



Key findings report for the

# 2013 Canada-US Comparative Climate Opinion Survey

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## Project Overview

This report summarizes results from national level surveys on public attitudes toward climate change administered in Canada and the US in Fall 2013. Since 2008, the National Surveys on Energy and Environment (formally the National Survey of American Public Opinion on Climate Change) has examined the perceptions and preferences of residents of the United States regarding their views on the existence of climate change and potential policy approaches to address the issue. In 2011, a simultaneous survey was fielded in Canada, providing some comparative perspective on attitudes in the US (Lachapelle, Borick and Rabe, 2012). In 2013, the Fall 2013 fielding of the National Survey on Energy and Environment (NSEE) was accompanied by a second Canadian wave, supported by the Université de Montréal and Canada 2020.

Results from these surveys allow for direct comparisons between the views of the American and Canadian publics on matters pertaining to climate change and its mitigation, providing insight into one of the factors affecting trends in both emissions and policy trajectories. In what follows, we highlight key findings emerging from the most recent 2013 wave of our comparative project. Where appropriate, some tables draw on findings from previous waves to illustrate the change in Canadian and American public opinion regarding climate matters.

## Key Findings

1. Most Canadians and Americans agree that global temperatures have increased in recent decades, although Canadians are more likely to agree with this view than Americans.
2. Despite their perceptions of rising global temperatures, however, a substantial number of Canadians and Americans continue to question the extent of a human role.
3. Climate change is not a major concern for most Canadians and Americans, despite the warnings of climate science.
4. Strong majorities in both countries support their respective federal governments signing onto an international agreement to reduce greenhouse gas emissions, even ahead of such developing countries as China.
5. Canadians are roughly twice as likely as Americans to support a carbon tax, although they remain evenly split on this approach to pricing carbon.
6. Canadians are equally divided on cap-and-trade, though they are more likely to support this policy than are Americans.
7. Support for renewable portfolio standards (RPS) is relatively high in both countries, though support drops off in the US when a clear price signal is attached to this policy.
8. Americans are more than twice as likely as Canadians to indicate that they are willing to pay nothing for the production of more renewable energy, while Canadians are more likely to indicate that they are willing to pay more.

# Introduction

Building on the international scientific consensus on climate change (Anderegg et al. 2010; Cook et al. 2013), the IPCC's Working Group I published its highly anticipated Fifth Assessment report in September 2013, concluding with more certainty than ever that climate change is primarily driven by human activity (IPCC 2013). In the same year, other scientific reports warned that the widely agreed upon target of limiting global warming to two degrees Celsius may in fact no longer be achievable given anticipated emission levels (Hansen et al. 2013). Meanwhile, the world broke a new record for global emissions of carbon dioxide from fossil fuel combustion (Le Quéré et al. 2013) as 2013 continued to be an unusually warm year marked by extreme weather and climate events, including record snowfall and blizzard conditions in central and northeastern United States, and flooding in Alberta, Canada.

Politically, climate change continued to take a back seat to other issues, though the gap between action in Canada and the United States also appeared to widen in 2013. While President Obama promised action on climate change in his State of the Union Address, Prime Minister Stephen Harper largely ignored the environment and failed to even mention the climate as he addressed Parliament in his Speech from the Throne. These diverging discourses reflect a disjuncture in emissions trajectories, which continue to grow in Canada but have begun to fall in the US, as well as actual policy commitments demonstrated in 2013. President Obama released a major climate action plan that included a directive for the EPA to begin regulating emissions from coal-fired power plants in the US, despite opposition to action on climate change in Congress. This began issuance of permits under the Clean Air Act for new electricity generation plants but was expanded in 2013 to begin to consider existing facilities. Although years in the making, Prime Minister Harper's proposal for similar regulations on coal, oil and gas have yet to take effect, as emissions from various Canadian sectors, including the Canadian oil sands, continue to rise. These diverging actions, and Canada's inability to curb its emissions from its fast-growing oil sands development, has now been linked to the President's slow decision on whether to approve the controversial Keystone XL energy pipeline, which continues to be a thorn in diplomatic relations between the two countries.

