Climate policy subsystems in Alberta and British Columbia: Lessons for climate policymaking

Major Research Paper

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Abstract:

Given climate policy stagnation at the federal level in Canada, it is important to study provincial climate policy efforts as an important location of policy innovation. This paper uses the literature on policy subsystems to analyze provincial climate initiatives in Alberta and British Columbia. Specifically, the Specified Gas Emitters Regulation in Alberta, and the carbon tax in BC will be evaluated for their stringency and effectiveness in meeting provincial climate plans. The central issue to be explored is how the nature of the different subsystems has influenced policy outcomes and instrument choice. Close attention will be paid to the political economy of climate policy instrument choice in each subsystem, drawing on the observations of David Victor who suggests that climate policy is driven by who pays the costs of the policy and the relative distribution of these costs. This requires consideration of the structural power of emitters within the subsystem.

The relative power of environmental groups and industry was found to influence the instrument choice within each subsystem. It suggests that subsystems with greater countervailing power to industry are more likely to choose market-based policy instruments, as regulations can be used to control the costs and their allocation, often to the detriment of emissions reductions. The paper also suggests that while provincial action is stalled without further national or US action, it also highlights that Alberta and British Columbia were willing to strengthen their climate policies given greater collective action.

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Inaction and policy switchbacks have dominated Canadian climate policy writ large. Given this larger context, a more in-depth analysis of two Canadian jurisdictions that have implemented climate policy is relevant. This paper will examine the climate policies of British Columbia and Alberta, with a specific focus on their central policy instruments. Both provinces introduced new climate initiatives in 2007-2008; a carbon tax in BC and an emissions intensity regulation in Alberta. These cases are puzzling. Why did the Alberta government act to regulate the greenhouse gases (GHGs) of its heavy emitters, effectively setting a carbon price, given the importance of the oil and gas sector in the provincial economy? Why did Alberta, a province known for its free market orientation, choose a command and control type policy design? Why did British Columbia decide to implement a carbon tax, a policy design known to be cost transparent and therefore politically corrosive? And, importantly for the greater cause of Canadian climate policy, how did these jurisdictions implement a relatively comprehensive climate policy when the federal government has been unable to do so? This last question speaks to the importance of studying climate policies at a sub-national level. In light of stalled federal climate plans both in Canada and the US, the provincial and state levels have been sites of climate policy innovation.

This paper will analyze system level norms in BC and Alberta to understand the development of their climate policies. The theoretical framework of this paper will discuss policy network theory and the contributions from the literature regarding the climate policy subsystem. The central issue to be explored is how the nature of the subsystem influences policy outcomes and instrument choice. Special attention will be paid to defining the structural power of subsystem actors. The relationship between the

policy subsystem and the macro-level variables suggest the need to pay attention to the specific context within a polity by using a historical analysis. To understand the actors that have been included and / or excluded from the network requires attention to the historical development of the policy subsystem, and why it has developed in one way and not another (Skogstad 2005). David Victor suggests that climate policy is driven by who pays the costs of the policy and the relative distribution of costs through the subsystem (Victor 2011).

Following a review of the literature that serves as the paper's theoretical framework there will be a brief discussion of the national policy context in which the provincial plans were developed. The central feature of the provincial climate plans will be described as they were developed in the time period 2007-2008, featuring an analysis of the carbon tax in British Columbia and the specified gas emitters regulation in Alberta. The policies will be reviewed according to the coverage of emitters, judged by the number of emitters included and the volume of their respective emissions. In addition, the effectiveness of the policy in meeting the province's climate change plan will be considered. Analyzing the coverage of emitters and the cost distribution within the policy subsystem will allow a preliminary observation of the structural power of relevant actors within the province's energy and environment policy fields.

The analysis of the experience of the two provinces suggests greenhouse gas (GHG) regulations are often initially preferred by industry and government because they allow these actors to control the impacts of the climate policy. A climate policy subsystem is more likely to develop market based GHG policies, like cap-and-trade or a carbon tax, if there are strong environmental actors with countervailing structural power.

This paper suggests that in climate policymaking, market based mechanisms may be used more often by a government that seeks a broad, societal reduction of emissions. The cases of Alberta and British Columbia are relevant for those interested in the advance of climate policy – the findings suggest that provincial policy subsystems change when responding to exogenous shocks but that there are limits to the agency of Premiers and provinces in pursuing stringent climate policy alone. Furthermore, the climate policies developed in British Columbia and Alberta highlight that a relatively comprehensive policy can be implemented and that provinces were willing, rhetorically at least, to scale up their policies given collective action.

Theoretical Framework

The study of policy networks tries to delineate different patterns of interest intermediation. It observes the interactions of different actors, including public and private actors, with attention to structural positions on the outcome of policy making (Rhodes 2006). The policy network approach attempts to incorporate the world of 'real' politics in which:

> Routine policy-making takes place in discrete and specialized policy subsystems with limited political visibility and in which state actors are dependent on the resources and/or support of non-state actors to accomplish its objectives. Policy networks are a response to this reality; they provide a means to coordinate resources of information, support and authority across state and non-state actors," (Skogstad 2005).

This approach recognizes that networks vary by subsystem, that is, the policy sector they address. R.A.W Rhodes defines policy networks in the following way:

> Policy networks are sets of formal institutional and informal linkages between governmental and other actors structured around shared if endlessly negotiated beliefs and interests in public policy making and

> implementation. These actors are interdependent and policy emerges from the interactions between them. (Rhodes 2006).

A policy subsystem is comprised of a group of actors, “bound together by material interests and policy ideas,” and the interest mediation between the groups of actors (which may be private or public) in large part determine the content and context of policy decisions within that policy sector (Howlett, Hessing and Summerville 2005). This is what we seek to observe in the Alberta and British Columbia case. The characteristics of the policy subsystem; the membership of the actors; and, the accessibility of the subsystem to others all impact policy outcomes (Howlett, Hessing and Summerville 2005). The policy subsystem is constructed. It is a reflection of structural power and the historical development of the subsystem. The subsystem influences the policy development process; it frames how the agenda is set, what policy issues are relevant for the agenda, who sets the agenda, and what are ‘acceptable’ policy solutions once the policy problem has been defined.

Differences in the policy network, however, are not enough to explain all (much less, fundamental) differences between policymaking in like sectors in different polities. Policy subsystems do not emerge fully formed with the creation of the polity under review; “system-level norms set the context in which networks are formed,” (Atkinson and Coleman 1996). Institutional rules and the political culture within which the institutions operate can be macro-level variables that form the context of the development of the policy subsystem. Macro-level variables are necessary to understand policy subsystem difference between like sectors across different polities. However, they need to be tied to the development of the policy subsystem in a deliberate fashion where a, “properly specified model of policy outcomes will have to

define macro-level variables accurately and appreciate that their effects may differ from one policy domain to another," (Atkinson and Coleman 1996). Attention must also be paid to the specific policy domain. In the natural resources and environment field, for instance, macro-level variables include the fundamental nature of the resource (Howlett, Hessing and Summerville 2005). Clearly the structural power of an industry is dependent on the economic potential of that resource. In climate policy, the emissions profile of a jurisdiction is a macro-level variable.

The study of policy subsystems implicitly involves the study of structural power which is constituted through relationships between different actors and the manner in which different interests are mediated within the policy subsystem. Subsystems will differ in the distribution of their power. A fundamental way of categorizing subsystems is identifying the number of actors with structural power to influence outcomes. Structural power is often due to macro-level political and economic variables, increasing the necessity to focus on the development of the policy subsystem so as to locate and understand the origins of structural power in the subsystem.

Howlett et. al develop a useful taxonomy of policy networks that illustrates variation in policy networks by the number of policy relevant actors and their relationship to each other.

Table 1 - Policy networks taxonomy, by number of actors and lead actor

	Number / type of network participants			
State/ societal relations within network	State agencies group	One major societal group	Two major societal groups	Three or more
State directed	Bureaucratic network	Clientelistic network	Triadic network	Pluralistic network
Society dominated	Participatory network	Captured network	Corporatist network	Issue network

Source: (Howlett, Hessing and Summerville 2005, 120)

This taxonomy has the bureaucratic network and the issue network as two extremes. The authors note that the term 'society dominated' normally includes business and financial interests as the main actors within the 'society' category. For instance, when a policy network features one major societal network, the authors suggest that this is normally a business interest. Business interests are often privileged within policy subsystems because of their structural power. Subsystems may have countervailing power to business, in the form of other 'societal groups' like labour or environmental organizations (Macdonald, 2010). Countervailing power can also be encountered from other business actors, and can also include power exercised by regulators (Macdonald 2010). Understanding the type of subsystem allows significant insight into the dynamics of policy formulation within the network.

