Distributive effects and political resistance to Canadian climate change policy[1]
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The subject of this paper is distributive effects associated with Canadian climate-change policy – such as a carbon tax which imposes a relatively greater financial burden on the poor than the rich, or mitigations costs which are higher in one part of the country than other – and the political resistance motivated by such effects which stalls policy development or diverts it from full effectiveness or efficiency. The ultimate goal of climate change policy in Canada and other industrialized nations is to induce technological and behavioural changes necessary to achieve a low-carbon economy - an economy and society which continues to experience growth in both population and economic activity but which generates only a small fraction of the current level of carbon dioxide and other greenhouse gas (GHG) emissions. Life in a low-carbon economy would be very different in a number of basic ways, most notably land-use and urban form; means of transportation; building design; product design; and energy generation, use and supporting infrastructure. The transition to a low-economy carbon requires changes in those and other areas throughout market and society on a scale comparable to those accompanying the transformation of agrarian to industrialized societies, with evolution of energy use and infrastructure from wood to coal to oil (Podobnik, 2006). The policies necessary to effectuate this transition are now well-known. Carbon pricing mechanisms can be used to provide incentives and a new market to encourage the transition toward carbon-free technologies in resource, energy, manufacturing and transportation sectors. For the electricity sector, where production and prices are already heavily regulated, various economic and regulatory instruments (feed-in tariff, renewable portfolio standards) can be implemented to provide incentives to reduce electricity consumption and shift new investments in electricity generation toward carbon free renewable energies. Green belt and smart-growth land-use policies are now beginning to be used and building codes are being revamped. All such policies, however, have distributive effects.

As was the case with industrialization fuelled by new energy sources and the accompanying rise of new merchant and manufacturing classes and creation of an urban under-class, change on the scale necessary to achieve a low-carbon economy will inevitably benefit some while imposing costs on others – for instance, renewable energy industries will flourish while fossil-fuel energy industries will decline; high-density urban dwellers will benefit by better public transit, while rural dwellers necessarily dependent upon the motor vehicle will pay higher gasoline prices. In the same way, policies being put in place by governments to address the

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problem of climate change are today benefitting some and imposing costs on others (for instance, in Ontario today electricity generated by means of renewable sources is purchased by Ontario Power Generation at a preferential price not available to other generators). Communities may not welcome new renewable energy projects, as they impose real or perceived aesthetics and health related costs. Therefore projects might be delayed and less economically and environmentally efficient forms of energy production such, as coal-fired electricity generation, might have to be maintained. The fact that it is not always easy to provide comprehensive cost and benefit estimates contributes to the overall confusion and the emergence of conflicts, meaning *perceptions* of distributive costs and benefits are often more salient in the political debate than actual costs and benefits.

Since public policy exists in order to change incentives facing societal actors and thus induce the behaviour change needed to accomplish the policy objective, political conflict associated with distributive effects is neither surprising nor objectionable. Distributive effects associated with policy have been recognized and analyzed by political scientists (Sefton, 2006) and economists (for a summary of the recent economics literature on the topic see Kriström, 2006) but to date have received little attention in the climate-change policy literature, in Canada or elsewhere (for an exception see Neuhoff, 2011). This paper attempts to fill that gap with respect to Canadian climate policy.

The subject is important because political action motivated by policy-related distributive effects is already influencing Canadian climate policy and will certainly do so even more in the future as that policy, in order to be more effective in bringing about behaviour change, imposes increasingly significant distributive effects. Political resistance motivated by distributive effects has two consequences. First, those suffering from distributional impacts of a given policy, particularly if they are motivated by a perceived lack of fairness, are likely to use the political power available to them in attempts to block or at least stall the policy initiative, making it that much more difficult for a government to achieve its policy objective. An example is the moratorium on off-shore wind turbines imposed by the Ontario government in 2011 in response to anti-wind lobbying. Secondly, lobbying by those affected by climate policy distributive impacts may move governments to use less effective or efficient policy instruments - for instance, voluntary programs instead of law (as was the case in Canada since the mid-1990s) or regulation of GHG emissions rather than a carbon tax (as is being done now by the Canadian federal government). In addition, distributive effects may influence climate policy not only as a result of lobbying, but also because policy makers themselves hold views on what is a fair distribution of impacts and will, to at least some extent, allow those perceptions to influence their policy decisions.

Beyond this applied significance, we suggest that viewing Canadian climate policy through a distributive effects lens will aid academic understanding. We hope to show in this paper that the inherently redistributive nature of climate policy is a factor influencing that policy in Canada today. In particular, we are exploring the possibility that the perceptions of actors respecting what is a fair or unfair distribution of cost and benefit is something which must be paid more attention by academic analysts studying the climate policy process.

Our purpose is first to present a conceptual view of that subject, based upon relevant secondary literature, and to then provide empirical data on the ways in which conflict related to distributional effects has influenced Canadian climate policy to date. Although the latter effort is hampered by the fact that there has been very *little* such policy yet put in place, beyond voluntary measures and technology research and development subsidy, and the policy which does exist is mostly provincial and of recent origin, empirical examination can be made. We are able to report here only on early empirical results; to more fully develop this analysis, more empirical is needed. Our examination is focussed by three research questions:

RQ #1: Can examples of political resistance motivated by climate policy distributional effects be found in Canada?

If so, in which category of impact (temporal; spatial; demographic – discussed below) is the resistance found?

If so, has perceived inequity of the distributional impact motivated resistance?

RQ#2: If so, what has been the influence of that resistance in terms of stalling or diverting climate policy from effectiveness and efficiency? Which types of resistance have had the greatest influence on climate policy?

RQ#3: What are the factors determining the degree to which that resistance has influenced climate policy to date? Are any of those factors unique to the issue of distributive effects?

Those are non-trivial questions because, on the one hand, it might seem that given the vast array of costs and benefits generated by environmental policy distributive impacts associated resistance is common. However, on the other hand there is the real possibility that some of the distributional impacts of environmental policy instruments are quite marginal and will not create conflicts. It is also possible that the groups most affected by the costs of climate-change policy (or lack of thereof) are so marginal and powerless that they will not be included in the policy-making process. In the latter part of the paper, we use our initial empirical data to present what we hope are useful suggestions for a theoretical understanding of the subject and possible lines of inquiry which might help develop that understanding.

We have found that political resistance motivated by distributional effects does exist. However, other than the ability of veto actors like Alberta and Saskatchewan to block development of co-ordinated national policy, it has had little influence upon Canadian climate policy to date - but nevertheless enough to confirm that the phenomenon of stalling or diverting climate policy does exist. In particular, BC and Ontario policy have been influenced. For that reason, this is a variable which must be taken into account by scholars wishing to fully understand why climate policy unfolds the way it does and by practitioners developing and implementing such policy. For that, we need better understanding of *how* such political resistance influences policy. We offer initial thoughts on that question in the concluding section of the paper.

Distributive effects of policy

As noted above, all policy measures change the incentives facing relevant actors, either in a positive or negative manner, in order to induce them to change behaviour in ways which will accomplish the policy objective. An instrument such as subsidy provides a positive incentive for behaviour change, while instruments such as tax, user-fees or law provide negative incentives.

The terms "distributive effects" and the synonym "distributive impacts" are used here to refer to the way in which the total benefit or cost associated with a given policy measure is allocated throughout the population. We set out below the categories of those citizens, groups, organizations or subnational governments which are used in this paper for discussion of distribution of cost and benefit amongst relevant policy actors.

