IMPLEMENTING CLIMATE MITIGATION POLICY AT A SUBNATIONAL LEVEL: LESSONS FROM BRITISH COLUMBIA

by

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Abstract

Owing to the undifferentiated nature of the atmosphere, the theory of collective action predicts that governments at all levels are unlikely to adopt climate policy that reduces emissions before the adoption of a globally accepted and enforced climate agreement. Yet contrary to this prediction, many subnational governments (local, municipal and regional) throughout North America have implemented climate policies that are reducing GHG emissions. Reviewing the literature assessing the implementation of climate policy at a subnational level, this thesis synthesizes a characterization of the factors understood to motivate the development and adoption of climate policy. These factors include (1) economic costs and benefits resulting from climate policy, (2) the existence of political will or an issue champion to further the policy, (3) the support and pressure from public and interest groups, (4) tangible climate impacts that require action, and (5) an institutional structure and capacity that allows for the implementation of mitigation policy. The thesis then analyzes the case of the development and implementation of mitigation policy in British Columbia (BC), Canada, against this characterization. The findings of this analysis suggest that within the BC context, climate policy decision outcomes can be understood to have been influenced by each of the decision factors identified. The study further finds that as contextual factors changed within the province, the prospects for policy longevity were diminished, which suggests that the contextual factors were necessary in achieving climate policy outcomes. The thesis argues that the characterization of motivation factors can be usefully applied to case examples, and that when each of the motivating factors established within the characterization are present, it is possible to implement politically challenging mitigation policy.

Preface

This thesis is original, unpublished, independent work by the author, L. Ferris. Chapter 3 Figure 1 is used with permission from the source.

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Chapter 1: Introduction

As the impacts of climate change continue to increase in both severity and frequency, and as the international community struggles to adopt a binding, coherent approach to emissions reductions, a growing number of sub-nationally situated regions, including municipalities, cities, states and provinces, have begun to implement regionally-led climate mitigation strategies and policies. These examples of regionalized climate mitigation efforts appear in contradiction to the conventional wisdom of collective action theory, which holds that as the atmosphere is a shared global resource and an undifferentiated good, any climate mitigation gains will be shared globally, while the costs will be borne locally. This creates a perceived 'free-rider' challenge, where it is predicted that regions are negatively incented from acting in advance of regional and global counter parts. And yet despite these predictions, multiple examples of regionally led mitigation efforts exist across North America, Europe, South America and Asia, and analysis indicates that these case examples are having measurable success in mitigating GHG emissions.

One notable example is the case of British Columbia, Canada, where, between late 2007 and early 2008 the province established a suite of climate change mitigation legislation targeted at reducing the province's total annual emissions output to 33% below 2007 levels by 2020. Analysis conducted in 2012, four years after policy implementation, indicates that the province's per capita fossil fuel consumption has decreased 15.1% in the years since climate policy was first enacted within the province, despite a national per capita average consumption increase of 1.3% during the same time period, and further argues that the policy has had no negative impact on the province's economic growth during the period of policy implementation (Sustainable Prosperity,

2012). This case example is made more notable still, as the strategy's central policy lever, North America's first broad based, revenue-neutral carbon tax, is widely recognized amongst policy scholars to be politically challenging to implement due to the negative perceptions the public has surrounding new taxes (Goulder and Stavins, 2011, Harrison, 2012, Jaccard, 2005).

Such examples of subnationally led policy naturally inspire several questions, including:

- What factors enabled policy implementation in the face of the predictions of the conventional theory of collective action;
- What can be learned about policy implementation from specific case examples of climate mitigation policy; and,
- Are there ways that these lessons can be replicated in other jurisdictions?

Using the case example of British Columbia as a backdrop, this thesis explores these questions. Chapter Two reviews existing policy literature focused on subnationally led responses to climate change. Seeking to understand the reasons behind the seeming contradiction between conventionally held theories of collective action, and the multiple examples of subnationally led climate mitigation efforts that exist across North America, the chapter examines the policy literature to determine the theoretical and founded factors that have been understood to motivate policy implementation within North America. The chapter finds that within scholarship on the topic, five factors have been argued to have motivated the development of regionally led climate change mitigation policy, including (1) economic costs and benefits, (2) the existence of political will or an issue champion to further the policy, (3) the support of public opinion or interest group pressure (4) tangible climate impacts that require action, and (5) an institutional structure and capacity that allows for the implementation of mitigation policy. The chapter further examines the outcomes of regionally led climate policy in North America and enters into a brief discussion into a possible future direction of climate policy research and practice which understands climate policy making as happening from within a polycentric framework that is situated across governance levels and jurisdictions.

Employing the characterization of the five motivating factors developed in chapter 2, chapter 3 examines climate policy design, decision-making, and implementation in British Columbia. The chapter explores the contextual factors that enabled policy implementation during the province's 'green shift' paying close attention to those factors established within the subnational climate policy literature as motivating policy responses.

1.1 Methods

To conduct the analysis of BC's climate policy, a case study approach was employed. Case study serves as a useful method of inquiry within this thesis for several reasons. Yin (2009) argues that case studies are applicable when research focuses on uncovering the reasons *why* a contemporary event occurred (Yin, 2009, 8), as is the case with this research project. Yin further argues that this holds true particularly in instances where the examination of the case itself will not result in manipulation of the behaviour of actors (Ibid, 11). Case study method was also selected because of the volume and type of possible explanatory variables explaining motivations behind climate policy implementation that emerged early within the research process. Hartley (2004) argues that in instances where the number of possible explanatory variables make standard experimental and survey design an inappropriate research strategy a case study approach can allow for the

review of multiple variables (Hartley, 2004). Furthermore, as case study research is known to be "sensitive to opportunistic as well as planned data collection" (Hartly, 2004), the use of the case study approach has allowed for the consideration of new causal factors as they emerged throughout the research process. Finally, as this study was predicated on the hypothesis that a variety of contextual factors may have influenced the design and implementation of climate change policy, the use of a case study approach allowed for the addition and removal of potential causal factors as they were identified.

A primary limitation of case-based research is the difficulty in comparing findings amongst multiple case studies conducted from within multiple orientations and framings, and further, the challenge of drawing conclusions from a single research case. These limitations, while significant were deemed acceptable, given the merits of a case based approach and its applicability to the present topic. It is my hope that the findings of this thesis contribute to a growing cannon of research examining sub-nationally led mitigation efforts and serve to increase the academic understanding on both the factors that are seen to motivate, and the policy consequences of these cases.

Data used in the British Columbia case study was gathered from publicly available sources, with a heavy reliance placed upon the use of legislative texts, and government documents including strategies, press releases and website content from the province's multiple pages dedicated to climate action. Publically available opinion polling data was also examined. The thesis further relied upon 'grey' literature such as reports from think tanks, advocacy organizations and other civil society mechanisms, along with opinion pieces and media reports published in provincial

and national print media. Additionally, ample use was made of peer reviewed academic sources, particularly within chapter 1. Each subsequent chapter includes its own methods section, which further details how data and evidence was selected and employed.

1.2 Theoretical Framework

As discussed above, the analysis presented in thesis relies upon a characterization that was developed through a review of the literature focused on North American, subnationally led climate mitigation efforts, established in chapter 1. Within both disciplinary and transdisciplinary traditions, scholars have theorized upon the relative impact of various factors upon decision-making, and this is certainly true within questions of climate policy. This theorization has led to the emergence of multiple explanatory theories of public policy decision-making. Among these various theories, it is argued that there is disagreement over the existence and usefulness of what Birkland (2005) terms "a coherent set of principles that can govern the study and understanding of what we call the public policy process". For example, Feist and Rosenberg (2009) argue that frameworks stemming from the field of cognitive psychology understand decision-making to be intrinsically linked to, and emerging from the internal mental process by which individuals think about, understand, perceive and solve problems (Feist & Rosenberg, 2009). In contrast, within the field of behavioral economics, Bernheim and Rangel (2008) argue that decision outcomes can be understood to be the result of the rational choices made under a series of economic constraints (Bernheim & Rangel, 2008). In part to address the challenges associated with monolithic interpretation, in 1951 Lasswell argued for the development of the field of 'policy sciences' which would apply an interdisciplinary, empirically driven and theoretically complex analysis toward decision outcomes (McCool, 1995). However even within

this interdisciplinarily-driven tradition, a variety of disparate theories have emerged, placing varying levels of importance on differing decision factors (Cochran, Mayer, Carr, Cayer, & Mckenzie, 2011).

The reasons leading to the existence of multiple frameworks is presently under debate. Birkland, (2005) argues that due to the newness and interdisciplinary nature of policy studies, "the field has yet to coalesce around a shared set of principles, theories and priorities" (Birkland, 2005, 5). In contrast, Cochran et al note that while theory development should be guided by an attempt to "simplify the reality they represent, no model of decision making can capture all of the complex factors that influence decision making"(Cochran, Mayer, Carr, Cayer, & Mckenzie, 2011). Irrespective of why multiple theories of decision making have emerged, the existence of frameworks that preferentially elevate various decision factors presents researchers with both epistemological and methodological challenges.

Before data collection begins, the process of research design compels researchers to hypothesize on decision factors, and select methodological frameworks which themselves define an approach towards data collection emerging from the initial hypothesis. Methodological frameworks have emerged to address the very practical challenges associated with answering complex, contextualized questions. These tools guide researchers in bounding the scope of data to be collected, and in determining what questions to ask of data once it has been collected. The natural consequence of bounding both the scope and content of research is a limitation in the nature and type of result.

I believe that the very existence of multiple explanatory frameworks of decision making that stem from the various disciplinary traditions should lead us to conclude that no one factor can be understood as operating either in isolation or in totality to propel policy outcomes. This thesis is inclined to accept the argument of Cochran et al that no model of decision making can completely capture all of the complex factors that influence decision outcomes (Cochran, Mayer, Carr, Cayer, & Mckenzie, 2011). However comprehensive previous scholars have been in examining the factors motivating climate policy making at a sub national level, it is probable that still more factors could be understood to have impacted decision outcomes. It is within this orientation that this research has been conducted, and the following chapters have been developed. It is my hope that the research presented within the subsequent chapters, and the framework employed in analysis serve to paint a broad brush stroke of the more important explanatory factors within the British Columbia case context and can be useful in considering similar decision making scenarios within other cases.

1.3 Terms

Finally, a note on terms found within the thesis. Within the following chapters, the term subnational is used to refer to any governance jurisdiction falling below national level, which could include cities, municipalities, subnational regions such as collections of municipal regional districts, provinces or states. The subnational unit of analysis within this thesis is a Canadian provincial jurisdiction, the Province of British Columbia. Climate policy refers to action either legislated or regulated by a governance structure with the purpose of either mitigating and/or abating GHG emissions. This action is understood to encompass both the target or intention set to mitigate GHG emissions, which is often, though not always enshrined within legislation, and

the accompanying strategy or policy instrument(s) designed to achieve the desired mitigation ends. Throughout the literature, several terms are often used to describe one concept, or a series of similar concepts. Throughout the thesis I have tried to apply the most frequently cited terminology found within the literature, and wherever possible, have indicated where these terms were found.

Chapter 2: Local and Regional Level Climate Change Mitigation Policy in North America: a Literature Review

2.1 Introduction

During the past 20 years, much of the climate change policy research has focused primarily on nation state led GHG mitigation, undertaken within a global environmental governance framework (Bulkeley and Moser, 2007, Okerere et al, 2009, Harrison and Sundstrom, 2010, Sharp et al, 2011). According to these authors and others, climate policy research has failed to adequately explore the role that other actors such as subnational governments, business, and NGO communities can play in mitigating GHG emissions, except for, as noted by Bulkeley and Moser, "insofar as they effect the positions of nation-states and the outcomes of international negotiations" (Bulkeley and Moser, 2007, p. 2). As argued by Rabe (2007), a serious consideration of the role and capacities of national and subnational jurisdictions to stabilize global GHG emissions is largely absent from the climate policy literature and debate.

This concentration of research efforts toward nation-state led multi-lateral policy development can perhaps best be understood by the implications of the commonly held understanding, recently articulated by Harrison and Sundstrom, that climate change is a "tragedy of the commons on a global scale" (Harrison and Sundstrom, 2010, p. 1). Within the 'commons' context, collective action theory holds that as the atmosphere is a public good shared freely by all, benefits resulting from GHG mitigation are shared collectively, while the costs of mitigation are born alone (Kousky and Schneider, 2003, Brennan, 2010, Ostrom, 2010). As a result, it is argued that countries face a strong incentive to 'free ride' on GHG emissions reductions undertaken by others (Kousky and Schneider, 2003, Brennan, 2009). Throughout this literature it is commonly held that in the absence of a globally negotiated and enforced global climate change deal, there is little if any incentive for countries to act alone (Brennan, 2010).

Within such framing, it is further argued that the disincentive from unilateral action extends from the federal level right down to the most localized levels of government. Betsill (2001), points out that from a 'rational choice' perspective, municipal governments face little incentive to employ resources towards GHG mitigation as it is not clear that these actions will result in a measurable effect on global climate change. Sharp et al (2010) cite that it is surprising that subnational governments would invest resources and time into approaching "transboundary" emissions problems. Zahran et al. note that overall emissions outputs will not be substantially changed if one city reduces emissions, yet others fail to do so (Zahran et al, 2008), and Kousky and Schneider argue that any regions that enact climate policy are doing so in contradiction to economic theory (Kousky and Schneider, 2003).

In parallel with the dominant academic literature, which deals with the international arena of climate policy, there exists an emergent and growing body of literature, that examines examples of subnational climate policy implementation that act in seeming contradiction to collective action theory (as a start, see Kousky and Schneider, 2003, Rabe, 2007, Bulkeley, 2010, Galarraga and Gonzalez-Eguino, 2011). This literature finds its basis for existence in what Ostrom (2010) argues are two reasons warranting a complete assessment of the applicability of the conventional theory of collective action toward the issue of climate change mitigation: firstly, that despite the predictions of the standard model, there are many examples of subnational

mitigation efforts that warrant further investigation, and second, that these efforts are generating regional benefits that appear to overcome the barriers presented by free ridership.