The type of subsystem will impact the policy cycle. In theory, the policy cycle is understood to have several distinct stages: agenda setting, policy formulation (defining

what ‘solutions’ are acceptable for the problem and which policy instruments are available), policy implementation and policy evaluation (Pal 2010). The construction of the policy agenda, which includes the definition of the problem to be solved, is the formative policy stage from which all other policy-making stems. The nature of the subsystem can determine when, and if, an issue becomes part of the policy agenda; “The nature of the actors initiating policy discussions and whether the structures in which they operate allow new ideas to come forward are the most important determinants of the movement of public problems from the informal agenda to the state’s institutional agenda,” (Howlett, Ramesh and Perl 2009). Subsystem actors may also “frame” a problem differently. For instance, climate change may be framed in at least the three following ways: as an extremely urgent environmental and health threat; as an economic opportunity; and as problem for which the solutions will entail significant economic costs (Houle and Macdonald 2009). This paper argues that while both Alberta and British Columbia developed climate policies at a similar time and in the same national context, variation in the policy subsystem generated different policy outcomes.

The policy formulation stage of the policy process is also influenced by the subsystem, especially regarding the entrance of new ideas. Policy making tends to follow a certain path-dependency where present policy actions are ‘locked-in’ because of past decisions. The framing of policy problems will also generate certain policy solutions as in ‘good currency’; these are the instruments that are acceptable to powerful actors within the subsystem and viewed as politically tractable. While the mediation of interests and final policy design is largely done within government, this paper is concerned with the ability of other actors to influence the agenda-setting

process and the policy formulation process. This can be a difficult relationship to study. If a certain actor holds a policy preference, and the government adopts that policy preference, what was the cause of that decision? The decision may be causal; the government adopted the policy because of the preference of a certain actor. The decision may also be unrelated to the policy preference of the actor. And, what is more likely is that the relationship is reflective of a more complex decision making process whereby the actor's policy preference was incorporated into the decision making process by government.

Policy formulation is a broad activity that includes other tasks beyond the strict design of the policy. Howlett identifies four activities involved in policy formulation: appraisal; dialogic activity; formulation and the consolidation phase (Howlett 2011). Policy subsystem actors are involved within each phase. For instance, in the appraisal activity, participation may take the form of, "expert testimony, stakeholder input or public consultation," (Howlett 2011). The "dialogic activity seeks to facilitate communication between policy actors with different perspectives on the issue and potential solutions," (Howlett 2011). In the consolidation phase Howlett notes that, "leading policy-makers' rejection of certain types of options need not be based on facts, but if significant actors in the policy subsystem believe that something is unworkable or unacceptable, this is typically sufficient for its exclusion from further consideration in the policy process," (Howlett 2011). The ability of significant actors in the policy subsystem to essentially veto a policy option speaks to the indirect, but important influence of subsystem actors.

Policy formulation, however, is very difficult to observe. The mediation of different interests takes place privately within government, not in the public forum of the legislature.

> The basic form of public policy has been worked out between the political executive and senior administrators. Consequently, lobbyists and others wishing to influence public policy have chosen to do so by approaching and persuading civil servants and Cabinet ministers rather than parliamentarians. (Pross 1993).

In practice this means that it is very difficult to research policy formulation as so much of it is done through private negotiations and consultations. Gaining insight regarding the motivations and relationships of actors within the policy process remains important. The challenges to accessing data, however, means that researchers will often work backwards from a perceived change in policy outcomes and attempt to reconstruct the policy formulation stage; recognizing that formation of policy options depend a great deal on the policy subsystem (Howlett, Ramesh and Perl 2009). This paper will follow this process; it will work backwards from the implemented climate policies in Alberta and BC, observe the coverage and effectiveness of the policy, and articulate subsystem dynamics within each case.

Much of the academic study of environmental and natural resource policy making in Canada has focused on the federal level (Howlett, Hessing and Summerville 2005) (Harrison 2010) (Courchene and Allan 2010) (Winifeld and MacDonald 2007). It is important, however, to study provincial policy making, especially in the climate policy subsystem. As former BC Premier Campbell noted, waiting for unanimity between the provinces and federal government is a recipe for paralysis. Policy innovation is, therefore, likely among certain provinces in place of concerted federal policy action

(Telford 2010). Indeed, the federal GHG emissions reduction target makes this approach explicit: the bulk of Canada's emissions reductions are to come from provincial reductions commitments (Environment Canada 2011). This paper aims to study policy subsystem influence on provincial policy making regarding climate change as not only is it understudied, the provincial level of government is likely the location of more substantive policy action in the foreseeable future.

The climate policy subsystem should not be viewed as a discrete subsystem. Instead, the climate policy subsystem can be seen as a fusion of the energy, natural resources and environmental policy domains. It is important to note the inextricable link between energy systems and climate change. Climate change is a function of the combustion of fossil fuels within global energy systems. Mitigating climate change will involve a radical transformation of the energy system, and separating the connection between increased energy usage and GDP growth. Holistically, climate policy is as encompassing as national economic policy. For our purposes, this means that many actors can be involved in subsystem decisions with significant crossover from the natural resources and energy subsystems. In addition, climate change is a global collective action problem whereby all major emitters need to reduce emissions in order to make any individual country's actions meaningful. This means climate policymaking in Canada can be driven by international policy changes that act as exogenous shocks to the Canadian climate policy subsystem.

In one effort to understand policy instrument choice at the provincial level , Houle and Macdonald have applied a framework developed by Rabe to understand climate policy variation in the US at the sub-national level (Houle and Macdonald 2009) (Rabe

2004). Rabe's work connects how policy makers frame the issue of climate change and their policy instrument choice, suggesting that:

- When policy makers consider climate change a serious threat, coercive instruments will be used.
- When policy makers consider climate change as offering economic development opportunities, market-based instruments will be used.
- When policy makers consider climate change mitigation as an economic threat they will use non-coercive instruments, or no instruments at all (Houle and Macdonald 2009).

Rabe follows the traditional hierarchy of environmental policymaking that categorizes regulation as the most coercive instrument (Field and Olewiler 2001) (Rabe 2004). Houle and MacDonald found that these claims were only partially reflective of Canadian cases. Rabe's work has similar aims to this paper, arguing that a difference in framing leads to a difference in policy output (Rabe 2004). However, this line of argument can be extended by noting Victor's suggestion that we give careful consideration to the actors paying the costs of the policy; the nature in which these costs are distributed; and, the relationships of actors and their relative structural power. In his view, these will determine the policy instrument choice in climate policymaking (Victor 2011).

In contrast to Rabe's first argument that suggests regulation will be favoured by those considering climate change a serious problem, Victor argues that:

> In the real political world, command-and-control regulation, despite its often high costs compared with market-based systems, is highly attractive. Unlike market-based strategies, direct regulations give government much

> more control over the visibility and allocation of costs and benefits. (Victor 2011, 66).

If the costs of regulation, however, fall on well organized groups (namely business interests), these groups may prefer market-based mechanisms because these instruments are more efficient and less costly. Direct regulation, however, can and will prevail when the organized groups prefer it - Victor uses the auto industry as an example. Direct regulation in that case is preferred by the carmakers because it is a long-standing approach that has also raised barriers to entry for new suppliers. Furthermore, direct regulations satisfy environmentalists because of perceived guaranteed emissions reductions. It is the consumer that pays the higher costs, but they are, “highly diffused, poorly organized and generally unaware of what regulation costs,” (Victor 2011, 69).

This behaviour is subject to an assumption about the coerciveness and stringency of any such proposed regulations. Regulations will clearly be preferred by producers to a certain point, as they are only responsible for the costs of compliance. Victor’s argument, however, is that given the seriousness of the challenge in addressing climate change, a government committed to significant action on climate change would require demanding emissions reductions and technology transitions. A regulation that disallowed the use of a particular technology, or required a particular emissions reduction for the facility, without the inclusion of market-based flexibility mechanisms (like paying a charge per unit of emissions or trading credits within a market system) reduces the flexibility for firms to comply with the regulation. Given a demanding regulation reductions may be more costly than in a market-based system. Victor describes this:

> By contrast, the actual cost of strict emission limits could be astronomical if governments tighten the caps on emissions much more rapidly than companies are able to adjust. Nobody is sure just how quickly firms will be able to adjust in the real world, but much of the evidence suggests that after the easy emission reductions are made, further adjustments will be difficult to plan precisely because they will require complicated technological and behavioural change (Victor 2011, 65).

The response of firms, therefore, will be dependent on their view of the seriousness of government action in reducing emissions. As regulations are viewed by the public as a more coercive instrument, it is possible for regulations to be used in a manner that appears more demanding than they may be in practice.

Victor argues that the relationship between subsystem actors can also influence the preferred policy instrument. For instance, when business interests are close to government, like in Japan for example, “essentially all of the national effort to control emissions takes the form of direct regulation administered sector-by-sector from a highly powerful government and through established government-industry relationships,” (Victor 2011, 71) . To use Howlett’s typology, these are state-directed policy subsystems, that are likely clientelistic in nature. Victor informs the study of climate policy subsystems by reminding us of structural power. He observes that the relationships in the subsystem will influence which policy instruments are acceptable to choose.