Distributive effects associated with policy have been primarily studied by economists, starting with the concept of externalities and the use of either tax or law to bring about a change in distribution of cost and benefit through internalization of the previously externalized cost. Economists have also studied distribution of the cost of tax measures, referred to as "tax incidence." This is essentially a study of the ability of the first payer of the tax, such as a firm, to pass the cost of the tax along to others, such as its customers in the form of higher prices, which in turn depends upon their elasticity of demand. One broad objective is to determine whether final tax incidence is regressive or progressive - working to shift income from poor to rich or the reverse. Economists today study distributive effects in terms of such things as the relationship between income distribution and economic growth, distribution of benefit and cost of social policy and regional impacts of trade liberalization (Kriström, 2006).

As a positive social science, economics does not comment upon whether a given distribution of goods and services is "fair." Instead, it looks to whether distribution has achieved "allocatively efficient equilibrium" (also referred to as "Pareto optimality") defined as the state in which buying and selling in the market has produced an ideal distribution of goods and services - no other trading could make one person better off, in terms of their own preferences, without making another worse off (Zajac, 1995: 13). This recognition that different individuals have different preferences has been extended to environment in the form research on “willingness to pay” for environmental quality (Kriström, 2006). Although not having a normative concern for fairness, economic analysis does recognize that perceptions of fairness may influence the design of policy measures and so those perceptions must be considered by policy makers: "Perhaps the most cogent reason for being concerned with environmental policy and distribution is that an understanding of distributional impacts allows the shaping of policy packages that are most likely to be accepted by the public (Kriström, 2006: 80)." The book edited by Serret and Johnstone (2006) provides papers which grew out of a workshop on distributive effects of environmental policy held by the OECD in March, 2003. Environmental economists have also studied distributive effects associated with the more specific environmental issue of climate change (Johansson-Stenman and Konow, 2010).

As noted, policy analysts have always considered distributive implications of policy, originally through examination of the effects on policy of interest group lobbying (Truman, 1951). Lowi (1972) was one of the first to address the distributive implications of social policy. A few years earlier, Mancur Olson (1965) had investigated the impact of the costs and benefits associated with public policy and their influence on group mobilization. The basic variable is the degree of concentration or diffusion of cost and benefit - concentration generates motivation and political mobilization in a way diffusion does not. Olson (1965) argues that collective actions by individuals and groups will be easier when confronted by concentrated costs, especially when only a small group of individuals is involved. Members of a privileged group composed of a limited number of individuals facing a high cost or benefit associated with a policy have a strong

incentive to act and can be more easily coerced by fellow members. Members of a large latent group are usually not successfully mobilized as the individual share of benefits or costs is usually quite small, and the coercion in large groups is more difficult to apply. Moreover, if the policy results in the provision of a public goods (define as non-rival and without restriction of access), any members of the groups will be able to access it, independently of his or her contribution to the group effort to provide it. The incentive to free-ride is therefore overwhelming. The insight has been applied to environmental policy by Harrison (1996: 12): "The point of departure for this chapter is Mancur Olson's insight … This insight has important implications for environmental protection, which typically benefits the public at large at the expense of a few regulated firms or individuals."

A useful work in policy studies around the question of distributive conflicts is that of Pal and Weaver (2003) which studies the politics of costs imposition by government in the context of Canada and United States, in a comparative perspective. Their work focus on the imposition of 'visible losses' (such as closing a military base) on groups or communities, which are not diffuse or marginal and which thus have political power attempt to 'exact retribution' for instance, by influencing the next election. (Pal and Weaver, 2003: 2). The authors are convinced that political systems which are not able to impose losses described as necessary, for instance losses that provide benefit for the society as a whole, are likely to suffer 'paralysis, or at least inflexibility' (idem). Among the factors they cite that might prevent governments from implementing policies involving losses to some groups and communities are: (1) 'majoritarian decision-making rules' which privileges the status quo as the necessary majority to adopt policy change might be hard to achieve (idem); (2) the presence of veto-players (idem), as introduced by Tsebelis (1990) and developed further by Sharpf (1997); (3) political regimes (ex. Westminster or presidential regime, with the general findings that Westminster regime provide 'some advantages with respect to loss imposition' although this is "partially offset by concentration of accountability" (Pal and Weaver, 2003: 3); (4) 'political institutional factors' (elections cycle, strength of opposition parties, desire for policy legacies, minority governments, and bicameralism) (Pal and Weaver, 2003: 7; 5) and the institution of federalism (political competition effect, passing the buck, joint decision trap, and emulation effect) (idem).

Climate change policy, although not discussed by Pal and Weaver, can be considered an example of "loss imposition" in that to be effective policy must impose costs on some actors, such as fossil fuel firms, and the workers and communities which benefit from their activity. Moreover, it is likely that the costs of climate change policy, at least in the short term, will outweigh the benefits, at least for some groups. We now turn to the question of how conceptualizations of distributive effects used in economics and policy analysis can best be applied to analysis of climate policy.

Distributive impacts associated with climate policy

In the next two sections, we address two questions: 1) what are the effects which climate change itself and climate change policy are distributing?; and, 2) how do we categorize the actors amongst whom those effects are distributed? For this, we draw upon the existing literature on distributive effects of environmental policy in general and apply that analysis to the specific case of climate change. Our purpose, in this section is to identify those receiving these effects, positive or negative, in order to better understand how those actors participate in climate-change policy making.

In response to the first question, we draw upon the two main categories used in discussion of distributive effects and environmental policy (Serret and Johnstone, 2006): 1) distribution of environmental quality (most often discussed in terms of air pollution in the inner city or siting of hazardous waste facilities); and, 2) distribution of cost and benefit associated with environmental policy (such as costs imposed by environmental regulation).

. distribution of climate-change environmental quality

How is environmental harm distributed? This question, of course, has been the subject of both considerable research (Pearce, 2006) and led to emergence of the environmental justice movement in the US, which pointed to the fact that those who suffered most from pollution tended to be poor and non-white (Bullard, 1994). Studies of distribution of environmental "bads" have tended to focus upon local environmental issues of air or water pollution and associated health effects, in which source of the pollution and location of the victim can be readily established. Pearce (2006: 37-38) suggests that global issues which are pure public goods, such as climate change, pose differential conceptual issues, since the harm "extends across all feasible locations (37)" and therefore "both rich and poor receive the *same* level of environmental quality" (38) – Pearce suggests being rich and able to move to a different neighbourhood helps to avoid local air pollution, but not global problems. Serret and Johnstone make the same claim, with respect to: "Global air pollution such as global warming ... In this case, when implementing an environmental policy, for instance to reduce emissions, the benefits in terms of improved environmental quality will be shared by all. (Serret and Johnstone , 2006: 299)" They recognize the costs associated with emission reductions will have different effects on different actors, such as rich and poor, and they say effects associated with climate-change environmental quality will vary with different *preferences* for environmental quality, but that quality itself is the same everywhere, because climate change quality is a public good.

This analysis ignores two things. First, climate change impacts are more or less severe in different places - a rise in sea-level has greater impact on those living in coastal areas than on those living inland. Secondly, it is now clearly established that vulnerability to climate change varies not only with location, as referred to above, but also with other factors which decide adaptive capacity, such as financial status and strength of community institutions (McMichael et al, 2003). At the global level, those living in the South are more vulnerable to climate change impacts, because they have less financial and institutional capacity to adapt (as well as being less responsible for their creation, and receiving less benefit from the economic activity powered by fossil-fuel combustion, compounding the inequity - see Timmons, 2007). Within Canada, those in Arctic regions are more vulnerable to climate-change impacts, as well as less responsible and receiving less benefit (Lemmen et al, 2008). The analysis by Pearce and Serret and Johnstone needs to be developed by extending the distribution of environmental quality (including preferences or "willingness to pay") to the case of vulnerability to climate-change impacts. In terms of our analysis here, vulnerability has to be included as a factor which one would expect would motivate actors to participate in the climate change policy process, pressing for more effective action. That is certainly the case with the Alliance of Small Island States within the Kyoto regime and it seems reasonable to expect similarly motivated actors exist in within Canada. Whether they have the political power needed to influence climate policy is another question.