For example, subnational jurisdictions across North America, including cities, municipalities, regions, provinces and states are establishing GHG emissions reductions targets, and developing climate change policies. As of 2013, the mayors of over 1050 American cities committed to reducing municipal GHG emissions to at least 5% below 1990 levels, through their membership in the US Mayors for Climate Protection Agreement (US Climate Protection Center, 2013). Analysis of Canadian provincial and regional responses to climate change indicate similar levels engagement and emissions stabilization opportunities in Canada, and are discussed in further detail below.

The motivations behind these actions are not fully understood, but there are several studies that suggest that the cumulative environmental impacts of sub-national policies are considerable. Within the U.S., for example, Lutsey and Sperling (2007) find that the subnational mitigation efforts existing as of 2007 could stabilize American emissions outputs to a 2010 level by 2020. Kousky and Schneider (2003) argue that the growing level of subnational climate change policy case studies "demonstrates that at the local level, free-riding has been much less of an impediment than theorized" (Kousky and Schneider, 2003). This argument finds support in a study by Ostrom (2010) where it is demonstrated that cities, municipalities, regions, provinces and states enacting climate policy are doing so with measurable fiscal, political and/or societal benefits.

This diagnostic review seeks to contribute to the ongoing and growing academic conversation on subnational climate change policy responses by describing how the literature conceptualizes the factors understood to motivate the development of climate mitigation policy, and discussing how this conceptualization could be used to understand climate policy decision making at a subnational level. This is done by analyzing the literature on climate change mitigation policy in North America from 1995 onward. I begin by providing a general overview of the historic, present and anticipated future of the scope of this research field and thereafter examine this literature in order to describe and synthesize the:

- Historical and current status of subnational climate change mitigation policy in North America,
- 2. Factors that are understood to motivate this policy action,
- 3. Anticipated future directions of research in the field and outstanding questions.

The studies examined in this review were found through Google Scholar, the UBC Library Search Catalogue, and references therein. Various combinations of the search terms given in Table 1 were used when searching for literature dealing with sub-national climate change mitigation issues.

Table 1: Literature Review Search Terms

| Sub-National | Mitigation | Climate Change | |
|--------------|------------|----------------|--|
| Regional | Response | Global Warming | |
| Jurisdict* | Action | Climate Change | |
| State | Effort | Energy | |
| City | Approach | Emissions | |
| Municipa* | Policy | GHG | |
| Domestic | Strategy | Greenhouse Gas | |
| | Abatement | Carbon | |

The review begins with a brief examination of the current state of the climate change policy literature. From this foundation, the review explores the state of existing subnational climate policy responses in North America, and finds a geographically diverse engagement in mitigation policy development and implementation throughout all subnational levels of governance (municipal, regional, and provincial/state). The review then summarizes the hypothesis forwarded by various authors to explain the motivations for subnational policy implementation, and explores the underlying evidence supporting these conclusions. The study synthesizes those reasons most commonly theorized within the literature, into a characterization of factors that can be understood to motivate climate policy decision making. Finally I explore the results of subnational mitigation efforts, focusing on both quantitative emissions reductions, and the often uncalculated societal benefits that arise at both a local, and collective level.

Overall, the review finds that within North America, notable mitigation efforts by subnational governments are currently contributing to global emissions reductions, and further, that the jurisdictions undertaking these actions are motivated to do so with calculable economic and societal benefit. These findings contradict the predictions of collective action theory, and support the body of literature calling for further research within this area (e.g. Ostrom, 2010, Brosseau et al, 2010, Fallaraga and Gonzalez-Eguino, 2011). The review concludes with a brief exploration into the use of poly-centricity within the literature as a framework to describe the existing subnational mitigation efforts, and from this discussion, sets the foundation for a further exploration into British Columbia climate policy, from within this framework.

2.2 Historical and Current Status of Subnational Climate Change Mitigation Literature and Policy in North America

Subnational climate change mitigation policy has been the subject of academic explorations for some time. Researchers have been examining greenhouse gas mitigation at the subnational level since non-nation-state actors first began engaging in climate policy as early as 1990. In her 2010 review of the field and research efforts to date, Bulkeley demonstrates instances of research that began in the early and mid 90s, citing case studies examining municipalities that demonstrated early adoption such as the 1996 study conducted by Lambright et al which explored the cases of Toronto, Canada and Chicago, US, and Young's 1995 analysis of the Toronto Canada case study, in addition to other urban case studies within the US, Canada and Australia. In their 2011 study in which Sharp et al examined the motivations behind municipal-led mitigation action, the authors found ample examples of subnationally focused research in the filed of global environmental policy dating back to the late 90s.

In the 2010 review cited above, Bulkeley demonstrates that research efforts to date can be primarily categorized into two areas of focus: studies which examine the events leading to the implementation of sub nationally led climate policy, such as motivating factors or institutional or structural features, and studies evaluating the impacts that these policies have had, typically through an examination of the tangible emissions reductions achieved by the policy. In their 2011 case study analysis of American states and Canadian provinces engaged in climate action, Burke and Ferguson add strength to this characterization of the field, finding that while there is "extensive and dynamic" research examining policy instrument design and selection at the

provincial and state levels, "these tools are generally viewed in isolation, or tracked via their spread across North America" (Burke and Ferguson, 2011). As noted in their 2011 study, which examined 23 best practice cases of local and regionalized climate action, Galarraga and Gonzalez-Eguino found there to be "few studies that consider the role of regions in global environmental governance" (Galarraga and Gonzalez-Eguino , 2011) . However as the field matures, research is beginning to integrate the findings of multiple case studies, to conceptualize and understand subnational climate policy and the emerging trans-national networks of subnational actors as integral elements of a global system of climate governance (E.g. Ostrom, 2010).

As noted by several authors (e.g. Okerere, 2009, Ostrom, 2010, Burke and Ferguson, 2010, Fallaraga and Gonzalez-Eguino, 2011), this gap in previous research presents an opportunity to extend enquiry toward conceptualizations of a role for subnational governance jurisdictions within a multi-level, nested governance framework that sees climate policy action extend throughout all levels of governance, and beyond governmental actors towards all sectors of society. This framework, characterized by Ostrom as polycentricity, recognizes "multiple governing authorities at differing scales rather than a mono centric unit" (Ostrom, 2010, p.552). As argued by Okerere et al in their 2010 conceptual paper which seeks to integrate the experiences of non-nation-state actors into a characterization of the global governance of climate change, as sub-national and other non-state actors begin to mitigate an increasingly larger share of the total global emissions, these actions will "significantly affect how we conceptualize and understand the nature of global climate governance" (Okerere, 2009). As Rabe contends in his 2007 study of American state-led mitigation efforts, analysis and review of subnational mitigation policy within the North American context provides an excellent opportunity for the examination of the "next generation" of climate policy (Rabe, 2007).

2.2.1 GHG Mitigation Policy in North American Subnational Jurisdictions

Before beginning a discussion of the findings made by researchers exploring the motivations behind subnational climate policy, I will first explore the scope of subnational engagement in climate policy within North America. Through this review of the literature, I have found that throughout the continent, there are ample examples of subnational climate policy existing across Canada and the US, and throughout all vertical levels of subnational governance including municipal, regional, state and provincial levels. As discussed by Kousky and Schneider in a 2003 analysis of municipalities participating in the International Council for Local Environment Initives' (ICLEC) Cities for Climate Protection (CCP) Campaign, the first example of subnational climate policy can be traced back to Toronto, Ontario, which, in 1990, became the first government to adopt a GHG emissions reductions plan. (See Young, 1995 for an analysis of the Toronto case study). From those humble beginnings, quite quickly subnational mitigation efforts emerged throughout North America.

Within the municipal context, several authors point to the emergence of the CCP campaign as an important organizing structure resulting in North American (and global) municipal engagement in climate policy. To date, the campaign itself has been well studied within the literature (e.g. Betsill, 2001, Kousky and Schneider, 2003, Zahran et al, 2008, Sharp et al, 2011). The network, which was established in 1990 by the International Union of Local Authorities and the United

Nations Environmental Program, provides members with guidance on developing municipal climate policy, including methodology for establishing greenhouse gas inventories, and an annual reporting structure to document policy outcomes. In a 2003 study in which the authors conducted interviews with 23 municipal members of the CCP campaign, Kousky and Schneider found that 140 American cities and over 540 cities globally had set municipal GHG emissions reductions targets through their participation in the program. In their 2011 study, Sharp et al examine the motivations behind municipal mitigation action using the CCP campaign membership as case subjects. The study finds that as of 2008, 545 US cities were engaged in the campaign. This study further examined municipal engagement in other network structures developed to provide resources for subnational policy engagement of over 1050 US cities which had committed to reducing GHG emissions at least 5% below 1990 levels, and the Sierra Club's Cool Cities Campaign, which was launched in 2005 (Sharp et al, 2011).

In addition to the many studies examining municipal engagement, there is an equivalent body of literature examining the examples of provincial and state-led responses, which have emerged during a similar time period. For example, Rabe (2008) examines the 50 American states (plus the District of Columbia) from within a multi-level governance framework to determine the scope of US state engagement in climate action. The findings of the study suggest that 28 of the 51 US state-level units achieved a percent change in emissions outputs between 1990 and 2003 that were above the national average, while 23 ranked below. Policy adoption trends were examined, and it was found that 22 US states, which together represent approximately one half of the US population, have demonstrated political support for mitigation through the adoption of

two or more climate mitigation policies (Rabe, 2008). In a study which examines the possible problematic interactions between state and federal government that arise when US states implement either renewable electricity/clean energy standards or fuel-economy standards, two common policy initiatives undertaken but subnational jurisdictions in order to achieve emissions reductions, Goulder and Stavins (2010) found that 30 states had implemented one of the two mitigation policies examined. The study suggests that of the states engaging with these policy initiatives, states typically adopted a target of achieving 15 to 20% renewable electricity production by 2020. By 2009, 14 states had put a cap on automobile GHG emissions outputs per mile.

Trans boundary networks are argued to be an important tool in the policy development stage, at the state and provincial level, as well as within municipal contexts. Martin (2010) examines the work of the Centre for Climate Strategies, which supports US states in identifying policy options and developing climate action plans. This work finds that 20 states have engaged with the organization in developing strategies. These strategies, which are, in large, focused on cost savings measures, are predicted to reduce GHG emissions by up to 25%. In their 2008 quantitative analysis of the emissions reductions potential presented by US state policy initiatives, Lutsey and Sperling (2008) identified nine initiatives developed to support or foster state level engagement and cooperation in policy and strategy, including the Western Climate Initiative, the Southwest Climate Change Initiative and the Climate Registry. In an analysis of all US states engaged within climate action, this study further found that approximately 90% of the total US emissions outputs in 2007 were captured under the umbrella of a state-level initiative designed to coordinate mitigation efforts (Lutsey and Sperling, 2008).

Subnational engagement in climate mitigation strategies is not unique to North America. In a 2011 study, Gallarrga et al considered the role of subnational jurisdictions in the global governance of climate change and examined 23 'leading' case regions, selected for their activity in both regional networks, and the international arena. The regions, which the authors define as "any form of subnational government just above local governments or municipalities," (2011, p. 165) included in the study as 'leading examples', were geographically situated in Australia, Europe, South America and North America, with seven of the twenty-three cases examined located in North America. However, as noted by Rabe (2007), in the context of subnational climate change mitigation efforts, it is difficult to draw direct comparisons amongst jurisdictions outside of North American, even when they are situated at similar vertical levels of governance. Rather, in multiple cases, in the context of climate policy enaction, nation states in one region may act congruently to a sub-national state or province located in another, as is the case with many nation states located in the European Union presenting similar case examples to Canadian provinces, or US states. In the following, I will hereafter concentrate mainly on examples from the North American context.

As in the United States, there has been broad engagement in climate policy by Canadian provinces. In the 2011 study highlighted above, Galarraga et al found examples of climate policy that they designated to be 'leading' in 5 of Canada's 13 provinces and territories, including Ontario, Quebec, Yukon, British Columbia and Manitoba (Galarraga et al, 2011). In a comparative case study which examines Canadian and American subnational engagement in climate policy, Burke and Ferguson (2010) argue that despite a historical academic focus on American case examples of state-led initiatives, this is rapidly changing as Canadian provinces

enact policy that targets emissions reductions at a greater rate than their American counterparts. In a 2012 analysis which examines climate policy engagement within federal-type structures including the US, Europe, Australia and Canada, Brown points to examples of sub nationally led mitigation policy in Canada that are arguably best practice (Brown, 2012). This work builds upon Harrison's 2012 analysis of British Columbia climate policy.

Within North American subnational mitigation efforts, several governance jurisdictions stand out as having implemented policy that is predicted to achieve high emissions savings as compared to other regional counterparts. The most widely discussed example is the state of California. For example, in a 2008 study, Rabe notes that California has enacted the most comprehensive climate policy response of all of the US states, beginning in 1988, through adopting "virtually every kind of climate policy available" (Rabe, 2008, 111). In a 2010 study that describes the importance of subnational mitigation efforts and argues in support of a poly-centric approach toward global climate governance, Ostrom (2010) discusses the California case study, and highlights that California was one of the first states to pass comprehensive climate change legislation with the state's 2006 "Global Warming Solutions Act", which is designed to achieve emissions reductions from the oil, gas refinery and utilities sectors. In a study which addresses the perceived role reversal between federal and state jurisdictions presented when states address the global issue of climate change, Engel (2006), highlights that the impacts of California's emissions reductions are non-trivial, as in 2006, the state of California was the 12th largest global emitter of greenhouse gas emissions. As argued by Vogel (1995), strong policy leadership within one jurisdiction can become a benchmark or standard by which the next round of future policy is measured against. Indeed California's leading auto emissions standards, which later became a

benchmark for US federal auto emissions standards, led Vogel to dub this effect the 'California effect' (1995).

The ample examples of sub-nationally led climate mitigation initiatives across North America calls for an analysis of the factors that have motivated these policy initiatives. Below follows a systematic review of the motivating factors that are understood to have influenced climate policy decision making. I characterize the research into a series of motivating factors, and from this move into a review of current and future direction of the field.

