI, 2005) cap-and-trade scheme (started among power plants in the northeast of the US in 2005) and the Western Climate Initiative (WCI, started in 2007). The WCI is currently composed of British Columbia, California, Ontario, Quebec, and Manitoba. Although several jurisdictions in the world have partial taxation schemes, only British Columbia has a broad consumer end-use carbon tax.

To date, the WCI is the most ambitious North American cap-and-trade system under development. By 2008 it was hoped that it would become the second-largest system in the world, and many felt that it would be a natural testing ground or initial platform for US and Canadian federal systems. However, by 2011, federal cap-and-trade was off the table in both countries, with only California and a few Canadian provinces remaining committed. Indeed, although over half of the emissions initially covered by it are still included – thanks to the participation of California – only California and Quebec intend to start trading in 2013.

A variety of studies have offered lessons from the EU ETS about the design of cap-and-trade schemes (Skjaereth & Wettestad, 2007; Convery, 2009; Grubb, 2009; Ellerman et al., 2010), but the development of the WCI provides a crucial opportunity to examine such a system further. It is increasingly clear that the global carbon market, if one develops, is likely to consist of a patchwork of regional bottom-up schemes. What can we learn about the political and technical requirements for multi-jurisdictional regional trading systems from a bottom-up attempt that has not progressed smoothly?

Although sub-national involvement has become a distinctive feature of North American climate policy, this involvement has led to some puzzles. The problem of ensuring global collective action on climate change is well recognized, but there are few immediate incentives for sub-national actors. They rarely face direct international political pressure, and efforts to reduce emissions may not result in localized benefits (especially in the absence of action by others). Four major themes have emerged from the literature on sub-national leadership. First, policy entrepreneurs and champions who provide leadership and knowledge within jurisdictions are crucial (Rabe, 2004, 2007). Many sub-national jurisdictions have been involved in common programmes and have had common advisors. Sub-national policy experiments have also been used to inform other sub-national and federal initiatives (Aulisi, Larsen, Pershing, & Posner, 2007; Lutsey & Sperling, 2008).

Second, local governments may have better information about electoral interests than national governments, allowing them to more easily take advantage of shifts in public opinion (Aulisi et al., 2007; Urpelainen, 2009). Some scholars have suggested that sub-national electoral politics, especially

in the US, have been less contentious than federal debates, which may facilitate non-partisan policy development at the sub-national level (Rabe, 2007).

Third, climate policy is inevitably multi-level, and the dynamics among levels of government and other institutions can shape the direction of policy. Some authors have stressed the often difficult relationships between the federal and state and provincial governments (Harrison, 1996, 2007; Rabe, 2007). For example, Harrison has highlighted the 'buck passing' that has stemmed from the ambiguous division of responsibility for environmental issues between federal and provincial governments, in combination with the desire for both levels of government to protect their electoral interests. Other authors have emphasized the importance of involving a wider range of institutions as well as the extent to which they have influenced policy development (Betsill & Bulkeley, 2006). These institutions have links across jurisdictions, which have facilitated the flow of ideas and expertise across policy arenas.

Finally, sub-national jurisdictions are not isolated from international regimes, a situation that resonates with the preceding multi-level governance theme. Although actors within these jurisdictions are not necessarily under direct international pressure, action to reduce emissions can be motivated by a concern to keep pace with changing norms about climate policy, the economic opportunities they might engender, and the electoral consequences of failing to do so (Rabe, 2004; Selin & VanDeveer, 2007).

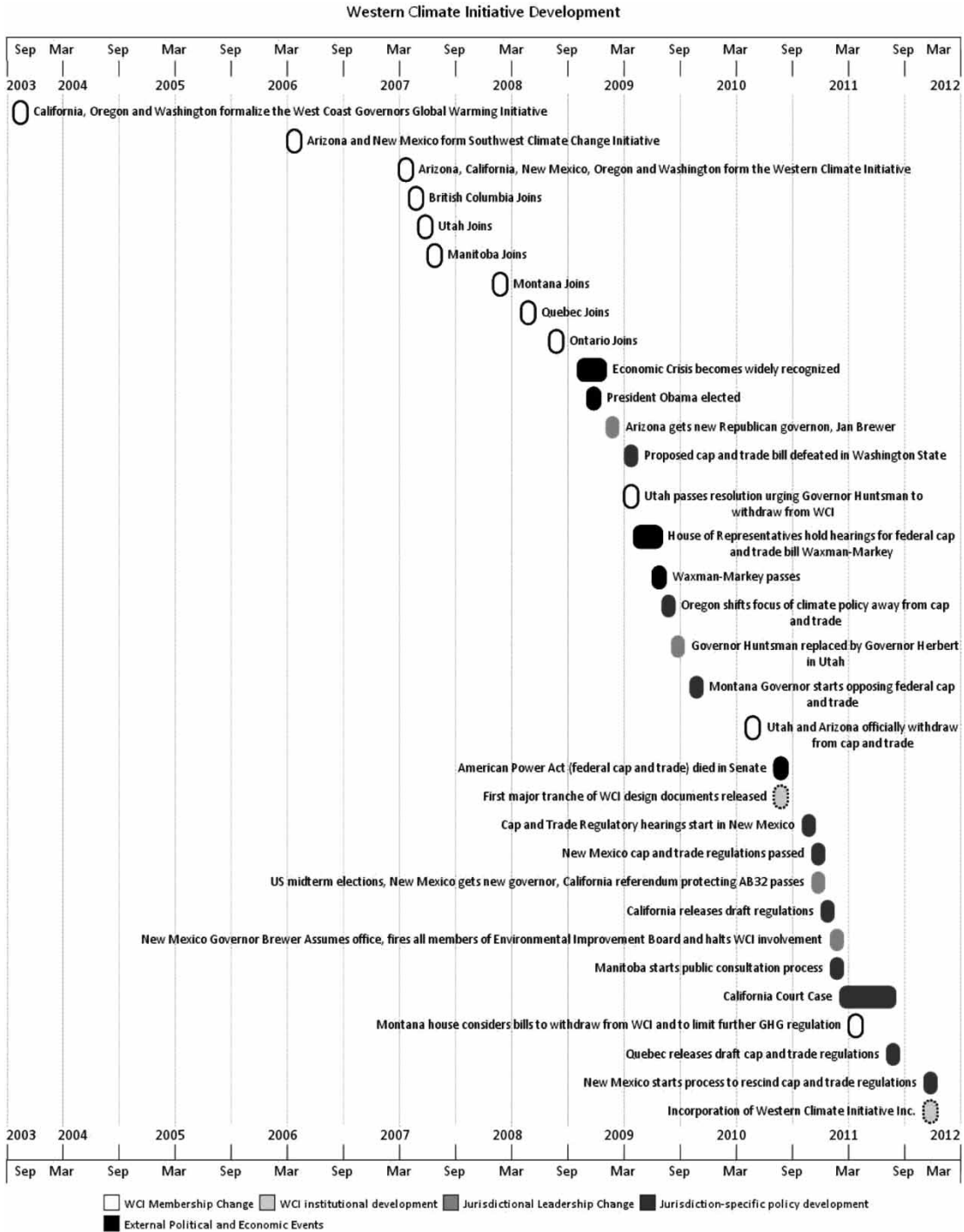
Since its inception in 2007, the WCI has had 11 partner jurisdictions. These jurisdictions are compared to identify why the development of the WCI has been difficult and also to learn lessons for other bottom-up approaches. Three periods of policy development will be examined: 2003–2008, when the WCI was coalescing; 2008–2011, when it largely disintegrated; and 2011 to the present, when its membership has greatly reduced (see Figure 1 for an overview).

In Section 2, a brief history of the WCI is provided. The three periods of policy development are discussed in Sections 3 to 5. In Section 6, four key lessons from the WCI case study are detailed: the importance of (1) acknowledging the multi-level governance aspects of climate policy; (2) paying attention to the logic of collective action; (3) the centrality of broader political and economic shifts in defining the contours of cap-and-trade attempts; and (4) the need for broad agreement about the purpose of policy.

## 2. The Western Climate Initiative

The WCI is a coalition of Canadian provinces and US states that cooperate loosely to reduce GHG emissions. The keystone of the coalition is a cap-and-trade component, although there are also other complementary policies. Negotiations started in 2007 and trading was scheduled to commence in January 2012. However, only California and Quebec will begin trading in 2013. At its peak, the WCI had 11 partners committed to cap-and-trade: the US states of Arizona, California, Montana, Utah, New Mexico, Washington, and Oregon and the Canadian provinces of British Columbia, Manitoba, Ontario, and Quebec. A further 16 jurisdictions have had observer status.

The shared WCI emissions target for GHGs is 15% below 2005 levels by 2020. Similar to the EU ETS, the WCI has a phased design, with the first phase including direct emissions from stationary installations for which annual emissions are greater than 25,000 tCO<sub>2</sub>e. This is to be expanded in 2015 to cover



**FIGURE 1** Overview timeline of the development of the WCI

90% of regional GHG emissions. At its peak, the WCI covered 20% of US gross domestic product (GDP) and 76% of Canadian GDP (WCI, 2008a, 2010a).

Structurally, the WCI is decentralized, with each jurisdiction developing its own targets and regulations, which may then be linked. However, efforts have been made to develop a single trading platform to reduce the risks of fraud and market manipulation.

Of the 11 partners that have been part of the WCI, only California, British Columbia, New Mexico, Ontario, and Quebec have enabling legislation, and Manitoba has not officially pulled out although it is far behind the rest in terms of legislation. (In 2011, New Mexico notably started the process of reversing its legislation.) These six partners are estimated to provide between 800 million and 900 million tons of CO<sub>2</sub> allowances, at least half of which come from California. The remaining jurisdictions have decided against pursuing cap-and-trade, but have nominally kept their seats at the 'WCI table', citing interest in a 'portfolio approach' of other policies. Only California and Quebec have current cap-and-trade regulations.

The diversity in the energy mixes of its members is one of the distinguishing features of the WCI (see Table 1). California is the giant when measured in all relevant dimensions, but other differences also exist. Importantly, electricity is the largest source of emissions for Arizona, New Mexico, Montana, and Utah, none of which are energy importers. Indeed, Montana exports almost 40% of its generated power (US EIA, 2012). Although nuclear and natural gas are important, domestic coal generation remains central in these states.

By contrast, transportation is the largest source of emissions for all other WCI partners, none of which has a significant domestic coal industry. California imports more than a third of its power to augment its domestic natural gas, hydro, and nuclear generation (CEC, 2009). Ontario's diverse fuel mix also includes imports from its neighbours. Hydroelectricity dominates the energy mix in Oregon, Washington, British Columbia, Quebec, and Manitoba (Statistics Canada, 2009). As will be seen, these differences have contributed to the development of the WCI.