. distribution of climate-change policy cost and benefit

At the international level, distributive implications of policy have always been central to policy making, due to Southern arguments that the Northern industrialized nations bear historical responsibility for the problem and so should pay the bulk of the mitigation costs (codified by the "common but differentiated responsibilities" principle of the Kyoto regime). The issue of allocating the cost of emission reductions is equally salient at the domestic level, and has been addressed within the EU by the 1997-98 Burden Sharing Agreement and 2008 Effort Sharing Agreement (Haug and Jordan, 2010). As discussed below, although not explicitly addressed, inability to agree on burden sharing largely explains the failure of Canadian federal-provincial efforts to develop national policy (Macdonald, 2009).

Serret and Johnstone (2006) argue that all environmental instruments have associated distributive effects and this holds when they are used for climate change policy. Voluntary programs carry costs only for those who participate and by the same token trading systems, such as the EU Emissions Trading System implemented in 2005, only imposes costs on the large-scale emitters included in the ambit of the program. Serret and Johnstone note that energy and carbon taxes have been extensively studied with the finding that, if compensation measures and behavior changes (some of the increase in price is often offset by change in consumers behavior) are included: "The degree of regressivity is often found to be mild to weak (2006, 291). " Subsidy, whether for technology development or feed-in-tariffs gives benefit to some and not to others. In Canada, the federal government has transferred almost all of its energy technology spending to carbon capture and storage which, because to date is only being developed in the west, has regional distributive implications. Rivers (2010) is one of the few studies of distributive effects of climate change policy in Canada. His focus is upon financial impacts of demographic groups, rather that regions. There, he finds that climate policy can potentially affect household income through higher fossil fuel prices; increased prices of other goods, because of such increased energy costs; and through household income related to employment. He argues that while climate policy initially has regressive impacts it becomes progressive if resulting revenue is used for compensation (Rivers, 2010: 11). This finding echoes most of the economic research done on the topic (Serret and Johnstone, 2006).

Categorization of actors experiencing distributive impacts

Who are the actors experiencing the impacts, positive or negative, of climate-change environmental quality or climate change policy? The most basic distinction is between humans and nonhumans (organisms belonging to other species). The latter need to be included for policy analysis purposes because while not directly policy actors themselves, some humans are motivated by the perception that impacts they suffer (such as species extinction) are unjust and so are motivated to take political action on their behalf - environmentalists take political action on climate change both due to concerns for human well-being, but also because they believe other species have a valid moral claim. Thus the nonhuman actors such as flora and fauna in a given region whose ecological balance is affected by increasing average temperatures are represented by ENGOs who lobby on their behalf. Within the human world, for purposes of this analysis we place actors in three categories of distributive impacts. The three categories are: 1) temporal; 2) spatial; and, 3) demographic. The categories are not mutually exclusive since a given actor, such as a low-income community in northern Canada living today, must be considered in light of all three categories. Within those three over-lapping categories, we make

distinctions between: 1) loosely organized groups ("communities") and; 2) organizations. The latter are divided between state and non-state organizations. We discuss each category briefly.

The temporal category includes actors in the past who generated emissions or received the economic benefits associated with industrialization based upon access to fossil-fuel energy; those in the present; and those not yet born, who will live in the future and experience both the benefits of today's high-carbon economy (eg, through use of infrastructure built today) and the costs (eg, higher sea levels). An important temporal element in global climate-change policy making, as noted above, is the concept of historical responsibility for today's elevated GHG and associated moral obligation to pay for mitigation. Similarly, perceived moral responsibility for impacts which will be suffered by future humans is part of the policy discourse (Nolt, 2011). The spatial element is discussed above in terms of such things as differing regional vulnerability. Of more immediate consequence in Canadian climate-change politics is regional variations in energy generation and use, such as the oil-based economy of Alberta compared to the hydro-electric economy of Quebec. The fact that Canada is a federated state means that these regions are represented by provinces, sub-national governments with constitutional ownership of the resources which contribute to the climate change problem and its solution. It is regional conflict amongst these constitutionally-empowered state organizations which has prevented development to date of national climate policy in Canada (Macdonald, 2009; 2011). Analysis of distributive effects amongst demographic groups has focused primarily upon financial impacts on households (Rivers, 2010). Beyond financial categories, groups can be categorized by age, sex, ethnicity or in spatial terms, such as the rural or urban. Here too degree of organization of the group is important for our analytical purposes, since organization is a source of political power (Galbraith, 1983). The most important organizational form in this context is the business corporation (the firm) such as Shell Canada, followed by the environmental non-governmental organization (ENGO), such as Greenpeace Canada.

The interests of climate distributive-effects actors

What objectives do these actors pursue as they take political action to address the issue of climate-change distributive effects. Here, we make two basic points - first, that such actors not only have financial interests, but also non-financial and, secondly, that change in existing distribution of cost and benefit gives rise to perceptions of unfair treatment, rectification of which may be another policy goal. We discuss each briefly.

As noted above, policy analysts since the early years of the twentieth century have focused upon activity of the interest group as a variable influencing policy decisions (Pross, 1992). Originally, the focus was primarily upon trade associations lobbying on behalf of the firms they represent in order to achieve policy which contributes to profitability in their industrial sector. With the rise of new social movements in the post-war years, it became clear that non-state actors might seek goals beyond the financial. Loomis and Cigler (1983) distinguish amongst three type of benefits pursued by interest groups: 1) material (financial) benefits; 2) solidary benefits, which they define as "socially derived, intangible rewards created by the act of association, such as fun, camaraderie, status or prestige" (19); and, 3) purposive benefits - "derived from advancing a particular cause or ideology" (19). We would add to that list identity-based benefit - the goal of affirming and requiring recognition by others of the identity of the

group. This identity objective has motivated the women's movement, civil rights movement and others and also groups pursuing a combined ethnic and territorial identity, such as the Khurds, Tamils and, in Canada, westerners, Québécois or Newfoundlanders. We argue that financial cost of a given climate policy instrument such as a carbon tax is one of the most visible and influential distributive effects, but that non-financial costs must also be considered. An example is western alienation – Alberta and Saskatchewan, we suggest, resist federal climate policy not only because of the direct financial cost it might force them to pay, but also because of another type of burden, the conviction that yet again, as has happened so many times before, eastern Canada is unfairly acting to protect its interests and not those of the west. At the same time, government of Quebec climate-change interests include the fear that federal government policy will provide more benefit to the west than to Quebec - it condemned the federal government 2002 climate plan as "inequitable" because, it argued, the plan unduly favoured western provinces and oil firms (Mercier and Crête, 2008: 615).