Within the climate policy subsystem, there is the ‘state’ (in our cases the provincial governments) and other ‘societal’ subsystem actors. The dominant ‘societal’ subsystem actor we assume to be business, and especially natural resource or energy producers. These interests are privileged in the policy process because of their structural power in terms of financial resources and, often, authority in the regulatory

process that comes from technical expertise. In examining the influence of the oil and gas industry on federal climate policy MacDonald highlights variables influencing industry power including: industry structural power and industry interest. Structural power, according to Macdonald, “is determined largely by the degree of government dependence, measured by financial benefits to the jurisdiction, primarily tax revenues and job creation, and also by the current context of ideas concerning such things as the relative legitimacy of state and market,” (Macdonald 2010). The expression of power is:

> The ability to influence behaviour of others in overt conflict; the ability to keep issues off the policy agenda, outside the realm of overt conflict, thus leading to inaction by government; the ability to induce “false consciousness” – influencing the interests and desires of those who might otherwise take political actions contrary to one’s own interests. (Macdonald 2007, 53).

The structural power of business, however, is neither unchallenged, monolithic nor expressed in the same way by all industries. The firm is not a political organization, it engages in political activity to preserve its interests which are derived from its primary profit objective. The degree to which it engages in political activity will depend on how its interests are positively or negatively impacted by a given policy action. This is industry’s agency power; resources it will consciously devote to achieving a political objective depends on the degree of its interest (Macdonald 2007). Policies will impact industries differently, and they will have varying levels of interest in engaging in political activity. Part of the context of political activity, too, is the countervailing power expressed by the state or by other actors (other businesses / environmental groups/ aboriginal groups, etc.) (Macdonald 2010). The structural power of industry will vary by subsystem. And, it is also far from absolute. Governments have more power, for instance, after an investment decision by a firm that involves sunk costs taking the form

of fixed capital expenditures (Macdonald 2007). One significant limitation of this paper is that the role of ‘business’ or ‘industry’ as a subsystem actor is overly simplified. A more detailed examination of all major industry actors within a given subsystem would be both useful and enlightening, but is beyond the scope of this paper.

This brief review of the literature regarding policy network theory suggests that the characteristics of policy subsystems impact policy outcomes, largely by defining which actors are involved in policymaking. The structural power of actors, especially industry has been identified as a key variable in the dynamics of subsystems. Policy subsystems, however, are not static, and they are a set of constructed relationships. They exist within the context of system level norms that define the rules and behaviours of subsystems within the polity. The literature on climate change policymaking highlights that an assessment of how the costs and benefits of a given policy are distributed can alert the researcher to structural power present in the subsystem. Accordingly, after a brief discussion of the national policy context in which provinces were acting, this paper will examine the system levels norms in both British Columbia and Alberta. Following this discussion, the climate policies introduced in each jurisdiction will be analyzed to indicate the dynamics of structural power within each policy subsystem. The analysis will be in two parts. First, we will undertake a descriptive discussion of the provincial subsystem. Then we will observe how the costs and benefits of the policy are distributed by looking at the coverage and effectiveness of the policy; and, how the policy was introduced. This process will be used to allow limited observation of how policy subsystem structure influences instrument choice and outcomes in climate policymaking.

Policy Context

The climate policy subsystem is the synthesis of other policy fields: energy, environmental, natural resources management (to name just the most prominent); and it shares / and is constituted by the same policy context as these fields. Jurisdictional questions between the federal and provincial governments remain contentious and a defining parameter within the climate policy subsystem. Since much of the academic work in Canada has focused on the constitutional division of authority vis-à-vis climate policy, this paper will just briefly highlight the main elements of the national context. We note that the provinces are constitutional owners of their natural resources and responsible for the regulation of their development (Plourde 2010). Electricity generation and distribution, too, is under provincial jurisdiction (Page 2010). Environment is shared jurisdiction between the federal government and the provinces, meaning both can launch environmental regulations (Elgie 2010). Importantly for climate policy, the federal government has the power to sign international treaties and it maintains national taxation powers (Elgie 2010). The federal government, however, does not necessarily have the power to implement these treaties if the required actions fall under provincial jurisdiction (Plourde 2010).

The Kyoto Protocol continues to define the Canadian climate policy context even after the current Conservative Government has withdrawn Canada from the protocol. In 1997 Canada negotiated a target to reduce GHG emissions by 6% below 1990 levels, and in 2002 after a heated national debate, the protocol was ratified by the Chretien cabinet. Canada's Kyoto target was more ambitious than what was negotiated at federal-provincial meetings; the provinces agreed to a US target to reduce emissions to

1990 levels by 2010 (Harrison 2010). To the provinces, Canada's participation in Kyoto was an indication of increasing federal intervention. Ottawa had launched two working groups led by the federal government the North American Energy Working Group and subsequently the Canada- China Energy Working Group (Brownsey 2007 , 246). While Canada ratified the agreement it did little to meet the resulting Kyoto targets. The Liberal government fell in 2006 and subsequently the newly elected Conservative government announced that Canada would not meet its Kyoto targets. Canada finally withdrew from the Kyoto Protocol in 2011. However the Kyoto debate, spanning more than a decade, still permeates the Canadian discussion on climate change.

The Canadian climate policy environment significantly changed in 2006 and 2007, sparking responses from the federal and provincial governments. It is in this context that British Columbia and Alberta developed their climate change plans. Policy action became an urgent priority for governments due to a rapid shift in Canadian public opinion regarding the environment.[1] Canadians were increasingly citing the environment as their unprompted priority concern in public opinion polls. For instance, the environment was an unprompted priority issue for 4% of Canadians in October 2004; 11% in October 2005; and 29% in 2006 (Macdonald 2008). In early 2007 the environment had eclipsed health care as Canadians' priority concern (Simpson, Jaccard and Rivers 2007). The media also rushed to cover the issue in 2006 - 2007 spawning unprecedented news coverage and editorials regarding climate change (Simpson, Jaccard and Rivers 2007). While the relationship between public opinion and policy formulation is contested and beyond the scope of this paper, most observers agreed a

[1] Environment is used as proxy for concern about climate change.

significant shift in policy direction witnessed at the federal level was attributable to changes in public opinion: “Prime Minister Harper’s recent conversion on the subject of global warming is certainly the result of strong pressures from Canadians as reflected in government polling,” (Herle May 2007). The shift in direction was evident when the Prime Minister took control of the file in 2006 after the proposed federal *Clean Air Act* was ill-received due to its distant targets and an emissions-intensity approach (Macdonald 2008). After much public fanfare, the ‘Turning the Corner’ package was released in early 2007 promising federal regulations for large emitters and an eventual carbon trading system. To the provinces the federal government seemed credible in its intent to implement regulations and a cap-and-trade system for large emitters.

System level norms and climate policy in Alberta and British Columbia

This has paper has discussed that system level norms set the context in which policy subsystems are formed, and this section will highlight these dynamics in both Alberta and BC. A comparative review on provincial politics found system level norms to be an enduring influence on provincial politics, “the differences are to be long-lasting, [and] that the provinces are to some extent prisoners of their pasts. They are made distinctive by their staple origins, their formative events, even the past economic development they have experience or not experienced,” (Dunn 2001, 461). The brief overview of each province will sketch the relationships of power in the nascent climate policy subsystem and the political dynamic this has generated.

After the contextual overview there will be an analysis of the key elements of each province’s climate policy plans. First, the major policy initiative will be described,

the specified gas emitters regulation in Alberta and the carbon tax in BC, respectively. The policy will be then evaluated regarding the policy's coverage, its effectiveness and the process by which the policy was introduced.

Alberta – system level norms and dynamics

Alberta has certain system level norms and dynamics that influence policy subsystems in the province. The province has seen long periods of one-party rule, reflecting both a stable and exclusive policymaking structure. Within the policymaking process the firms involved in the energy industry (especially unconventional oil producers) have a high degree of structural power, which will be further developed in this section. The strength of oil and gas sector in Alberta is a result of the formative influence the sector had on the province's modernization, and the financial contribution the sector makes to the provincial treasury. For instance, the provincial government derives 28% of its revenue from the upstream oil and gas sector (2007-2008); this financial steam is one of most significant enablers of Alberta's low-tax regime and the absence of a provincial sales tax (Plourde 2010, 8) . The symbiotic interests of the energy industry and the provincial government have continued a long tradition of Alberta seeking to pre-empt the federal government and guard its jurisdictional autonomy.