### **3. The WCI from 2003 to 2008**

#### **3.1. Overview**

Discussions of GHG cap-and-trade schemes in the US were introduced during the Kyoto Protocol negotiations in the 1990s, but by the early part of the 21st century it was becoming clear that it was unlikely that federal schemes in Canada and the US would develop rapidly. The US declared it would not ratify the Kyoto Protocol and, indeed, no comprehensive policy on climate change was forthcoming. Under a Liberal government, Canada signed and ratified the Kyoto Protocol, but it lacked sufficient mechanisms to follow up on its commitments and, following the election of a Conservative government in 2006, immediately abandoned its target.<sup>2</sup>

The US states of California, Oregon, and Washington have repeatedly expressed concerns about climate change, and their political leaders have been on board. For example, the state of Oregon initiated its first task force on global warming in 1988, which found that it was a serious concern for the state (Oregon State, 1990). By the early 2000s, California had become an established sub-national leader on climate policy, and its governor – Arnold Schwarzenegger – had gained recognition for his commitment to climate policy development. Meanwhile, the state of Washington pursued a range of

**TABLE 1** Summary characteristics of WCI partner jurisdictions

| Jurisdiction     | GDP <sup>a</sup><br>(billions) | Population <sup>a</sup> | Total emissions<br>(millions tCO <sub>2</sub> e) <sup>l</sup> | Top emissions sector <sup>a</sup> | Net trade of<br>electricity <sup>m</sup><br>(millions kWh) | Total electricity<br>disposition |
|------------------|--------------------------------|-------------------------|---|-----------------------------------|--|----------------------------------|
| Arizona          | US\$247                        | 6,338,755               | 80 (2000) <sup>b</sup>  | Electricity                       | 34,378   | 11,200 <sup>j</sup>              |
| British Columbia | CA\$190                        | 4,380,300               | 65 (2008) <sup>c</sup>  | Transportation                    | -2,832   | 74,665 <sup>k</sup>              |
| California       | US\$1813                       | 36,553,215              | 477.7 (2008) <sup>d</sup>                                     | Transportation                    | -82,010  | 207,599 <sup>j</sup>             |
| Manitoba         | CA\$49                         | 1,186,700               | 21 (2008) <sup>c</sup>  | Transportation                    | 12,167   | 22,235 <sup>k</sup>              |
| Montana          | US\$34                         | 957,861                 | 37 (2005) <sup>e,n</sup>                                      | Electricity                       | 15,124   | 30,041 <sup>j</sup>              |
| New Mexico       | US\$76                         | 1,969,915               | 83 (2000) <sup>f</sup>  | Electricity                       | 11,554   | 36,293 <sup>j</sup>              |
| Ontario          | CA\$582                        | 12,803,900              | 190 (2008) <sup>c</sup>                                       | Transportation                    | 4,809  | 153,425 <sup>k</sup>             |
| Oregon           | US\$158                        | 3,747,455               | 68 (2000) <sup>g</sup>  | Transportation                    | 5,401  | 55,562 <sup>j</sup>              |
| Quebec           | CA\$298                        | 7,700,800               | 82 (2008) <sup>c</sup>  | Transportation                    | -18,052  | 210,014 <sup>k</sup>             |
| Utah             | US\$106                        | 2,645,330               | 69 (2005) <sup>h</sup>  | Electricity                       | 7,873  | 42,267 <sup>j</sup>              |
| Washington       | US\$311                        | 6,468,424               | 95 (2005) <sup>i</sup>  | Transportation                    | 6,997  | 105,684 <sup>j</sup>             |

Notes: <sup>l</sup>Dates of emission inventories in parentheses. <sup>m</sup>International and regional trade is combined in this table. <sup>n</sup>The figure for Montana only represents its consumption-based emissions as it does not include emissions associated with exports in its GHG inventory. Net Trade = Total Exports - Total Imports. For each jurisdiction, Total Exports = International Exports + Regional Exports. Total Imports = International Imports + Regional Imports. US and Canadian statistics agencies record these data in slightly different ways. In both cases, regional exports and imports are taken from reported interregional trade. In the US, Interstate Trade = [Total Supply - (Total Electric Industry Retail Sales + Direct Use + Total International Exports (if it applies) + Estimated Losses)]. In Canada, Interprovincial Trade = (Total Exports to other provinces - Total Imports from other provinces).

Sources: <sup>a</sup>WCI (2010a, 2010b, 2010c, 2010d); <sup>b</sup>Arizona (2006); <sup>c</sup>Canada (2011); <sup>d</sup>California (2010); <sup>e</sup>CCS (2007a); <sup>f</sup>CCS (2006); <sup>g</sup>Oregon (2004); <sup>h</sup>CCS (2007b); <sup>i</sup>Washington (2007); <sup>j</sup>US EIA (2012); <sup>k</sup>Statistics Canada (2009).

studies on climate change impacts (Washington State, 2009a) and concluded that it was 'the environmental issue of our lifetime' (Washington State, 2009b).

US public concern about climate change increased between 2000 and 2007. In 1997, only 27% of respondents said that climate change was important or very important, but, by 2007, this had grown to 52% (Nisbet & Myers, 2007). In 2003, climate change ranked ninth out of ten environmental concerns (Brechtin, 2003, p. 113) but in 2007 briefly topped the list (ABC, 2007). As Urpelainen (2009) has argued, state governments may be more nimble in reaping political benefits from shifting public opinion because they have better information about electoral interests. As a result of federal inaction, in 2003 the states of California, Oregon, and Washington initiated the West Coast Global Warming Initiative (Locke, Davis, & Kulongoski, 2003). In 2007, during the inauguration of the WCI, Governor Richardson explicitly identified its development as an example of state leadership and claimed that 'states are once again taking the lead on combating global climate change' (Gregoire, Kulongoski, Schwarzenegger, Napolitano, & Richardson, 2007). While a direct connection to electoral politics is hard to demonstrate, this clear message suggests that leaders were aware of the potential for political gains being made available by a reluctant federal government.

During this period of development in the western US states, the Regional Greenhouse Gas Initiative (RGGI, 2005) was established among eastern US states, another example of a state-driven attempt to

craft a platform for emissions trading with the possible aim of providing a basis for federal policies (Wall, 2007). Governor Schwarzenegger publicly aligned himself with these efforts (Pataki, 2006), and the movement towards cap-and-trade in these other states lent it credence as a feasible option. Meanwhile, the first trading in the EU ETS also took place in 2005. The development of these sister initiatives provided concrete policy models, and their initiation contributed to a sense of shared momentum and engagement.

In 2006, Arizona and New Mexico – under Governors Napolitano and Richardson, respectively – also signed an agreement to coordinate climate change action. This was known as the ‘Southwest Climate Change Initiative’ (Napolitano & Richardson, 2006). In 2007, California, Oregon, Washington, Arizona, and New Mexico merged their collective initiatives and formed the WCI (Gregoire et al., 2007). By the end of 2007, the members of the WCI were Arizona, California, Oregon, New Mexico, Washington, Utah, Montana, and British Columbia. By the middle of 2008, Ontario, Quebec, and Manitoba had also joined.

Some of these jurisdictions had already demonstrated leadership on climate change and framed the WCI as a continuation of these efforts. The governors of California and New Mexico, Schwarzenegger and Richardson, were both known environmental champions. Governor Huntsman of Utah had also expressed initial concerns about climate change and in 2006 had spearheaded a governor’s initiative known as the Blue Ribbon Advisory Council on Climate Change (Utah, 2007). During this time California was developing AB32, a comprehensive climate change plan, which, in addition to cap-and-trade, included changes in fuel efficiency, buildings, and landfill regulations (CARB, 2008). Similarly, British Columbia had already established a broad end-use consumer carbon tax, Quebec a carbon levy, while Quebec and Manitoba were the only provinces to continue working towards their Kyoto Protocol goals when Canada itself backed out.

The WCI alliance offered four advantages to these leading jurisdictions. First, creating a larger carbon market offered jurisdictions a defence against internal lobbying (Flachsland, Marschinski, & Edenhofer, 2009). Jurisdictions have repeatedly signalled that ‘collective effort’ was crucial in enabling action throughout the region (WCI, 2008a). As representatives of the New Mexico system argued

the Department has never considered a state-only approach. . . New Mexico will implement a cap-and-trade program only when there are sufficient North American trading partners to make a system efficient and cost effective. (Ely, 2010)

Working together was based both on the recognition of the importance of a ‘consistent’ approach to emissions regulation (Gregoire et al., 2007) and on industry concerns about competitiveness and losses due to carbon pricing (CAC, 2008; Chevron, 2008; MABC, 2008).

Second, it was argued that a market-based approach with ‘a broad geographic scope [would] reduce overall compliance costs and help mitigate leakage risks’ (WCI, 2010a). The advantages of a coordinated market system were highlighted by the smaller jurisdictions. Ontario and Quebec cited the importance of reducing costs and improving liquidity, and signed a memorandum of understanding that indicated their intention to cooperate on cap-and-trade even before joining the WCI (Ontario and Quebec, 2008). Similarly, the government of British Columbia applauded Ontario’s decision to join the WCI and claimed that this created ‘access to an even larger market that will lower compliance

costs for industry' (BC, 2008). Indeed, the central premise of the WCI was that 'using the power of the market' will result in the least cost regulation that 'allows emitters to be flexible and creative in how to make needed reductions' (WCI, 2010a).

A third advantage, emphasized by early adopters, was that the WCI 'sets the stage for a regional cap-and-trade program, which will provide a powerful framework for developing a national cap-and-trade program' (Governor Schwarzenegger, as quoted in Gregoire et al., 2007). For some members such as California, the WCI was a convenient platform on which to base arguments for a federal system. For others, the WCI was useful for allaying concerns that federal regulations would not respect their own interests. For example, Utah's energy advisor, Dianne Nielson, supported the governor's state-specific task force on GHG emissions reductions and claimed that 'we don't need federal regulation to tell us we need to do better' (Lee, 2006, p. B1). Similarly, in Montana a key finding of a state report argued that 'as federal climate change policies unfold, it will be imperative that Montana be proactive in protecting its resources, including the economy' (Nowakowski, 2008, p. 3). By 2007 and 2008, Canadian and US federal elections were in full swing and climate change was on the agenda. US president Barack Obama supported a federal cap-and-trade system during his campaign, which increased its likelihood as a possible outcome. Involvement in the WCI was a way of ensuring that state interests would be heard in a US federal system. As the state of Washington argued, the best way 'to make sure that the federal cap-and-trade program does not disadvantage Washington, is to continue to move our regional cap-and-trade program forward' (Washington, 2008, p. 81). This logic was reflected within jurisdictions, with industry stakeholders being offered the opportunity to contribute to the design process. Overall, the WCI was a means for some members to achieve a much larger climate change policy end; for others, it provided a chance to protect their interests given the inevitability of federal climate change regulation.