The pursuit of both financial and non-financial interest is found in all forms of policy making - the abortion debate, for instance, has almost nothing to do with financial interest. The Quebec objection to an "inequitable" climate policy, however, highlights the form of interest unique to the issue of distributive effects - a perception that the change in existing cost and benefit, financial or non-financial, which is brought about by policy is unfair. For our analysis, that perception of distributive inequity takes two forms in the climate-change policy process. First, it functions as another interest or policy objective pursued by the actor - bringing about change in policy which removes the inequity. As discussed below, this may be because the actor genuinely believes the distribution is unjust but also the actor (perhaps more likely to be a firm than an individual) may make *strategic use* of an equity claim (even though the actor is aware the claim is exaggerated or false) in order to influence other climate-policy actors. Secondly, and of more importance for the theoretical view we are working to develop here, the perception of inequity may serve to motivate the actor, adding to the motivation which stems from financial or non-financial interest. As discussed below, degree of motivation is one source of power, and so we suggest that aggrieved actors, spurred by the believe they have been unfairly dealt with, all other things being equal will hold more political power than actors without that believe.

There is now a considerable literature on the subject of distributive justice with respect to climate change (for instance, Timmins, 2007). Much of it, however, lies outside the scope of this analysis because it engages in normative analysis of what distribution of climate-related cost and benefit is just in the mind of the analyst and therefore should be pursued by policy makers - for a review of that literature see Klinsky and Dowlatabadi (2009). To understand perception of inequity as a variable influencing climate policy, however, we need to know what is considered just (and therefore should be done by policy makers) *in the mind of the policy actor*. We need to know what those actors believe to be the rules which generate an equitable distribution of climate-change cost and benefit, since it is the perception those rules have been broken which will, we surmise, motivate political action. What are those rules?

Zajac (1995) discusses distributive justice in the arena of administrative law used for economic regulation, such as price increases which will be allowed by bodies regulating monopoly-type industries such as transportation, communication or electricity. He distinguishes between normative (in the mind of the analyst) and positive (in the mind of the actors engaged in

such regulatory decisions) and argues the latter has to be understood because "perceived fairness is important for policy making (Zajac, 1995: 101)." For his purposes it is important because economic regulators seek to make decisions using the criterion of fairness and so he seeks to understand what criteria they are using; for our purposes, of course, it is important because we think the perception of distributive fairness is a variable influencing climate policy in Canada. Zajac argues that within the realm of economic regulation as practiced in the US over the past century there has developed at least some consensus on what is fair or unfair - for instance, those in similar circumstances should receive similar treatment; all should have at least some minimum form of benefit; insurance should be provided for loss not due to actions of the individual; decisions should be made by due process. Johansson-Stenman and Konow (2010), drawing on psychology research, have identified four distributive justice rules held by individuals: reward should be proportionate to effort made; some fairness should be sacrificed if it increases the total benefit; all should receive minimal benefit; and those in similar circumstances should receive similar treatment. Both Zajac (1995) and Johansson-Stenman and Konow (2010) report that psychology experiments show individuals interpret such rules in ways which benefit themselves (in comparison to the interpretations of non-interested umpires in psychology experiments), either through conscious misrepresentation of their situation or because they genuinely believe in their interpretation (referred to as "denial or cognitive dissonance (131)" by Zojac). For instance, a survey of choice of rules for allocating GHG emission reductions found that: "individuals in different geographical regions generally favor rules that impose lower costs on their region (Johansson-Stenman and Konow, 2010: 150)." Both also find that accepted distributive justice rules vary with venue - one decision-making arena such as administrative law may use somewhat different rules from another, such as friends sharing cost of a dinner.

Nevertheless, both argue that such rules of perceived distributive fairness do exist and do influence individual's actions (rules are not *completely* interpreted in self-serving ways) and so need to be considered as explanatory variables in policy areas requiring distribution of cost and benefit. The perceived norm which is most relevant for our purposes is this: "the sense of unfair treatment typically comes from a perception that a contract, explicit or implicit, has been broken (Zajac, 1995: 117)." That implicit contract, Zajac argues, is based in existing ownership of a benefit:

> The sense of ownership in the status quo is a commonplace phenomenon. Feelings about the justness of such ownership rights may swamp feelings that equality should prevail. (Zajac, 1995: 121)

Examples of such perceptions of ownership given by Zajac include one's place in a queue; rent-controlled apartment prices in New York City; and the many instance in which new regulatory standards are grandfathered, applying only to new facilities because it is deemed to impose the additional cost upon already existing facilities (Zajac, 1995: 121).

We suggest it is this perceived norm of a contractual right to existing benefit, even if implicit, which is most important for understanding the political implications of climate-related distributive effects. The homeowner forced to live beside a wind-turbine or to pay significantly more for gasoline feels that an implicit social contract has been broken; that this is unfair; and therefore political action is morally justified and required. More broadly, the transition to a low-carbon economy, as noted, means a change in distribution of current cost and benefit. To the

extent it is seen as breaking an implicit contract, such change will be seen as inequitable and for that reason, in addition to self-interest alone, will be resisted.

The political power of climate distributive-effects actors

We define political power as the ability of a state or non-state policy actor to influence a given policy decision or its implementation. Without going into detail on a complex and contested subject, we can say that the sources of political power flow from the nature of the actor and the relevant policy context. The former refers to such things as available financial resources, degree of organization, perceived legitimacy of the actor and degree of motivation (referred to above). Factors relevant to the context include the institutional design of the policy process, which determines access to decision makers; existence of counter-vailing power, in the form of actors pressing for contrary policy decisions; and ideas, such as dominant norms or popular framing of the policy problem. The political power of actors motivated by distributive effects to participate in climate-change policy making will be influenced by all such factors but also, we suggest by three others which are specific to distribution of cost and benefit: 1) motivation and mobilization stemming from degree of concentration or diffusion of cost and benefit, as noted by Olson (1965); 2) motivation stemming from the perceived inequity of loss of benefits due to breaking a social contract and; 3), the fact the actor is playing a veto role. The first is generally accepted in the social sciences. Respecting the second, although more research is needed, we assume a sense of inequity will increase the motivation of an actor, beyond the desire to reduce cost or achieve benefit absent any such moral implications. If so, that increased motivation will lead the actor to commit more resources to the political conflict over a longer period of time. That in turn, we surmise will increase the political power of the actor.

Thirdly, in some institutional contexts, that power will also be augmented by the fact that actor is playing a veto role. Veto actors are defined by Pal and Weaver (2003: 2) as "an individual or collective actor whose agreement is required for a change in policy" which is essentially the same definition as that offered by Tsebelis (1995). Tsebelis' analysis focuses upon the institutional context for policy making - consensus-based decision making, such as that used for international agreements, gives each actor potential veto power, while majority-vote decision making does not allow such veto power. In this case, the veto actor is given voting rights in the process, but the concept is applied to others, such as political parties or courts, who are not direct participants in the policy process (Ganghoff, 2003). In the Canadian climate change policy processes examined below, only provinces participating in intergovernmental policy making have direct veto powers. Others, however, who participate in such things as provincial electricity policy as stakeholders, lobbyists or voters do have some veto-type influence. To the extent a veto role confers political power, this suggests that actors seeking to stall policy to avoid distributive costs have power given to them by their distributive-effects motivation not given to those distributive-effects actors seeking benefit, and therefore pressing for policy implementation.

The theoretical picture of climate-change distributive effects set out above can be summarized as follows.