Strong premiers and long periods of what is essentially one party rule have dominated Alberta's political institutions. Only four parties have ever governed the province, and each has ruled uninterrupted for several decades.[2] Brownsey argues that the dominance of one party has led to, "a blurring of the distinction between party and state," where every aspect of life in Alberta becomes a political act, illustrated by the

view that, “a seat on the Calgary Stampede Board is the first step into the provincial legislature and eventually cabinet,” (Brownsey 2005, 209) One party dominance impacts political access. The policy subsystem, generally, in Alberta is highly restricted to outsiders. Smith writes that, “Alberta, to this day, many argue, has remained a qausi-party system governed by a small coterie of party elites in the cabinet,” (P. Smith 2001). The Alberta legislature is one of the least active in Canada. One former opposition MLA wrote that the government looked upon, “legislative sessions like a trip to the in-laws’, as an obligation that is to be barely tolerated (Tougas 2009).”

Alberta’s economy, and its related political culture, has been deeply shaped by the oil and gas sector. Indeed, one author writes that Alberta was transformed from an agricultural society to an urban society because of development in the oil patch (P. Smith 2001). Oil was discovered at Leduc, Alberta in 1947 and the reigning Social Credit government pursued investment from foreign multinationals to develop the resource. Structural change in the oil and gas sector has often precipitated change in government, as it did in the fall of the Social Credit Party and the rise of Peter Lougheeed’s Progressive Conservative government. Lougheed is a formative figure in the creation of the oil sands, a resource that is now of pivotal importance to the Canadian economy and also a significant flashpoint in climate policy discourse. Rather than the laissez-faire approach Social Credit took towards the oil and gas industry, Lougheed’s government, “demonstrated a much greater willingness to use the power of the state to obtain its policy objectives,” with a focus on economic development (P. Smith 2001).

One of Lougheed's objectives was the development of the oil sands in Northern Alberta. Along with the federal government, Alberta provided an equity stake in the first oil sands project, subsidizing feedstock price well below the market export price. It was the combined investment of the federal and provincial governments that subsidized oil sands development when developments costs exceeded oil prices. Lougheed's election by the new, urban, professional middle class and the development of the Syncrude oil sands project in 1975 largely fused the interests of the oil and gas industry with the political interests of the reigning provincial government (Pratt 1976). Now, it is virtually impossible to discuss Alberta without highlighting its virtually unparalleled resource, the oil sands. The massive boom in oil sands production will continue to transform Alberta, the Canadian economy and the federation.

Larry Pratt, writing in the 1970's, described the oil lobby, based in Alberta, as having a veto power over the provincial government and effective at having the Alberta provincial government act as its shill in Ottawa. "If power is defined as the ability to realize one's will and to achieve one's objectives, then the oil lobby necessarily must be reckoned as one of Canada's fundamental power blocs," (Pratt 1976). This dynamic appears largely unchanged (Brownsey 2007) . This paper earlier defined structural power for industry as a function of government dependence. From the late 1940's natural resource revenues have provided the largest percentage of provincial revenues, and revenues from the oil industry reached over 50% of provincial revenues in the 1950's (P. Smith 2001). In the fiscal year 2010 – 2011, Alberta collected $3.7 billion in royalties from oil sands projects (Government of Alberta n.d.). Between a one quarter and one third of provincial revenue comes from natural resources royalties, bonuses,

sales and leases (Edmonton Journal 2012). The structural power of industry is dominant and constant; its position is so powerful that measuring only the direct benefit of the oil and gas sector masks the spinoff benefits through the Albertan and Canadian economy.

A consistent norm in Alberta has been its adversarial relationship with Ottawa. Alberta has a long a history of pre-empting federal government intervention. For instance, “fear of encroachment by the federal government decided the Social Credit government to bring free enterprise and oil sands together,” (Pratt 1976). A key aspect of the political ethos in Alberta is a, “synthetic form of anti-colonialism vis-à-vis central Canada through which western alienation has been expressed,” (Wesley 2011). All Alberta premiers have campaigned, at times, against Ottawa and have vigorously protected Alberta’s constitutional authority. On the climate policy file, for instance, Alberta was the most vocal campaigner against the federal government’s ratification of the Kyoto Protocol. In September 2002 it launched a $1.5 million advertising campaign featuring apocalyptic messaging regarding lost jobs and living standards if Kyoto was successful (Brownsey 2008).

The system level norms in Alberta make it unlikely that its climate policy would generate costs unpalatable to industry. We know that Alberta has almost unparalleled natural resources in Canada, and an oil and gas industry with vast structural power in the province. Furthermore, the Albertan legislature is a weak institution, and, that the provincial government is dominated by strong premiers and decades of one-party rule. This weakens the access of outsiders to policy subsystems. Finally, there has been a dominant trend of resisting encroachment by the federal government on Alberta’s jurisdiction. It is within this context that we explore how Alberta developed its Specified

Gas Emitters Regulation (SGE regulation). Recall that Victor argues regulation prevails in climate policy when industry and government are close, and government sets regulations that are favourable to industry.

Alberta's Climate Change Plan

Alberta is the largest GHG emitter in Canada. In 2008, it generated 33.3% of Canada's GHGs (244.3 Mt) (Environment Canada 2010). Alberta's sizeable emissions profile is not only attributable to the oil sands, 82% of its electricity is generated through coal (Environment Canada 2010) . The following table breaks down Alberta's emissions into its largest contributing subsectors:

Table 2 - GHG emissions, Alberta, by largest subsector, 2008[3]

Sector	Emissions (Mt)	% of total AB emissions (244.3 Mt)
Electricity and Heat Generation Sector	55.9	22.8%
Fossil Fuel Industries	41	16.7%
Oil and Natural Gas Fugitive Sources	35.7	14.6%
Mining	17.5	7.2%

Source: (Environment Canada 2010)

Alberta has the highest number of large emitting facilities in Canada. Of those Canadian sources emitting over 50mt of GHG emissions annually, Alberta accounts for 47% of them (Environment Canada 2010). This means that policies designed to cover large emitters would impact Alberta more significantly than any other province. The federal "Turning the Corner" proposal was one such policy.

[3] Kilotonne: One thousand tonnes. Designated by kt.
Megatonne: One million tonnes. Designated by Mt.

Alberta has had three provincial climate plans. Its 2002 climate plan committed the province to reducing its GHG emissions intensity by 50% between 1990 and 2020 (Bramley, et al. December 2011). Reducing emissions intensity is the main policy approach of the Alberta government. Emissions intensity is a calculation of how much carbon dioxide equivalent (CO2e) is emitted per unit of output. While targets were introduced in 2002, no major policy initiatives designed to meet the targets were introduced until 2007 (Bramley, et al. December 2011). This was the Specified Gas Emitters Regulation, and this paper will focus on this regulation as the primary instrument within Alberta's climate change policy. The current Alberta climate change plan was introduced in 2008 by then Premier Ed Stelmach. It maintains the SGE regulation, the focus on emissions intensity and also articulates a reliance on carbon capture and storage to provide the major share of emissions reduction.

The Specified Gas Emitters Regulation is the major regulatory effort of the Alberta government, implemented July 1, 2007. Facilities emitting more than 100,000 tonnes of CO2e annually are required to report their emissions and to reduce the emissions intensity of their operations. The regulated facilities are required under the SGE regulation to reduce their emissions intensity by 12% from the baseline of the facility's average emission intensity during the period 2003 to 2005. There is compliance flexibility in how regulated facilities can meet the required emissions intensity reduction:

1. The facility can reduce their emissions intensity in their own production.

2. The facility can purchase emissions performance credits from other facilities or can purchase carbon offsets produced in Alberta. Carbon offsets are voluntary GHG emissions reductions originating in Alberta.

3. The facility can pay into a technology fund, the Climate Change and Emissions Management fund, at a rate of $15 / tonne of surplus emissions (the difference between its present emissions intensity and its calculated baseline emissions intensity.)

The rate at which firms can pay into the technology fund effectively sets the carbon price for the regulated emitters at $15 / tonne as firms would not pursue one of the other compliance options should its price per tonne be greater than $15. Recall that only firms emitting more than 100,000 tonnes of C02e are subject to the regulation. In 2009 there were ninety firms subject to the regulation, covering approximately 46% of the province's emissions (Alberta Environment 2011b).

The specified gas emitters regulation is the not the only component of Alberta's climate change strategy. The Climate Change and Emissions Management Fund is an arms-length organization that invests in technology or strategic projects that aim to reduce GHGs in Alberta, and is funded through compliance with the SGE regulation (Carbon Offset Solutions n.d.). The objective of the fund is to direct compliance funds at projects that will assist in industry reducing its emissions. A final and major component of Alberta's climate change plan is funding for carbon capture and storage. The provincial government has funded $2 billion in carbon capture and storage initiatives,

complemented by $526 million in funding from the federal government (Bramley, et al. December 2011).