In this context of a growing scientific consensus on the existence and causes of climate change, increasingly alarming predictions from climate scientists on potential consequences, and diverging emissions and policy paths in Canada and the US, this report compares public opinion in Canada and the US on matters pertaining to climate change science and policy. To the extent that carbon emissions are associated with a wide range of essential human activities – like heating our homes, fueling our economies and moving around – emissions reductions will require changes to the way individuals work, play, and go about their daily lives. Behavioral change is thus a crucial variable in responding to climate change, making it necessary to better understand what the public thinks about the issue, and how they are prepared to respond. Moreover, to some extent, emissions reductions involve costs associated with innovation and capital stock turnover, raising important distributional questions, equity concerns, and questions about the public's willingness to pay for mitigation. Finally, both Canada and the US are relatively large emitters of carbon, especially on a per capita basis. Given the interdependent nature of the two economies, and the extent to which Canadian and American lifestyles are culturally linked, understanding public attitudes and behavior in both countries are important for addressing this global collective action problem.

## Section 1: Perceptions of Evidence on Climate Change

Climate change is a complex phenomenon. As a result, the issue may be perceived from various perspectives. An important place to start when exploring the distribution of opinions on climate change is with the fundamental beliefs people hold. Is the climate actually warming? If so, what accounts for this change? The survey results indicate solid majorities of individuals in both Canada and the United States believe there is strong evidence that the average temperature on Earth is warming. However, results also show that Canadians are considerably more likely than Americans to hold this position. As can be seen in Table One, 4 out of 5 residents in Canada believe that the climate is warming compared to only 3 out of 5 Americans in 2013. In addition, Americans are roughly twice as likely as Canadians (25% to 12%) to believe that there is no solid evidence of global warming or are not sure about their views (14% to 8%). Despite substantial fluctuations in American views on the issue over the past decade (Borick and Rabe, 2013), survey results indicate very little movement between the two comparative survey waves summarized in Table One.

**Table One:** Perceptions of evidence of climate change in Canada and the United States

	There is Solid Evidence	There is Not Solid Evidence	Not Sure
<b>Canadians</b> (2013)	81%	12%	8%
<b>Canadians</b> (2011)	80%	14%	6%
<b>Americans</b> (2013)	61%	25%	14%
<b>Americans</b> (2010)	58%	26%	16%

*Question wording: Is there solid evidence that the average temperature on earth has been getting warmer over the past four decades?*

Canadians are more likely than Americans to believe there is solid evidence of rising global temperature on earth (Table One). However, the national Canadian average masks an important difference in opinion at the regional level. The 2013 Canadian survey oversampled in the largest Canadian provinces, ensuring a minimum of at least 70 respondents in all of the major regions and over 300 respondents from the provinces of Alberta (n=320), British Columbia (n=322), Quebec (n=330) and Ontario (n=390). Comparisons for the larger provinces are thus accurate within a reasonable margin of error outside of which significant differences can be observed. No such oversample was conducted among American states and regions. As can be seen from Table Two, belief in climate change is relatively high and stable among most Canadian provinces and regions, with the noticeable exception of Alberta. Belief in the existence of climate change is significantly lower in this relatively more carbon-intensive province, where the oil and gas sector is responsible for an important component of economic growth, but also, for steadily rising absolute and per-capita greenhouse gas emissions. At 65%, aggregate levels of belief in Manitoba and Saskatchewan are below that of Alberta, but given the smaller sample size of this region, the lower and upper bound

are much wider, at 49 and 79 per cent, respectively. Despite these regional differences, perceptions of warming global temperatures in all provinces remains above the American national average for this same period.

**Table Two:** Regional breakdown of climate change perceptions in Canada, 2013

	QC	ON	MB/SK	AB	BC	MA	National
<b>Yes</b>	85%	82%	65%	71%	81%	85%	81%
<b>No</b>	7%	12%	14%	21%	13%	6%	12%
<b>Not sure</b>	7%	6%	21%	7%	5%	8%	8%

*Question wording: Is there solid evidence that the average temperature on earth has been getting warmer over the past four decades?*

Note: margin of error differs by sample size across various provinces and provincial groupings.

## Section 2: Partisan Divides

Beyond this regional divide in Canada, which to some extent aligns with differences in provincial political economies and emissions intensity, past research has consistently found a partisan divide in the way members of the American public perceive the problem of climate change (McCright & Dunlap, 2011; Borick and Rabe, 2010). Findings from the comparative surveys demonstrate how this well-established link between an individual's party affiliation and beliefs regarding the existence of global warming apply in non-American contexts as well. In both the United States and Canada there is a wide gap in opinion between individuals who align with right-wing parties and those who align with parties of the centre and left. For instance, acceptance of climate change is highest among self-identified supporters of the New Democratic Party (NDP) and lowest among self-identified supporters of the Conservative Party of Canada. In the United States a similar pattern emerges, with self-identified Democrats significantly more likely than those identifying with the Republican Party to express a belief that global warming is occurring. Although these partisan differences in Canada and the United States are similar, Canadians who support the Conservative party are still more likely than the average American to believe that global warming is occurring (Table Three). However, consistent with partisan divide, Canadian Conservatives are slightly less likely to hold this belief than American Democrats (71% to 68%).