1) cost and benefit: . concentrated or diffused
. both financial and non-financial

	. associated with environmental/climate quality
	. associated with climate policy
2) categories:	. temporal
	. spatial
	. demographic
3) perceptions of distributive equity:	. motivate actors
	. can be used strategically by actors
	. influence decisions of policy-makers
4) power of actors	. motivation from concentrated or diffused effects
	. implications of perceptions of distributive equity
	. veto role

Case studies of distributive effects influence on Canadian climate policy

In this section, we present the results of empirical research on what we believe to be the major influences of distributive effects concern to date in Canadian climate-change policy. We present four case studies of actors motivated by increased costs (both financial and non-financial) or benefits due to actual or pending changes in that policy: 1) failed efforts to develop national federal-provincial policy; 2) three energy industries, renewable, nuclear and coal; 3) wind-turbine siting in Ontario; and, 4) the BC carbon tax. In terms of the categories presented above, none of the cases is temporal; two are spatial (national climate policy and siting wind turbines); and two are demographic (energy industries and BC carbon tax, although the latter also has a spatial element in terms of political influence from rural municipalities). In these cases, the veto actors motivated by negative distributional effects of climate policy are these: 1) the government of Alberta; 2) oil and coal industries; 3) NIMBY groups opposed to wind-turbine siting; 4) rural municipalities in BC. Benefits actors are the renewable and nuclear industries. These cases were selected on the basis that, to the best of our knowledge, they are the most significant current or potential influences upon Canadian climate policy associated with distributive effects.

We do not present case study data on those motivated to take political action by distribution of environmental (climate) quality (eg, citizens of Canadian Arctic regions or those in coastal areas). These are not included primarily because we have not yet had time to examine them, but also because policy interventions by such actors, to the extent they exist, have had much less influence than those in the four cases presented. We first provide context by means of a short description of Canadian climate-change policy; present the four cases; then present our analysis of the implications these cases have for the theoretical picture being developed in this paper.

. Overview of Canadian climate policy

Climate-change policy in Canada and other countries has two primary objectives, to reduce GHG emissions and to increase adaptive capacity. Although distributive effects certainly exist with respect to adaptation, they are beyond the scope of this study. To reduce GHG emissions, policy must induce behaviour change with respect to energy generation, transportation and use in three major areas of activity: 1) industry - oil and gas, manufacturing

and electricity production; 2) transportation; 3) building design and use. Although not yet tested by the courts (unlike environmental policy, for which the Supreme Court has ruled each holds jurisdiction), both the federal and provincial governments have a generally recognized right to make and implement climate-change policy. Municipalities are also active, particularly with respect to building code implementation, transportation and land-use. From 1992 to 2002, the federal government worked to develop co-ordinated federal-provincial policy but since then has relied only on its own unilateral policy making. It has primarily relied upon appeals for voluntary action; spending on technology development; and law-based regulation (most notably with respect to motor vehicle efficiency and coal-fired electricity utilities; other sectors, such as oil and gas and manufacturing will be subject to future federal regulation using federal law). To date, the provinces have relied on a variety of policy instruments, including appeals for voluntary action; spending; and regulation (land use, motor vehicle emissions, energy efficiency); three provinces, BC, Manitoba and Quebec, have introduced some form of carbon tax; Alberta has introduced law-based regulation; and a number of provinces are using spending (including in the case of Ontario and Nova Scotia FIT subsidy) to shift their electricity fuel mix toward a greater share for renewables (Houle and Macdonald, 2011).

. Strong stalling effect: national federal-provincial climate policy

By far the strongest distributive-effect influence to date has been the stalling of the attempt to develop national climate-change largely due to resistance from the oil-producing provinces (Weibust, 2003; Macdonald, 2009). Between 1992 and 2002, the federal and provincial governments worked together in what came to be referred to as the National Climate Change Process, using the institutional arena of regular joint meetings of environment and energy ministers, supported by a system of federal-provincial committees. They faced the challenge of a major discrepancy in regional distribution of the total cost of meeting the Kyoto objective of reducing emissions to 6% below 1990s levels. That cost discrepancy is indicated by differences in per capita emission rates: in 2009 Saskatchewan emissions were 71 tonnes per person and Alberta 63.7, while Ontario emissions were 12.6 and Quebec emissions were 10.4 per person (Environment Canada, 2011) - a ratio of roughly seven to one. Although not a direct indication of mitigation cost differentials, these figures suggest that if all provinces reduced by the same percentage the cost to the Alberta and Saskatchewan economies would be at least several times that of other provinces.

Not surprisingly, the issue of spatial distributive effects was recognized from the outset, in large part because of resistance to national policy by the major veto actor, Alberta. First Ministers agreed in 1997 that no region would be asked to bear an “unreasonable burden” and one of the federal-provincial committees in the NCCP process had a mandate to examine mechanisms to achieve equitable burden sharing. However the process ended in 2002, when Alberta withdrew and all other provinces strongly objected to Government of Canada ratification of the Kyoto Protocol, before that committee could complete its work. Since then, each government has developed unilateral climate policy, with no attempt at co-ordination, which precludes any possibility that the governments could collectively address the issue of regional distribution of the cost of mitigation policy.

More recently, the Council of Energy Ministers has discussed the concept of a national (or as it is sometimes termed pan-Canadian) energy strategy, which again implicitly raises the issue of distributive effects of energy policy. Ontario Premier Dalton McGuinty has publicly complained of the distributive effect of western oil-sands development, which raise the trading price of the Canadian dollar and thus hurt manufacturing exports from his province (Howlett and Walton, 2012). Since the weakness of Canadian intergovernmental processes means there essentially is no institutional forum within which to develop policy to address these distributive issues, there is little likelihood of national policy being developed to address the issue (Macdonald and Lesch, 2012).

. Mixed effects: energy sectors and electricity policy

The different energy-generating industries are the industrial sectors most directly exposed to distributional effects of climate-change policy, since the policy objective is to shift total Canadian energy use (and, ideally energy export) from fossil fuels toward other fuels. Accordingly, to the extent that policy is effective the nuclear and various renewable energy industries receive financial benefits, while the coal, oil and natural gas suffer financial costs. We assume, therefore, that all of these industries will function as distributive-effects actors, lobbying for or against relevant climate policies. To date we have done initial research to test that assumption and, if they are so acting, to determine the form of their political activity.

In summer, 2011 a review was done of documents found on these renewable energy websites: The Canadian Wind Energy Association; The Canadian Solar Industries Association; The Canadian Geothermal Industries Association; The Canadian Bioenergy Association; and The Canadian HydroPower Association. As expected, this preliminary qualitative assessment showed that each renewable energy industry advocates future energy development which benefits their particular market share. Their more specific policy analysis and recommendations tend to focus on barriers to expansion of their particular industry, such as building codes for the solar industry. Reference was made to both temporal distribution, in terms of historic government supported provided for fossil fuel and hydro-electric industries, and to the challenges they face today competing with the subsidized fossil fuel industries. They spend little time, however, attacking one another in a bid to increase their share of the total renewable-fuels market. The over-all impression is one of political awareness, but not of intensive, heavily funded political activity. That impression is confirmed by a study of lobbying which contributed to passage of the Green Energy Act in 2009 by the Ontario government (Macdonald and Photiadis, 2011). Although direct beneficiaries of the Act, in the form of feed-in-tariffs, the industry was not at the forefront of lobbying – that role was played by others with a financial interest, such as farmers who could lease their land to solar industries and by environmentalists pursuing a non-financial interest. This finding of relatively little political activity is perhaps largely explained by the limited financial resources available to the renewable industries, in contrast with political spending by such actors as the oil industry. However, a line of possible future research is to investigate whether the position of receiving distributional benefit, with no sense of injustice, generates less political motivation than receiving distributional cost.