Finally, cap-and-trade did not present the early adopting states with large immediate costs, and was perceived to offer potential economic benefits. Two important features of the early adopting jurisdictions partly account for the perception of cost (see Table 1). First, transportation was the largest source of emissions for California, Oregon, Washington, and the four Canadian provinces. The WCI does not cover transportation until 2015, a feature that provided some insulation from public and industry concerns about impacts on transportation fuel (Chevron, 2008) and gave regulators time to finalize a design strategy to incorporate transportation in light of several approaches taken across the WCI.<sup>3</sup> Second, none of the early jurisdictions had powerful fossil-fuel industries; indeed, several were dependent on energy imports. Ontario and California were interested in energy efficiency independently of climate change concerns, and Ontario was phasing out coal power plants. Oregon, Washington, Quebec, Manitoba, and British Columbia have large sources of hydroelectric power, which places them in a good position to take advantage of the demand for 'green power'.

In addition to these underlying energy interests, it was argued that 'addressing global warming now will position west coast states to become global leaders in this emerging economic sector' (Locke et al., 2003, p. 1). Jurisdictions saw economic opportunities in the shifting global discourse towards low carbon energy technologies, regardless of federal (in)action. California's initial economic analysis suggested that the state could enjoy a US\$33 billion increase in economic production by implementing the suite of policies included in AB32 (CARB, 2008).<sup>4</sup> In Arizona and New Mexico, the potential for solar power facilitated discussions about climate change policy, with the Arizona Department of Commerce (ADC, 2007) estimating that solar could grow from 6 MW of generation capacity in 2006 to over 2600 MW by 2025. Other modelling placed the potential even higher, suggesting that up to



4340 MW of solar generation capacity could be developed by 2025 (Frisvold, Patton, & Reynolds, 2009). Interestingly, the economic analysis conducted by the WCI itself was entirely aggregate. Jurisdiction-specific costs were not included or represented, but the aggregate costs savings, estimated to be between \$11 and 23 million a year depending on the degree of offsets included, were used as evidence of the economic benefits of the programme (WCI, 2008b). As explained by a bureaucrat involved in designing the WCI, arguments that stressed the long-term economic advantages of early action were used to get industry stakeholders onside. This argument may have been most crucial in securing wider involvement among western states such as Utah and Montana.

In Montana and Utah climate change was not an issue, but energy policy and economic development were. Unlike the early-adopting states, electricity was a key source of emissions, and fossil-fuel industries were well established. It is estimated that in 2005 Montana exported 40% of the electricity it produced, 65% of which came from coal (Montana, 2007). In 2005, Montana's governor argued that it needed a climate change action plan centred on coal-to-liquid fuels, wind, and biofuels, because it was an economic opportunity for the state (Schweitzer, 2005). In 2008, Utah, under Governor Huntsman, another Republican governor known for his concerns about climate change, passed a bill supporting renewable energy development with no reference to climate change, but as an effort promoting 'economic vitality' (Utah, 2008).

Because of the importance of energy and economic development to these energy-producing states, the relationship they had with their neighbours was a pull into the WCI. Montana's (2007) Climate Action plan explicitly identified state-wide economic uncertainty introduced through policies 'such as limits that California, Washington, and Oregon have implemented or discussed that limit GHG emissions for both electricity and transportation fuels' (Montana, 2007, p. 44). The First Jurisdictional Deliverer component of the WCI meant that electricity purchased outside a WCI jurisdiction would have to be covered through domestic credits, thus providing added incentives for energy exporters to join. The WCI gave these states opportunities for framing climate-related policy endeavours as economic management and opportunity. In both cases, climate policies were couched in terms of the potential economic benefits of diversifying state energy systems. Notably, although both Utah and Montana were led by Republican governors with Republican legislatures, these initial forays into climate policy were not blocked by partisan disagreements.

Between 2003 and 2008, the WCI grew to include all 11 partners and established the market's basic parameters and design features. Leaning heavily on EU ETS and RGGI experiences, and on metrics developed for the Clean Development Mechanism and the voluntary market, the WCI started to develop frameworks for offsets, market oversight, and auctioning. These rules were not released until 2010 (WCI, 2010b, 2010c, 2010d), but were crafted during this period. Although a full analysis of the involvement of specific individuals and their links to other trading systems is beyond the scope of this article, it should be noted that there was explicit recognition of the involvement of advisors from other systems, most crucially the EU ETS and RGGI (WCI, 2008b). Similarly, during this time period (and continuing to the present), a number of other stakeholders with experience in carbon trading were involved in the stakeholder processes, a situation that resonates with other multilevel governance contexts (Betsill and Bulkeley, 2006). For example, the International Emissions Trading Association (IETA, 2008), Morgan Stanley (2009) and Weyerhaeuser (2009) all contributed detailed comments about specific rules being designed at WCI level. In many cases these contributions explicitly cited experiences in other systems, such as the RGGI (e.g. J.P. Morgan, 2009). Some important

decisions taken during this period included a focus on absolute, rather than intensity-based, emissions reductions, and consideration of auctioning (as was being used in the RGGI)<sup>5</sup> to protect against the windfall profits and over-allocation experienced in the EU ETS (WCI, 2008a).

### **3.2. Key factors of coalescence**

Overall, the period between 2003 and 2008 was one of intense coalescence. Genuine concern within government leadership and from the public had placed climate change on the map, and a void of federal action left space for sub-national leadership to benefit politically from climate action. On the east coast, the RGGI was well under way, and in Europe, the EU ETS had started trading. These developments provided evidence and expertise. Support for climate change policy sub-nationally was forthcoming from leaders within both the Democratic and Republican parties, even when occasionally faced with unenthusiastic legislatures.

Growth of the WCI was fostered through the idea that jurisdictions (and industries) could create a system that could generate economic opportunities, shape US and Canadian systems, and provide safety in numbers. Early involvement in a market mechanism promised an economically and politically least-cost approach to GHG reductions. Crucially, none of the early-adopting jurisdictions was dependent on the fossil-fuel industry directly; the potential complications of including the transportation sector were delayed; and the possible impacts on electricity exports provided energy-producing states with a reason to enter the WCI.

The loose structure of the WCI may also have aided its early development. Caps and allocations were determined internally, thus allowing partners to compromise with key industries. Although this decentralization may raise a doubt about its environmental effectiveness, it probably facilitated coalescence. This resonates with the experience of the EU ETS (Ellerman et al., 2010): it is only over time that decision making there has become increasingly centralized.

President Obama was elected in November 2008 and immediately began crafting federal cap-and-trade legislation. The Canadian government had been pursuing an intensity reduction platform but indicated, after President Obama's election, that it might consider cap-and-trade (Ljunggren, 2008). These policy shifts highlighted the realistic potential of the WCI to be a stepping stone towards a North American carbon market.

## **4. The disintegration of the WCI**

### **4.1. Overview**

Despite the rapid coalescence of the WCI up to 2008, the policy landscape had shifted entirely by the middle of 2010. Oregon and Washington had rejected cap-and-trade legislation, legislators in Utah had passed a bill urging their governor to withdraw from the WCI (Utah, 2009), Montana's governor now opposed cap-and-trade, and Arizona had withdrawn from the WCI. Over the same period, the US federal cap-and-trade bill had been defeated. In early 2011, New Mexico's newly elected governor abruptly halted involvement in the WCI. Meanwhile, none of the Canadian provinces had developed cap-and-trade regulations. The WCI's future looked grim even before serious implementation had begun. What happened, and what lessons have emerged? Three factors appear crucial to this disintegration: a shift of economic considerations, a resurgence of climate change science debates, and political polarization.

## 4.2. Economic cost or opportunity?

The world economic crisis came to light during the autumn of 2008 and radically changed the context of discussion. Cap-and-trade had been presented as a policy capable of promoting economic opportunities, but increasingly it was seen as an economic cost. The governors of Oregon and Washington submitted cap-and-trade bills to their legislatures in 2009, but, despite initial interest (Washington, 2008), neither passed them (Oregon, 2009b; Washington, 2009a, 2009b). Concerns about the costs of cap-and-trade started in 2008 and culminated in efforts to withdraw these two states from the WCI in 2011. The economic costs of cap-and-trade were explicitly targeted by groups in both states. In one case, it was even claimed that it would cut Oregon's economic growth in half, and reduce output per capita by 20% (CPI, 2008).

In Washington, the economic crisis shook legislators' trust in markets generally. As the Speaker of the House Frank Chopp explained, 'with what's happened in the last year, one would wonder about the wisdom of the markets' (Cornwall, 2009, p. B1). Uneasiness about the use of the market for GHG reductions continued, and referring to 'political favouritism and accounting tricks' in the EU ETS – presumably a reference to the tax fraud concerns within the EU – the Washington legislature urged the governor to withdraw from the WCI (Washington, 2011b). This request was echoed by the Senate, where it was felt that cap-and-trade would result in 'massive increases in the price of gasoline, electricity, food, and water, further hampering an already fragile economy' (Washington, 2011a). Similarly, in Oregon, economic costs and the perceived failure of the EU ETS to achieve its reduction targets provided the basis for bills that aimed for the withdrawal of Oregon from the WCI (Oregon, 2011a, 2011b).<sup>6</sup> For these two states cap-and-trade came to be seen as an expensive and risky market mechanism, which was a powerful frame of reference after the economic crisis. Neither state pursued cap-and-trade, but both enacted a range of other climate policy mechanisms (Washington, 2008a, 2010; Oregon, 2009a, 2009b).

Economic concerns also shaped the discussion in California, which was under extreme financial constraints and experiencing unemployment levels of over 12% (BLS, 2011). In 2010, the mid-term elections included two referenda centred on containing the economic costs of cap-and-trade. Although not passed, the first referendum proposed the suspension of all climate change policy until unemployment was below 5.5% for four consecutive quarters (California Secretary of State, 2010a). This referendum was seen by some as obstructionist, considering that unemployment had been well above 5.5% since the 1990s (although it had briefly dropped to approximately 5% in 2001 and 2007). However, the dramatic increase in unemployment from 4.9% in January 2007 to 12.3% in January 2010 underlines the shift in the economic context facing Californian legislators (BLS, 2011). The second referendum proposed that new state levies and charges, including GHG-related fees, should be approved by a two-thirds super majority of voters. This proposition was passed (California Secretary of State, 2010b) but does not affect the WCI, although it may hinder future carbon pricing.

In the remaining states, economic considerations of cap-and-trade were influenced by federal debates and concerns regarding electoral interests. For example, the (Democrat) governor of Montana had championed the WCI through his (Republican) legislature, but as federal politics heated up he spoke against cap-and-trade, claiming that it would 'transfer a lot of wealth from consumers of electricity to utilities' (Chesser, 2009). Montana soon distanced itself from the WCI and, like Utah, opposed regulation of GHGs by the US Environmental Protection Agency (EPA) by

arguing that ‘the primary goal of government at the present time must be to promote economic recovery and to foster a stable and predictable business environment’ (Montana, 2011d).