2.3 Motivating Factors Behind Subnational Climate Policy Implementation

Various studies have examined cases of climate policy implementation to determine the factors that can be understood to have motivated the decision to implement climate policy. This research has examined cases operating at differing subnational scales of governance including municipalities, regions, and states and provinces. For example, one study may compare multiple cases of municipally led efforts, while another may examine cases existing at a regional level, both state, and provincial. From this review, it appears that few, if any efforts to date, have undertaken a cross comparative analysis of the different contextual and motivating factors existing between these separate levels of governance.

In conducting this review, after an initial scan of the literature, I elected to include literature focused upon any governance jurisdiction falling below the national level. The reasons for this are three-fold. Firstly, as significant leading examples of state/provincial led mitigation efforts

are relatively rare, there is limited literature focused upon the state/provincial level alone, and including both municipally and regionally focused literature allowed for the expansion of this review. Second, as argued by Rabe (2008), when it comes to characterizing subnational regions, due to the contextual governance constraints presented within each case, it is possible that the features present at one governance level within any given jurisdiction may better map against a different governance level within another jurisdiction. For example cities might have more in common with states in other jurisdictions. Finally, through the initial scan of the literature, it was found that many of the policy levers available to subnational jurisdictions for climate mitigation, such as building code standards, or fuel and energy options are either administrated across governance levels, or jointly amongst nested levels of regional governance jurisdictions. In some cases, literature comparing regional and national efforts was included, when the findings significantly contributed to an understanding of motivating decision factors at a subnational level.

Despite these reasons justifying a cross scale analysis, there are several key distinctions between municipal and regionally led governance systems that cannot be overlooked. The first of these factors is scale, which translates both to the total emissions profile of the jurisdiction, and the size of the corresponding economy. Municipalities are often situated as a subset within a regional jurisdiction such as a state or province, and consequently make up a proportion of the region's total economic and emissions output. In the context of climate policy, this means that municipal climate action plans are designed to address fewer emissions.

A second factor for consideration is geography, which relates to the types of emissions sources to be included within the jurisdictions emissions boundary. Many industrial, manufacturing and energy generation activities occur outside of the boundary of municipalities, however do fall within the scope of regionally led climate initiatives. In practice, even in cases where industrial and energy emissions fall within the jurisdictional boundary, municipal strategies commonly are scoped to exclude these emissions sources. Instead, municipal strategies encompass operating emissions, which are those resulting from the activities run by the municipal government, including municipally-owned infrastructure and fleets. Finally, as discussed above, municipalities and regional jurisdictions have access to similar policy levers to address climate change. However, in practice, as municipal climate plans have, to date, been primarily focused upon operating emissions, while regionally focused efforts have encompassed both operational emissions along with the emissions resulting from industrial and manufacturing processes along with energy generation. The types of policy levers employed have also differed, to address the different sources of emissions. These key distinctions have been taken into account in this analysis of motivating factors.

Despite these key distinctions, many of the contextual factors faced by decision makers in these regions remain similar between these two separate levels of governance. For example, within both governance levels, decision makers find themselves facing the challenge of re-election, and the need to maintain support of the electorate and interest group. Additionally, both units of governance exist within a national context, and face pressure and motivation from operating as a sub-unit, within a national governance structure. A central hypothesis of this section of the thesis is that important insights can be learned by comparing and synthesizing these two literatures.

Research examining municipally and regionally led emissions undertaken at both a municipal and regional (state or provincial) level has employed similar techniques for analysis. Comparative case studies, examining multiple cases of sub nationally led mitigation efforts is a common approach, with studies examining both quantitative and qualitative measures that could be understood to have factored into climate policy decision outcomes.

One of the earliest comprehensive studies to examine the factors understood to have motivated climate action at the municipal level, is a 2003 analysis conducted by Kousky and Schneider. This study examines municipally driven climate action, and conducted interviews with decision makers from 23 jurisdictions participating in the Cities for Climate Protection campaign. The study examined four possible factors motivating municipal level climate policy, including: (1) that mitigation efforts may be cost neutral, or even have some cost saving advantages, (2) that there are 'additional' local benefits to be had from engaging in GHG mitigation efforts, (3) that climate policy is undertaken 'altruistically' and finally (4) that citizen pressure leads local officials to undertake climate action (Kousky and Schneider, 2003). Building on this work, Zahran et al (2008) employ the use of GIS analysis and other statistical techniques to examine three variables that are hypothesized to impact the likelihood a city will adopt mitigation policy. These variables include, (1) climate change risk, as measured by proximity to coast, ecosystem sensitivity and susceptibility to extreme weather events, (2) climate change stress, as understood by the city's transportation, energy and built environment, which adversely affect the climate, and (3) civic capacity, as measured by "human capacity and environmental concern variables" that encompass the municipality's ability to enact policy initiatives. Another example is the study by Sharp et al (2011), which reviews the 545 Cities for Climate Protection campaign US member

municipalities and examine why some cities have joined the campaign while others haven't, and further explore the rationale for variance in progress in achieving CCP goals. Building further upon the work of Zahran et al (2008), this study examines political institutional structure, interest group pressure and the pre-existing emissions outputs as factors that influence both participation and progress.

At the state and provincial governance level, this review has found fewer comparative studies examining multiple cases that have focused directly upon examining the factors understood to motivate climate policy decision- making. Of these studies, at the state/provincial governance level, research questions often move away from examining the factors motivating climate policy, and instead focuses on the outcomes of policy implementation. For example, in a 2009 study, Engel (2009) examines the impact state level climate implementation has on federal legislation. In another study on the same topic, Goulder and Stavins (2011) examine the challenges arising from state-federal interactions, and find that state-led climate action is a necessary aspiration in absence of federal leadership. Several studies do examine motivating factors. For example Rabe (2008) surveys American state case studies, and examines the reasons motivating climate policy decision making, finding that several factors have resulted in state-led emissions reductions policies, including the framing of economic self interest that states obtain when undertaking climate policy, the increasing impacts of climate change effecting all jurisdictions, and the desire of states to become 'first movers' (Rabe, 2008). Many studies at the regional level explore the reasons understood to motivate climate action from within the context of a single case study. For example, Harrison (2012b) examines the case of British Columbia and finds that the province's

governance structure and the absence of interest group opposition played a central role in enabling climate policy within that case.

The following sections of this review synthesizes the hypotheses and findings most often cited in the municipally and regionally focused literature into a characterization of the factors understood to lead to subnational climate policy, drawing heavily upon the studies cited above. An overview of these findings can be found in table 2 on the following page.

Table 2- Factors Motivating Subnational Mitigation Policy

| Factors | Administrative scale | Sources | Terminology |
|---------------------|--------------------------------|---|--------------------------|
| Economic Costs | Municipal, State and | Koursky and | Cost saving options, |
| and Benefits | Provincial | Schneider (2003) | negative cost options, |
| | | Betsill (2001) | cost neutral policy, co- |
| | | Sharp et al (2011) | benefits, ancillary |
| | | Zahran et al (2008) | benefits |
| | | Lambright et al | |
| | | (1996) | |
| | | Metz et al (2001) | |
| | | Schneider et al | |
| | | (2010) | |
| | | Betsill (2001) | |
| | | Ruth (2011) | |
| Dalitiaal | Maniainal | Rabe, 2008 | Dalitiaalill issue |
| abampion | Municipal, | Rabe (2008) Retail (2001) | Political will, issue |
| champion | State/Provincial | $\frac{\text{Betsill}(2001)}{\text{Engel}(2000)}$ | champion |
| | | Eliger (2009) Harrison $(2012 h)$ | |
| | | 11a111SOII (2012 0) | |
| Public and Interest | Municipal. | Rabe (2008) | Public opinion, public |
| Group Pressure | State/Provincial | Keeler (2007) | perception, issue |
| 1 | | Betsill (2001) | saliency, Interest |
| | | Engel(2009) | group, issue group, |
| | | Kousky and | civil society group, |
| | | Schneider (2003) | non governmental |
| | | Sharp et al (2011) | group |
| | | Zahran et al (2008) | |
| | | Harrison (2012b) | |
| | | Harrison (2012 a) | |
| | | Peet and Harrison | |
| | | (2012) | <u></u> |
| Responding to | Municipal, State/Provincial | Lambright et al | Climate Impacts |
| chinate impacts | State/110vincial | (2000) Repetto (2006) | |
| | | Keeler (2000) | |
| | | $\frac{1}{2007}$ | |
| Institutional | Municipal | Kousky and | Civic capacity. |
| structure and | ···· r ·· | Schneider (2003) | governance structure. |
| capacity | | Betsill (2001) | institutional structure. |
| 1 5 | | Betsill and | governance capcity |
| | | Bulkeley (2006) | |
| | | Harrison (2012 a) | |
| | | Harrison (2012 b) | |

2.3.1 Economic Costs and Benefits

Economic costs, benefits and co-benefits can be understood as the tangible economic effects that climate policy implementation has on the bottom line of the implementing jurisdiction, which

can be measured by total policy cost, and often takes into account cost savings that result from policy action. Studies examining cases at both the municipal and the regional level address the impact that economic costs and benefits may have on decision maker's choice to implement climate policy. However while research examining cases within the municipal context has found the economic benefits of action to be a central motivating factor, studies examining regional case studies have found that policy cost has been a secondary or tertiary factor guiding decision outcomes, of interest only insofar as it generates public or interest group support or opposition. The following examines the role that cost factors into climate policy decision making within the municipal and regional contexts.

Within the municipally focused literature, the presence of real or perceived economic benefits resulting from policy development appear to be the greatest motivating factor of climate policy, found multiple studies at the municipal level. For example, in the 2003 comparative case study, Kousky and Schneider (2003) found that decision makers indicated cost savings resulting from climate policy was a strong motivating factor in each of the 23 cases examined. The study's findings further demonstrated that though positive co-benefits or cost savings were correlated to subnational mitigation action, the perception of decision makers that these benefits existed could act as enough incentive to motivate action, even in cases where there was no evidence to suggest that these perceptions were founded. These findings support the findings of Betsill's 2001 study, where the author examined municipalities participating in the ICLEI Cities for Climate Protection Campaign. That study found that "cost-effectiveness is the ultimate criterion on which city councils make budget decisions" (p.401, Betsill, 2001). In their 2011 study, Sharp et al built upon the work of Betsill (2001) and Zahran et al (2008), to examine the motivations behind
122 municipal climate plans, including 47 ICLEI cities. In this work, the authors note that despite some case examples where there were no direct benefits resulting directly from emissions reductions, climate policies may lead to other economic benefits such as economic gains, which can shape decision outcomes. The study additionally found that fiscal stress can become a barrier to municipalities implementing climate policy, even in cases where the city has demonstrated a willingness to implement climate policy through a public commitment. Certainly the availability of zero-cost, or negative cost options which generate revenues, are a positive indicator in the likelihood of enaction of climate policy, as found by several studies. (e.g. Lambright et al, 1996, Betsill, 2001, Sharp et al, 2011). As highlighted by Kousky and Schneider (2003), at the municipal scale, abatement policies are frequently implemented through a top-down manner, and justified on the basis of being "good policy" or "rational policy choices", even though the policy may not stand up to such characterization upon assessment. This is perhaps because, as the authors note, decision makers are "primarily driven by the potential for realized or perceived cost savings and co-benefits rather than by public pressure" (Kousky and Schneider, 2003).

While economic benefits are understood to be a primary driver leading to municipally led efforts, at a regional level, economic benefits are often understood to be a secondary factor that influences other factors such as interest group pressure, or a calculation of climate impacts. For example in a 2012 study examining the implementation of carbon taxation in British Columbia, Harrison (2012) characterizes the revenue neutral policy's economic benefits within the context of the benefits to the forestry industry, which was facing the cost burden of climate impacts. In a 2008 study that examines American state led climate changes, Rabe (2008) argues that the adoption of climate policy presents states with an opportunity to promote economic self interest

through the implementation of climate policy, which is understood to be a motivating factor, particularly on the context of states who can realize a chance of becoming a "first mover" (Rabe, 2008).

The characterization of economic benefits from within a regionally focused research context maps well against the terminology of co-benefits, which are policy outcomes that enable decision makers to meet multiple policy objectives through the adoption of a single policy. An examination of the role of co-benefits in incentivizing policy outcomes can be seen at both levels of governance. Within the global nation-state level climate policy literature, the terms co-benefits and ancillary benefits are occasionally used interchangeably (e.g., Pittel and Rubbelke, 2008), while within the subnational literature, authors make a clear distinction between co-benefits, which are outcomes that are anticipated in the planning phase of the policy cycle, and ancillary benefits, which may have an additional benefit to a jurisdiction, however are not defined as an explicit goal of the policy, nor factored into the decision making process (e.g. Kousky and Schneider, 2003, Metz et al, 2001, Schneider et al, 2010). As I am specifically interested in factors that drive decision outcomes within this review, this section focuses exclusively on side benefits of climate policy that are directly considered at the time of policy design.

At a municipal level, Betsill's 2001 study of the CCP membership seeks to determine the opportunities and obstacles of municipal led GHG mitigation within the US, and finds multiple potential co-benefits resulting from the local implementation of climate policy, including increased competitiveness, which can create a more attractive business atmosphere and draw

high skilled workers and investment, and environmental benefits such as better air quality, or the reduction of traffic congestion through improving transit and alternative transportation options. Within the study, Betsill argues that despite the number of sub-national jurisdictions undertaking policy initiatives that ultimately lead to GHG emissions reductions, climate change is not the driver behind these initiatives.

Co-benefits can extend from beyond the health and economic benefits discussed above, and lead towards improved resiliency and overall sustainability. At the regional level, in a paper that explores the co-benefits associated with the implementation of climate policy in the state of Maryland, Ruth (2011), finds that climate mitigation policy can dovetail with regional adaptation planning to improve resiliency toward predicted impacts of climate change. For example, Ruth highlights the Regional Greenhouse Gas Initiative, a nine-state emissions reductions program that sets a cap on total GHG outputs and is predicted to achieve a 35% reduction in GHG emissions by 2020, as compared to a business as usual scenario. Revenues from this program, which themselves can be understood to be co-benefits resulting from the policy initiative are inturn invested in state energy security initiatives which enhance the resiliency of the energy system (Ruth, 2011).