**Table Three:** Perceptions of climate change by party affiliation, 2013

	There is Solid Evidence	There is Not Solid Evidence	Not Sure
<b>NDP (Can)</b>	92%	6%	2%
<b>Bloc Quebecois (Can)</b>	89%	9%	2%
<b>Liberal (Can)</b>	88%	5%	7%
<b>All Canada</b>	81%	12%	7%
<b>Canadian Unaffiliated</b>	79%	11%	10%
<b>Democrat (US)</b>	71%	15%	13%
<b>Conservatives (Can)</b>	68%	24%	8%

<b>All US</b>	61%	25%	14%
<b>US Unaffiliated</b>	59%	23%	19%
<b>Republican (US)</b>	52%	38%	9%

*Question wording: Is there solid evidence that the average temperature on earth has been getting warmer over the past four decades?*

### Section Three: Confidence in Beliefs

Cross-national differences are also observed in the level of confidence people attach to their views on the existence of global warming. Of those Canadians and Americans who believe the climate is warming, a majority is “fairly” or “very” confident in their views. However, the percent of “very confident” responses has fluctuated over time. For instance, although Canadians are just as likely as they were in 2011 to express a belief in climate change (Table One), they are more confident that this change is occurring in 2013 than they were in 2011 (Table Four). Interestingly, this dynamic has worked in the opposite direction in the US, where the percent of Americans who agree that average global temperatures on earth have been increasing and who are also “very confident” in this view has fallen between the two survey waves. Thus, while clear majorities of believers in both countries are confident in their views, Canadian perceptions appear to be getting more confident, while the opposite is true for respondents in the US. This may potentially reflect the different political, media and elite discourses around the issue in both countries (McCright & Dunlap 2003; Jacques et al. 2008; Feldman et al. 2012).

**Table Four:** Level of confidence in perceptions of climate change

	Very Confident	Fairly Confident	Not Too Confident	Not Confident at All	Not Sure
<b>Canadians 2013</b>	57%	35%	5%	2%	1%
<b>Canadians 2011</b>	48%	41%	7%	2%	2%
<b>Americans 2013</b>	47%	49%	3%	<1%	1%
<b>Americans 2010</b>	55%	37%	6%	1%	1%

*Question wording: How confident are you that the average temperature on earth is increasing?*

Note: Asked only of those that think there is evidence of global warming

### Section 4: Human vs. Natural Contributors to Change

One important distinction among those who believe that the climate is warming is their perception of the underlying cause of the change. Generally, individuals may associate the causes of climate change with human activity, natural causes or to a combination of both. These differences are important because to accept global warming but deny its anthropocentric causes is to implicitly

reject the idea that changing human practices and behavior might help stem the trend and thereby legitimate emission mitigation policies. In contrast, those who believe climate change is primarily driven by human activity are more likely to support changes in human behavior in an effort to mitigate climate change. In both waves of this survey, Canadians are more likely than Americans to accept the prevailing scientific view regarding the anthropocentric factors primarily responsible for climate change (IPCC 2013).

**Table Five:** Perceived drivers of climate change

	Primarily Human Factors	A Combination of Human and Natural Factors	Primarily Natural Factors	Not Sure
<b>Canadians</b> 2013	58%	23%	15%	4%
<b>Canadians</b> 2011	43%	36%	15%	5%
<b>Americans</b> 2013	40%	36%	21%	3%
<b>Americans</b> 2010	37%	40%	18%	5%

*Question wording: Is the earth getting warmer because of human activity such as burning fossil fuels, or mostly because of natural patterns in the earth's environment?*

Note: Asked only of those that think there is evidence of global warming

As illustrated in Table Five, nearly 3 in 5 Canadians see human factors as the primary cause of climate change, compared to only 2 in 5 Americans holding the same view in the most recent survey. Moreover, the distribution of opinion on this question has shifted far more markedly among Canadians than Americans over the sampling period. The percent of Canadians who believe that there is evidence of warming global temperatures and attribute climate change primarily to human factors has jumped from 43% in 2011 to 58% in 2013. Most of this shift appears to have come from a significant decrease in the number of Canadians attributing climate change to a combination of factors. Interestingly, the number of Canadians attributing climate change primarily to natural forces has stayed constant over time. Meanwhile, American attitudes shifted only modestly during this period, with 37% of climate change believers attributing human factors as the primary driver in 2010 and 40% holding that view in 2013. Strong majorities of Americans continue to support either primarily human factors or a combination of human and natural factors, contrary to their Canadian counterparts. To the extent that these views are at odds with the majority of climate scientists (Anderegg et al. 2010; Cook et al. 2013), this is a form of “stealth denial” that may help explain why individuals deny any emotional connection to climate change, or eschew any sense of personal responsibility, despite agreeing with the basic science (Rowson 2013). Such views on the natural drivers of climate change, a form of climate skepticism that is equally apparent in both Canada and the US, are also likely to be consequential, as they may feed into what individuals believe is the appropriate way to respond to a warming world.