The influence of the fossil-fuel industry and its distaste for GHG regulation became apparent simultaneously. Montana’s demand that the federal EPA stop regulating GHGs was based on recognition of the economic value of the fossil-fuel industry. Arguing that ‘the total economic impact of the petroleum industry in Montana is \$9 billion’ and that ‘environmental improvement is only possible in a society that generates wealth’, a joint resolution from the House and Senate meticulously listed the number of jobs provided in the coal, natural gas, and refining industries and identified the tax revenue generated through fossil-fuel production (Montana, 2011e). Such legislation made it clear that economic costs to the fossil-fuel industry would have costs to the states themselves, thus making any climate change policy action difficult. In the period from 2008 to 2011, without any shifts in the WCI itself, cap-and-trade changed from being understood as an economic opportunity to being understood as an economic liability.

### **4.3. Climate science and the rationale for markets**

In the technical and political flurry of creating cap-and-trade systems it may be forgotten that they are created for a reason. Carbon pricing is predicated on the desire to avoid climate change impacts by reducing GHGs. As Colby (2000) notes, it is much easier to develop cap-and-trade systems for environmental goods when there is widespread acceptance of the need to limit resource use.

Many of the early adopters of the WCI had long demonstrated concern about climate change, and public opinion was initially supportive of climate action. However, public qualms about climate science reached all time highs in 2009 and 2010. In 2008, it was estimated that 72% of Americans felt there was solid evidence for global warming. By 2010 this had dropped to 53%, the lowest level since 1997, and 48% of Americans felt that scientists were overstating the evidence about global warming (Newport, 2011). This social discussion about climate science had direct implications for the WCI. Just as jurisdictions may initially have been able to take advantage of public concerns about climate change, several were quickly faced with potential electoral costs as public concern shifted.

In July 2009, Utah elected a new governor who did not share his predecessor’s concern about climate change and was unconvinced that there was sufficient scientific proof to necessitate policy action (Roche, 2009). In 2010, the Utah legislature passed a resolution urging the EPA not to regulate GHGs until ‘climate data and global warming science are substantiated’ (Utah, 2010), and withdrew from cap-and-trade. This bill rooted the legislature’s mistrust of climate science on the ‘Climategate’ scandal and on the ‘concerted effort by climate change alarmists to marginalize those in the scientific community who are sceptical of global warming’ (Utah, 2010).

Similarly, Montana’s legislature was debating a bill declaring that emissions reductions should not be pursued because global warming might not exist, and, even if it did exist, it would be beneficial for Montanans (Montana, 2011a). The hearings for this, and other bills, were dominated by debates about the validity of climate science (Montana, 2011b, 2011c). A large portion of New Mexico’s hearings on cap-and-trade also revolved around the validity of climate science (Gutzler, 2011; Norton, 2010).

The power of questions about climate science to shape the attractiveness of policy options can be illustrated by comparing these states with the Canadian provinces. In contrast to the US data, 80% of Canadians in 2010 felt that there was solid evidence for climate change (Borick, Lachapelle, &

Rabe, 2011). No questions about the validity of climate science appeared in official discussions about the WCI by the Canadian provinces. The four provinces were proceeding with a variety of climate policies while cap-and-trade, as well as any other GHG regulation, was halted in Utah and Montana.

The uneasy relationship with climate science within WCI jurisdictions highlights the degree to which carbon markets rest on acceptance of their rationale. Carbon markets are first and foremost climate policy mechanisms, and are difficult to establish without agreement on the need for GHG reductions. Cap-and-trade, or any other climate policy, is an unnecessary expense at best if climate change is not occurring. The capacity for debates about climate science to erode climate policy within North America was amplified by the apparent tight association between political affiliation and views on climate science. For example, while 78% of Democrats felt that global warming was occurring and largely supported climate policy, 53% of the rapidly growing Tea Party movement did not. Similarly, during this period, Tea Party members were more likely to perceive disagreements among scientists and to have heard of 'Climategate' (Leiserowitz, Maibach, Roser-Renouf, & Hmielowski, 2011). Within Canada, 64% of Conservatives felt that global warming exists, compared to 91% of Liberals, 84% of New Democrats, and 90% of Bloc Quebecois<sup>7</sup> supporters (Borick et al., 2011). Thus, both countries demonstrate a polarization of public opinion that coincides with the relevant political ideologies about appropriate modes of governmental regulation.

Deep mistrust of climate science may be a particularly North American response to climate change. However, the vulnerability of the WCI serves as a reminder that – without widely accepted agreement about their ultimate purpose – cap-and-trade systems may be susceptible to politicized debates about scientific evidence, regulation, and other social fractures.

#### 4.4. Political polarization and political ideology

Just as wider discussions about climate science contributed to the shape of the WCI, so too did political changes. Tensions between federal and state governments, and increased polarization between Republicans and Democrats in the US, which included growing resistance towards climate policy within the Republican party, set the context for political challenges for cap-and-trade.

First, protecting state interests, in part by contributing to federal policy, had been an impetus for the WCI. However, debate shifted as federal cap-and-trade developed. The lead opponent of Montana's involvement in the WCI argued that

the process that we get directed from Washington [i.e. the federal government] is saying that global warming is bad and there is no argument for us to shoot back at them unless we do it through the legislature or through protest. These are regulations that are coming at us. (Read, 2011)

State legislation and rejection of the WCI became as much about resistance to perceived federal policy impositions, as about the WCI or climate change itself.

Second, as with climate science, differences between positions taken by Republican and Democrat voters at the federal level influenced state discussions. Republicans have consistently been less likely to accept climate science, and less concerned about climate impacts (Dunlap & McCright, 2008). Despite this, during the earlier period of coalescence (see Section 3), several Republican leaders had been supportive of climate policy. For example, former Governors Schwarzenegger, Huntsman,

and Pataki (respectively, of California, Utah, and New York) were all Republican leaders able to shepherd cap-and-trade through their legislatures. Similarly, Republican Senator John McCain had included cap-and-trade in his presidential campaign, but in 2009 aggressively denounced Obama's federal cap-and-trade plans (Lerer, 2009). McCain's shift can be seen as partially indicative of changes within the Republican Party itself. By 2009 support for the Tea Party movement, founded on the desire for free markets and extremely limited government, was growing rapidly<sup>8</sup> and contributed to a move to the right within the Republican Party (Williamson, Skocpol, & Coggin, 2011). Tea Party supporters have been fiercely opposed to federal cap-and-trade policy on two fronts. First, a majority of Tea Party supporters do not think climate change has been convincingly demonstrated by climate science. Second, cap-and-trade is perceived as an expression of 'big' government. As one Tea Party group explained, federal cap-and-trade is the 'largest tax in the history of civilization' and is 'only the beginning of the onslaught of socialism' (SLTPC, 2009). For a movement predicated on the principle of small government, any additional regulation is ideologically unacceptable. From this perspective, the growing resistance against climate policy within the Republican Party has not been just about climate change, but is a reflection of increasingly conservative ideas about the role of government and what 'sensible' policy entails. While debates about cap-and-trade may have been part of this process, the actual shift far surpasses climate policy and is a broader feature of political polarization in the US.

This movement within the Republican Party, and the increased political polarization in the US, may have undermined efforts to forge the WCI. Table 2 presents an overview of party affiliations of each jurisdiction's governor or premier and legislature<sup>9</sup> in 2007–2008 (when all jurisdictions joined the WCI) and in 2001–2011 (when all but California and Quebec had decided not to pursue cap-and-trade). Within Canada, none of the provinces had Conservative leadership when they joined the WCI, and although several provinces subsequently underwent provincial elections (which included discussions about energy policy), none underwent a change of party.

At the time of joining, most WCI state governors were Democrats. The only two exceptions were Governors Schwarzenegger and Huntsman in California and Utah, respectively, both recognized as climate policy supporters. Without knowing which other states were approached for membership in the WCI, it is difficult to know how important Democrat leadership was at the time of the coalescence of the WCI and the extent to which shifts within the Republican party may have changed support for cap-and-trade. However, the importance of party polarization and championing policy is highlighted by considering the implications of government changes.

By 2010–2011, Arizona, Utah, and New Mexico had Republican governors who did not have strong climate commitments. All these states (plus Montana) had Republican legislative majorities, and all pulled out of cap-and-trade (effectively stopping all climate policy) and crafted legislation that made future climate policy more difficult. In these cases, governors who had championed the climate were replaced, or a wider change in government took place. By contrast, the governmental leadership of Oregon and Washington remained Democrat throughout and pursued other climate change policies, focusing largely on transportation, and rejected cap-and-trade legislation.

The impact of party politics and the associated political ideology is most clearly illustrated by the case of Arizona. When the Obama administration recruited the Democrat governor of Arizona, Janet Napolitano, to become Secretary of Homeland Security, her replacement Jan Brewer was a Republican. Napolitano had championed climate policy through a Republican legislature<sup>10</sup>, but Brewer almost

**TABLE 2** Overview of state governor/premier and legislature party affiliations

| Jurisdiction   | Governance when joined  |                      | Governance when changed status,<br>or present governance if<br>status did not change |                      |
|--|-------------------------|----------------------|--|----------------------|
|  | Governor/premier        | Legislative majority | Governor/premier   | Legislative majority |
| <i>Category 1: Pulled out of cap-and-trade, pursuing other climate policy</i>    |                         |                      |  |                      |
| Oregon   | Democrat                | Democrat             | Democrat   | Democrat             |
| Washington   | Democrat                | Democrat             | Democrat   | Democrat             |
| <i>Category 2: Pulled out of cap-and-trade, stopped all other climate policy</i> |                         |                      |  |                      |
| Arizona  | Democrat <sup>a</sup>   | Republican           | Republican   | Republican           |
| New Mexico   | Democrat <sup>a</sup>   | Democrat             | Republican   | Republican           |
| Montana  | Democrat                | Democrat             | Democrat   | Republican           |
| Utah   | Republican <sup>a</sup> | Republican           | Republican   | Republican           |
| <i>Category 3: Cap-and-trade status unclear, pursuing other climate policy</i>   |                         |                      |  |                      |
| British Columbia <sup>b</sup>  | Liberal                 | Liberal              | Liberal  | Liberal              |
| Ontario <sup>b</sup>   | Liberal                 | Liberal              | Liberal  | Liberal              |
| Manitoba <sup>b</sup>  | New Democratic          | New Democratic       | New Democratic   | New Democratic       |
| <i>Category 4: Continuing with cap-and-trade, pursuing other climate policy</i>  |                         |                      |  |                      |
| California   | Republican <sup>a</sup> | Democrat             | Republican   | Democrat             |
| Quebec <sup>b</sup>  | Liberal                 | Liberal              | Liberal  | Liberal              |

Notes: <sup>a</sup>The governor of the state was widely known to be supportive of climate change policy.