The regulated facilities in Alberta come from a variety of sectors. The 2009 sectors with the highest number of emitters are conventional oil and gas (22); oil sands in situ and oil sands mining / upgrading (22); and utilities (17) (Alberta Environment 2011b).[4] The top ten emitters in the province contain 5 utilities, 4 oil sands operations and 1 chemical manufacturing plant (Alberta Environment 2011b). Utilities produce the highest net emissions in the province because of their coal fired generation and increased demand from oil sands. Within the top three emitters Transalta has the highest net emissions of 23. 3 mt, and Suncor and Syncrude follow with 12.5 mt and 11.6 mt respectively (Alberta Environment 2011b). Companies have facilities, however, that are under 100, 000 tonnes and not subject to the emissions intensity reduction regulation, and they will have facilities under 50,000 tonnes that are not required to report their emissions; therefore this data is based on the available data from facilities emitting greater than 100,000 tonnes.

Coverage of policy

The producers' net emissions do not represent their net liability under the Alberta GHG regulations as they are based on their emissions intensity relative to a baseline. Total emissions would represent all the GHGs emitted, not just a measure of the emissions per unit of output. Looking, however, at the volume and concentration of emissions among the major producers, an emissions intensity approach is consistent

[4] The calculations are the author's own, based on the 2009 emissions data by all regulated facilities. This data is available from Alberta Environment's website.

with Victor's theory of carbon regulation. A policy that covered total emissions would be mostly borne by a small group of well-organized producers and result in very large carbon liabilities. Instead, under the Albertan policy, only 107 mt or 44% of province's cumulative emissions are regulated (Alberta Environment 2011a, 9).[5] Furthermore, as it is an emissions intensity approach relative to a baseline, only a total 12.6 mt of emissions required some form of compliance in the form of a fund payment, offset purchase, improvement at the facility, developing cogeneration, or retiring a previous year's emissions performance credit (Alberta Environment 2011a, 10). This is 11% of the total regulated emissions, and only 5% of Alberta's total emissions. The maximum cost of compliance to producers is $189 million, since the technology fund can be contributed to at a rate of $15 / tonne, companies will only pursue compliance options that are less than $15/ tonne. In contrast, if all emissions were subject to a carbon price, the costs of compliance would be approximately 10 times greater. [6]

The compliance mechanisms available to producers further underscore that the Albertan approach prioritizes flexibility in compliance. This is consistent with an emphasis on solutions to climate change lying in the technological transformation of the energy sector. It does, however, privilege the large emitters by generating and pooling capital in a technology fund for projects that will reduce their compliance costs over time. The 2008 compliance year demonstrates that purchasing offsets or contributing to the fund was the compliance option chosen for the majority of the compliance

[5] 2007-2008 data.
[6] These are the author's own calculations based on the emissions statistics from Alberta Environment (Alberta Environment 2011). If each producer chose to contribute to the fund ($15/ tonne) for their emissions surplus to the baseline, the maximum compliance cost is $189 million. $15 x 12.6 mt = $189 million. By contrast, if producers had to pay $15 / tonne on each unit of emissions (107 mt), the total compliance cost could be ten times greater.

requirements. 41% of the compliance reductions were met through a fund payment, and 24% through retiring an offset (Alberta Environment 2011a, 10).[7] Only 10% of compliance was achieved through reductions at the regulated facility (Alberta Environment 2011a, 10). Furthermore, since the emissions intensity approach is relative to a baseline, a producer could see its compliance requirements decrease as long as its emissions intensity declined, all while allowing net emissions to increase. This is, however, the objective of an emissions intensity approach, as it is not meant to provide a cap, or price on total emissions, but rather allow production to increase. Economist Mark Jaccard estimates the average fee for industry to be less than $5 per tonne, and the Pembina Institute pegs the price at $1.80 per tonne (Bramley, et al. December 2011) (David Suzuki Foundation 2012).

Effectiveness of policy

Alberta is unlikely to meet its target to achieve a 50 mt reduction from business as usual (BAU) by 2020. In addition, according to the provincial climate change plan 2020 is the date beyond which emissions should begin an absolute decline. At current trajectories this will not happen. The Redford government announced in May 2012 that the province did not meet its 2010 targets (a 20 mt reduction from BAU), and was reviewing how it could meet the 2020 goal (Cryderman 2012). The Pembina Institute estimates that Alberta's current GHG policies will likely only achieve one-third of target reductions. It has been estimated that the effective carbon price in Alberta would need to be 10 times greater to achieve its climate targets (Rivers 2010). Without a significant technological innovation, Alberta will be unable to meet a climate change target that

[7] In 2008 $78 million was paid to the Climate Change and Emissions Management Fund.

sees a decline in absolute emissions. This is a result, in part, of the predicted doubling of oil sands production and emissions over the next decade (Environment Canada 2011).

Alberta's climate plan places great emphasis on carbon capture and storage (CCS). 70% of the emissions reductions are slated to come from this technology. While the provincial government is investing heavily in carbon capture and storage, at least one project (CCS for a coal-powered electrical plant) has failed to go ahead because the price on carbon was too low to make the project economic (O'Meara 2012). In addition, Premier Redford seems sceptical of the CCS contracts signed by her predecessor, Ed Stelmach (Thomson 2012). The Alberta policy approach essentially subsidizes very expensive emissions reductions with public money through carbon capture and storage, and a regulatory program that features technology development for industry as its most popular compliance mechanism. Alberta's approach reflects the political considerations that make CCS attractive. Without CCS remaining reserves may not be fully developed under a stringent climate plan, thereby the necessity of CCS for politically powerful energy incumbents (Torvanger and Meadowcroft 2011). The Alberta provincial climate plan however, is less effective, because it fails to create the market conditions in which CCS is closer to being economic as the carbon price is too low to generate rapid innovation (Torvanger and Meadowcroft 2011). The provincial and federal support for CCS illustrates a key plank in a climate policy that could reconcile continued fossil fuel use, and expanded production and export, all within the context of the transition to a low-carbon economy.

Introduction of policy

Alberta's policy should not be viewed as static, or in isolation from the national policy context. At the time of introduction, it was widely perceived in industry and government that the regulatory regime would have to be strengthened, perhaps in the form of a higher carbon price or perhaps the inclusion of a greater number of emitters. Eric Newell, former CEO of Syncrude and now Chair of the Climate Change and Emissions Management Corporation, recalls:

> …[T]he world was really heated up. The U.S. was talking cap-and-trade. We were going to go big. So we thought we would in a very short time expand the number of emitters, like the definition of a large emitter… The 12 per cent was just a target. We figured the targets would get tougher, so it is all there. Government policy can move these levers at any time. (Newell 2011)

His comments also reflects the view of many observers that Premier Stelmach's sudden introduction of the regulations was prompted by rapidly increased public concern onm the part of Canadians and the influence of public opinion on the direction of the federal government's policies.

The introduction of the SGE regulation was rapid. It was in March 2007 that Stelmach's government unveiled the policy, which was to take effect less than four months later. The Pembina Institute had this comment about the introduction, remarking that the, "suddenness of this move appeared to be explained by Premier Stelmach's desire to set a provincial precedent in advance of the new federal government's first detailed proposal to regulated industrial GHG emissions announced just a few weeks later," (Bramley, et al. December 2011). Bill 3, which amended existing reporting requirements for large emitters to include the SGE regulation, was not considered by a legislative committee and was only briefly discussed via committee of the whole. The

announcement and introduction of the regulations came with little reaction from industry, and similarly little attention from the media. There were few articles published about the announced regulations in the Alberta dailies, more attention was paid to the federal Conservative plan, “Turning the Corner.” This muted response from the public and industry can be compared to industry’s response to the royalty review done by the Stelmach government. The election following the review corporate campaign donations to the provincial Progressive Conservatives fell by 41%, which observers attribute to corporate ill-will regarding the changes (Romanowska 2009). Or, compare industry reaction to the Kyoto targets, where in 2002 the oil and gas industry, led by the Canadian Association of Petroleum Producers mounted a vociferous campaign to prevent the Chretien government from ratifying the agreement (Macdonald 2010).

This analysis suggests that the Albertan climate policy suite was specifically designed to ‘benefit’ large emitters, relative to what a more stringent climate policy would entail. The Alberta emissions profile is such that there is small, concentrated group of large emitters that also benefit from significant structural power. Large emitters are also the most significant source of government revenue. While they are regulated, the requirements have been set such that the large emitters pay compliance costs on a small portion of their emissions, rather than facing a carbon charge on their net emissions. Further, the policy has been designed for maximum flexibility for industry in meeting its compliance requirements. Regulated emitters can reduce their emissions, trade-in emissions performance credits, purchase offsets or pay into the technology fund. The charge for payment into the technology fund is $15 /tonne, effectively setting a price cap. With the ability to contribute to the technology fund, producers are unlikely

to pursue emission reduction opportunities at their facilities that are greater than $15 / tonne, nor would carbon offsets generated in Alberta be competitive if they exceeded this price cap. Finally, large emitters will benefit further from the technology developed through the Climate Change and Emissions Management fund, and through the government's large subsidies to develop CCS on an industrial scale. An intensity-based climate policy can be desirable where governments want to give a clear carbon price signal, but are unwilling to have industry pay for each unit of emissions (Rivers and Jaccard 2010).