However despite these promising potential co-benefits the arise from climate policy, the literature does not appear to support the hypothesis that co-benefits in and of themselves are a strong driver of mitigation policy at the subnational level. In a 2010 study exploring the health co-benefits of climate policy in urban areas, Jack and Kinney (2010), find that though researchers have studied the co-benefits of climate change policy for over 20 years, the "co-

benefits literature has so far failed to leave a mark in the policy realm" (Jack and Kinney, 2010, p. 172). This finding is strengthened by the findings of Kousky and Schneider (2003), who argue that though there are methods for calculating co-benefits, municipalities often do not include a valuation of co-benefits in decision processes. However, the authors did find that the widespread perception of the existence of co-benefits may be enough to drive outcomes.

2.3.2 Political Will and the Presence of an Issue Champion

Within the subnational policy literature, various researchers have discussed the importance of political will in achieving climate policy outcomes, and the impact that a strong issue champion can have in generating political will. In the 2008 study of US state experience implementing climate policy discussed above, Rabe hypothesizes that like corporations, decision makers in governance contexts understand that competitive advantage can arise from becoming a 'first mover' and consequently may develop the will to implement policy, which significantly impacts decision outcomes (Rabe, 2008). In the 2003 study conducted by Kousky and Schneider, the authors found that an issue champion was an important factor in urging climate policy in the cases examined (Kousky and Schneider, 2003). These findings seem to support those of Betsill, who in 2001, found that political leadership is a necessary condition of subnational climate policy (Betsill, 2001). In a study examining the political economy of BC's Carbon tax, Harrison (2012, b) examines the way that the interplay between BC's political parties impacted the policy's origins, and argues that a strongly-committed leader was instrumental in achieving the policy outcome. As highlighted by Rabe "those policies that tend to maintain the strongest base of support from policy analysts appear to have the greatest difficulty of being adopted by state

legislators and governors", which presents a possible explanation for why generating political will towards climate mitigation policies is so challenging. (Rabe, 2008, 116). However while generating the political will to implement climate policy can be difficult, those who manage to overcome the barriers stand to gain. As argued by Engel (2009), "to the extent a jurisdiction develops a successful policy model in the area of climate change, those associated with that development become more successful." (Engel, 2009).

2.3.3 Public and Interest Group Pressure

Another possible explanatory factor of subnational climate policy discussed within the literature is the pressure placed on decision makers by the opinions and perceptions of the general public, the saliency, or relative importance, of the issue of climate change, and the role that interest groups play in motivating policy outcomes. Within the papers reviewed, studies are divided on how important of a factor this is to decision outcomes.

At a municipal level, some evidence indicates that interest group and public opinion more directly can foster policy outcomes, however these are not seen to be particularly consequential. In Betsill's 2001 study, the author notes that the majority of sub-national jurisdictions undertaking climate policy had a 'prior interest' in environmental issues, and hypothesizes that this history led decision makers to be more receptive to learning about emissions reductions policy opportunities. However, as argued by Betsill, in the cases that did ultimately result in emissions reductions, many of the quantified emissions reductions were gained simply through the 're-packaging' of existing initiatives, re-framed to account for emissions reductions, in order

to present a public image of action in this area. Kousky and Schneider (2003) found limited cases where the decision makers perceived that the public had 'environmental leanings', and consequently assumed the existence of political support. In their 2001 analysis, Kousky and Schneider (2003) find that direct citizen pressure or NGO pressure provides motivation for the implementation of climate policy only in rare cases. A primary finding suggested by Sharp et al (2011) in the review of CCP member municipalities discussed above is that organized interest group pressure impacts both adoption and implementation of GHG mitigation policy. These findings support Zahran et al's 2008 work, which found that cities that have high levels of civic capacity, as measured by both human capacity and environmental concern variables, are more likely to participate in mitigation efforts.

Studies that examine the motivations driving climate policy decision making at a regional (state or provincial) level recognize a much more powerful role for public opinion and the role that interest groups such as industry associations or the environmental community at driving decision outcomes. For example, in the 2008 study cited above, Rabe (2008), notes that motivations behind any policy implementation are context dependent, however highlights scenarios where public pressure could influence decision outcomes. Harrison (2012) finds that within the case of British Columbia, while interest group pressure didn't drive decision outcomes, the lack of organized industry opposition enabled the government to go forward in implementing climate policy aims. In a 2009 study that examines impact that anticipated, federally-driven climate legislation is likely to have on state and municipal actions, Engel (2009) suggests that in cases, industry group support may be instrumental in driving climate decision outcomes. The study highlights the California case study and demonstrates that a desire by the business community to

expand markets for energy efficiency and create demand for advance technology led industry driven interest groups to call for policy action on climate change. Indeed in a study which examines the 'efficiency' and 'effectiveness' of US state-led emissions reductions efforts, Keeler (2007) argues that in areas where public opinion supports strong climate policy action, politicians are led into action.

2.3.4 Responding to Climate Impacts

Also hypothesized in the literature is the role that increasingly frequent and severe climate impacts are having on driving decision outcomes. Several earlier studies indicated that changing climate impacts were an important co-factor in subnational mitigation policy. For example, in their 1996 study examining the Toronto case study (Lambright et al, 1996), the authors include the urban heat island effect in their analysis, and argue that extreme weather events such as heat waves, drought or other unusual weather patterns can act to spark sub-national responses to climate change. Repetto (2006) argues that within the American context, significant weather related events such as storms, species migration, lasting droughts, forest fires and shifting disease transmission vectors are, in cases, acting as "triggering events" behind climate policy. Keeler (2007) argues that as sub-national jurisdictions become frustrated by the lack of policy leadership at a federal level, states will craft local level legislation as a way to 'pressure' federal governments into national action. However, in their comprehensive analysis of CCP members, Zahran et al (2008) found that proximity or susceptibility to climate risk don't appear to have contributed to policy adoption in the cases examined, however this study only assesses risk, and does not address impact, or the results of risk, enacted.

2.3.5 Institutional Structure and Capacity

In many ways, the features of the governance structures, economic systems and built environments of subnational jurisdictions make these actors ideal implementers of climate mitigation policy. Much akin to Sir Edmond Hillary's famous "because it's there" reasoning for climbing Mt. Everest, it is understood within the literature that in addition to all of the factors driving decision outcomes discussed above, one reason such jurisdictions are understood to implement climate policy is simply 'because they can'. At the municipal scale, Kousky and Schneider (2003) find that local governments control many of the factors related to emissions outputs including building permits, land use decisions, the operation of regional transit systems, and solid waste disposal (Kousky and Schneider, 2003). These findings support the findings of Betsill (2001), who claims that sub-national governments have authority over many of the policy levers that have GHG implications. As argued by Betsill and Bulkeley (2006), in many cases the most appropriate jurisdiction to regulate emissions proliferation is the one where emissions originate, which given the nature of governance structures, is often the subnational jurisdiction. Several studies have examined the jurisdictional latitude of subnational governments, and the proximity these governments have to the levers that serve to mitigate emissions. For example, in an analysis of climate change policy implementation at a subnational level, Puppin de Oliveria (2009) finds that in multiple cases, "international and national policies are unfolded and de facto implemented at the subnational level" (p. 253). In a 1998 study that examines the jurisdictional authority cities have to mitigate emissions in the face of federal inaction, DeAngelo and Harvey

(1998) find that despite a limited legal capacity, cities mitigation initiatives can reinforce and further pre-empt domestic emissions reductions strategies.

While governance authority is important in determining decision outcomes, so to is governance structure, which impacts the types of policies that make it onto the decision agenda, and the autonomy of decision makers to implement policy. Within the comparative politics literature, several authors examine the role that institutional structure plays in determining policy outcomes. For example in a 2001 study which compared national level climate policy implementation, Dolsak (2001), found that parliamentary systems, which have a relatively greater diffusion of power as compared to presidential systems, are able to set firmer climate policy goals. In a 2004 study examining the comparative politics of environmental taxation, Fredricksson and Millmet (2004), found that within parliamentary systems, challenging policy instruments such as regulation and taxation have had greater implementation success. Within the literature it was also found that governance systems that concentrate power toward a central decision maker may support the adoption of climate policy. For example, in her 2012 study examining the implementation of carbon taxation in British Columbia, Harrison found that BC's governance structure, which combines single member plurality with a parliamentary system "tends to concentrate authority in a small number of hands, most notably those of the leader of a majority party", and this was a contributing factor to BC's success in implementing climate policy (Harrison, 2012, p.9).

2.4 Collective Benefits Resulting from Subnational Mitigation Efforts

While it has been proven that from an economic and social welfare perspective it is in the selfinterest of many jurisdictions to begin to mitigate GHG emissions, it is argued that there may be some additional collective societal benefits that exist beyond the boundary of the subnational region. While these benefits are not understood to be a motivating factor to subnational jurisdictions, they do add weight to the utility of polycentricity as a useful framework from which to view climate mitigation policy. In a 2007 analysis of potential net US emissions savings resulting from subnational action, Lutsey and Sperling (2007) identify four potential collective societal benefits that arise from subnational mitigation action. These include (1) opportunity for policy experimentation, (2) the ability to tailor policies to meet specific regional needs or constituent preference, (3), an opportunity to test public response to policy implementation, and (4) the ability to employ local experience toward locally focused policy. In his 2007 study, Rabe (2007) furthers the policy experimentation argument, noting that subnational policy implementation allows for cross-jurisdictional learning and further allows decision makers to test what he terms the 'next generation' of GHG mitigation policy. As argued by Keeler (2007), a pilot implementation of test policies at a subnational level presents an ideal opportunity for policy evaluation. Ostrom (2009) furthers these ideas, noting that policies implemented at a local or regional level can be tested for and address market failures resulting from policy implementation before these policies are adopted at a federal level. Fallaraga and Gonzalez-Eguino (2011) note that the proximity of subnational jurisdictions to policy levers allows jurisdictions to "identify priorities and difficulties and thus implement policies more clearly, while still being strategic enough to establish links between all the different policy areas

that need to be coordinated for climate change policy". The authors further argue that this 'close proximity' additionally enables proper policy consultation

2.5 Barriers Against Subnational Action

It should be noted that despite the abundant aforementioned regional and collective societal benefits of subnational climate policy, there are still multiple barriers faced by regions seeking to mitigate emissions. In her 2001 study, Betsill highlights several institutional barriers to subnational climate action, including: (1) that the organizational structure of many governments leave no obvious 'home' for climate policy, be it at a national or subnational level, (2) that subnational governments face a deficit in administrative capacity, and the ability to select, evaluate and implement policy options, and (3), there is additionally a deficit in the financial resources required to make upfront investments in policy or technology, even if these investments lead to cost savings. In their interviews with local government officials, Kousky and Schneider (2003) found that multiple respondents highlighted a need and desire for broader federal leadership to achieve further emissions reductions. Specifically discussed included the need for greater federal leadership in setting vehicle emissions standards, and a recognition that many market barriers inhibit the adoption of energy efficiency measures and technology, including the hidden costs of climate policy such as maintenance, consumer preference, negative externalities, uncertainty etc., and these cannot be effectively addressed at the local level.

Rabe (2008), examines the issues that arise when multiple subnational governance jurisdictions operating under a national or federal umbrella implement climate policy along a non-uniform

time-line. The inquiry finds that when baselines are set, regions that were successful before the baseline period are incentivized to receive credit for work done before the baseline, whereas those that would not benefit aim to 'set the clock back to zero' at the time of the baseline adoption, or even to push the baseline further out. As a result of currently existing subnational policy, this dynamic has the potential to benefit some regions, and harm others, if federally mandated climate policy were to be implemented at a future date.

In addition to policy implementation barriers, several studies have identified and examined potential challenges that can arise from the simultaneous implementation of climate policy at multiple levels of government. For example in a study which examines the 'efficiency' and 'effectivness' of US state-led emissions reductions efforts, Keeler (2007) examines the effect that state-driven initiatives could theoretically have on the future cost effectiveness of a national cap and trade policy. The study identifies several circumstances that make some state-driven policy less effective at reducing GHG emissions than an equivalent policy that was federally-led. Further, the study argues that the adoption of state led initiatives has the potential to generate what the author terms a "series of rights and expectations" that could act as an impediment to future federal action. However the paper argues that given the lack of federal action, these criticisms should not be understood as detractors from state-led policies. Goulder and Stavins (2011) also examine potential conflicts between the simultaneous existence of federal and subnational climate policies, specifically focusing on the impact of sub-national policies that exceed national standards within a nested co-existing policy framework. The authors find that state-driven initiatives may be unable to reduce GHG emissions and further may negatively impact the overall cost effectiveness of a national effort in cases where both state and national

policy simultaneously coexists. However, the authors conclude that in cases where nationally driven climate policy is politically infeasible, as is the case presently in North America, sub nationally driven climate policy can be rationalized. In a synthesis paper discussing the potential of subnational policy action, Ostrom (2010) explores the issues that are most often cited as creating tension between overlapping climate policy at multiple levels, including leakage, inadequate certification, inconsistent policies, free riding, and gaming the system. As with the studies cited above, Ostrom finds that none of these potential outcomes are sufficient in their effect to further an argument against subnational policy action in the context of absent federal leadership. Furthermore, despite the challenges presented by subnationally led action, as highlighted by several authors (e.g. Goulder and Stavins, 2011, Rabe, 2008), in both the US and Canada, constitutionally the primary responsibility for environmental protection falls upon state and local jurisdictions, rather than at a federal level, which furthers an argument for subnationally driven climate leadership.

2.6 Mitigation Results

Several studies have made various estimates detailing the total cumulative impact of GHG emissions reductions at a subnational level in North America. In their 2008 analysis, Lutsey and Sperling (2008), conduct an inventory of existing US state-led mitigation initiatives to determine the potential effect these policies could have on total US emissions outputs. In their analysis, the researchers explore three types of US policy initiatives, including top-down target-setting initiatives, bottom up policy responses, and multi-government efforts aimed at connecting these two approaches. Using a specifically constructed database that included information such as total

population, number of vehicles, GHG emissions and policy initiatives, the authors analyzed various "policy" and "no policy" scenarios to predict the potential emissions reductions outcomes resulting from US policy implementation. Overall the authors found that as of 2007, the cumulative impact of existing US subnational mitigation policy could result in a stabilization of US emissions to 2010 levels, by 2020.