# Section 5: Issue Importance

In addition to perceptions of global temperature increases and beliefs around this phenomenon’s primary cause, another key dimension of public attitudes on climate change relates to issue salience – to what extent are rising global temperatures a concern amongst members of the public? In order to gauge issue salience, the survey asked respondents in both countries to identify their level of concern regarding the issue. Framing the question around the salience of climate change as an *issue* makes no presupposition that the phenomenon is real, and was thus asked of all respondents, even if they initially expressed skepticism around perceptions of rising temperatures. Results are presented in Table Six.

**Table Six:** Concern with climate change in 2013

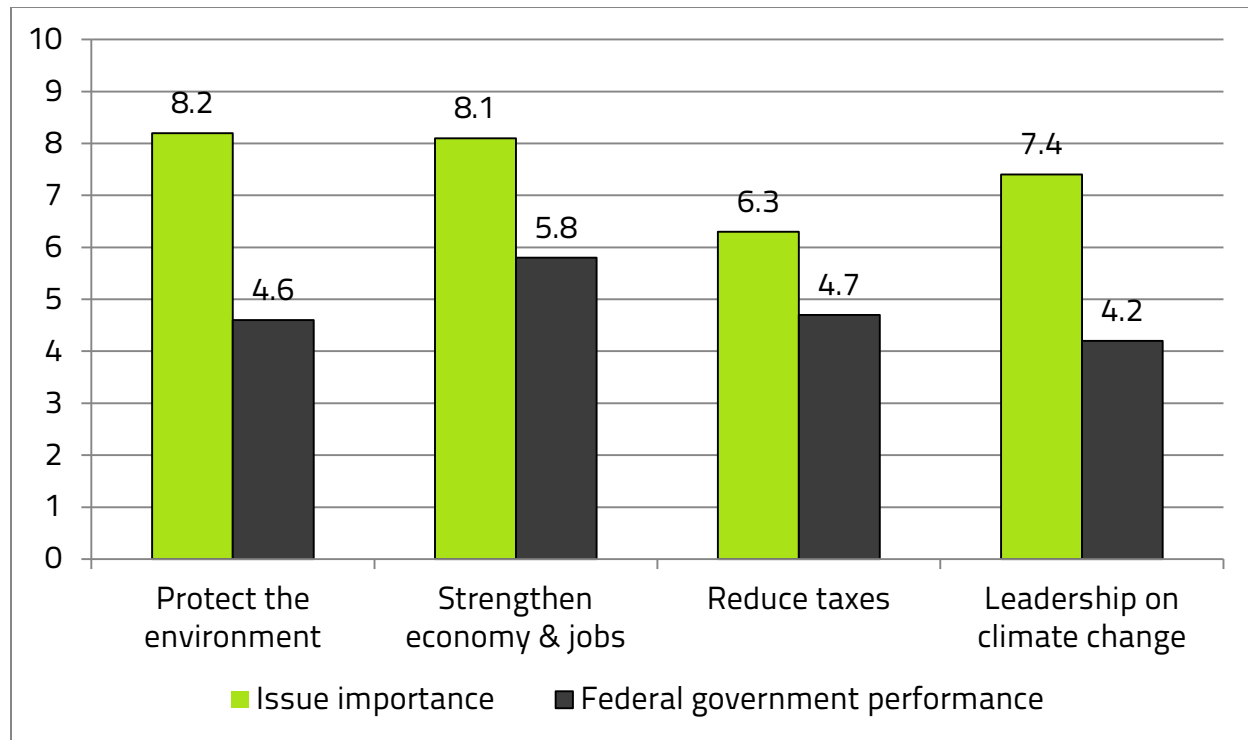
	Very concerned	Somewhat concerned	Not too concerned	Not concerned at all	Not sure
<b>Canadians</b> 2013	32%	45%	14%	8%	<1%
<b>Americans</b> 2013	23%	34%	21%	22%	1%