<sup>b</sup>Canada has three parties at the federal and provincial levels. The Liberal party of Canada is a roughly centre-right party lying between the centre-left New Democratic and right Conservative parties. In Quebec the key provincial parties are the centre-right Liberals and the centre-left Parti Québécois. Federally, the separatist-leftist Bloc Québécois is often the main party representing Quebec, although all three other federal parties have had members from Quebec.

immediately withdrew from cap-and-trade based on the argument that state industry was overburdened with regulations (Brewer, 2010a, 2010b). The Arizona legislature then went further and passed a resolution forbidding any GHG regulation without ‘express legislative authorization’ (Arizona, 2010). This bill effectively minimized the chance that a future Democrat governor, or climate-oriented Republican, could actively pursue GHG regulation if faced with a Republican legislature resistant to climate policy.

The importance of political polarization is also apparent in New Mexico, where a two-year hearing process was held for cap-and-trade regulations. These hearings included extensive discussions of climate mitigation economics (Rose, Wei, & Miller, 2010) and climate science (Norton, 2010; Gutzler, 2011). A Republican governor was elected on the same day that the Environmental Improvement Board (EIB) approved cap-and-trade regulations (New Mexico, 2010). In her second day in office the new Governor fired all seven members of the board, stating that they were ‘more interested in advancing political ideology than implementing commonsense policies that balance economic growth with responsible stewardship’ (Martinez, 2011). Again, cap-and-trade was framed as excessive

regulation, doomed to strangle economic growth. Two senate bills – SB91 and SB190 – that attempted to reverse cap-and-trade were subsequently advanced (New Mexico, 2011a, 2011b) but were stalled by party line voting in the Democrat-dominated Judiciary Review Committee<sup>11</sup> (Nikolewski, 2011). In August 2011, the governor’s newly appointed EIB decided to start a hearing process to repeal the regulations (EIB, 2011).

#### **4.5. Key themes of disintegration**

In July 2010, the federal cap-and-trade bill failed to generate sufficient support in the US Senate, and the Canadian government reiterated its unwillingness to pursue climate policy without the US. Arguments supporting involvement in the WCI as a means of influencing federal policy lost their power. By January 2011, California was the sole remaining state, and, although British Columbia, Ontario, and Quebec had enabling legislation for cap-and-trade, none had regulations. Manitoba was officially a partner but did not even release a statement of interest for public comment until 2011 (Manitoba, 2011). Cap-and-trade was increasingly seen as an economically costly policy involving risky markets, and in many jurisdictions was mired in partisan debates about government regulation and climate science.

Three large external shifts appear crucial in this disintegration: the economic crisis and increased emphasis on state-specific economic costs; increasing climate scepticism, which changed electoral politics; and political polarization and a shift within the Republican party. Within these broad shifts several sub-themes are also notable. First, the role of policy champions is highlighted by the fate of climate policy in jurisdictions that lost key leaders. This is most clearly demonstrated by the abrupt change in policy direction triggered by the loss of champions in Arizona, Utah, and New Mexico. Second, the dynamics between governance levels played a crucial role in shaping the trajectory of the WCI. While movement towards federal systems provided initial energy to the alliance, federal polarization spilled into state debates. The heightened tension within states is reminiscent of the squabbles between the provincial and federal levels that Rabe (2007) has argued contributed to the lack of progress within Canada. Finally, it is possible that the momentum of collective action is important. Initial movements towards cap-and-trade were buoyed by parallel developments in the RGGI and EU ETS. As these systems were criticized for their low prices, over-allocation, and occasional administrative problems, and as the WCI itself started to disintegrate, it may have been more difficult to ‘sell’ the WCI or cap-and-trade generally as a successful example of collective action.

### **5. Maintenance of the WCI**

By the beginning of 2011, only California and the four Canadian provinces remained. Two new challenges emerged as this sub-group moved forward. First, more than half of the proposed market’s emissions came from California, and the unbalanced structure started to create fractures. California had always been a leader within the WCI, and released its draft regulations for comment in October 2010. British Columbia, Ontario, and Quebec all declared their intention to present regulations in early 2011, but none emerged. It was becoming apparent that with such a large portion of the market, California’s decisions made it difficult for the remaining partners to design regulations that reflected their economic and political needs. For example, stakeholders in British Columbia were concerned that California’s decision to



---

impose a price floor of \$10 a ton would constrain the domestic options available (BC, 2010). Similarly, in an open letter, two respected provincial policy experts argued that involvement in the cap-and-trade imposed unnecessary risks for British Columbia specifically. Among other concerns, it was noted that

given the sorry state of the California industry, the cap-and-trade system will involve granting of free permits to powerful lobbies. This will bring uncertainty in the price of carbon in B.C. and undermine investments in greening our economy. (Jaccard and Dowlatabadi, 2011)

Internal uncertainty was revealed when government officials from British Columbia stated that California had ‘jumped the gun on us a little bit’ by releasing a 2011 status update that described the Canadian province as committed to cap-and-trade. As the British Columbian Environment Minister Terry Lake clarified, cap-and-trade ‘is not a simple subject to address, and we have to do it in a way that is sensitive to our competitive situation vis-a-vis other jurisdictions and industry’ (McCarthy, 2011).

Meanwhile, Ontario and Quebec reiterated their determination to pursue cap-and-trade only in cooperation with each other. The two provinces share many industries and feel exposed to competitive pressures from their non-WCI trading partners around the great lakes. Ontario was gearing up for a provincial election in late 2011 amidst public debate about its energy strategy and an expensive feed-in tariff (CBC, 2011), thus making the WCI a politically sensitive issue. In light of political uncertainty and concerns about market control and competitiveness, both provinces have continually delayed release of their regulations. Quebec released its draft regulations in autumn 2011 (Quebec, 2011), almost a year after California, and declared it would start trading by 2013. Ontario has not released any, although it has not withdrawn (McCarthy, 2011). For smaller jurisdictions the lack of balance in the market created a risk of delegating internal policy decision making to California, making their relationship with the WCI less straightforward than if all 11 jurisdictions had remained involved.

A second challenge emerged in February 2011. During the referenda of 2010, Californian environmental justice communities had supported state GHG reduction policy, but had done so in the belief that it would reduce industrial pollutants locally. Citing the failure of previous cap-and-trade regulations to result in local pollutant reductions through the ability of industries to trade with areas in which reductions could be less costly, the environmental justice community sought an injunction against the state’s cap-and-trade regulations (Sweet, 2011). The court made a tentative ruling that the California Air Resources Board (CARB) had failed to adequately assess all of the alternatives to a cap-and-trade policy (Hodges, 2011; Superior Court of California, 2011). Although the Supreme Court reversed the judgement in September (Supreme Court of California, 2011), and the CARB continued policy development throughout, the case brought attention to the political importance of local co-benefits and alternative policy goals.

By 2011, cap-and-trade was off the table in most states, although all nominally remained part of the WCI. Despite the Utah legislature’s position on climate change policy and science, the governor did not entirely withdraw from the WCI, arguing that ‘Utah is better served by having a seat at the table than by removing itself from the conversation altogether’ (Fahys, 2010a, 2010b). Arizona acted similarly because it had no intention of pursuing cap-and-trade but still wanted to develop solar and nuclear power (Brewer, 2010b). The WCI had always included a range of ‘complementary policies’ designed to augment cap-and-trade. Following a well-established trend in the US (Selin & VanDeveer, 2007; Rabe, 2008)

attention increasingly focused on these policies – now referred to as a ‘portfolio approach’ – which are more easily framed as energy efficiency or ‘green’ economic opportunities (WCI, 2011a, 2011b). The diversity of policies encompassed within such a portfolio approach allowed jurisdictions to stay nominally involved in the WCI despite rejecting cap-and-trade. The extent to which this connection among jurisdictions might contribute to broader climate policy is unclear.

It is important to note what the WCI accomplished during this period. Institutional and administrative capacity building can enable jurisdictions to more nimbly take advantage of policy windows when they emerge (Rabe, 2004) and can provide information about the costs and opportunities of climate action (Ellerman et al., 2010). Quebec and California have functional cap-and-trade regulations and auction systems, and work is under way to facilitate linkage between them. Owing to the size of California, these two partners represent roughly half the emissions that were initially predicted to be covered under the WCI. Similarly, the WCI has continued to develop offset protocols, an integrated electronic trading and tracking system, and harmonized reporting requirements (WCI, 2012). A non-profit corporation has been established – Western Climate Initiative Inc. – to continue developing the infrastructure required for emissions tracking, monitoring, and trading (WCI, 2011a, 2011b). All of these tasks are significant, and the resulting platforms are designed to facilitate linkage should other jurisdictions wish to join or rejoin. It has been argued by Tuerk, Mehling, Flachslund, and Sterk (2009) that linkage across systems is greatly facilitated when core elements are shared, and the WCI was designed with this explicitly in mind. As a multi-jurisdictional coalition the WCI cannot be seen to be a complete success, but neither should it be seen as a failure. The WCI may yet prove to be an important nucleus for future cap-and-trade and other climate policy approaches.

## **6. Discussion and conclusions**

It is widely recognized that implementing cap-and-trade systems is politically challenging, despite their allure in economic theory (see Colby, 2000; Heinmiller, 2007; Rabe, 2008; Convery, 2009; Grubb, 2009; Pope & Owen, 2009; Ellerman et al., 2010; Skjaereth & Wettestad, 2010; Zhang & Wei, 2010; Betsill & Hoffmann, 2011). Comparing the trajectory of cap-and-trade across jurisdictions in each of the three periods of development of the WCI provides key insights about the strategies and difficulties of designing bottom-up decentralized carbon markets.

Several key themes run throughout scholarship on sub-national climate policy: policy leadership and learning, electoral politics, economic interests, and multi-level governance, all of which potentially facilitate policy development. Many of these themes appeared repeatedly in the evolution of the Western Climate Initiative (WCI), but played out differently depending on economic outlook, attitudes towards climate science, and political polarization.

During the coalescence of the WCI, climate change science was broadly accepted, but federal governments were not responding to public concerns. This left political benefits to be reaped by sub-national governments, and many had strong political champions. Long-term interests for jurisdictions were appealed to as it appeared that federal climate change regulation was inevitable. For jurisdictions with solar or biofuel potential, involvement in the WCI on a ‘green-growth’ platform linked to international changes was politically feasible. None of the early-adopter jurisdictions had strong fossil-fuel sectors, and transportation was typically the largest emissions source. Transportation was not to be

included in the WCI until 2015, which allowed a lag time before difficult decisions had to be made. Rules that included electricity imports in emissions allocations provided a pull for jurisdictions not otherwise interested in climate policy. Overall, cap-and-trade was framed as a long-term economic opportunity with few immediate political costs.