The assessment that industry 'benefits' from the Alberta policy is not meant to be a normative argument. This paper does not intend to assess whether the clear orientation of the Alberta climate change policy towards large emitters is a good or a bad policy outcome. Either position could be defended. Some would say that the necessary emissions reductions are not being made in Alberta because of the relationship between large emitters and the provincial government. Others would say that this policy is reflective of the need to engage large emitters in massive technology transformation in the energy sector, and creates policies that keep the funds associated with compliance within industry, precisely to fund these technological solutions. What this paper does argue, however, is that the outcomes of the climate change policy reflect a policy development process that either by design, or subconsciously, promotes the interests of large emitters. The way the policy was introduced, rapidly and without public consultation, and the lack of public 'blowback' from industry suggests that they were extensively consulted in private regarding the regulations and were supportive of their intent and content. This dynamic signifies either a captured or a clientelistic

network, in which two actors – government and business interests, dominate the subsystem. In this subsystem there is an absence of countervailing power to industry, namely environmental groups. The process and outcomes in Alberta substantiate Victor's hypothesis that regulation will be preferred by industry when industry and government are close and industry is able to control the regulatory approach.

British Columbia - system level norms and dynamics

British Columbian politics reflects multiple sources of power within the province and an attempt between the two major parties (the Liberals and the New Democrats) to cobble together coalitions of support among these groups. This dynamic has been a major contributor to BC's climate change policy development. While relationships of governance are changing within the province, one author notes that, "BC politics remain distinct from politics in most other provinces in its strong ideological polarization and intense two-party competition, and the interest groups and NGOs that are implicated in struggles for power as well as in patterned relationships of governance," (Crawford 2010, 169-170) .

While British Columbia has traditionally been considered a natural resources economy, in recent years it has transitioned to relatively diversified economy, in line with a "service-sector" society. This has implications for the power of actors within the subsystem. While resource development and exports are still significant, this sector is no longer the sole engine of the BC economy. Primary and secondary resource-sector production accounted for $12.5 billion of BC's total annual output of over $87 billion, and for the past century BC has had a primary sector labour force smaller than the national

average (Howlett and Brownsey 2011). British Columbia also has two significant natural resource sectors: the energy sector (especially natural gas) and the forestry industry. Output from forestry has ranged between 6-8% of provincial GDP, and the energy sector has ranged between 5-6% (Hoberg 2010, 332). While forestry sector employment has been on the decline, it is typically five times that of energy (Hoberg 2010, 332). Forestry also dominates the energy sector as an export earner, but its relative importance has has significantly declined; in 1998 forest exports were four times that of the energy sector, by 2008 they were only twice as large (Hoberg 2010, 332). Direct employment in the natural gas sector is expected to increase from 12,000 to 40,000 employed (Collyer 2011).

The tension between competing sources of power should inform our understanding of BC politics. Indeed, Howlett and Brownsey write:

> The activities of provincial political leaders and the timing of their actions, therefore can be understood to originate in their own need to construct and retain successful electoral coalitions in the context of a provincial society shifting from a staples or resource base to a post-staples or service sector-based economy. (Howlett and Brownsey 2011, 311).

A polarized BC electorate means that elections are contested in a context where a small of number voters may shift their alliances to strengthen different voting coalitions. For instance, the provincial NDP typically aligns itself with the public sector and the provincial Liberals ally with large corporations, the middle class and small business (Howlett and Brownsey 2011). The “land question” is a dominant axis of BC politics regarding resource development and involves business, labour, environmental and native groups. It is viewed to have replaced the historical class polarization within BC society as the dominant narrative regarding political polarization (Crawford 2010, 175).

The two ‘land question’ actors relevant to this paper are business interests and environmental groups.

While the economy is diversifying, the natural resource producers still command a great deal of structural power. Leading forest and mining companies have, “insider status by virtue of being licensees or lessees of crown land, major employers and contributors of provincial revenues through royalty payments, and sources of vital information about their industries,” (Crawford 2010, 179). According to BC’s fiscal plan in 2012-2013 the government will receive $534 million in revenues from forestry and $597 million in natural gas royalties (Collyer 2011). Revenues from natural resources total $3 billion in 2012-2013, or around 7% of total BC government revenue (Ministry of Finance 2012).

BC also has a strong environmental policy community that was especially prominent in its conflict with the forestry industry in the 1990s. When shut out of the policy network, it has pursued strategies of protest and mobilization. The NDP government of Mike Harcourt had a strong constituency in the environmental community, and became much more responsive to their agenda on the forestry industry (Hoberg 2010, 334). This marked a shift towards direct engagement among actors within the policy subsystem. The experience within the forestry sector of engagement between the industry, the provincial government, First Nations and environmentalists has moved the participation of environmentalist to a more active role within the resource / energy subsector generally and strengthened the power of environmentalists.

British Columbia lacks the federal-provincial dynamic that has shaped so much of political life in Alberta. In the past, at least, “the Alberta government’s ability to speak for the west in national politics was facilitated by BC’s erratic and / or subdued intergovernmental performance. Alberta’s star shone so bright in part because BC’s star shone so dim,” (Telford 2010). On the climate policy file, however, BC had been on a similar page as Alberta as suggested by the Campbell government’s stance on the Kyoto ratification. In 2002, Premier Campbell declared that BC would not support the ratification of Kyoto as it would ‘ruin the economy’, cause a loss of between 11,000 and 37,000 jobs, and undermine energy development (H. Smith 2010).

As mentioned in the Alberta case, a province’s emissions profile is a key macro level variable to be considered when evaluating the provincial climate change policy. British Columbia has a significantly different emissions profile than Alberta. In 2008 BC generated a total of 65.1 mt of GHG emissions, representing 8.9% of Canada’s GHG emissions, while the province accounts for approximately 13% of the Canadian population and 12.5% of total GDP (Environment Canada 2010). The largest contributors to net BC emissions are:

Table 3 - GHG emissions, British Columbia, by largest subsector, 2008

Sector	Emissions in megatonnes (mt) and percentage of total emissions

On-road transportation	15.4 mt or 23% of total
Manufacturing and construction industries	6.6 mt or 10% of total
Fossil fuel production	6.2 mt or 9% of total
Oil and natural gas fugitives	6.2 mt or 8% of total

Source: (Environment Canada 2010).

This emissions composition is largely thanks to the abundant hydro-electricity resources in the province, accounting for 95% of BC electricity generation (Environment Canada 2010).

British Columbia's Climate Change Plan

In the February 2007 Speech from the Throne, Premier Gordon Campbell announced a significant new commitment to climate change action. The BC government announced a goal to lower provincial GHG emissions by at least 33% below 2007 levels by 2020. At the time no specific taxes to encourage shifts in consumer behaviour were announced. Following a year of consultation, a carbon tax was announced in the 2008 budget, to be implemented on July 1 of that year. The carbon tax rate in 2008 was $10 per tonne of C02e and has risen each year to the current $30 per tonne of CO2e emissions. The carbon tax is applied and collected at the wholesale level, the same way motor fuel taxes are applied, except for natural gas which is applied at the retail level (Ministry of Finance July 2012). This means that the carbon tax must be translated into a different tax rate for the GHG emissions released from different fuel types. The 2012 carbon tax rate on gasoline is 6.67 cents per litre, and 7.67 cents per litre for diesel fuel

(Ministry of Finance July 2012). The BC carbon tax is designed to be revenue neutral for government, which has meant personal and corporate income tax cuts.

Coverage of BC's climate change plan

Approximately 70% of emissions are covered under the BC carbon tax. The remaining emissions are those not released through the combustion of fossil fuels: 14% from agriculture and landfills; 16% from industrial fugitive emissions (David Suzuki Foundation n.d.).[8] Beyond this, the structure of the carbon tax makes it difficult to ascertain what the impact of the tax is on individual sectors. Sectors pay the carbon tax on the majority of their emissions, and pay the tax according to their consumption of fossil fuels. As the carbon tax is paid at the point of sale for fuel, the provincial government does not track the carbon tax payments by sector.[9] Certain sectors have a higher proportion of uncovered GHGs than others, for instance those with fugitive industrial process emissions. According to BC's climate change plan, the province was to introduce a cap-and-trade system to cover the remaining industrial emissions in the province. While the enacting legislation has been passed, and facilities are required to report their emissions, the provincial government has missed its own deadline to set up a cap-and-trade system in 2012 (Barrett 2011).

There are certain sectors that have expressed concern about being particularly hard-hit by the carbon tax, including the greenhouse growers sector and the cement industry. Cement is particularly carbon intensive to produce, without large differences in prices between locally produced cement and imported cement. The cement producers

[8] The Pembina Institute puts the coverage at 76% of emissions.
[9] Author's conversation with Senior Policy Advisor, Climate Action Secretariat.

note that imports of cement from Asia has increased to an unprecedented 23% of market share, from 4% in 2008, and suggest that the carbon tax be applied to cement imports at the point of sale (McSweeney 2011). Since transportation is the highest contributor to net GHGs in the province, it is worth nothing that BC's plan is very effective at covering GHG emissions from transportation. Transportation is not addressed, for instance, in the Alberta plan.