*Question wording: How concerned are you about the issue of climate change?*

Overall, a majority of both Canadians and Americans are either very or somewhat concerned about the issue of climate change or global warming. However, Canadians are more likely than Americans to state that they are very or somewhat concerned about the issue, while those in the United States are considerably more likely to be either not too concerned or not concerned at all than residents of Canada. At the same time, a modal response of “somewhat” concerned suggests that there is additional evidence of stealth denial in both countries. While a majority of individuals in both countries agree on the existence of rising temperatures (Table One), these views do not appear to translate into high levels of concern (Table Six). In the context of steadily rising emissions, much of the Canadian and American public appears to have some way to go before perceiving climate change as a serious problem, despite predictions from leading scientists that climate change poses a significant existential threat for humanity on earth (IPCC 2013; Hansen et al. 2013).

To be sure, climate change is not the only issue facing citizens and their governments, and the public may be preoccupied with different priorities. Moreover, issue saliency may evolve and follow a pattern in which issues compete with one another in the issue attention cycle described by Downs (1972). This dynamic points to the importance of tracking salience over time, and in comparing the importance of competing issues. In order to gauge *relative* saliency, the Canadian 2013 survey began asking a battery of questions probing issue importance, followed by a similar battery of questions asking respondents to evaluate the performance of the current Canadian government in each area. These questions were not asked in the United States. To guard against question order effects, issues were randomized in each interview conducted. Results are presented in Figure 1 on the following page.

**Figure 1: Issue importance and perceptions of federal government performance in Canada, 2013**



*Question wording: Thinking about the various economic and environmental issues facing the federal government in Ottawa, please tell me, on a scale from 0 to 10, where 0 means not at all a priority and 10 means should be a major priority, how much of a priority should it be for the Federal government to do the following:*

*Question wording: Now on the same scale, where 0 means very poor and 10 means very good, how would you rate the performance of the Harper government in Ottawa on:*

Figure 1 summarizes the average importance respondents attached to four issues, compared to the average rating given to the current Conservative government performance in the same policy area. Overall, Canadians attach a lower level of importance to the issue of showing leadership on climate change (mean = 7.4; standard deviation = 2.7) than they do for protecting the environment (mean = 8.2; standard deviation = 1.9;  $p=0.000$ ) or strengthening the economy and jobs (mean = 8.1; standard deviation = 1.9;  $p=0.000$ ). At the same time, the largest gap between public perceptions of an issue’s importance, and perceptions of government performance, is greatest on environmental matters (3.6) and for climate change (3.2). Thus, while the issue of climate change does not appear to be highly salient at the time of our survey, there appears to be a substantial deficit between how much of a priority the public thinks the government ought to give to showing leadership on climate change, and perceptions of what the current Conservative government in Ottawa is actually doing on the issue.

## Section 6: Responsibility for International Leadership on Climate Change

Perceptions of warming temperatures, some concern about this phenomenon, and in the Canadian case, evidence of an overall governance deficit, raise questions about what exactly should be done in terms of national engagement in any international strategy to address climate change. Given substantial per capita emissions levels, and the relative wealth of the two countries, a case can be made regarding moral responsibility accruing to the governments in Canada and the US to show international leadership on the question of climate change. What are the public's perceptions regarding responsibility for addressing this matter? The 2013 survey finds that a majority of both Canadians and Americans believe that rich countries like their own have a moral obligation to show international leadership by reducing their greenhouse gas emissions. Moreover, findings demonstrate a substantial gap between Americans and Canadians on this question, with residents of Canada over twice as likely as counterparts in the United States to strongly agree about the moral obligation of their government to reduce greenhouse gas emissions. Conversely, Americans are over twice as likely as Canadians to strongly disagree that their country has such a moral responsibility.

**Table Seven:** Moral obligation to show international leadership on climate change, 2013

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Not Sure
Canada	57%	27%	5%	7%	4%
US	22%	35%	14%	18%	11%

*Question wording: Rich countries like Canada [The US] have a moral obligation to show international leadership by reducing their greenhouse gas emissions"*