From a multi-level governance perspective, lessons and expertise from cap-and-trade systems elsewhere were leveraged in the design process. These other systems also contributed to a sense of momentum, highlighting the benefits of collective action and helping to address competitiveness concerns. The WCI's structure also gave jurisdictions a potential avenue to influence federal regulations. Not all jurisdictions were initially climate policy leaders, but the benefits of involvement in a state-centric market approach with ample room for industry stakeholder engagement proved sufficient to secure their participation. To some extent cap-and-trade could be represented as a least-cost industry-friendly approach to inevitable regulation.

The context shifted with the onset of the economic crisis, although the same themes have remained important. Concerns regarding unemployment and government debt fed worries about costs and deepened ideological stances on government regulation. Policy champions in WCI states were either replaced or bound by legislatures unwilling to take economic and political risks in an uneasy time. With the growth of the Tea Party movement, ideological shifts within the Republican Party, and entrenchment of divisions between Republicans and Democrats, cap-and-trade came to be viewed through increasingly polarized political lenses. Federal tension spilled into state debates and fueled rifts internally. In New Mexico, for example, politically charged debates resulted in the replacement of agency professionals who had gained substantial policy expertise. Oregon and Washington were less affected by political shifts, but the 2008 market failure and perception that the EU Emissions Trading Scheme (EU ETS) had failed to deliver the degree of transformation it promised, fed into questions about the desirability of market mechanisms for addressing climate change.

Simultaneously, there was an upwelling of public scepticism about climate science. Cap-and-trade in some states became perceived as an expensive manifestation of government (over)regulation of a non-problem. The power of these ideological framings is partly illuminated by comparison between the states and provinces. The provinces have been slow to release regulations due to concerns about economic competitiveness, but they were not rocked by the intensity of the battles raging in the US and none withdrew from cap-and-trade.

Finally, only California and Quebec are ready to initiate trading immediately, and the remaining provinces have neither committed nor retreated. This maintenance stage has seen two challenges emerge, which stem from the WCI's structure. Provincial concerns about their ability to protect their own interests highlight challenges caused by the unbalanced structure of the alliance, and the Californian court case accentuated the political difficulties of regulating something as multi-dimensional as GHG emissions. These debates resonate with the negotiation obstacles identified in other studies of cap-and-trade policies (Colby, 2000; Heinmiller, 2007), and suggest that further development of the WCI will be no smoother.

This analysis has suggested several key observations relevant to other bottom-up cap-and-trade attempts. First, regional or sub-national climate policy is a key aspect of North American policy, which presents multi-level governance challenges and opportunities. There is huge political and economic diversity across jurisdictions within Canada and the US. Within the WCI, jurisdictions had fundamentally different electoral politics and energy policy challenges and opportunities,

which resulted in multiple rationales both for involvement and for withdrawal. Importantly, the interactions among them and with their respective federal states shaped their internal climate policies and that of both federal states. For example, at times, federal involvement helped the development of bottom-up policy development, but this shifted as federal debate intensified. Similarly, jurisdictions (such as the energy exporting jurisdictions) were sensitive to shifts in other jurisdictions and in the international discourse of low carbon energy demand.

Moreover, no cap-and-trade policy attempts can be considered in isolation. Experiences from the federal cap-and-trade process, the RGGI, and the EU ETS contributed to debates about the WCI. In California, environmental justice communities opposed cap-and-trade based on evidence that other cap-and-trade systems had not decreased local pollutants. Simultaneously, a number of non-state actors used previous experiences to ground their contributions to policy discussions. Perceptions about the strengths and weaknesses in one system will be brought into debates about the feasibility, desirability, and technical design elements of every other system.

Second, the dynamics of collective action are crucial. Many of the early-adopting states had strong policy champions, and cap-and-trade did not pose immediate economic or political costs. None of the early adopters had dominating fossil-fuel industries, public sentiment was sympathetic to climate policy, and their major source of emissions (transportation) was not included immediately.

Additional jurisdictions were pulled into the WCI through rules about energy importing, long-term hopes for economic opportunity, and impending regulation from above. The WCI gave jurisdictions and industries an avenue by which to potentially influence federal climate policy: if cap-and-trade was inevitable, being involved in its design was beneficial. This bottom-up system had a pull from above while the US federal government sought federal cap-and-trade. Similarly, the economic opportunities stemmed from the recognition of green growth opportunities emerging from a changing international scene. Sub-national jurisdictions are not isolated from broader international shifts, although they may not face direct obligations.

Collective action in a bottom-up context depends on believability and momentum. Seeing the WCI as a precursor to a larger system may have allowed jurisdictions sufficient leverage to manage industrial lobbying. As it became increasingly apparent that a federal system was not forthcoming, support for the WCI eroded in jurisdictions not already committed to climate policy. Attention also needs to be paid to the structure of bottom-up processes. If there is insufficient balance among the stakeholders, there will be disincentives for smaller players to join.

Third, the underlying economic and political discourses and conditions are central in defining, and redefining, the opportunities and costs of climate change policy generally, and cap-and-trade specifically. Larger political debates hindered individual jurisdictions' attempts to join or implement cap-and-trade regulations. In this case, the extent of political and ideological polarization went well beyond the scope of debates specific to climate change policy. Disagreement about the appropriate role for regulation, or of government generally, fuelled climate policy U-turns in many states.

Similarly, the economic crisis and the resulting uncertainty contributed to a re-evaluation and reframing of cap-and-trade from an economic opportunity to an economic risk (including the risks of dependence on markets themselves). This shift in framing draws attention to the extent to which broader discussions can influence the political feasibility of cap-and-trade attempts.

After the economic crisis, the focus of dissent in many jurisdictions was the immediate economic costs of cap-and-trade. However, the modelling conducted by the WCI focused on aggregate savings.

Individual jurisdictions need to demonstrate internal cost savings and benefits, not aggregate regional ones, and this is likely to be particularly important during periods of economic upheaval. The economic crisis may also have contributed to the shift in focus from aggregate benefits to individual, immediate needs and losses.

Regardless of aggregate impacts, the location, distribution, and characteristics of costs and benefits have important implications for political feasibility. The court case in California drew attention to the importance of co-benefits of emission reductions. Similarly, concerns about jurisdiction-specific costs emerged in all jurisdictions.

Finally, broad agreement on the policy goals is essential. Carbon markets are forms of climate change policy. Without broad agreement on the need for climate policy generally, cap-and-trade or other market-based mechanisms will be much harder to implement. As public climate scepticism has grown, it has become increasingly difficult for jurisdictions to pursue cap-and-trade or any other climate policy.

At present, the future of the WCI is uncertain. California and Quebec intend to continue, and the remaining provinces have not ruled out involvement. Administratively, the WCI has created a strong basis for linkage between California and Quebec, and this platform could also be used for other jurisdictions that wish to join or rejoin the cap-and-trade system. In addition, the system covers over half the total emissions initially included due to the size of California. These are important accomplishments. However, large challenges remain and it is unclear what exactly will emerge from the WCI. The remaining US jurisdictions currently appear less willing than ever to become involved in cap-and-trade and, with the exception of Quebec, the provinces are, at the very least, slow to commit. Simultaneously, a shifting focus to a portfolio approach has allowed even those jurisdictions not interested in cap-and-trade to maintain an uneasy association. As Convery (2009) notes, previous policy failures made way for the successful implementation of the EU ETS. It is entirely possible that the incomplete implementation of the cap-and-trade portion of the WCI will make room for some other climate policy approach built on these jurisdictional relationships.

## Acknowledgements

The author thanks Michael Grubb, Hadi Dowlatabadi, the *Climate Policy* editors, the anonymous reviewers for their helpful comments regarding this manuscript, and all of the people within the jurisdictions involved who shared information about and provided insights into the policy-making process. Financial support for this work came from the Social Science and Humanities Research Council of Canada, and the Pacific Institute for Climate Solutions.

## Notes

1. While the RGGI initially included the states of Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont, Maryland and Rhode Island had joined by 2007. The state of New Jersey withdrew in 2011 (New Jersey, 2011).
2. Canada formally withdrew from the Kyoto Protocol in 2011.
3. For instance, California was already heavily engaged in changing fuel efficiency standards as part of AB32, and British Columbia had already covered transportation under its carbon tax.

4. The CARB (2008) analysis covered all policies encapsulated by AB32, of which cap-and-trade was just one.
5. Thanks to an anonymous reviewer for drawing attention to RGGI's early decision to use auctioning to protect against windfall profits in the EU ETS.
6. These bills were still in committee when the house adjourned, leaving Oregon's WCI status unclear. It should be noted that despite the fact that the Oregon legislature has used the putative 'failure' of the EU ETS as a reason to halt the internal development of cap-and-trade, the EU ETS should not necessarily be considered a failure: although low prices have hindered its ability to incentivize investment in low carbon energy (Grubb, 2012), emissions have stayed within the EU ETS cap and it has successfully created the largest carbon market in the world (Ellerman et al., 2010).
7. The Bloc Québécois Party is the only federal party based solely in one province, i.e. Quebec. All members of the public who affiliate themselves with the Bloc Québécois will be in or from this province.
8. By 2010, polls suggested that about 18% of US voters supported the Tea Party (Zernike & Thee-Brenan, 2010).
9. This includes both Houses, where there is a bicameral legislature. There were no cases in which one party had a majority in one of the Houses while the other party had a majority in the other House. All provincial legislatures in Canada are unicameral.
10. Napolitano went on to declare climate change a national security threat under the Department of Homeland Security (Howell, 2010).
11. The 2011 New Mexico Senate had a Republican majority. However, the Judiciary Review Committee had a Democrat majority and it was in this that party line voting defeated these bills.