In his 2008 analysis of the American experience of state-led reduction efforts, Rabe (2008), analyzes state-by-state emissions output data provided by the US EPA to determine change in overall emissions outputs between 1990 and 2003. In this analysis, Rabe finds only two states that had achieved net emissions reductions during the time period, including Delaware, and Louisiana.

Prior to these two studies, several authors (e.g. Kousky and Schneider, 2003, Betsill, 2001) had cited US EPA estimates conducted in the year 2000, finding that municipalities undertaking climate mitigation policy were reducing 7.6 million tonnes of GHG emissions annually, resulting in a cost savings of US \$ 70 million. As argued by Betsill (2001), this analysis is likely conservative, as in reporting to the US EPA, many cities don't include all of their GHG reduction activities within their quantification.

2.7 Future Directions and Discussion

Looking forward, within the subnational climate policy literature there is a sense that regionally led mitigation efforts will continue to play an increasingly important role in the global

governance of climate change. In a review of the subnational governance of climate change, Ostrom (2010) argues that the previously held assumption that a global climate deal must be reached on a global level to overcome the challenges of collective action no longer holds true. From this basis Ostrom proposes a reframing of the role of multi level governance in generating emissions reductions through the development of polycentric lens. Through this framework, climate change is understood to be addressed through multiple units of self-organized climate governance happening simultaneously and concurrently in collaboration, yet, not necessarily with direct coordination (Ostrom, 2010). Within such a framing, subnational governance jurisdictions would become an integral player within a broader framework of governance that understands the role of important players throughout all levels of society, from businesses, to Non-Governmental organizations, to all levels of governments. The basis for this framing of poly-centricity is found within the argument shared by many subnational authors and articulated by Bulkeley and Moser (2007), that "in the absence of more effective international action, and cognizant of the big task ahead, alternative attempts at climate change governance and social action have emerged".

In reviewing the subnational climate mitigation literature, I have found strong evidence that despite the predictions of collective action theory, over the past 20 years, climate change policy has been broadly adopted by subnational jurisdictions across North America. Despite the predictions of the conventional theory of collective action, the perceived free rider barrier has been overcome in a number of cases, due to a combination of contextually-bound motivating factors. Seven factors were repeatedly argued to be central to the creation of subnational climate change policies. These factors include: (1) economic costs and benefits, (2) the existence of

political will or an issue champion to further the policy, (3) the support of public opinion or interest group pressure (4) tangible climate impacts that require action, and (5) an institutional structure and capacity that allows for the implementation of mitigation policy. A number of studies suggest that tangible emissions reductions have resulted from these efforts. Furthermore, future analysis of the cumulative total reductions resulting from subnational policy implementation could serve to help better understand the role that subnational jurisdictions are playing within the global governance of climate change.

In a review of both old and new literature focused on the governance of the commons, De Moor (2012) argues that as society becomes ineffective at governing resources sustainably, there is and will continue to be an increasing shift towards 'joint resource management' where collective action becomes a tool for stakeholders to meet shared economic and social goals. Within this context, there is a strong argument to be made that subnational governance of climate change, through a polycentric lens may provide the foundations for future resource management can occur. As further argued by De Moor, the current academic debates surrounding the governance of common pool resources understand the potential that 'the commons' framing has to provide a governance regime, that is far superior to either of the existing market or state lenses (De Moor, 2012).

Within the context of the challenges faced by the global governance of climate change, subnationally led climate mitigation efforts undertaken within a polycentric framework offer a promising area for further study. Harrison and Sundstrom (2010) argue that climate change can be understood as a 'third-generation' environmental problem, unique to previous policy issues

because (1) the global scale of the climate change requires cooperation amongst actors who have varying interests, (2) while costs of action are borne now, the timescale of climate change means that the majority of benefits will not be realized until the future, (3) the issue faces great scientific uncertainty, and (4) the issue faces low public salience and political support (Harrison and Sundstrom, 2010). It is the unique nature of this issue that presents a great opportunity for further research into societal decision-making on collective-good issues. As argued by Ostrom, though the ever-increasing atmospheric GHG concentrations remain daunting and unaddressed at a global scale, the 'global environmental' problems we currently face are simply the cumulative effect of many individuals, communities and regions acting in seemingly inconsequential ways (Ostrom, 2010). Solutions to such a challenge so too must arise from collective, cumulative efforts resulting in tangible reductions.

Applying the findings from this literature review, the following chapter seeks to describe the case of climate policy implementation within one case study, the province of British Columbia, Canada, and assess the factors that can be understood to motivate climate mitigation policy against the characterization of factors described above.

Chapter 3: Climate Change Mitigation In British Columbia

3.1 Introduction

In the 2007 throne speech, the Government of the Canadian Province of British Columbia announced a series of ambitious climate change mitigation targets including a province-wide 33% reduction in greenhouse gas (GHG) emissions from 2007 levels by 2020. The policy document argued that climate change is "threatening life on earth as we know it" and called for a "focused and relentless" approach towards GHG emissions reductions. Among the actions, the speech announced the immediate requirement that all coal fired power plants sequester 100% of carbon emissions, and additionally set up a series of investments in tax credits on the purchase of hybrid vehicles, a \$ 25 million innovative clean energy fund to "encourage the commercialization of alternative energy solutions" and a total pledge of one billion new dollars to projects that would curb climate change and lead to "more jobs, new investment and ultimately greater prosperity for British Columbia (Province of British Columbia, 2007).

By the end of the 2008 legislative session, the province of British Columbia had established itself as a North American leader on climate action. Publically denouncing voluntary regimes as ineffective, the government, led by Premier Gordon Campbell, passed a suite of climate-related legislations including:

- The Greenhouse Gas Reductions Targets Act, which established into law time-bounded emissions reductions targets for the province;
- The Greenhouse Gas Reduction (Cap and Trade) Act, enabling legislation which allows for the eventual implementation of a regionally based cap and trade scheme;

- The Greenhouse Gas Reduction (Vehicle Emissions Standards) act, which enables the adoption of fuel efficiency standards;
- The Greenhouse Gas Reduction (Emissions Standards) Statues Amendment Act, which regulates landfill gas outputs,
- The 2008 Utilities Commission Amendment Act, which was designed to foster what the government has termed "low-carbon energy generation" projects;
- The Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act, which provides incentives for renewable energy;
- The Local Government (Green Communities) Statutes Amendment act, 2008, which provides a framework for local (municipal) governments to establish emissions reductions targets and Climate Action Plans; and,
- The Carbon Tax Act, which establishes a revenue neutral carbon taxation scheme for the province.

(BC Climate Action Plan, 2008)

Of this list of legislation, the notable elements include legislating emissions reductions targets, mandating a carbon-neutral public sector, establishing enabling legislation for BC's participation in an potential future regional cap and trade initiative, and establishing a province wide, broad based, revenue neutral carbon tax which entered into force July 1st, 2008.

Following legislation, a comprehensive framework was established to achieve the province's policy aims. The framework produced by the province to address climate change was developed with four parts (BC Climate Action Plan, 2008). First, legislation entrenched emissions

reductions targets into law. The Greenhouse Gas Emissions Reductions Targets Act, a piece of legislation formalized by the government of British Columbia in 2007 set into law a target to reduce the Province's total annual greenhouse gas emissions to 33% below 2007 levels by 2020. Second, a strategy was developed to address emissions produced within a cross section of sectors of the economy in order to, in the words of the government, " set the course for the new lowcarbon economy of the future". Elements of this strategy include the implementation of North America's first revenue neutral carbon tax. Further specific emissions mitigation actions were developed that addressed emissions resulting from the sectors of: transportation, buildings, waste, agriculture, industry, energy and forestry. Third, the government announced an intention to develop a strategy to address adaptation to climate change, which was formally launched in 2010. Fourth, a comprehensive strategy sought to educate the public on the Province's climate change initiatives, through a series of public forms, and the LiveSmart initiative, a website and programming that the government argues is designed to help BC residents "make green choices that save money at home, at work and on the road" (LiveSmart BC, 2013). In 2013, the LiveSmart program website featured multiple BC climate initiatives, including the *Climate* Action Plan, the Carbon Neutral BC program, which supports the public sector in achieving carbon neutrality, the BC Carbon Tax, the Clean Energy Vehicle program, the Business Energy Advisors program, the Climate Action Inventory, and a Carbon Calculator.

The design of BC's climate policies has resulted in praise from both the environmental community and academics within British Columbia. For example in an analysis examining the implementation of BC's carbon tax, Harrison (2012a) argues that BC's climate policy can be understood as a triumph of "good policy" over "good politics" (Harrison, 2012a p.383). Further,

the regulatory instruments used by the Campbell government, most notably the carbon tax, are widely recognized to be politically challenging to implement (e.g. Rabe, 2008, Lutsey and Sperling, 2008). As indicated by Harrison (2012b), "many observers were surprised that a right-of-centre government not known for its environmentalism would embrace a carbon tax at all, let alone a textbook example of one" (p.5). Indeed, when the carbon tax was first introduced, BC was the first and only North American jurisdiction to have implemented a tax that was both broad based, covering businesses and individuals, and revenue neutral. Both analysts and interest groups have argued that the subsequent re-election of the Campbell government in 2009, after it had implemented the carbon tax, demonstrates that the perceived political challenge of climate policy implementation is surmountable.

This suite of policy moved British Columbia far ahead of the majority of Canadian and American counterparts in taking action on Climate Change. In 2007 when the BC legislative agenda was announced, the federal government of Canada had been struggling with the premiers from all provinces and territories including BC for over a decade to establish a coordinated response to the Kyoto Protocol, an international agreement Canada had ratified in 1998, which committed the country to a 6% reduction in emissions from a 1990 baseline by 2012. The scale and speed within which British Columbia was able to develop such a response is striking. This chapter seeks to understand what factors enabled the province of British Columbia to undertake such bold leadership on the issue of climate change.

3.2 Framework and Methods

In order to understand the factors that enabled British Columbia to undertake leading climate action, this chapter begins by examining the context within which BC's climate policy came to be. The review of North American subnational climate policy literature (Chapter 2) suggests five factors that scholars have been identified to have either motivated or been present at the time of climate policy implementation at a subnational level (table 2). These factors include: (1) economic costs and benefits, (2) the existence of political will or an issue champion to further the policy, (3) the support of public opinion or interest group pressure (4) tangible climate impacts that require action, and (5) an institutional structure and capacity that allows for the implementation of mitigation policy. Using this categorization for analysis, this chapter deconstructs the process by which the political agenda was set, policy was formulated and decisions were made in the case of British Columbia's 2007/8 implementation of climate policy.

Data was gathered through an examination of primary source documents including legislative texts, government press releases and websites, speech texts, and transcriptions from sessions of the BC Legislature with particular emphasis placed on the material published within the Province's 2008 Climate Action Plan and the *LiveSmart* website, which was set up to promote the plan to the public. Additionally, a media scan was conducted which examined the print media referencing climate policy in British Columbia between 2007 and 2013. Data collected by other scholars who have examined the British Columbia context was also incorporated into this study.

3.3 The Political Context of British Columbia

As discussed previously, contextual factors present at the time of policy-making influence policy outcomes. Within British Columbia, politics occur within what is often characterized as a "populist democratic space" (Pilon, 2010, 87). For the better part of the 20th century, British Columbia governance has operated within the context of a two party system, with the electorate swing support between the BC New Democratic Party, and the BC Liberal Party. As argued by Erickson in an analysis of electoral behavior within British Columbia, the "provincial elections in British Columbia have long been characterized by the drama of polarized party politics," (Erickson, 2010, 131). In an assessment of the impact of party politics on the province's governance structures, Philips argues a defining feature of this system is the "pronounced divide" between the two political parties occupying the center-right and center-left of the political spectrum (Philips, 2010).

The governing party at the time of the implementation of the 2007 climate initiatives was the right-leaning British Columbia Liberal Party, which was led at that time by Gordon Campbell. The BC Liberal party, a party distinct from the federal Liberal party, is a diverse coalition that draws its base from federal liberals and conservatives, along with remnants of the former Social Credit Party and situated "right-of-center" along a bi-polar political spectrum (Erickson, 2010). From 1990s onward, the party was self-perceived as moderate, claiming to understand the importance of centrism as a "necessary antidote to the ideological polarization of politics in the province" (Philips, 2010, 116). The party's leader, Gordon Campbell, climbed to the leadership position in 1993 following a successful stint as Mayor of Vancouver, where he represented the

center-right Non-Partisan Association. It was within this context that in 2007, the government, led by then leader Gordon Campbell announced the series of province wide greenhouse gas emissions reductions targets, and began to signal the suite of policy responses that would help achieve the ambitious goals. The thesis will now move into an examination of the policy making process to understand how the contextual factors present at the time of decision making can be understood to have shaped the climate policy outcomes, in British Columbia.

3.4 Economic Costs and Benefits

As identified in chapter two, multiple studies examining climate policy making at both the municipal and regional level have found that economic costs, benefits and co-benefits, which can be understood as the tangible economic effects that climate policy implementation has on the bottom line of the implementing jurisdiction, have an influence on the decision to implement climate policy. As argued above, at the regional decision context, economic costs and savings of policy outcomes have previously been found to be a contributing, rather than driving factor of climate policy implementation.

Within British Columbia in the years leading to climate policy implementation, the government had strongly indicated through both public announcements and actions that balancing the budget and fiscal austerity would drive the policy decisions of the party. Shortly after taking leadership of the Provincial Liberal Party, in 2001 Gordon Campbell began to outline a fiscally conservative approach to policy development and signaled a shift in the party's priorities calling upon the need for reduced business taxes, and balanced budgets (Philips, 2010, 117). This shift was clearly demonstrated in 'A New Ear for British Columbia', the party's platform going into the 2001 provincial election which called for a dramatic cut in personal income tax, and decisively won the party control of the government, earning 77 of the 79 seats in the legislature (Philips, 2010, 117). As argued by academics and media pundits, following the 2001 election victory, the newly elected government embarked on an "uncompromising neo-liberal program for governing" (Erickson, 2010, 137), implementing the promised significant personal and corporate income tax cuts, and undertaking a program of deregulation, and a shift toward the privatization of many of BC's previously public held government services (Philips, 2010). While elements of this plan, particularly the privatization of government services, were disagreeable to the electorate in the period leading up to the election, the party still won a decisive majority in 2005, earning 58% of the seats in the legislature.