Effectiveness of BC's climate change policy

It is difficult to assess the effectiveness of BC's climate policy in reducing GHG emissions this early after implementation. Recall that the carbon tax was only introduced on July 1, 2008 at $10 per tonne, and reached $30 / tonne on July 1, 2012. The carbon tax has increased in line with plan contained in the 2008 budget, but the chief architects of the plan have always felt the carbon tax would need to keep rising to generate further reductions in GHGs. For instance, Ontario applying HST to its gasoline (13%) instead of solely GST (5%) placed a tax on gasoline that is effectively higher than the BC carbon tax on gasoline (Pollon 2011). There are some early indicators, however that consumer behaviour is beginning to shift. Stewart Elgie observes that BC's gasoline consumption has dropped by 3% and is attributable to the carbon tax, and not the recession (Pollon 2011). BC's GHG emissions have also decreased over the 2008 – 2009 period, but more recent data is required to ascertain whether this decline has been sustained (Ministry of the Environment 2012). In the short-run, consumer demand for energy products is largely inelastic, especially on products like natural gas for heating, meaning that consumers take time to recognize the price change and shift their behaviour (Ryan and Razek 2012).

The BC government collected $960 million in carbon tax revenue in the 2011-2012 fiscal year (Ministry of Finance 2012). It also dispersed $1.15 billion in reduced provincial tax measures to compensate for the carbon tax, with consumers receiving $481 million in reductions and businesses receiving $671 million in reductions (Ministry of Finance 2012). For the next three fiscal years the BC government projects it will collect approximately $1.2 billion in carbon tax revenue, which will be returned on a revenue neutral basis (Ministry of Finance 2012). In Budget 2012 the province announced that the carbon tax would be frozen at the 2012 rate of $30 / tonne and would be reviewed for its positive and negative impacts on BC's competitiveness. The BC Finance Minister, Kevin Falcon said that, "we had always anticipated others would follow us down this path…That didn't happen," (CBC News 2012). Expanding natural gas production will further complicate the achievement of BC's GHG reduction targets.

Introduction of British Columbia's Climate Policy

Premier Gordon Campbell's 'green' conversion shocked many observers. In his first term he had joined the anti-Kyoto campaign and his approach to resource development had angered many environmentalists. Harrison quotes the Executive Vice President of the influential BC Business Council Jock Finlayson as saying:

> The throne speech was a huge surprise, not just to my organization but to everybody in the corporate community. There really wasn't any advance notice, either through public statements or even through back channels. . . . We were absolutely shocked. . . . I actually dropped my coffee cup, full of coffee, when I was watching [the live broadcast]. . . . That's how surprised we were. I remember the media asking 'were you consulted on this?' and I said 'no' and neither was anybody else. (Harrison 2012).

The public narrative developed by Campbell himself featured a 2006 trip to China where the Premier, witnessing tremendous air pollution was prompted to investigate the climate problem more thoroughly and was concerned enough to take serious action. The 2007 Speech from the Throne did not introduce the carbon tax itself but opened a year of public consultation regarding how BC could meet its climate change targets. A large number of environmentalists and academics advocated for a carbon tax, succeeding with the tax's introduction in Budget 2008 (Harrison 2010). The personal commitment of Premier Gordon Campbell is widely viewed as a key factor for the carbon tax's introduction:

> The Finance Minister's trial balloon in late 2007 elicited expressions of public support for a carbon tax and, perhaps more noteworthy, no marked opposition from the business community. However, the Minister's own statements acknowledged that the policy was politically risky, a finding supported by subsequent polling on public attitudes toward carbon taxation. At minimum, the Premier's good policy motives seem to have tipped the balance on a difficult policy choice. (Harrison 2012)

This paper has highlighted that a key BC political dynamic is managing polarized actors and building coalitions of support, especially as it pertains to environment and development issues. An alternate view of Campbell's 'conversion' suggests that the carbon tax was a key strategic initiative in building a coalition of support for Campbell's 2009 re-election. In a similar fashion to Campbell's strategic embrace of the First Nations treaty process, BC's climate plan prevented, "a united front from forming around land and resource questions, which would have been allied with the NDP and opposed to the government," (Crawford 2010, 180). Another observer, political scientist Dennis Pilon supports this view, arguing that the plan was an attempt to steal away middle class supporters of the NDP (Barrett 2011). The carbon tax did turn out to be a

politically astute move by Campbell. According the environmentalists a key 'win' by accepting their recommendation to adopt a carbon tax, the government ensured that environmental groups would be supportive of the government in the upcoming election, held in May 2009, not even a full year after its implementation. When the NDP adopted its "axe the tax" platform to kill the carbon tax, leading environmental groups, like the David Suzuki Foundation, held a press conference announcing their support for the Campbell government's climate plan.

Influence in the policy development phase is not limited to participation in the actual design of a given policy. Significant policy actors have influence on the agenda setting process and the broad public policy development phase by framing acceptable policy choices and providing support to their preferred policy outcome. In the BC policy development phase, the BC government appointed a Climate Action Team comprised of policy leaders from natural resource sectors, leading businesses and environmental group mandated to provide advice on how the government could meet its climate change targets (Climate Action Secretariat n.d.). Furthermore, the secretariat was advised by Dr. Mark Jaccard a leading environmental economist (Climate Action Secretariat n.d.). This paper cannot isolate the direct influence the Climate Action Team, or the public participation of environmental groups had on policy design, but their prominent inclusion in the process is a clear indication of their importance within the subsystem. Environmentalists can be said to have influence within the process because the evidence suggests that the government deemed the policy group to be critical to meeting its policy objectives.

The central argument of this paper has been that structure of the policy subsystem influences policy outcomes and instrument choice, with the distribution of costs and power within the subsystem being key variables. We have observed that in British Columbia the structural power of the natural resource industries has declined over time with the diversification of the economy. Powerful actors in labour, environmental and First Nation groups, who are often allied on the 'land' question, further buffet the structural power of business. In British Columbia we saw significant participation from environmentalists in the policy development phase, a strategic inclusion by the Campbell government. The climate policy subsystem, in this case, involved a greater number of actors with countervailing power, demonstrated most clearly by the involvement of environmental groups and experts in crafting the BC carbon tax. The power of environmental groups to play a deciding role in BC's ever-changing electoral balance of power created the conditions in which the government was receptive to their policy demands and implemented a carbon tax, their preferred policy option. The presence of a stronger countervailing power to industry suggests a climate policy subsystem in BC that is closer to either a pluralistic network, or an issue network. A greater number of actors, with sufficient power commanded by environmental groups, resulted in a market-based policy instrument choice.

Conclusion

British Columbia and Alberta have successfully implemented climate policies while similarly comprehensive policies have not been realized at the federal level. In Alberta, the climate policy framework is designed around decreasing emissions intensity of industry. A second major objective of their plan is to fund technological breakthroughs

that the province will need to achieve major reductions while still maintaining energy sector viability. British Columbia has a relatively smaller emissions profile that is mainly generated through the consumption choices of individuals, rather than the large amount of emissions generated in Alberta by industry for energy exports. The BC carbon tax is a policy aligned with creating the incentives for behavioural change, especially over a longer time period, as individuals can adapt their decision-making to reflect the increased price of carbon. While there are many other explanatory variables, perhaps one of the reasons why we see increased climate policy innovation at the provincial and state level is the principal of "policy subsidiarity" is important in the nascent climate policy subsystem. Those who are closest to the emissions may be the best to determine a carbon policy that 'fits' their emission structure and is most palatable to its subsystem.

This paper found the structural power of actors within the subsystem influenced policy outcomes in the Alberta and BC cases. In Alberta, the distribution of costs from the climate policy suggests a privileging of industry and reflects the structural power of industry in Alberta. In the subsystem this led to the adoption of carbon intensity regulations. In the BC case, a greater number of actors within a polarized political system led to greater countervailing power from environmental groups. Environmental groups prefer market-based mechanisms because they are perceived to be more stringent. In both subsystems the energy and environment are the defining issues upon which the provincial pendulum of power swings. The policy responses reflected the system level norms in the policy field from which the climate policy subsystem originated; the energy subsystem in Alberta and the 'land' subsystem in BC. The evidence suggests that in Alberta political actors worked to pre-empt the federal

government regulation and protect the oil and gas industry with a policy it found more favourable. In BC, the process by which the carbon tax was introduced gives weight to the argument that political actors were motivated to prevent an anti-government coalition from coalescing around the so-called 'land question'.