## References

- ABC News, Washington Post & Stanford University (2007). Concern soars about global warming as world's top environmental threat, Public Opinion Poll. Retrieved from <http://abcnews.go.com/images/US/1035a1Environment.pdf>.
- Arizona (2006). *Final Arizona Greenhouse Gas Inventory and Reference Case Projections 1990–2020*. Arizona Climate Change Advisory Group, Phoenix, AZ.
- Arizona (2010). *House Bill 2442*. Retrieved from <http://www.azleg.gov/legtext/49leg/2r/bills/hb2442h.pdf>.
- Arizona Department of Commerce (2007). *Arizona Solar Electric Roadmap Study Full Report*. Navigant Consulting for the Arizona Department of Commerce. Retrieved from <http://ebookbrowse.com/az-solar-electric-roadmap-study-full-report-pdf-d345745802>.
- Aulisi, A., Larsen, J., Pershing, J., & Posner, P. (2007). *Climate Policy in the State Laboratory: How States Influence Federal Regulation and the Implications for Climate Change Policy in the United States*. World Resources Institute, Washington, DC. Retrieved from [http://pdf.wri.org/climate\\_policy\\_in\\_the\\_state\\_laboratory.pdf](http://pdf.wri.org/climate_policy_in_the_state_laboratory.pdf).
- Betsill, M., & Hoffmann, M. (2011). The contours of 'cap-and-trade': the evolution of emissions trading systems for greenhouse gases. *Review of Policy Research*, 28(1), 83–106.
- Betsill, M., & Bulkeley, H. (2006). Cities and the multilevel governance of global climate change. *Global Governance*, 12(2), 141–159.
- Borick, C., Lachapelle, E., & Rabe, B. (2011). *Climate Compared: Public Opinion on Climate Change in the United States and Canada*. The Center for Local, State and Urban Policy of the Gerald Ford School of Public Policy at the University of Michigan, Ann Arbor, MI/Muhlenberg College Institute of Public Opinion, Allentown, PA.
- Brechin, S. (2003). Comparative public opinion and knowledge on global climatic change and the Kyoto Protocol: The US versus the world?. *International Journal of Sociology and Social Policy* 23(10), 106–134.
- Brewer, J. (2010a). Address by Governor Jan Brewer. *Business Summit of the West: Western Business Roundtable*, Phoenix, Arizona, 10 January.
- Brewer, J. (2010b). *Executive Order 2010–06: Governor's Policy on Climate Change*. Phoenix, Arizona.

- British Columbia (2008). *Press Release: B.C. Welcomes Ontario to Western Climate Initiative*, Office of the Premier, Ministry of the Environment. Retrieved from [http://www2.news.gov.bc.ca/news\\_releases\\_2005-2009/2008OTP0183-001117.htm](http://www2.news.gov.bc.ca/news_releases_2005-2009/2008OTP0183-001117.htm).
- British Columbia (2010). *British Columbia Emission Trading Regulation Stakeholder Meeting*, Vancouver, BC, November 2010.
- Bureau of Labor Statistics (2011). *California Statewide Unemployment Rate – Seasonally Adjusted 2001–2011*, Series ID: LASST06000003. Retrieved from <http://data.bls.gov/timeseries/LASST06000003>.
- California (2010). *Trends in California Greenhouse Gas Emissions for 2000 to 2008*. California Air Resources Board, Sacramento, California.
- California Air Resources Board (2008). *Climate Change Scoping Plan: A Framework for Change*. California Air Resources Board for the State of California, Sacramento, California. Retrieved from [www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm](http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm).
- California Energy Commission (2009). *2008 Net System Power Report*, State of California Energy Commission. Retrieved from <http://www.energy.ca.gov/2009publications/CEC-200-2009-010/CEC-200-2009-010-CMF.PDF>.
- California Secretary of State (2010a). *Proposition 23*, Sacramento, California.
- California Secretary of State (2010b). *Proposition 26*, Sacramento, California.
- Canada (2011). *National Inventory Report: Greenhouse Gas Sources and Sinks in Canada*, Environment Canada, Gatineau, QC.
- Cascade Policy Institute (2008). *Oregon Greenhouse Gas Reduction Policies: The Economic and Fiscal Impact Challenges*, Cascade Policy Institute, Portland, OR.
- CBC News (2011). Vote compass: energy – the parties’ positions – Ontario votes 2011. *CBC News*, 29 September. Retrieved from <http://www.cbc.ca/news/canada/ontariovotes2011/story/2011/09/27/on-vote-compass-energy.html>.
- Cement Association of Canada (2008). *Canadian Cement Industry Submission in Response to: WCI Draft Design Recommendations on Elements of the Cap-and-Trade Program*, Ottawa, ON. Retrieved from [www.westernclimateinitiative.org/draft-design-recommendation-comments](http://www.westernclimateinitiative.org/draft-design-recommendation-comments).
- Center for Climate Strategies (2006). *New Mexico Greenhouse Gas Inventory and Reference Case Projections, 1990–2020*. Washington, DC.
- Center for Climate Strategies (2007a). *Montana Greenhouse Gas Inventory and Reference Case Projections 1990–2020*, Washington, DC.
- Center for Climate Strategies (2007b). *Final Utah Greenhouse Gas Inventory and Reference Case Projections, 1990–2020*, Washington, DC.
- Chesser, P. (2009). *Montana Governor Changes Position on Cap-and-Trade*. Heartland Institute, Chicago, IL. Retrieved from <http://news.heartland.org/newspaper-article/2009/10/01/montana-governor-changes-position-cap-and-trade>.
- Chevron (2008). *Chevron Submission to WCI Draft Design Recommendations*. Retrieved from [www.westernclimateinitiative.org/draft-design-recommendation-comments](http://www.westernclimateinitiative.org/draft-design-recommendation-comments).
- Colby, B. (2000). Cap-and-trade policy challenges: a tale of three markets. *Land Economics*, 76(4), 638–658.
- Convery, F. J. (2009). Origins and development of the EU ETS. *Environmental and Resource Economics*, 43, 391–412.
- Cornwall, W. (2009). Lawmakers thwart Gregoire’s cap-and-trade plan on climate. *Seattle Times*, 16 March.
- Dunlap, R. E., & McCright, A. M. (2008). A widening gap republican and democratic views on climate change. *Environment*, 50(5), 26–35.
- Ellerman, A. D., Convery, F. J., & de Perthuis, C. (2010). *Pricing Carbon*. Cambridge, UK: Cambridge University Press.
- Ely, S. (2010). Direct Testimony of Sandra Ely in the Matter of Proposed Regulation 20.2.350 NMAC – Greenhouse Gas Cap-and-Trade Provisions, Santa Fe, NM.
- EIB (2011). Notice of Public Hearing to Consider Proposed Repeal of 20.2.300, – 301 and – 350 NMAC, New Mexico Environmental Improvement Board, Santa Fe, NM.
- Fahys, J. (2010a). Utah sticking with climate pact but not its cap-and-trade plan. *Salt Lake Tribune*, 21 April.

- Fahys, J. (2010b). Cap-and-trade? No. Pact? Yes. *Salt Lake Tribune*, 22 April.
- Flachsland, C., Marschinski, R., & Edenhofer, O. (2009). To link or not to link: benefits and disadvantages of linking cap-and-trade systems. *Climate Policy*, 9(4), 358–372.
- Frisvold, G., Patton, W., & Reynolds, S. (2009). *Arizona Solar Energy and Economics Outlook*, Prepared for Arizona Solar Energy and Economics Summit, Arizona Research Institute for Solar Energy, Tucson, Arizona.
- Gregoire, C., Kulongoski, T., Schwarzenegger, A., Napolitano, J., & Richardson, B. (2007). Western regional climate action initiative. *Western Climate Initiative*, 26 February.
- Grubb, M. (2009). *Ten (Plus One) Insights from the EU Emissions Trading Scheme*. Climate Strategies, Cambridge, UK.
- Grubb, M. (2012). *Strengthening the EU ETS: Creating a Stable Platform for EU Energy Sector Investment*, Climate Strategies, Cambridge, UK.
- Gutzler, D. (2011). Rebuttal Testimony of David S. Gutzler before the State of New Mexico Environmental Improvement Board in the Matter of Proposed New Regulation 20.2.350 NMAC – Greenhouse Gas Cap-and-trade Provisions.
- Harrison, K. (1996). *Passing the Buck: Federalism and Canadian Environmental Policy*. Vancouver, BC: UBC Press.
- Harrison, K. (2007). The road not taken: climate change policy in Canada and the United States. *Global Environmental Politics*, 7(4), 92–117.
- Heinmiller, T. (2007). The politics of ‘cap-and-trade’ policies. *Natural Resources Journal*, 47, 446–467.
- Hodges, W. (2011). California Court Issues Tentative Ruling Enjoining AB32 Implementation. Retrieved from <http://www.cleantechlawblog.com/2011/02/articles/global-climate-change/california-court-issues-tentative-ruling-enjoining-ab-32-implementation/>.
- Howell, B. (2010). Napolitano says DHS to begin battling climate change as homeland security issue. *CNS News*, 17 December. Retrieved from <http://cnsnews.com/news/article/napolitano-says-dhs-begin-battling-climate-change-homeland-security-issue>.
- IETA (2008). Comments of the International Emissions Trading Association (IETA) on the July 23, 2008, Western Climate Initiative (WCI) Draft Design of the Regional Cap-and-Trade Program, International Emissions Trading Association.
- Jaccard, M., & Dowlatabadi, H. (2011). Six reasons to delay joining California’s cap-and-trade program. *Vancouver Sun*, 9 June. Retrieved from <http://www.vancouver.sun.com/technology/reasons+delay+joining+California+trade+program/4917275/story.html#ixzz1ZvcRc6ds>.
- J.P. Morgan (2009). *JP Morgan Response to Market Committee Questions*. Retrieved from <http://www.westernclimateinitiative.org/public-comments/comment/361>.
- Lee, B. (2006). Huntsman creates a climate panel. *Deseret News*, 26 August, Salt Lake City.
- Leiserowitz, A., Maibach, E., Roser-Renouf, C., & Hmielowski, J. (2011). *Politics & Global Warming: Democrats, Republicans, Independents, and the Tea Party*. New Haven, CT: Yale Project on Climate Change Communication. Yale University and George Mason University. Retrieved from <http://environment.yale.edu/climate/files/PoliticsGlobalWarming2011.pdf>.
- Lerer, L. (2009). John McCain slams ‘horrendous’ climate bill. *Politico*. Retrieved from <http://www.politico.com/news/stories/1109/29747.html>.
- Ljunggren, D. (2008). Canada wants North America cap-and-trade system. Reuters, November 19. Retrieved from <http://www.reuters.com/article/2008/11/19/us-politics-environment-idUSTRE4AI70120081119>.
- Locke, G., Davis, G., & Kulongoski, T. (2003). *Statement of the Governors of California, Oregon and Washington on Regional Action to Address Global Warming*. Washington, California, Oregon: Offices of the Governors.
- Lutsey, N., & Sperling, D. (2008). America’s bottom-up climate change mitigation policy. *Energy Policy*, 36(2), 673–685.
- McCarthy, S. (2011). B.C., Ontario hinder California green plan. *Globe and Mail*, 12 April, Toronto, Canada.
- Manitoba (2011). *Public Consultation on a Proposed Cap-and-Trade System for Manitoba*. Government of Manitoba, Winnipeg, Manitoba.