This preference for an economically conservative approach to governance was continued throughout the 2000s. For example in a policy paper published by the Canadian Center for Policy Alternatives, it was argued that throughout the 2000s and prior, BC's public sector spending had shrunk, reducing both GDP/expenditure ratio, and the per capita number of public sector employees (Ivanova, 2010).

This thesis has been unable to uncover any evidence directly indicating that BC's suite of climate policies were selected specifically for cost reasons, however there is evidence to indicate that the climate policies selected by the BC Liberal Government are economically consistent with previous governance decisions made in the years leading up to policy implementation, and can be understood to be in alignment with party priorities.

Of the province's suite of climate legislation and related actions, two cornerstone policies- the BC Carbon Tax, and the BC Carbon Neutral Mandate were designed to be revenue neutral, and

consequently cost-neutral to the government's fiscal reporting. The following section examines the design of these policies in order to examine the ways these policies were consistent with previous governance decisions. The section additionally explores the ways these two policies provided further co-benefits that aligned with previously indicated governance priorities.

The central policy put forth within the government's green shift is a broad-based, revenueneutral carbon tax levied on all liquid fossil fuels and natural gas. The tax, announced in the 2008 provincial budget and launched on July 1st of the same year, is argued by Peet and Harrison (2012) to "approximate the academic ideal" (Peet and Harrison, 2012, p.99) in terms of policy design, and represents the first example of a revenue neutral climate policy within North America. The tax, applied at the point of sale of all fossil fuels within the province (with the exception of transport and airline fuel), began at a rate of \$10 per tonne of GHG emissions, raising by \$5/year between 2008 and 2012 to a rate of \$30/tonne, which equates at the pump to approximately 6.7 cents per litre of gasoline (Government of BC, 2008).

Of the total anticipated revenues generated by the tax, at the time of initial design, two-thirds of revenues were returned to British Columbians through personal income tax reductions, and the final third of revenues were applied to a reduction in the corporate tax rate, from 12% to 10%. (Peet and Harrison, 2012). In the budget cycles following the initial launch of the tax, these ratios moved towards an even split between personal and corporate tax reductions (Harrison, 2012). In a move to mitigate the risk of tax regression, built into the tax was a credit issued to low-income residents (Peet and Harrison, 2012). In June 2008, one month before the launch of the tax, BC residents were given a one time climate action dividend payment of \$100, which the

government intended to "promote environmentally friendly lifestyles", and additionally offset the initial cost burden of the carbon tax. (Government of Canada, 2013).

Consistent with the predictions established by the review of subnational literature conducted in chapter two, BC's cornerstone policy is revenue neutral, meaning that the policy itself doesn't place any additional cost burden upon the government. When viewed through the lens of the characterization of motivating factors established in chapter 2, in addition to being revenue neutral, the design of BC's carbon tax can also be understood as having the co-benefit of allowing for the reduction of both personal and corporate tax levels, which was a stated objective of the government at the time. This is because as a revenue neutral policy, the revenues generated from BC's carbon tax were returned to British Columbians through reductions in both personal and corporate tax rates.

In addition to the carbon tax, other elements of the province's suite of climate policies further aligned with the government's legislative agenda. As argued in an analysis of the party politics that shape policy outcomes in British Columbia, a longer-term theme of the Liberal legislative agenda was the privatization of government services (Philips, 2010). A second and significant element of the provincial policy response to climate change included a mandate for a carbon neutral public sector by the year 2010. To meet this mandate, in 2008 the government established the Pacific Carbon Trust, a crown owned entity designed to provide a venue for emissions credit trading, by establishing publically and privately generated emissions reductions projects, which are turned into credits that public sector organizations must purchase to meet their carbon neutral goals.

The government defines carbon neutrality as "measuring energy use and greenhouse gas (GHG) emissions, reducing where cost effective, and purchasing offsets to balance the remainder and achieve net-zero GHG's" (LiveSmart BC, 2011). Since 2010, the province has claimed carbon neutrality in the public sector, with reports made publicly available on its websites. The carbon neutral requirement extends to most of the public sector, including schools, hospitals, universities and colleges. On official publications the Province maintains "all public sector" organizations are captured under the carbon neutral government requirements. However the 2011 progress reports, which include submissions from school districts, post secondary institutions, health authorities, crown corporations, and core government, (Ibid) notably exclude the crown owned BC Ferries Corporation, which, though a government owned entity, was not captured under the carbon neutral government owned entity, was not captured under the carbon neutral government owned entity, was not captured under the carbon neutral government owned entity, was not captured under the carbon neutral government owned entity, was not captured under the carbon neutral government owned entity, was not captured under the carbon neutral government mandate. In the 2011 calendar year, the government, through its public sector organizations, invested \$19,387,725 in carbon offsets through the crown owned Pacific Carbon Trust (Ibid), thereby serving to shift funds from the public sector into privately held mitigation projects.

In the weeks and months following the implementation of BC climate policy, the government's messaging and communications indicated that the province's climate policy was in alignment with government priorities. For example, in the 2007 BC throne speech, which set the policy agenda of the Province's climate action, it was indicated that climate action would play a role in creating "more jobs, new investment and ultimately greater prosperity for British Columbia" (Government of BC, 2007). This sentiment was echoed by Premier Campbell in a 2007 interview with one of Canada's leading newspapers, where the Premier highlighted the role that climate

policy would play in attracting investors to the BC economy and lowering corporate and personal income taxes (Hunt, 2008). This consistency between messaging and governance objectives strengthens the argument that the government was aware at the time of policy design that climate policy was in alignment with its own governance priorities.

3.5 **Responding to Climate Impacts**

Another factor influencing the policy landscape at the time of BC's climate policy implantation was the presence of environmental events that were understood by the media and decision makers to be the result of climate change. In the months leading up to climate policy implementation, the province was struggling to address an unpredicted pine beetle infestation that was projected to wipe out 80% of BC's pine forests by 2013. The public discourse, as published within national news media, indicates that it was understood in the months leading up to BC's climate change policy implementation that the pine beetle infestation was at least in part, the result of warmer winter temperatures caused by climate change, and would likely be very costly to the province. For example, in 2005, the Globe and Mail, a nationally published newspaper, indicated that BC Forest Minister Mike de Jong estimated that the cost of recovering from the BC pine beetle epidemic would be \$1.5 billion over a 10-year period (Globe and Mail, 2005). By December of 2006, national media was indicating that the pine beetle infestation was made possible by a changing climate (e.g. Oosthoek, 2006).

The pine beetle and other climate impacts played an important role in the messaging used to communicate BC's climate policy to the public, in the months following policy implementation. For example, on the public website published by the province to provide information about

climate change, the government currently indicates that the pine beetle epidemic is the direct result of warmer winters, which are linked to a changing climate. The province additionally lists a variety of other climate impacts effecting the province, including a warming of average annual temperatures by between 0.5 and 1.7 degrees Celsius, a 50% loss of snow pack over the previous 50-100 years, and an increase in annual precipitation by approximately 20%, increased flows in the Interior and Fraser Valley regions and longer summer droughts (Government of BC, 2008).

These effects appear to play an important role in the communications used by the government in justifying the comprehensive climate strategy to the public, both during the stage of policy enaction, and within subsequent reports and documentation. For example, in the 2007 speech from the throne, the government indicated that of all legislative priorities, "none is more important than the critical problem of global warming and climate change" (Campagnolo , 2007). Within the 2008 *Climate Action Plan*, comprehensive argument outlining the science of climate change, and the impacts it is already having on the province are outlined in sections with headings including, 'the problem is real', 'the problem is here', and 'BC is ready'. The existence of climate impacts that were discussed within the public discourse in the months and years leading to BC's climate policy implementation, and used in the messaging following policy implementation is consistent with the findings of the literature review, which understands climate impacts to be a contributing factor to climate policy decision making.

3.6 Public Opinion and Interest Group Pressure

Another factor explored within the literature review is the role that the popular opinion and pressure of interest groups plays in shaping policy outcomes at a subnational level. As identified within the studies examined above, within subnational contexts, public opinion tends to either support policy adoption, or at the very least, not hinder the adoption of policy, rather than act as a determining factor. This section explores the government's overall approval ratings, the public's opinion towards climate change and environmental issues, and the role of groups and stakeholders with an interest in climate policy in the period leading up to BC's climate policy implementation.

In the years leading up to BC's implementation of climate policy, the BC Liberal Government had successfully won multiple elections, achieving a considerable majority government, and consequently faced limited opposition within the Legislature. Following the 2001 provincial election in which the government won 77 of 79 of the seats in the legislature, Premier Campbell was argued to be "one of the most powerful premiers in provincial history" (Ruff, 2010B, 214). Subsequently, in the years between 2001 and 2009, the party enjoyed three strait majority governments, earning 97% of the seats in the legislature (77 of 79) in the 2001 provincial election, and 58% (46 of 79) and 57% (49 of 85) in the 2005 and 2009 elections respectively.

Upon forming the government, one of the first orders of business of the newly elected Liberal government was to institutionalize election dates, mandating that elections would occur on a four-year cycle. In the spring of 2008 as the government implemented climate policy, the BC

Liberal Party continued to enjoy a period of high public support. Additionally, in 2007 when climate legislation was first announced, the government was comfortably distant from the next provincial election, scheduled for 2009. It is possible that this timing gave the government a window within which to redirect the course of governance should policy decisions prove unpopular with the electorate.

In the months leading up to the implementation of climate policy, the strong approval ratings of the BC Liberal government were also met with the saliency of the issue of climate change and environmental values in general among British Columbians. As argued by Harrison (2012a), between December 2006 and June 2007 during the period of policy design, the issue of the environment was top of mind for many British Columbians, with more British Columbians indicating that the Environment was the most important issue, than indicating the economy (Harrison. 2012a).



Figure 1: Saliency of Environmental Issues in British Columbia. Source: Harrison, 2012b.

It was perhaps this alignment between policy and public opinion that led a well-respected political consultant to argue in the months following policy implementation that, Campbell is a "very smart politician. He's reading the tea leaves very carefully. There is a huge, green tidal wave in public opinion. No one wants to be swept away by that. They want to be on the crest of it" (Struck, 2007).

Within British Columbia politics, interest groups can be seen as occupying the space as lobby organizations, vying for specific demands and preferences, and additionally help to develop and shape public policy (Crawford, 2010, 170). As argued by Crawford in a 2010 assessment of the role that non-governmental groups play in BC politics, non-business groups such as the environmental lobby have been "growing in number and influence alongside business groups" in a role in public policy making in the province (Crawford, 2010). These groups presence is not accurately captured by the provincial Lobbyist registry; within BC's parliamentary structure, much of the interest group lobbying happens outside of the public eye and rather in venues such as offices of public servants and cabinet ministers (Crawford, 2010, 171). In the case of climate policy in British Columbia, two groups were key to the government's policy implementation success: business leaders and the environmental lobby.

In the years leading up to BC's implementation of Climate Policy, it has been argued that BC's business community had played an important role in securing Premier Campbell's political longevity, and maintaining the support of the business community was particularly important for Premier Campbell, whose electoral success was largely the result of strong business support. For example, as indicated by Philips (2010), in 1993 when premier Campbell first sought leadership

of the Liberal party, substantial business backing enabled "Campbell's campaign [to] easily surpass its rivals" (Philips, 2010). It is understood that the business community continued to play a key role throughout Campbell's tenure as Premier. In 2001 corporate donations accounted for 62% of the funds raised in support of the Liberal Party, rising to 70% of the donations in advance of the 2005 Election (Philips, 2010). In addition to monetary support, the business community was also vocal in its ideological alignment with Campbell and his government.

Three days before the 2005 provincial election, a press conference criticizing the opposition party and lauding the performance of the Campbell government was held by seventeen business leaders from across the provinces (Philips, 2010). It is possible that the shift toward climate action could have marginalized Campbell's business base. For example, Michael Magee, a veteran political consultant argued in advance of BC's Climate policy that taking a "strident environmental position" puts the Campbell government in "perilous" position, given the substantial contributions made by the mining, oil and gas industries (Struck, 2007). However the role of the business lobby doesn't have appeared to negatively influenced the Government's decision to implement climate policy. As identified by Harrison (2012a) in an interview with the Executive Vice President of the BC Business Council, the business community was kept out of the decision making process, and was "absolutely shocked", as the policies were implemented with no consultation (Harrison, 2012a, p.389). This finding that interest groups didn't oppose BC's climate policy in a coordinated way is consistent with the findings of the literature review, which indicate that climate policy is implemented in cases where interest groups either support, or fail to hinder policy outcomes.

Soon after implementation of BC's suite of climate policy, the BC Business Council first refrained from commenting on the issue, and then issued tempered support, acknowledging that a central policy, the carbon tax, "won't hurt" and most will be "marginally better off" (Hutchinson, 2008). Indeed, as argued by Harrison, the business community's restraint from criticizing the climate initiatives was a significant source of the government's ability to implement the policy (Harrison, 2012a, 391).

Another key interest group with respect to Climate Policy in British Columbia was the environmental lobby. In the years prior to BC's green shift, the government had faced strong opposition from environmentally minded interest groups, and had received strong criticism from a coalition of non-governmental organizations in 2003, toward their approach to environmental issues (Erickson, 2010). This thesis hasn't uncovered any evidence to suggest that the environmental lobby was consulted during the policy development phase, however findings do suggest that the development of climate policy was consistent with previous demands of the environmental lobby, and was met with favorable response, and further that the political lobbying of the environmental movement supported the government in implementing climate policy objectives.

For example, in communication with a representative from Voters Taking Action on Climate Change (VTACC) a citizen's advocacy group in the province, Premier Gordon Campbell indicated to the group that he required a "groundswell of support", which the group manufactured, by generating a petition in support of a carbon tax that contained approximately 15 000 signatures (Harrison, 2012a p.390). Furthermore, soon after the announcement of BC's

ambitious climate action targets and policy program, the environmental lobby came out strongly in favor of the government's strong response to climate change (Sierra Club, 2008).