While there is a limit to what we can infer from two cases alone, this paper makes the following observations about subsystem structure and climate policy outcomes based on the experiences in Alberta and BC. To return to Howlett's taxonomy of policy networks developed early in the paper, Alberta has a subsystem with two major network participants (clientelistic network / captured network) and BC has a subsystem with more than three major network participants, given the dynamics of the 'land' coalition (pluralistic network / issue network). Subsystems with more network participants are more likely to feature a stronger countervailing power to industry, most often from environmental groups. Environmental groups will prefer more stringent climate policies, which will likely be market-based policies. If a subsystem features greater countervailing power to industry, we have observed that market-based policy instruments are the more likely choice.

The evidence from climate policymaking in Alberta and British Columbia supports a reversal of the typical typology of climate policy instruments and their relative stringencies. In the environmental policy field the standard hierarchy of policy instruments has direct regulation as generally the most restrictive. The emerging trend in climate policymaking does not support this hierarchy. As Victor indicates, regulation as a policy instrument to reduce GHGs is preferred, not because of its stringency, but because it allows government to both obfuscate and control the allocation of costs and

benefits. An example of this is the seemingly never-ending consultation cycle for federal regulations that carries on without finalization (Commissioner of the Environment and Sustainable Development 2012) (National Roundtable on the Environment and the Economy 2012). This allows the appearance of tough regulatory action without actually implementing the policies. In addition, there are few, if any, examples where a government has implemented a comprehensive regulatory policy. This is because developing GHG reduction standards for every subsector of the economy would require immense amounts of information and sustained government intervention. Regulatory instruments are not well suited for a broad coverage of emitters, save for jurisdictions with highly concentrated emissions sources.

Instead, the evidence suggests that market-based instruments will be used when the broad coverage of emitters (and effectiveness) is intended. Climate policy instruments judged by stringency would have two main categories: coverage of emitters and the inherent or explicit price on carbon. Regulations cannot achieve at least one of these categories easily (broad coverage). This is because regulations will be inefficient unless the regulators know how much it will cost a given emitter to make emissions reductions (Field and Olewiler 2001). This is the marginal abatement cost of emissions reductions, and it will vary from firm to firm, or within sectors (Field and Olewiler 2001). To make regulations more efficient, therefore, governments would need significant amounts of information and would have to invest significant resources in developing tailored regulations, or they could create large inefficiencies in the economy and a higher cost of carbon policy (Field and Olewiler 2001). In practice government is often unwilling to regulate emissions from all of the economy for political or administrative

reasons (Rivers and Jaccard 2010). It is for these reasons, that regulation in climate policy is often intended to target one group of relatively homogenous emitters rather than a broad base of emitters from different sectors. Therefore, in the hierarchy of climate policy instruments, regulation is, in practice, less stringent than market-based mechanisms. There is an emerging pattern in Canadian climate policy in which regulations are often used in an effort to create "false consciousness" where it appears tougher action is being taken then empirically demonstrated.

In the Alberta and British Columbia cases, the choice of market-based mechanisms does not entirely follow the logic articulated in Victor's model of instrument choice. Victor argues that when the burden of climate policy falls on an organized group, like industry, the group will prefer market-based instruments because they are more efficient than regulation. This, however, implies a credible threat of comprehensive regulations that are more costly than broad-based market instruments would be. In the Alberta case, industry preferred regulations because they were less stringent than market-based instruments will full emissions coverage. In addition the regulations were developed by a level of government with a close relationship to industry. In the British Columbia case there is insufficient evidence to suggest that industry's tacit support of a carbon tax was a result of any concern from industry that the BC government would proceed with stringent regulations in place of a carbon tax.

The second part of Victor's argument is that a 'credible threat of regulation' will compel industry to prefer market-based instruments. This type of regulatory 'threat' has yet to be realized in Canada, making it difficult to assess this argument. The threat of federal regulations did prompt change in the national subsystem, evident from the

provincial responses. The regulations, however, did not reach a point in the regulatory cycle where it appeared inevitable that they would be fully implemented. Logically, it would be at this point that industry might reconsider its political objectives in support of a carbon tax. For instance, should the federal government fully implement its sector-by-sector regulatory strategy, we may have the occasion to test this argument. Perhaps some of the industry calls for a carbon price, even if relatively muted presently, are an early indication of this development.

The analysis presented in this paper, especially as it pertains to Victor's model of climate policy instrument choice, bears further testing. Future research would be especially relevant on other key Canadian jurisdictions, like Ontario and Quebec, both of which have a relatively advanced provincial climate plans. It would also be useful to examine the policymaking dynamics surrounding federal regulations, such as they are. The forthcoming coal regulations, in particular, are relevant to this research. Faced with impending regulations that do not allow compliance flexibility, the coal-powered electricity industry has already signalled its discontent with a regulatory approach (De Souza 2012). Additional research and theoretical exploration would also be useful to elaborate on Howlett's model of policy networks in which the nature of the relationship between network actors is further defined.

The findings of this paper are also relevant for climate policy practitioners. An analysis focused on subsystem structure and power raises the issue of determinism – will the subsystems, based on their structure, always develop similar policy outcomes? While the policy outcomes are based on patterned series of interest mediation between actors, subsystems do not operate in a vacuum. They are subject to external forces and

shocks that can change the balance of power within the subsystem. Highlighted in this paper, one such episode was the rapid change in public concern regarding climate change in 2006-2007 and its related response from a minority federal government. Canadian climate policy is also buffeted by the action of the US, our closest neighbour and trading partner. The fallout from the 2008 financial crisis and the increasing polarization of the American political system has made US climate action uncertain (National Roundtable on the Environment and the Economy 2011). This development has effectively stalled Canadian climate policy at all levels of government. However, a new external force may be prompting change in the climate policy subsystem: there are increased concerns from certain voices, both nationally and internationally, regarding the emissions and environmental impact of the oil sands.

The relative importance of emissions structure versus subsystem structure would be an important area of future research. In both the Alberta and British Columbia cases, the policy instrument chosen was reflective of which emitters were to be targeted, based on the composition of emissions within the subsystem. For instance, where jurisdictions have emission profiles like Alberta, highly concentrated industrial emissions (with the added dimension of energy exports) will the subsystem be more likely to generate emissions-intensity based regulations? For jurisdictions like BC that already have relatively low emissions and fewer industrial emitters, will a carbon tax prevail? Incorporating data from Canadian and US sources would allow an interpretation of the relative importance of emissions structure vis-a-vis political factors within the subsystem.

The provincial responses from BC and Alberta in the 2007-2008 emphasize the agency of the Premiers in setting the policy agenda to include climate change. While Premier Gordon Campbell may have been responding to the political imperative to forge new coalitions of support, it was his initiative that included climate change on the provincial agenda. He also contributed substantial political capital to implement the policy. Premier Ed Stelmach also recognized that maintaining the status quo was a liability for Alberta and took the initiative to develop a comprehensive climate policy. In this way, provincial Premiers have acted as conduit for change in the subsystem. The current Alberta Premier, Alison Redford continues this role as she attempts to change the relationship between Alberta and its federal, provincial and international colleagues by re-framing the discussion about energy and environmental issues in Canada.

Both British Columbia and Alberta intended to strengthen their carbon policies but have stalled in light of minimal federal or US action. Both provinces developed their policies amidst sweeping concern about climate change, and acted on their expectation that more stringent federal or continental policies were to follow. Since the implementation of their respective plans neither BC nor Alberta has strengthened their frameworks. If anything, BC looks like it might weaken its policy as it is in the midst of carbon tax review and has delayed the implementation of a cap and trade system; all while planning to dramatically increase natural gas production (Cox 2012) (MacLeod 2012) (Ministry of Energy and Mines 2012). With a provincial election expected in 2013 and with the Liberals' coalition fracturing on the right, BC's climate plans may involve significant changes in the near future. Alberta, too, may be changing its climate policy. Premier Redford seems attuned to the social license considerations her province is

facing and may consider a more stringent climate policy as a necessary trade-off to grow the industry, if those two objectives can be accommodated. Stalled provincial action suggests a cautionary tale regarding the limits of sub-national governments to both generate momentum on national climate policy, and to achieve the committed levels of reductions. Without the sense that their competitors, and partners, are making a similar commitment to reducing emissions, the provincial climate plans cannot be 'scaled up'. The structural constraints of collective action problems also restrict the agency of political actors in moving too far ahead of their economic partners.

Finally, these two cases also illustrate that climate policy need not be the third rail of Canadian federal politics. Alberta and BC, two key western provinces, have developed climate policy frameworks that are politically acceptable to their subsystem actors. Both were willing (at least rhetorically) to strengthen their approach should others act as well. Further analysis of the Quebec and Ontario climate plans would bring additional insight, but it is worth noting that citizens of those provinces have also learned to live with a variation of a provincial climate policy. Put together, between those four provinces, you have most Canadians living in a jurisdiction that has existing climate policy frameworks with the potential to scale up their plans given a commitment to collective action. The developing social license questions regarding Canada's environmental performance may be the push to the table that a few governments need.

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