To be sure, moral obligations can be confounded by the realities of world politics. An ongoing point of contention in climate diplomacy has been the status of China and other rapidly developing countries in international regimes created to coordinate emissions cuts. For instance, in both Canada and the United States, various groups have voiced their opposition to joining multilateral treaties that leave other major carbon-emitting nations exempt from committing to emissions reductions. This position is perhaps most clearly reflected in a bi-partisan resolution sponsored by Senators Robert Byrd and Chuck Hagel that passed by a vote of 95 – 0 in the U.S. Senate in 1997. A similar position was also behind Canada's decision in December 2011 to abandon the Kyoto protocol, which failed to bring large emitters like China and the US under a common set of legally-binding emissions constraints. Fueled primarily by concerns over international competitiveness, China's participation has increasingly become a political condition for the future negotiation of a comprehensive, multilateral treaty tasked with coordinating global emissions reductions. The "China question" has become particularly salient in the American case given the well-publicized passing of the United States by China in terms of total annual emissions in recent years. In this context, our surveys included an embedded experiment in which respondents were asked a question probing support for a new international treaty on climate change, but were randomly assigned to one of two possible question formulations. In the first condition, respondents were asked their level of support for their

country signing onto a new international agreement to limit global emissions of greenhouse gases. In the experimental condition, respondents were asked the identical question, but with a qualifier mentioning the absence of China taking on similar commitments.

**Table Eight:** Support for signing a new international treaty in 2013

	Canada		United States	
	No conditions specified	Even if ahead of China	No conditions specified	Even if ahead of China
<b>Strongly Support</b>	51%	49%	29%	22%
<b>Somewhat Support</b>	25%	29%	26%	30%
<b>Neither Support or Oppose</b>	7%	7%	22%	23%
<b>Somewhat Oppose</b>	5%	6%	7%	6%
<b>Strongly Oppose</b>	7%	6%	9%	11%
<b>Not Sure</b>	5%	3%	8%	8%

*Question wording: How much do you support Canada [the US] signing onto an international agreement to limit global emissions of greenhouse gases, [...even if it means doing so ahead of other countries such as China?]*

As illustrated in Table Eight, there is overwhelming support in Canada and the US for governments in both countries to play an active role in international climate diplomacy. Although stronger in Canada, there is broad public support for signing a new international treaty in both Canada (76%) and the US (55%), even if doing so means going ahead of such other countries as China. Comparing across the experimental and control conditions, priming the idea of going ahead of China barely moves support. This is at odds with the elite discourse in both countries, and suggests that the members of the public are ahead of their respective governments on the need for an international agreement on climate change. To be sure, the question wording does not prime some of the arguments made by opponents of international leadership, such as leakage and international competitiveness concerns. However, results are robust across two populations in which these concerns may be more or less known to the public, and suggest that, at least on the surface, public appetite for international cooperation on the climate is not contingent upon what developing countries like China do.

## Section 7: Support for Domestic Policy Options

Perceptions of climate change as a concern and the desire for international action to address the issue among Canadians and Americans sets the table for consideration of more specific policy options that may be implemented domestically. Previous research on this subject has shown that even if members of the public perceive the planet to be warming and even if they report concern about the implications of this trend, support for policy options to fight the problem is by no means guaranteed. In fact, past studies of public opinion on this matter have shown very mixed levels of support in both Canada and the United States for many of the major policy tools that are most commonly considered as means to reduce greenhouse gas emissions (Lachapelle, Borick & Rabe, 2012). Meanwhile, several US states and Canadian provinces have taken a leadership role in

implementing climate change policy ahead of their respective federal governments in Ottawa and Washington, DC (Houle, Lachapelle & Rabe, 2014).

In developing climate policy, governments may chose from a variety of different options to reduce emissions. In our most recent wave, respondents were asked their views on such policies as carbon taxes, cap-and-trade emissions trading, renewable portfolio standards for electricity, and various other forms of regulation. Over the last decade, each of these methods has been employed, to varying degrees, throughout the United States and Canada, and remain part of broader policy debates in Ottawa, Washington D.C. and provincial and state capitals. So where did the public stand on these policy options in Fall 2013? The results of the survey indicate dramatically different levels of support across policy tools as well as between the Canadian and American public. Here, we focus on several policy options that include market-based instruments such as carbon taxes and cap-and-trade as well as regulatory instruments such as renewable electricity mandates.<sup>1</sup>

## Section 7.1: Carbon Taxes

**Table Nine:** Support for carbon taxes in Canada and the US, 2013

*With and without costs specified*

	Canada		United States	
	No cost specified	Even if it raises cost of energy by about 10%	No cost specified	Even if it raises cost of energy by about 10%
<b>Strongly support</b>	16%	15%	5%	9%
<b>Somewhat support</b>	37%	32%	19%	14%
<b>Somewhat oppose</b>	16%	22%	16%	19%
<b>Strongly oppose</b>	25%	28%	55%	53%
<b>Don't know</b>	5%	4%	5%	5%

*Question wording: Provincial/State governments should increase taxes on all fossil fuels in order to decrease greenhouse gas emissions.*