The design of BC's climate policy was additionally applauded by academics. In the months leading up to the announcement of BC's carbon tax, seventy academic economists had signed a letter directed to the government that called for the adoption of a tax with similar design (Peet and Harrison, 2012). While there isn't enough evidence to suggest that the academic and environmental community's vocal and strong support of BC's climate policy was definitively a deciding factor in policy outcomes, the support of these communities is consistent with the findings presented within the literature review.

3.7 Institutional Structure and Capacity

While public opinion and interest group pressure can be understood as the vehicle that give political leaders the social license to consider climate policy, institutional structure can be understood as the vehicle that gives decision makers the legislative authority to implement policy decisions. As identified within the literature review, jurisdictional authority to use policy levers to influence climate outcomes, and the presence of a governance structure that affords decision-making authority upon elected officials, are primary factors influencing climate policy decision outcomes at the subnational level of governance.

Within the British Columbia context, at the time of policy-making, this thesis argues that several factors combined together to create a unique circumstance that facilitated the province's climate
policy implementation. Within Canada, governance occurs under the umbrella of a constitutional monarchy representative democracy (Ruff, 2010A). British Columbia, a sub-national region within parliamentary constitutional monarchy demonstrates this point well. Once having selected policy for implementation, the premier had only to pass climate policy through the cabinet committee on climate change, and later the legislature. As at the time of the implementation of climate policy, and in the months prior, the governing party enjoyed a majority of seats within the legislature, the premier was able to pass climate legislation unimpeded.

In addition to being a parliamentary system couched within a constitutional democracy, British Columbia is also a region within a federalist state. Federalism has historically been recognized as a contributing factor in the development of weak policy responses to disparate policy issues (Howlett et al, 2009, 60). This is seen to result from the difficulty governments face when trying to impose national policy requiring intergovernmental cooperation among regions each with unique electoral incentives, economic imperatives, and geographical features. This certainly was the case when provinces attempted to develop a coordinated response to the nationally ratified Kyoto Protocol, which called for a 6% reduction in greenhouse gas emissions from a 1990 baseline by 2012.

In the case of Canada's response to climate change, however, federalism has proved to be a double edged sword; while federalism has actively impeded the development of a coordinated national response to climate change, "in the face of national inaction, federalism may allow for at least some sub-national governments to act, to the extent that there is regional variation in electoral incentives" (Harrison and Sundstrom, 2010, 19).

This certainly was demonstrated in British Columbia. Across Canada, authority for the regulation of the environment is exercised at the provincial level, with each province in control of its own set of pollution control and environmental assessment laws (Morton, 1996). Owing to the divergent interests of the provinces and territories that make up Canada, the federal government has been unable to establish a national response to climate change that meets the imperative of reductions. Despite the challenges the federalist structure has imposed on the establishment of a country-wide response, the federalist structure allowed for BC, a jurisdiction well poised economically, politically and geographically, to act, in advance of other jurisdictions.

A primarily important factor enabling the BC Government to implement leading climate legislation is the concentration of power afforded to the center of government in British Columbia, particularly in periods where the government faces wide-spread public support, as was the case in the first decade of the 21st century. Following the 2001 provincial election in which the government won 77 of 79 of the seats in the legislature, Premier Campbell was argued to be "one of the most powerful premiers in provincial history" (Ruff, 2010B, 214).

While still formally linked to the crown in structure and title, the of role of the Lieutenant-Governor has become largely ceremonial (Ruff, 2010A). Within British Columbia, the two party structure which, in practice, has shaped BC politics over the past several decades has ensured that the governing party enjoys a majority of seats in the legislature. This organization has "heightened power at the center" of government, giving the cabinet, and above all the Premier the ability to direct the agenda for governance without limitation (Ruff, 2010A). During his tenure as leader, Premier Gordon Campbell "amplified the power inherent in the Office of the Premier and the office's ability to command the policy agenda and administrative direction of government ministries and other central agencies" (Ruff, 2010B 205). Since Campbell was first elected in 2001, the make up of cabinet's committees has reflected the premier's chief policy concerns (Ruff, 2010B). It is within this context that "the premier is in every sense the *first* minister, and his office and its staff visibly dominate the policy direction and management of provincial government" 208) (Ruff, 2010B).

3.8 Political Will and the Presence of an Issue Champion

It is within this decision-making context that this thesis examines the role of a political champion in driving BC's decision outcomes. As indicated within the literature review, a political champion can be understood as a key driver in climate policy outcomes at a subnational level.

Despite the apparent alignment between elements of the policy instruments designed to meet BC's climate targets and the legislative agenda of the government at the time that were highlighted above, the addition of climate change to the provincial agenda still reflected a marked departure from the government's previous environmental stance and practice. For example, in 2003, a coalition of environmental groups had given the government a "sharply worded failing grade" for their approach to environmental issues (Erickson, 2010, 146), and throughout the early 2000s the Premier had been a vocal opponent to the federal ratification of the Kyoto Protocol, which established a national target of a 6% reduction of GHG emissions below 1990 levels.

There is little direct evidence to pin point the reasons behind the central role the premier played in placing climate change onto the political agenda in advance of the 2007 policy announcements, however anecdotally several theories exist. As argued by Struck (2007), Premier Campbell self reported his own "recognition of the urgency of the issue" (Struck, 2007), which has been argued to have resulted from a 2006 trip to Beijing, where the Premier witnessed "the impact of billions of individual decision(s) on the environment" (Hunt, 2008). Another theory, contemplated by Harrison (2012a) is that the birth of Gordon Campbell's first grandchild in 2006 may have led the leader to "have had stronger than usual personal motives to pursue "good policy" (Harrison, 2012a, 389).

In the years following the implementation of BC's climate policy, several facts have emerged that support the idea that the premier played a central role in the liberal party's 2007 'green shift'. Upon announcing the ambitious climate program in the 2007 throne speech, the Premier established the Cabinet Committee on Climate Action, which he chaired personally. The Climate Action Secretariat was established within the office of the premier to support the Cabinet Committee on Climate Action legislation through parliament. This enabled the premier to play a direct role in shaping the climate action legislation passed by the government. As argued by Ruff (2010), of the suite of climate policy implemented in British Columbia following the 2007 throne speech, all of it is "inseparable from the authorship of Premier Campbell" (Ruff, 2010b, 208).

In the years following the initial launch of BC's suite of climate policy, the importance of the Premier's leadership on the issue became more pronounced in the public discourse. As argued by Palmer in an article published in the Vancouver Sun assessing the Premier's success with the policy, despite anxiety within the liberal caucus over the carbon tax, the Premier indicated that if his colleagues wanted to get rid of the tax, they would first need to get rid of him (Palmer, 2009). Certainly in the case of climate policy in British Columbia, it is possible to interpret the decision to pursue climate action as largely aligning with the ideology, values, and legislative priorities of the party in power, and perhaps more importantly, the leader of that party.

Despite the apparent divergence BC's climate policy represented from previous policy directions, publicly the government argued that the shift in governance priorities toward the environment reflected a continuation of a long-held plan for governance. This framing is consistent with reports that Terry Tamminen, the chief environmental advisor to Governor Schwarzenegger of California, was said to have worked with Campbell's staff to draft a "far-reaching" plan as early as 2006 (Struck, 2007). Indeed, as argued by Howlett et al in a review of policy making theory, governments do commonly keep the motives underlying policy decisions from the public (Howlett et al, 2009), as is the case in British Columbia.

Whether BC's adoption of climate policy represents a major policy shift, or is consistent with the province's previously held policy aims, as noted by Ruff in an analysis of the way that BC's governance structure concentrates decision authority toward the premier's office, it is impossible to separate BC's climate policies from the authorship of Gordon Campbell (Ruff, 2010B, 208) and the values and ideas that shaped his tenure as Premier. As Harrison (2012a) argues, the reason for the province's shift toward support of climate policy can be understood to have been generated by the premier himself. This role of the premier as a central driving decision maker is

consistent with the findings of the literature review, which finds that amongst subnational jurisdictions, an issue champion and/or the existence of political will is a necessary factor in climate policy outcomes.

3.9 British Columbia's Shifting Political Landscape

The above review of the BC case study within the context of the five factors identified within the literature review presents a snapshot view of how contextual factors can be understood to have influenced climate policy decision making in British Columbia in the months leading up to the government's policy implementation. However; policymaking doesn't occur in a vacuum, and as contextual factors shift, so too do governance outcomes. The following sections examine the shifts that have occurred within the BC political landscape in the years since policy implementation, and present an understanding of the ways these shifting contextual factors are currently influencing climate policy within the province, and could influence policy outcomes in the future.

In the years since the establishment of climate legislation in 2007, the province of British Columbia has continued to demonstrate its commitment towards meeting its climate mitigation targets. Through a the lens of the emissions reductions achieved, BC's climate policies can be argued to have been a success to date. In a report released by the provincial government in 2012, the government documents a 4.5% reduction in provincial GHG emissions outputs between 2007 and 2010 and cites these as resulting from BC's climate actions. The report additionally points to better than average reductions between 2007 and 2010 across four fuel indicators when compared to the Canadian National Average (see table 3 below).

| % Change 2007-2010 | BC | Canada wide |
|----------------------|------|----------------|
| Natural Gas Demand | - 10 | -4 |
| Diesel Sales | -6 | +8 |
| Motor Gasoline Sales | -2 | +5 |
| Light Fuel Oil Sales | -78 | -24 |
| | | |

Table 3- Change in Fuel Sales 2007-2010. Source: Making Progress on B.C.'s Climate Action Plan, p. 10.

The BC government further argues that GDP growth was stronger than the national average between 2008 and 2010, growing 4.4% (Government of British Columbia, 2012, p 9), and highlights a variety of other indicators that demonstrate the success of British Columbia's eight pieces of climate legislation. Several of these indicators include (Ibid, p 10):

- 48% growth in sales in the clean tech sector between 2008 and 2010
- 419 000 tonnes of GHG avoided in 2010, through the *Renewable and Low Carbon Fuel Requirements Regulation*
- Vancouver achieved the lowest GHG footprint of any 'major city' in North America

These findings are supported by independent analysis conducted by civil society groups, and contradicted by others. For example, in a research report released in 2012 by Sustainable Prosperity, a national research and policy group located at the University of Ottawa, a four-year review of the BC carbon tax's policy consequences indicates that the average BC citizen consumption of fossil fuels has decreased by 15.1% during the four years the tax has been levied

(2008-2012), while the national per capita amount increased by 1.3% during the same time period.

However despite the government-touted success of BC's carbon policies, particularly the carbon tax, the medium and long-term policy longevity and policy consequences remain uncertain. In the years since BC's climate legislation was first tabled, the province's political landscape has shifted considerably, and the motivating factors identified in Chapter 3 as having supported policy adoption no longer all align in support of policy longevity.

While the institutional structures governing BC's political decision making have remained unchanged from the time BC's climate policy was implemented in 2008, the governance landscape has changed quite dramatically. In July 2009, Premier Gordon Campbell announced BC's participation in a harmonized sales tax (HST) program with the federal government, which would set a standard tax rate of 12% for all goods and services across the province, thereby eliminating the 5% Goods and Services Tax (GST) and 7% Provincial Sales Tax (PST) present at the time. The announcement prompted support of the business community, but strong opposition by the general public. In media reports, this opposition was attributed to the perception that the Premier had hidden his intention to implement the HST during the spring's election campaign, and the tax rate increase that the introduction of the HST would result in for several sectors, including the restaurant sector (Tieleman, 2010). In September 2010, following access to information requests made by the media, it was reported that documents including briefing notes from a January 2009 First Minister's Meeting appeared to contradict the Premier's indications that the HST "wasn't on his radar" at the time of election (Wintonyk, 2010). In November, 2010

following these revelations, in a televised press conference, Gordon Campbell indicated his intention to resign from his position as Premier. This announcement launched a leadership race within the BC liberal party. At a leadership convention held in February 2011, Christy Clark, who was painted throughout the campaign as a 'party outsider', was voted in as the new leader of the BC Liberal Party (Davies, 2011). Gordon Campbell officially resigned March 14th, 2011, and Christy Clark became the new premier of the province.

While former premier Campbell had amassed strong political capital during his 10-year stint as a premier that lead a party to three consecutive political victories, immediately upon taking office, Premier Clark faced low levels of support both within, and outside her party. Following a shaky first year as premier, in the summer of 2012 a number of high profile cabinet ministers including Clark's two primary opponents in the 2011 leadership race, announced they would not be seeking re-election in the planned 2013 BC General Election, leading media reports to cite deep divisions with the BC Liberal Party (Fong, 2012). The governance and political priorities announced by Premier Clark focused in large part, on the economy and on strengthening BC's families. Despite announcing during her leadership campaign that she supported her successor's suite of climate policies (Saxifrage, 2011), this support didn't appear to be demonstrated by the Clark government priorities and decisions.

In the 2013 BC speech from the throne, the province announced the creation of a new fund designed to collect royalties from the expansion of Liquid Natural Gas (LNG) development across the province. The government indicated the fund could collect over \$100 billion over 30 years, a figure which indicates the scale of the anticipated future expansion of LNG development

within the province (Fowlie, 2013). This announcement follows January 2013 comments made by BC Community Minister Bill Bennett that BC's natural gas development could "rival anything Alberta has experienced" (Hume, 2013), and the surprising June 2012 announcement by US oil and gas prospector Apache Corp that the company had made the 'world's largest' shale gas discovery in Northeastern BC (Westenhaus, 2012), which estimates predict could match the previous 10 years of Canada's total output (Vanderklippe , 2012). Future development and expansion of LNG resource extraction is likely to be a politically contentious issue in British Columbia, as accessing the resource requires the use of fracking, a technique using large amounts of water and chemicals to free LNG from the shale it is currently embedded within. Further, a dramatic expansion of LNG production within the province runs contrary to the province's legislated aims of reducing total provincial GHG output to 33% below 2007 levels, by 2020.