A similar review was done of documents available on the website of the Canadian Nuclear Association (CAN) and records of CAN lobbying of federal agencies, provided by the Federal Lobbying Commissioner. The latter revealed 18 recent communications, almost all of

which were on subjects directly relevant to the industry. Only one, a communication on the proposed federal regulation of coal-fired utilities might be considered touching upon the fuel mix in Canada. A review of relevant secondary literature found almost no analysis of political activity by the nuclear industry in Canada. Like the renewable industry, the impression is of limited political activity undertaken by the sector.

Finally, a similar study was done of political activity by the coal industry in Canada, through secondary literature review (which revealed no data on political activity by the industry) and documents available on the websites of the Coal Association of Canada and the Mining Association of Canada. These indicate the policy concerns of the coal industry focus primarily upon the corporate tax rate; a proposed federal mineral exploration tax credit; a desire for devolution of regulatory authority from the federal to the provincial level. In addition, as expected, the industry argues continued use of coal will benefit Canada because other fuels are more expensive. Detailed examination (Adams, Houle and Macdonald, 2012) was also done of the phase out of coal for electricity generation by Ontario. Surprisingly, the industry took no visible political action to avoid that distributive cost, presumably because there is no active coal mining within the province (Ontario Power Generation imports the coal it uses) and because the out of province suppliers did not see the Ontario market as sufficiently large, relative to other available markets, to warrant the cost of political action.

. Minimal stalling effects - wind-siting in Ontario

With almost all of its wind power capacity (5,400 MW) installed in the last decade, Canada currently ranks 9th in the world in terms of total installed capacity. Its domestic market has grown at a rate of approximately 30% in each of the last three years and new projects are presently developed in eight of its provinces (CanWEA, 2012).

As of 2011, there were 700 wind-turbines in Ontario, generating approximately 1,650 MW of electricity. Current Ontario electricity and climate policy is to generate 7,500 MW from wind by 2018 (3,600 of which have already been contracted) (CanWEA, 2012), which will require something like a three-fold increase in the number of turbines. Actors benefitting from that policy, to be implemented through the Green Energy Act FIT mechanism, are private-sector wind firms (now including some oil firms such as TransAlta and Suncor), those owning land leased for use by turbines (who receive annual lease payments/royalties, typically $7-8,000/year/turbine for 20-year contracts), but also municipalities, in the forms of direct benefits (such as property taxes, taxes on road maintenance and use of utility corridors) and indirect benefits, such as jobs created during the construction and maintenance stages. The distributive cost of wind-turbines, as in all siting issues, is borne by those living in the immediate vicinity. This cost has motivated political activity by some fifty community groups, who have banded together in the coalition Wind Concerns Ontario, and as of November, 2011, seventy-eight mostly rural municipalities which had passed resolutions opposing wind-turbines and some environmental groups concerned about bat and bird mortality. A review of documents generated by Wind Concerns Ontario and other opponents does not reveal a pre-occupation with equity or the breaking of an implied social contract. Instead, opponents point to claimed health effects, aesthetic loss and reduced property values and call for increased regulatory requirements for set-back from the turbine property line; municipal rather than provincial approval powers (municipal

zoning approval powers were removed by the GEA); and, implicitly at least, an end to the FIT subsidy.

The most significant effect of this activity was the moratorium on off-shore wind turbines announced by the Ontario government on February 11, 2011. Wind Concerns Ontario claimed this was due to their lobbying efforts. Companies which were affected had projects proposed for Lake Ontario, near Kingston and Scarborough Bluffs and Lake Erie, near Leamington.

A first moratorium on offshore wind had been placed in Ontario in November 2006 by the Ministry of Natural Resources, which suspended existing applications over uncertainties about wind potential and concerns about environmental impacts. However, the decision seems to have the origin in the unexpected and strong, but little publicized, public opposition to a Lake Erie offshore wind farm proposed by South Point near the Municipality of Leamington (Hamilton, 2006, Municipality of Leamington, 2008). Opposition to wind farms had been targeting Ontario onshore projects, as well. In the same year (2006), Enbridge had to cancel a wind project planned for Saugeen Shores (a small town in Bruce County, on the shores of Lake Huron) as a result of opposition and lack of results in negotiating a setback requested by public opposition (CanWest, 2006). The moratorium on offshore wind developments was lifted after 14 months, on January 17, 2008, when existing (suspended) and new applications were allowed to go forward, on the basis that the environmental concerns and wind potential have been studied and decisions on applications will be based on new information.

Subsequent legislation, in the form of Green Energy Act (2009) streamlined the approval process. The long term objective was the development of the renewable energy, and particularly wind, which would fill in the energy gap generated by phasing out the province's coal fired plants.

The 2011 moratorium came as a surprise for both industry and opposition groups; this time, the Ministry of the Environment's decision explicitly stated the need for further research in "freshwater lakes" environment (Government of Ontario, 2011). Two wind firms, Trillium Power Wind Corporation and SouthPoint Wind, have launched legal action and others affected by the moratorium (Windstream Energy) have lobbied to have it lifted, supported by the city of Hamilton in which turbines would be made; in that sense, in January 2012 Windstream Energy has announced that it had signed contracts with several companies in the Hamilton-Niagara region in order to manufacture and install the turbines for its Wolfe Island Shoals project near Kingston (Dreschel, 2011). The City of Kingston has also been supportive of the proposed offshore wind farm, approving a motion (at its December 20, 2011 council meeting) in support of the companies organized in a consortium in support of offshore wind development (Canada Newswire, 2011). The planned wind generation cancelled by the 2011 off-shore moratorium, however, represented only a small portion of Ontario planned wind capacity and an even smaller number of project applications - only 5 out of the 1500 applications to the FIT program (CBC News, 2011), meaning the successful veto action has not been of major significance. Perhaps more significant was impact of wind opposition in the October, 2011, Ontario election. It was a factor in a number of rural ridings, and is said to have contribute to defeat of three Liberal cabinet members in rural ridings: Minister of Education Leona Dombrowsky (Prince Edward-Hastings); Minister of Agriculture Carol Mitchell (Huron-Bruce) and Minister of Environment

John Wilkinson (Perth-Wellington) (Counsel Public Affairs, 2011). These results reinforce the view that wind-turbine siting raises rural-urban distributive issues.

.Successful management of distributive effects: the BC carbon tax

Following the adoption by California of legislation (AB 32: California Global Warming Act, on August 31, 2006) mentioning the idea of carbon pricing as a mechanism to reduce GHG emissions, a small group of governors, premiers and their staffs discussed various market based instruments (MBIs), including carbon tax and emissions trading. This group included BC premier Gordon Campbell. A first report was published recommending the development of regional emissions trading system, supported by legislation and regulation adopted in each jurisdiction, and the Western Climate Initiative (WCI) put in place (in February 26th, 2007). The BC government officially joined the WCI on April 24th, 2007. Interviews done by Houle suggest WCI resources were essential for BC development of the carbon tax.

The Campbell government announced in its February 13, 2007 Throne speech the government's willingness to develop market-based mechanisms (MBIs), although in general terms, along with ambitious GHG emissions reduction targets. Several pieces of legislation were adopted in the following months, creating the necessary regulatory powers to implement MBIs. This was done by a limited number of public servants working in a new organization created the same year, the Climate Change Action Secretariat, under the close supervision of Premier Campbell and with the participation of several consultants and experts, including MK Jaccard and associates.