- Martinez, S. (2011). *Press Release: Governor Martinez Terminates Environmental Improvement Board Members*, January 4, Office of the Governor, State of New Mexico.
- Mining Association of British Columbia (2008). *B.C. mining and smelting industry's response to Western Climate Initiative's July 23, 2008, Draft Design of the Regional Cap-and-trade Program*, Vancouver, BC. Retrieved from <http://www.westernclimateinitiative.org/draft-design-recommendation-comments>.
- Montana Climate Change Advisory Committee (2007). *Montana Climate Change Action Plan: Final Report of the Governor's Climate Change Advisory Committee*, Helena, Montana.
- Montana Legislature (2011a). *House Bill 549*.
- Montana Legislature (2011b). *Hearing for Montana House Joint Resolution N.18*.
- Montana Legislature (2011c). *Hearing for Montana House Bill 549*.
- Montana Legislature (2011d). *House Joint Resolution No. 18: A Joint Resolution of the Senate and the House of Representatives of the State of Montana Urging Montana's Governor to Withdraw Montana from the Western Climate Initiative*.
- Montana Legislature (2011e). *A Joint Resolution of the Senate and the House of Representatives of the State of Montana Opposing Efforts by the Environmental Protection Agency to Use Existing Federal Laws to Regulate Greenhouse Gas Emissions*.
- Morgan Stanley (2009). *Response to Market Committee Questions Submitted by Morgan Stanley Capital Group*. Retrieved from <http://www.westernclimateinitiative.org/draft-design-recommendation-comments>.
- Napolitano, J., & Richardson, B. (2006). *Southwest Climate Change Joint Governors' Initiative*, State of Arizona, State of New Mexico.
- New Jersey (2011). *Notice of Withdrawal of Agreement to the RGGI Memorandum of Understanding*.
- New Mexico (2010). *Title 20 Environmental Protection, Chapter 2 Air Quality (Statewide) Part 350 Greenhouse Gas Cap-and-Trade Provisions 20.2.350.1 NMAC*.
- New Mexico Senate (2011a). *Senate Bill 190*.
- New Mexico Senate (2011b). *Senate Bill 91*.
- Newport, F. (2011). *Americans' global warming concerns continue to drop*. Gallup. Retrieved from <http://www.gallup.com/poll/126560/americans-global-warming-concerns-continue-drop.aspx>.
- Nikolewski, R. (2011). *Analysis: Attempts to kill cap-and-trade in NM not dead yet*. *Capitol Report New Mexico*, 8 February. Retrieved from <http://www.capitolreportnewmexico.com/?p=3207>.
- Nisbet, M.C., & Myers, T. (2007). *The polls trends: Twenty years of public opinion about global warming*. *Public Opinion Quarterly*, 71(3), 444–470.
- Norton, J. (2010). *Rebuttal Testimony of Jim Norton Before the State of New Mexico Environmental Improvement Board in the Matter of Proposed New Regulation 20.2.350 NMAC – Greenhouse Gas Cap-and-trade Provisions*. New Mexico Environmental Improvement Board, Santa Fe, NM.
- Nowakowski, S. (2008). *An analysis of climate change policy issues in Montana: A report to the 61st Montana Legislature*, Environmental Quality Council, Helena, MN.
- Ontario-Quebec (2008). *Memorandum of understanding between the Government of Ontario and the Government of Quebec: A Provincial – Territorial Cap-and-Trade Initiative*, 2 June.
- Oregon State (1990). *Oregon Task Force on Global Warming: Report to the Governor and Legislature*, Oregon Department of Energy, Salem, Oregon.
- Oregon State (2004). *Oregon Task Force on Global Warming: Report to the Governor and Legislature*, Governor's Advisory Group on Global Warming, Salem, Oregon.
- Oregon State (2009a). *House Bill 2186*.
- Oregon State (2009b). *Senate Bill 80*.
- Oregon State (2011a). *Senate Bill 585*.
- Oregon State (2011b). *House Resolution 9*.
- Pataki, G. (2006). *'Governor Pataki Meets with California Governor Schwarzenegger to Discuss Collaborative Efforts to Combat Global Warming'*. Retrieved from <http://www.votesmart.org/public-statement/224505/>

- governor-pataki-meets-with-california-governor-schwarzenegger-to-discuss-collaborative-efforts-to-combat-global-warming#.
- Pope, J., & Owen, A. D. (2009). Emission trading schemes: potential revenue effects, compliance costs and overall tax policy issues. *Energy Policy*, 37, 4595–4603.
- Quebec (2011). *Projet de règlement: Loi sur la qualité de l'environnement: Système de plafonnement et d'échange de droits d'émission*.
- Rabe, B. G. (2004). *Statehouse and Greenhouse: The Emerging Politics of American Climate Change Policy*. Washington, DC: Brookings Institution Press.
- Rabe, B. G. (2007). Beyond Kyoto: Climate change policy in multilevel governance systems. *Governance*, 20(3), 423–444.
- Rabe, B. G. (2008). States on steroids: the intergovernmental odyssey of American climate policy. *Review of Policy Research*, 25(2), 105–128.
- Read, J. (2011). *Hearing for House Bill 549*.
- RGGI (2005). *Regional Greenhouse Gas Initiative: Memorandum of Understanding*, Regional Greenhouse Gas Initiative.
- Roche, L. (2009). Herbert challenges reality of global climate change. *Deseret News*, 16 June.
- Rose, A., Wei, D., & Miller, S. (2010). *Macroeconomic Impacts of the New Mexico Cap-and-Trade Program on the State's Economy: a REMI Analysis*. Report for the New Mexico Environment Department, Santa Fe, NM.
- SLTPC (2009). Tell Congress 'NO!' on Cap-and-trade, June, 25, Saint Louis Tea Party Coalition. Retrieved from <http://stlouisteaparty.com/2009/06/25/tell-congress-no-on-cap-and-trade/>, Last accessed December 2010.
- Schweitzer, B. (2005). Letter to the Department of Environmental Quality, 13 December.
- Selin, H., & VanDeveer, S. D. (2007). Political science and prediction: what's next for U.S. climate change policy? *Review of Policy Research*, 24(1), 1–27.
- Skjaereth, J., & Wettestad, J. (2007). *EU emissions Trading: Initiation, Decision-Making and Implementation*. Burlington, VT: Ashgate Publishing Company.
- Skjaereth, J. B., & Wettestad, J. (2010). Fixing the EU Emissions Trading System? Understanding the post-2012 changes. *Global Environmental Politics*, 10, 101–123.
- Statistics Canada (2009). *Electric Power Generation, Transmission and Distribution 2007*. Ottawa, Canada. Retrieved from <http://www.statcan.gc.ca/pub/57-202-x/57-202-x2007000-eng.pdf>.
- Superior Court of California County of San Francisco (2011). Tentative Decision: Association of Irrigated Residents et al. vs. California Air Resources Board, Case Number: CPF-09-509562.
- Supreme Court of California (2011). Conference Result for Case S195112 (California Air Resources Board v. Association of Irrigated Residents), Petition for Review and Stay Denied.
- Sweet, C. (2011). California cap-and-trade faces potential hurdle. *Wall Street Journal*, 3 March.
- Tuerk, A., Mehling, M., Flachsland, C., & Sterk, W. (2009). Linking carbon markets: concepts, case studies and pathways. *Climate Policy*, 9(4), 341–357.
- Urpelainen, J. (2009). Explaining the Schwarzenegger phenomenon: local frontrunners in climate policy. *Global Environmental Politics*, 9(3), 82–105.
- US EIA (2012). *State Electricity Profiles 2010*, US Energy Information Administration, US Department of Energy, Washington, DC. Retrieved from <http://www.eia.gov/electricity/state/pdf/sep2010.pdf>.
- Utah (2007). *Utah Report on the Environment*, Utah Department of Environmental Quality, Salt Lake City, UT.
- Utah (2008). *Senate Bill 202: Energy Resource and Carbon Emission Reduction Initiative*.
- Utah (2010). *Climate Change House Joint Resolution N. 12*.
- Utah Legislature (2009). House Resolution 3: Resolution on Energy Policy.
- Wall, M. H. (2007). The regional greenhouse gas initiative and California assembly bill 1493: filling the American greenhouse gas regulation void. *University of Richmond Law Review*, 41(2), 567–588.
- Washington State (2007). *Washington State Greenhouse Gas Inventory and Reference Case Projections, 1990–2020*.
- Washington State (2008a). *Revised Code of Washington 70.235.005*.

- Washington State (2009a). *Responding to the Climate Change Challenge: Focus on Impacts of Climate Change in Washington State*, Department of Ecology, State of Washington.
- Washington State (2009b). *Responding to the Climate Change Challenge: Focus on Implementing Cap-and-trade*, Department of Ecology, Washington State. Retrieved from <http://www.ecy.wa.gov/pubs/0901004.pdf>.
- Washington State (2010). *Path to a Low-Carbon Economy: Washington's Interim Plan to Address Greenhouse Gas Emissions*, Washington State.
- Washington State Legislature (2008). *House Bill 2815: Greenhouse Gas Emissions*.
- Washington State Legislature (2011a). *Senate Bill 5096* (an act relating to withdrawing Washington State's participation in the western climate initiative).
- Washington State Legislature (2011b). *House Joint Memorial 4003*.
- WCI (2008a). *Design Recommendations for the WCI Regional Cap-and-Trade Program*, Western Climate Initiative.
- WCI (2008b). *Appendix B: Economic Modeling Results*, Western Climate Initiative. Retrieved from <http://www.westernclimateinitiative.org/document-archives/Economic-Modeling-Team-Documents/2008-Economic-Analysis/Appendix-B-Economic-Modeling-Results/>
- WCI (2010a). *Design for the WCI Regional Program*, Western Climate Initiative.
- WCI (2010b). *Auction Design White Paper*, Western Climate Initiative.
- WCI (2010c). *Market Oversight Draft Recommendations*, Western Climate Initiative.
- WCI (2010d). *Offset Protocol Review Report*, Western Climate Initiative.
- WCI (2011a). *WCI Regional Emissions Trading Program Status Update*, Presented at the WCI Stakeholder Meeting, Hollywood, California, Western Climate Initiative.
- WCI (2011b). *Western Climate Initiative Jurisdictions Establish Non-Profit Corporation to Support Greenhouse Gas Emissions Trading Programs*, Western Climate Initiative.
- WCI (2012). *Final Essential Requirements of Mandatory Reporting 2011 Amendments for Harmonization of Reporting in Canadian Jurisdictions*, Western Climate Initiative.
- Weyerhaeuser (2009). *Market Oversight Questions for the April 9, 2009 Workshop*, 9 April 2009 workshop, Market Oversight.
- Williamson, V., Skocpol, T., & Coggin, J. (2011). The Tea Party and the remaking of Republican conservatism. *Perspectives on Politics*, 9(1), 25–43.
- Zernike, K., & Thee-Brenan, M. (2010). Poll finds tea party backers wealthier and more educated. *New York Times*, 14 April. Retrieved from <http://www.nytimes.com/2010/04/15/us/politics/15poll.html?ref=newyorktimespollwatch>.
- Zhang, Y-J., & Wei, Y-M. (2010). An overview of current research on EU ETS: Evidence from its operating mechanism and economic effect. *Applied Energy*, 87, 1804–1814.

Copyright of Climate Policy (Earthscan) is the property of Earthscan and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.