Carbon taxes are often touted by economists and policy analysts as the most efficient means of reducing greenhouse gas emissions. This is largely because carbon taxes equalize the cost of emitting additional greenhouse gases in the atmosphere, encouraging emissions cuts where they are cheapest. Only those polluters that find it cost-effective to change their emissions behavior will invest in such changes in order to avoid paying the tax, thus ensuring emissions reductions at a

<sup>1</sup> Readers interested in the distribution of opinions in other policy areas are invited to examine the complete results available at: [http://canada2020.ca/climatepoll/docs/Cross\\_Tabs-Canada\\_2020\\_U\\_of\\_M\\_Climate\\_Poll.pdf](http://canada2020.ca/climatepoll/docs/Cross_Tabs-Canada_2020_U_of_M_Climate_Poll.pdf)

lower aggregate social cost. While popular within the economics literature, the adoption of carbon taxes in North America is very limited. Though a variety of states and provinces have some form of carbon fees attached to fossil fuel use, only British Columbia has implemented a broad-based and comprehensive carbon tax. Thus, it may not be surprising to find fairly limited support for this policy alternative among Canadians and more particularly Americans. Employing a split sample design, our survey measures support for this tool under two scenarios – one with and another without a specification of costs in the question wording. What we find is a considerable gap in support for carbon taxes between Canadians and Americans. While a slight majority (53%) of Canadians support a carbon tax without an affixed cost, only about a quarter (24%) of Americans maintain the same view. When asked if they support a tax even if it raised monthly energy costs by about 10% there is a slight drop (53% to 47%) in support for carbon taxes in Canada, but no net change in support among Americans (24% to 23%).

## Section 7.2: Carbon Cap-and-Trade

A second policy option that has received positive appraisals from economists involves the development of cap-and-trade systems for the emissions of greenhouse gases. Under such a system, government sets an overall limit on the amount of carbon that regulated entities are allowed to emit. Government then issues emissions permits (either freely allocated or auctioned) allowing companies to emit a certain amount. Those companies that are able to reduce emissions below their allocated limit are then permitted to sell their permits to others who would otherwise fail to comply. The idea is that companies will have an incentive to find ways to decrease emissions in order to avoid paying for permits. Over the last decade, this type of system has become more popular among U.S. states and Canadian provinces, with one such system, the Regional Greenhouse Gas Initiative (RGGI) in the Northeastern United States, fully operational and flourishing. However other systems such as the Western Climate Initiative (WCI) and Midwest Greenhouse Gas Accord (MGGA) that at one time included numerous states and provinces have either completely dissolved or have experienced severe membership attrition and slow progress. This pattern of retrenchment is consistent with falling support for cap and trade systems in the US (Lachapelle & Borick 2013).

**Table Ten:** Support for Cap-and-Trade in Canada and the US, 2013

*With and without costs specified*

	Canada		United States	
	No cost specification	Even if it increases the cost of some goods by about 10%	No cost specification	Even if it increases the cost of some goods by about 10%
<b>Strongly support</b>	19%	16%	10%	5%
<b>Somewhat support</b>	27%	36%	22%	22%
<b>Somewhat oppose</b>	20%	17%	11%	24%

<b>Strongly oppose</b>	26%	26%	34%	43%
<b>Don't know</b>	8%	5%	22%	6%

*Question wording: Provincial/State governments should allow businesses to buy and sell permits to release greenhouse gases.*

While there is slightly more support in the United States for a cap and trade system (Table Ten) than there is for a carbon tax (Table Nine), Americans' support for cap-and-trade fails to attain even close to majoritarian levels regardless of question wording and (a lack of) specification of costs. More specifically, only about one in three (32%) of Americans support cap and trade without costs assigned, while 5% fewer (27%) support this type of system when told it will raise the cost of some goods by about 10%. By contrast, Canadians are evenly split in terms of support for a cap and trade policy when no cost is specified, but become slightly more supportive (46% to 52%) when a 10% increase in the cost of goods is attached to the policy. Thus, including information on the cost of the policy (in this case, a modest increase in the price of goods) has a limited impact on levels of public support and opposition to this type of policy.

### Section 7.3: Renewable Portfolio Standards

A third approach to reduce greenhouse gas emissions is the use of regulatory requirements for the use of renewable resources. Since the beginning of this century state governments have increasingly turned to renewable energy standards as a key component of their energy policies (Rabe 2004). Under this policy approach, which is commonly referred to as a renewable portfolio standard or RPS, a set portion of energy produced within a jurisdiction is required to be produced from renewable sources such as solar and wind. Twenty-nine American states and several Canadian provinces have adopted some version of an RPS. The survey results indicate very strong support for this policy option in both the Canadian and American publics, with large majorities of both Canadians (82%) and Americans (79%) supporting such policies when no cost is assigned. However when a \$100 per year increase in electricity is attached to the policy, support decreases by 34 points to below majority level in the U.S. (45%), while the drop is less pronounced in Canada (about 10 points).