Many interviewees mentioned the importance of Premier Campbell's commitment, often described by close collaborators as a 'policy wonk,' to climate change as an explanation of the proactive stance adopted by British Columbia on the issue starting in 2007. Campbell himself has said he realized the importance of climate change while in China, exposed to poor air quality. It is also possible he saw electoral advantage in moving on climate change. The Liberal party electoral threat was not from the right (it is the conservative party in BC) but from the NDP on the left and taking environmental action might attract NDP votes.

Shortly after the Throne speech, the carbon tax file was transferred to the Minister of Finance to be part of the 2008 budget. A small group of public servants worked closely with the Minister, as well as MK Jaccard and associates, to determinate the modalities of the tax. Distributive effects were recognized by policy makers from the outset - the group worked on some measures aiming to compensate groups and industries that might be most adversely impacted by the measure (including northerners, low income family, and carbon intensive industries). This took the form of the "Low Income Climate Action Tax Credit. The idea of 'income neutrality' also emerged as a way to foster the public acceptability of the carbon tax - all revenue generated by the tax was offset by corresponding reduction of other taxes. Other compensatory measures, such as a one-time payment to all British Columbians called the 'climate dividend', and funding for GHG emissions-related research in specific industries, were also included in the budget.

The impact on the tax on northerners prove to be an important political issue to which much attention was devoted by the Ministry of Finance, who realized studies of the impacts on

the carbon tax on them. Despite heated arguments, no impact of the measure was found and the general compensation already in place was deemed sufficient to respond to their concerns.

Only limited input from ENGOs or industries was provided to the Minister of Finance given the fact that the modalities of the tax remained secret, being part of the budget. The specifics of the carbon tax were announced to the industry, by the Minister of Finance, during an activity organized by the Business Council of British Columbia. To the surprise of the Minister, once industry representatives learned about the specifics of the tax, their reaction was rather positive. Although not enthusiastic about the idea of carbon taxation in principle, the tax provided the price certainty required to reassure investors while the new diminution of income and corporate taxes was welcomed. The tax was implemented in 2008, starting at 10$/t$CO^2$ and a schedule of regular yearly increases was followed until the last increase to 30$ in 2012 (from the initial 10$ level). Despite the original decision not to compensate northern BC residents, after lobbying by rural municipalities the BC government in 2010 introduced the "Northern and Rural Homeowner Benefit" which as of 2011provided a credit of up to $200 a year (Rivers, 2010).

The NDP claimed to be infuriated by the measure, despite the fact that it had previously recommended in its 2005 climate policy platform and developed an 'Axe the Tax' campaign. Despite the best NDP efforts, the Liberals were re-elected in 2009, in part because by then voter attention had become focussed on the economy and the Liberals were seen as better able to manage that file (Harrison, 2009). The Liberal government, now led by Premier Christy Clark, indicated its intention in the February 2012 budget to conduct a review of impacts of the tax before scheduling any new increases.

The situation was much different in the case of BC emissions trading regulation where after the proposed regulation was published, the industry had an opportunity to weigh in. Without any allocation proposal put forward, many industrial sectors were concerned with its potential impact on their activities. While the cement and aluminum industry, hoping to gain credits for early action and fuel switching, were in favour of emissions trading, the oil and gas and mining sectors did not share their enthusiasm. Representatives of those sectors claimed that the new emissions trading system might generate uncertainties that damaged their industries in a context where substantial new investments were in the horizon. Many elected officials were inclined to listen and share this concern.

Also, instead of subjecting the industry to a carbon tax and emissions trading, the expectation was that as the emissions trading mechanism was implemented, the carbon tax will be phased out. However, now confronted with a difficult budgetary context, the BC government is unwilling to abandon the income generated by the tax, which can be accurately predicted, and replace it with income generated by a cap-and-trade system, whose revenues are much more difficult to predict. Lobbying from various industries, including the Oil and Gas sector, which represents about 5% of the annual provincial GPD, was not an important factor at the early stage of policy formulation, when the decision to implement the tax was made. However, the diversification of the BC economy, and the fact that none of the sectors represents by itself more than 5-15% of the total GDP, make for a heterogeneous group of policy actors, from whom some support can be secured.

The BC carbon tax is an example of policy-making in which distributive effects were considered by policy makers from the outset and addressed by the design of the instrument, both by making the tax revenue neutral and later adjusting the policy to address northern rural concerns. BC is to date the only jurisdiction to have adopted a carbon tax (other than the weak form of a tax implemented by Quebec in terms of a tax limited to oil refineries), which suggests political acceptability of the instrument is low. The BC exception is explained both by unusually strong personal conviction of the Premier and by political context - the major opposition to the BC Liberals was from the left (the NDP) which led business to continue to support the Liberals, despite the tax, in order to avoid an NDP election victory in 2009 (Harrison, 2009). Nevertheless, careful attention to distributive implications shown in BC is a lesson for all future climate-change policy.

Conclusions drawn from the case studies

The influence of political actions by the veto actors examined above can be summarized as follows.

1) Government of Alberta	. significant factor in stalling national climate policy
2) renewables industry	. minimal role in Ontario GEA
3) nuclear industry	. no discernible influence
4) coal industry	. made no effort to stall Ontario coal phase-out
5) wind NIMBY	. successful in Ontario off-shore moratorium; impact on Ontario 2011 election; not successful in stalling wind-turbine siting
5) rural municipalities	. influenced minor modification to BC carbon tax

From this limited sample, we draw these conclusions. First, the institutional venue for the decision-making purpose has a major influence on the strength of the veto actor. If such an actor is defined as one "whose agreement is required for a change in policy" then in a case where that is literally true, such as the consensual decision-making of Canadian intergovernmental relations, then a veto actor like Alberta can certainly stall policy. In other cases, however, where non-state actors can only lobby and do not have a vote on the policy decision (governments would like their agreement, but it is not literally necessary), the veto actor influence is less - both the coal industry and wind-NIMBY groups had some influence on policy, but could not stall it completely. Secondly, organization matters. The least successful veto actor studied, those concerned about electricity price increases, had the least influence on policy. We need to do more research to determine the influence of perceptions of inequity, either upon motivation of these actors or upon the policy maker decision. That research will include examination of strategic use of rules governing distribution of climate policy cost and benefit.

Conclusion – toward a theoretical view

How do these findings help us develop theoretical understanding of distributive effects as a variable in Canadian climate change policy? We begin by providing answers to the three research questions posed at the outset.

RQ #1: Can examples of political resistance motivated by climate policy distributional effects be found in Canada?

If so, in which category of impact (temporal; spatial; demographic – discussed below) is the resistance found?

If so, has perceived inequity of the distributional impact motivated resistance?

Obviously we believe examples can be found, in the form of the cases discussed above and it is likely others exist as well. Secondly, in terms of categories, it seems that temporal impacts are irrelevant for Canadian policy (although concern for future impacts is presumably a factor). While prominent in the global discourse, historical responsibility for emissions is not a factor in the Canadian policy debate, even though the west and Atlantic Canada might argue industrialized Quebec and Ontario should bear a greater portion of the cost now because of the benefit they received from emitting in the past. During the national process, Quebec argued it should be given "credit for early action" - its spending on hydro-electricity starting in the 1970s should be taken into account in a way which would reduce its share of total Canadian reductions - but that argument had no traction with other provinces. Nor has the moral claim of Canadians not yet born had any discernible influence on policy. Spatial impacts, on the other hand, have been the most significant, something which is not surprising given Canadian regionalism and decentralized federalism. Outside the federal sphere, however, they were also factors in modifying the BC carbon tax and Ontario wind policy. Impacts on demographic groups, in particular the degree to which climate policy is regressive and unfairly punishes the poor, have not had anything like as much impact, with the exception of the BC carbon tax in which they did influence policy. This is partially because there has been so little use to date, other than that example, of tax as a climate policy instrument. However, it also seems reasonable to expect they will be less significant than spatial impacts in the future, even if tax comes to be widely used, because of the inherent political weakness of the poor, and because regional conflict plays itself out in the institutional venue of consensual IGR decision-making.