During this time period, public opinion on the topic of BC's climate change policies has remained surprisingly robust. While there was initial strong public opposition to the BC Carbon Tax, opposition to the policy has been waning in recent years. A December 2012 poll conducted by Environics Research Group indicates that the policy enjoys 64% approval ratings amongst British Columbians. Further the number of those strongly opposed to the tax has dropped by almost half between June 2011, and December 2012, from 32% to 17% (Environics, 2012).

However in contrast to BC's warming public opinion towards BC's suite of climate policies, the government has faced a strong lobby from industry impacted by BC's climate policies, most notably the carbon tax. For example, in a 2011 feature article published in the Globe and Mail, a

nationally syndicated print newspaper, it was argued that several large corporations, including Encana Corp, a gas developer with large holdings in the province, have lobbied Premier Christy Clark to get rid of the tax (Ebner and McCarthy, 2011).

Perhaps in response to the shifting contextual factors including lobby pressure from interest groups, notably the oil and gas sector, and a changed political landscape, in the 2012 budget, the government announced it would launch a comprehensive review of the BC carbon tax. The government indicated the review would cover "all aspects" of the tax, including revenue neutrality, and BC's economic competitiveness with regional counterparts. Findings of the review were to be announced as part of the 2013 British Columbia budget Process (BC Ministry of Environment, Undated).

Following the announcement of the government-led policy review, a variety of think tanks began to publish their own findings and express opinions on BC's climate policy and its perceived benefits. For example, in a January 2013 opinion piece published in the Vancouver Sun, Mark Lee, Senior Economist for the Canadian Center for Policy Alternatives, a left-leaning independent research group noted that the BC Carbon Tax is partly responsible for BC's 4.5% reduction in GHG emissions between 2007 and 2010, and argued that the province should pursue a "revamped and reformed" carbon tax policy. Acknowledging that the government has avoided indicating the future for the tax, which, at present is not slated for further rate increase, Lee notes that the 2013 budget will indicate whether the tax rate will be raised in the future, and argues that in advance of the 2013 provincial election, the province's two leading political parties, the BC

New Democratic and Liberal parties will need to make their position on the carbon tax clear (Lee, 2013).

In the 2013 budget process, the findings of the Carbon Tax's full-scale review were published. The review findings indicated strong interest group opposition to the policy, as expected, and announced a middle-of- road response by government, whereby the BC carbon tax would remain, however the tax rate will not be increased, and further that the tax base would not expand to include industrial processes, or non-combustion emissions. The tax will remain revenue neutral, with all revenues contributing to tax shifting within other parts of the economy. In March, 2013, it was announced by the governing Liberal Party that the government intended to implement a 5 year freeze on the rate of the carbon tax. However, the overall fate of the tax remains uncertain. The province is set to go to the polls in May, 2013, and the New Democratic Party, which has since dropped their previous 'axe the tax' campaign and indicated support for the policy, has a 20 point advantage over the incumbent Liberals (Angus Reid, 2013).

BC's climate policies additionally faces criticism over policy design and implementation. In a spring 2013 review conducted by the BC Auditor General, the emissions trading mechanism established to help the public sector meet its carbon neutral requirements, the Pacific Carbon Trust, came under fire after findings indicated that the credits produced by the crown owned organization did not meet the criteria of a carbon offset. The most damning findings of the Governor General's report indicate that over \$6 million in public funds were given to two privately owned projects, the Encana gas drilling project, and the Darkwoods forestry project, that ultimately didn't produce any additional emissions reductions. The report further argues that

as the credits generated by the crown-held corporation don't meet the criteria of offsets, that the government did not achieve its aim of carbon neutrality by 2010.

In a response to the media, BC Environment Minister Terry Lake rejected the findings of the report, arguing that the Auditor General is not an 'accredited expert' in carbon offsetting, and further indicated that the government will take no further action as a result of the auditor general's report (Hoekstra, 2013). Public opinion has not yet solidified on this most recent gaff and it remains to be seen if this presents another black mark on BC's climate change policies, or if the controversial carbon neutral public sector policy will weather this storm. It is not clear if the government was aware of the auditor general's findings in advance of the release of the report, and further, if these findings could provide political cover to the present government, should they wish to distance themselves from the previous government's carbon strategy, and scrap BC's policy of a carbon neutral public sector.

3.10 How Contextual Factors are Shaping Policy Longevity in BC

As BC's climate legislation and related policies are still active, existing within the present political context, it is difficult to assess what the full future impact of these policies might be, and if these policies will be able to achieve political longevity over time. As discussed earlier in the chapter, government and academic analysis indicate that to date, BC's climate legislation can be billed a success, insofar as it has generated tangible reductions in the provinces GHG emissions outputs, at little or no impact to BC's economy.

However a primary indicator of the long-term impact of any piece of legislation or policy surely has to be its ability to meet its objectives not only in the present, but also over time. Despite having survived the first full scale policy review, BC's carbon tax remains vulnerable to changes in political leadership, and shifting government priorities. Further, even though BC's climate policy has survived to date, without future ratcheting up of BC's carbon tax policy, the policy impact will decrease over time, as the tax rate is set at a dollar amount/tonne of GHG emissions, which means that the real tax rate is decreasing as inflation within the BC economy reduces the value of the dollar. Finally, as discussed above, despite the emissions reductions achieved by BC's suite of policy to date, the existing policies will not meet the targets established by the province, and the likelihood of the province meeting it's targets is called further into question with the province's shift towards LNG development.

When applying the characterization of motivating factors developed in chapter 2 to the current policy landscape in British Columbia, it is apparent that the shifting political landscape has changed the long term policy prospects for BC's suite of climate action policies, when compared to what they were when the policies were first implemented. At the time of policy implementation, the findings of this chapter suggest that the stars had aligned, with every contextual factor identified within the subnational climate change literature to be important to climate policy outcomes present at the time of implementation. As these factors shifted with the changing political landscape, so to did the support for, and long term prospects of BC's suite of climate policy. Of particular notability has been the shift in leadership within the government's political agenda.

These findings suggest that climate policy making remains vulnerable to the contextual factors presented within the implementing jurisdiction. While decision makers may be able to push through politically challenging policies, the findings of this thesis suggest that climate policy will continue remain vulnerable over time to shifting government priorities and leadership.

3.11 Chapter Conclusions

The results from the analysis presented above show that the establishment of BC's climate policy can be understood to have happened during an 'alignment of stars', whereby the contextual circumstances were perfectly aligned to support the development and implementation of climate policy within the province. Of the characterization of motivating factors established within chapter 2, all five factors were present at the time of decision making. These include the presence of policy options that were cost neutral, the alignment between policy and existing governance priorities at the time of decision making, a high degree of political will on the part of the province's Premier, the support of public opinion and issue saliency of environmentalism at the time, strong support of the environmental lobby coupled with an absence of dissent from the business lobby, changes to BC's forests which the government recognized as resulting from climate change, and finally, a governance system that concentrates the authority for decision making within the office of the premier, making it possible for the premier to act swiftly and decisively to implement climate legislation. These combined to enable a political feat that remains impressive.

Within the British Columbia context, the findings of this thesis demonstrate that the factors examined can be understood to have influenced climate policy decision outcomes. While this study didn't complete a thorough re-assessment of BC's carbon policy and legislation against the changing contextual factors, a cursory review of the Province's changing political landscape indicates that as the contextual factors changed, the likelihood of policy longevity was brought into question. Within the British Columbia context, the results of this case study suggest that once implemented, to guarantee longevity, climate policy must be met with the support and political will of a leader. This is particularly true in governance jurisdictions such as British Columbia, where perhaps ironically, the high concentration of power afforded to the office of the Premier which was instrumental in facilitating policy implementation in the first place, leaves the policy vulnerable to the whims of future governments. This effect is exacerbated as public opinion and interest group pressure shift, placing pressure on the leader to change the policy position.

As BC's climate legislation remains in effect, and vulnerable to the constraints discussed above, it is impossible to determine if BC's climate policy, specifically the BC carbon tax, will survive the test of time. As discussed above, the final scheduled tax rate increase came into effect July 1st, 2012, and has since been frozen for a five year period.

However despite the uncertainty in the long term prospects of the climate policy presented by the BC case study, the study still offers a useful demonstration of the conditions required to foster the development and implementation of climate policy within a subnational region. Given the apparent challenge of establishing national and internationally coordinated responses to Climate Change, regionalized responses are increasingly recognized as an opportunity to start

acting in jurisdictions that for political, economic or geographical reasons are more readily able to implement climate policies. As former Premier Gordon Campbell noted shortly after announcing BC's ambitious GHG reductions targets "If you wait for a whole continent to come together, sometimes it takes too long" (Struck, 2007). Certainly the Campbell government demonstrated in the subsequent year that firm action on climate change can be taken within a relatively short period of time. The concluding chapter now moves towards an analysis of what lessons can be learned from BC's case study, and how these lessons might be applied elsewhere.

Chapter 4: Discussion and Conclusions

Using the case of British Columbia as a back-drop, this thesis has attempted to examine the role that contextual factors play in shaping climate policy making at a sub national level. Through the analysis presented in the chapters above, the thesis has sought to contribute to the growing and emerging academic discussion exploring a theory of climate policy decision making that understands a central role for subnational jurisdictions within a polycentric framework. The findings within this thesis demonstrate that despite the contextualized nature of climate policy implementation, it is possible to tease out patterns that exist, within the factors that enable policy development and implementation. The research presented within this thesis has specifically aimed to understand what factors enable climate policy decision making within a subnational context, particularly given the predictions of collective action theory, which suggests that the barrier of free-ridership will negatively incent action.

Through the review of subnational responses to climate change developed in chapter two, a conceptualization of the factors understood to motivate subnational mitigation efforts from across multiple jurisdictions within North America was established. This characterization understands climate policy making to emerge from within the governance context of decision making, and argues that the decision to implement climate policy can be understood to be motivated by a series of factors guiding decision making. These factors include (1) economic costs and benefits resulting from climate policy, (2) the existence of political will or an issue champion to further the policy, (3) the support and pressure from public and interest groups, (4) tangible climate impacts that require action, and (5) an institutional structure and capacity that allows for the implementation of mitigation policy.

The thesis additionally aims to uncover what, if anything can be learned from BC's experience of implementing climate policy, and if these learnings have potential applicability in other jurisdictions. Through an application of the characterization to the case of British Columbia, the thesis finds that not only were the five factors present during the time of BC's decision making, but that each of these factors can be understood to have influenced the development of BC's climate policy.

A further assessment of BC's climate policy against a shifting contextual landscape inspires the question of how important each of the contextual factors are in fostering climate policy at a subnational level. While in the context of British Columbia, it appears that all five factors identified within the literature review as important to climate policy decision-making were present, to at least some extent, within the BC case, from the evidence available for this analysis, it is difficult to tease out how important each of the various factors were in the ultimate decision outcomes in order to understand which of these factors were necessary, and which simply added weight to the conclusions of an argument for climate policy that was already in place. For example, within the British Columbia case study, had the factor of the climate impacts, as interpreted by the BC government to be the effects of the pine beetle infestation, been less severe, would the policy have been implemented to such a degree? Had the government enjoyed less public support at the time of policy implementation, would they have been able to take a risk on a policy that generated public opposition and political backlash?

While these questions may never be able to be definitively answered, the lessons from the BC case study indicate that each of the five contextual factors discussed within this thesis appeared to have some importance in the adoption of climate policy. Within the BC context, it is apparent that as the contextual factors changed, so too did the prospects for policy longevity. Certainly, each of the factors can be argued to have supported the final decision outcome.

Overall, the findings from this research can be characterized into three lessons about subnational climate mitigation policy. First, BC's experience in enacting a suite of climate legislation within a policy making context consistent to those of other North American jurisdictions that have also implemented similar policy, suggests that there are policy factors that are important to implementing climate mitigation policy, and that by replicating a policy context with each of the motivating factors, other subnational jurisdictions may too find success in policy implementation.

Second, the discussion of the changing political context outlined in Chapter 3 indicate that as contextual factors shift, so too do the prospects for policy longevity. This suggests that while the formula presented in chapter 2 might present a framework for policy implementation, the prospect of policy 'success', when measured by the policy's ability to produce sustained tangible emissions reductions over time remains dependent upon the political and contextual landscape.

A third and less straightforward finding of this study pertains to the role that subnational jurisdictions can play in the future global mitigation of GHG emissions. As discussed in chapter 2, many subnational climate policy scholars argue that regionally led climate initiatives, when

networked together into a polycentric framework of climate governance, present the future of climate mitigation. However the analysis presented within this thesis suggests that subnational jurisdictions may not be the silver bullet policy scholars perceive them to be. British Columbia is often presented as an example of policy success. The implementation of the politically challenging carbon tax policy presents a North American first, and, perhaps except for California, no other jurisdiction has managed to enact such comprehensive legislation. And yet, as discussed above, despite the laudability of BC's climate legislation, in the four years since BC's suite of climate policy was first enacted, the province now faces uncertainty over if the policies will be able to continue to produce emissions reductions over time, and what the scale of these emissions reductions will be. This is to say, climate policy at the subnational level remains vulnerable to the changing contextual factors within the jurisdiction, and these vulnerabilities remain even after the implementation of policy.

Overall, the analysis presented in this thesis helps present an understanding of the way that contextual factors influence climate policy decision outcomes, and furthermore, suggests an interpretation of some factors that might be important influences of policy outcomes within other jurisdictions. The thesis further suggests that subnational governance jurisdictions within North America present a viable potential avenue for securing some future emissions reductions. Within British Columbia's context, while all five contextual factors were present at the time of policy making, at the time of decision making, several key factors converged to result in the province's policy outcomes, including strong issue saliency leading up to decision making, the existence of a governance structure that allowed for swift decision making, without requiring public or even party support, and, of particular importance, a decision maker who had a strong desire to

implement climate policy within the province. These factors were of course unique to the policy context of British Columbia, though the result in British Columbia does open the possibility that other governance jurisdictions, particularly other Canadian provinces, could undertake similar policy paths, if a similar combination of factors were to emerge. These findings suggest that while there is indeed no silver bullet for climate policy implementation, through consistent and collaborative work on the part of decision makers, leaders who wish to demonstrate championship, and public and interest groups who support action, further policy implementation in other jurisdictions may be possible.

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