From this, we conclude future theoretical development will be most productive (both in terms of academic understanding and contribution to applied policy) if it focuses upon the most relevant category of impacts - spatial. Based on that, we recommend below that in future Canadian policy focus less upon the most spatially organized source of emissions, different fuels, and instead focus more upon such things as buildings which do not have the same spatial concentration.

We did not find that actor perceptions of equity had a major influence. It is not clear if this because they are not a significant factor, contrary to our expectations, or if they have implicit, less visible influence. However, perceptions of distributive inequity, caused by breaking an implicit contract, do seem to be an additional explanatory variable in cases such as Alberta and national climate policy, and citizen opposition to wind siting and electricity price increases. A theoretical challenge, therefore, is the difficulty of disentangling those variables particular to the distributive-effects aspect of climate policy from the other variables found in all policy venues. We need to determine indicators of the existence of the phenomenon, such as explicit reference to perceived inequity in the texts produced by climate policy actors, and to do more research, including process-tracing analysis to determine when in the policy process distributive equity concerns were articulated. If it happens that those concerns where only mentioned after the decision to use a given policy instrument was taken (during its implementation for instance) it will be a strong indication of the relative unimportance of the distribution impacts in the policy-making process (in BC, we found exactly the opposite, distributive concerns where included early in the process).

RQ#2: If so, what has been the influence of that resistance in terms of stalling or diverting climate policy from effectiveness and efficiency? Which types of resistance have had the greatest influence on climate policy?

Aside from stalling national policy, distributive effects resistance has had little effect to date. The fact that Canadian climate policy to date has been less effective than that of many other jurisdictions, such as the EU and northern European states and some US states, is only partially attributable to actions of distributive-effects veto actors. Other factors, such as governing party ideology, weakness of the international regime and in particular the absence of policy action by the US federal government, with which the Canadian federal government has always aligned climate policy, have been as much or more important (Simpson, et al, 2007; Macdonald, 2011). However, it has had *some* influence - the phenomenon does exist. The form of that influence seems to be an augmentation of the variable of the political power of policy actors seeking self-interest as they negotiate policy, which has always been central to policy analysis. In the case studies examined, most of the explanation can be provided by standard variables such as interest, power and institutional context. The type of resistance with the greatest effect was that of a province, within the context of Canadian federal-provincial relations which, as noted, confirms the importance of institutional context.

RQ#3: What are the factors determining the degree to which that resistance has influenced climate policy to date? Are any of those factors unique to the issue of distributive effects?

As noted, in keeping with studies of veto players (Tsebelis, 1995), institutional context and actor organization seem to be the most important factor to date. What we cannot yet speak to is the question unique to distributive effects of the influence of perceptions of equity on climate policy. As discussed, how important is that factor relative to the others which it overlays? In the BC carbon tax it clearly was important but the answer is less clear for the other cases. In the next stage of our research, we hope to generate that kind of empirical data.

The other more general question posed above is whether distributive effects analysis can aid scholarly understanding of climate-change policy making. We argue it can, for two reasons. The first is that the transition to a low-carbon economy, in which climate policy plays a major role, is at heart a fundamental redistribution of cost and benefit, just as the transformation to coal and oil economies were in the past. Particularly in spatial terms, major change in the fuel mix gives economic rewards to those living where the privileged fuels are to be found (or manufactured in the case of renewable technologies) and imposes costs upon those in regions no longer so favoured. Those in turn have impacts on demographic groups, such as fluctuations in employment income experienced by different groups. If this is the fundamental nature of the process being studied, it has to be captured in theoretical approaches. Secondly, although we do not yet have data to support this claim, its seems reasonable to assume the perceptions of what is a fair distribution of climate-policy cost and benefit is having some influence now and will have even more as policy becomes more effective, both because of the extent to which they motivate veto actors and ways in which they influence actions of others in the policy process. Because it is an explicit element in the climate-policy discourse at the global level, academic analysis has addressed distributive issues there. It is also present at the domestic level within Canada, but in only a few instances, such as the 1997 First Ministers agreement no region would be asked to

bear an undue burden, has it been explicitly part of the discourse. The fact the phenomenon is implicit rather than explicit makes its analysis more difficult, but that analysis is needed for a more complete scholarly understanding of Canadian climate policy.

Finally, we close with thoughts on what this analysis can offer to governments as they continue to develop climate policy and by so doing re-arrange the existing pattern of cost and benefit. The first is to express our agreement with the recommendation of Serret and Johnstone - recognize that policy actions have distributive effects and if necessary, both to be equitable and to increase political acceptability, reduce negative impacts by compensation:

> If distributional impacts from the introduction of environmental policy are potentially significant, the use of mitigation and compensation measures may be politically necessary to allow for its implementation. ... For instance in Sweden it has been argued that the relatively high level of the NOx charge that was introduced can be attributed in part to the fact that those affected were compensated… (Serret and Johnstone, 2006: 303)

Compensation was used in the case of the BC carbon tax, both initially through the decision to make it revenue-neutral and then in the later adjustment, and this is likely a factor explaining its political acceptability. Compensation was not used, or even seriously considered, in the case of national climate policy which was a failure to political unacceptability to the veto actor of its distributional impacts.

Secondly, as recommended by Serret and Johnstone (2006: 306), keep both the effectiveness and efficiency of policy measures in the face of distributive effects opposition. Compensate, such as to reduce regressivity of a tax, but keep the behaviour-changing incentive before the relevant policy actor. Do not exempt actors totally, as was done with the coal industry and the BC coal tax, or the Ontario off-shore wind moratorium. Instead, address their concerns and find ways to make the distribution of effects more equitable, while preserving the policy effectiveness which comes from new benefit or cost imposed upon the actors whose behaviour must change. In particular, do not abandon the policy initiative entirely, as was done in the case of national climate policy after 2002.

These recommendations to maintain policy effectiveness but to diffuse political resistance by use of compensation have implications for the choice of policy instrument. Economic instruments such as tax or trading generate revenue which can be used for compensation, while law does not. Analysts have suggested that regional distributive effects conflicts could be addressed by ensuring that revenue generated by climate-policy instruments remain within the boundaries of each province (Snoden and Wigle, 2009). That may or may not be enough to resolve distributive disputes amongst provinces, but the point is that the proposal can only be considered because it uses the revenue-generating instrument of tax, instead of law. It seems reasonable to assume compensation from general revenues raises more distributive equity issues than does compensation from a polluter-pay instrument such as a carbon tax. For that reason, we suggest governments favour economic instruments over law-based regulation. (See Neuhoff, 2011; "Managing distributional implications," pp. 45-52 for a discussion of use of revenue generated by putting a price on carbon.)

Thirdly, where possible use policy measures which result in diffused rather than concentrated costs. Reducing emissions from the western oil-sands is one of the most high-profile and politically difficult challenges right now, due to the combination of western perceptions of injustice and provincial constitutional power. Reducing the energy-intensity of buildings is also politically difficult, but at least in that case the potential veto actors are not geographically concentrated and so have less benefits of institutional context and organization to augment their political power. Governments should use distributive-effects analysis to help them pick the winnable fights when putting in place climate policy which existing cost and benefit of policy actors.

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