**Table Eleven:** Support for Renewable Portfolio Standards in Canada and the US, 2013

*With and without costs specified*

	Canada		Even if it increases the cost of electricity by about 100 \$ per year	
	No cost specified	Even if it increases the cost of electricity by about 100 \$ per year	Canada	US
<b>Strongly support</b>	58%	44%	46%	18%

<b>Somewhat support</b>	24%	28%	33%	27%
<b>Somewhat oppose</b>	8%	11%	7%	13%
<b>Strongly oppose</b>	7%	15%	11%	39%
<b>Don't know</b>	4%	2%	3%	3%

*Question wording: Provincial/State governments should require a set portion of all electricity to come from renewable energy sources such as wind and solar.*

As illustrated in the patterns identified in Tables Nine through Eleven, policies deemed more costly appear less likely to receive substantial levels of public support. As associated costs rise, general support for a policy option tends to erode, though support for policies may actually increase when modest costs are involved. These different public reactions to cost specification raise the question of the public's willingness to pay for the types of energy that would reduce greenhouse gas emissions. We do so by asking Canadians and Americans to specify the amount of additional cost they would be willing to pay in order to have more renewable energy produced. Table Twelve summarizes the closed version of this question asked in two of the survey waves.

**Table Twelve:** Willingness to Pay for more Renewable Energy Production in Canada and the US

	<b>Canada</b>	<b>Canada</b>	<b>United States</b>	<b>United States</b>
	2011	2013	2010	2013
<b>Nothing each year</b>	21%	18%	41%	42%
<b>1 to 50 \$ per year</b>	28%	23%	26%	19%
<b>50 to 100 \$ per year</b>	19%	24%	17%	16%
<b>100 to 250 \$ per year</b>	13%	16%	7%	11%
<b>250 to 500 \$ per year</b>	6%	8%	4%	4%
<b>Over 500 \$ per year</b>	7%	4%	2%	1%
<b>Not sure</b>	5%	5%	4%	6%

*Question wording: If it required you to pay extra money each year in order for more renewable energy to be produced, how much would you be willing to pay?*

As shown in Table Twelve, Canadians are generally more willing than Americans to pay for the increased production of renewable energy. Specifically, Americans are roughly twice as likely as Canadians to indicate that they would pay nothing each year for more renewable energy to be



produced. In turn, 56% of Canadians are prepared to pay \$50 or more per year versus only 32% of Americans. And at the high end, a much larger proportion of Canadians (nearly 1 in 3) are prepared to pay at least 100 dollars more per year in order to increase the generation of renewable energy, compared to a much smaller proportion of Americans (about 1 in 10). Also noteworthy, willingness to pay (WTP) in both countries is relatively stable over the two waves analyzed here. For instance, WTP for the production of more renewable energy in Canada and in the United States barely changed between the two waves reported in Table Twelve. Though more analysis is required, especially to control for ability to pay, which tends to be highly correlated with WTP measures, these large and enduring cross-national differences in WTP suggest one reason why Canadians may react differently to cost specifications regarding various types of climate policy examined here.

## Conclusion

As two of the world's most carbon intensive economies, the United States and Canada have an important role to play in leading international efforts to address the issue of global warming. If governments in both federations are to act on the growing body of scientific evidence documenting the role of human activity on the Earth's changing climate, publics in both countries must also play a key role. This study has helped demonstrate that most Canadians and Americans believe that global warming is happening, although there is correspondingly less concern within these populations than one might expect, given the more alarming claims of leading climate scientists (Hansen et al. 2013). This level of issue salience is likely behind the relatively low level of support for some of the more direct ways of dealing with climate change, including putting a price on emissions.

At the same time, we find wide and enduring differences in the two publics, in terms of levels of support for various instruments of climate policy, and in their willingness to pay. In general, Canadians are more likely than Americans to support key policy tools such as carbon taxes, cap and trade systems and renewable energy standards. There is also a substantial divide among Americans and Canadians when it come to willingness to spend money to move their respective countries away from carbon intensive fuels. These differences reflect a general trend in comparative Canada-US opinion – Canadians appear to be more convinced, more concerned, and more willing to do something about climate change than their neighbors in the United States.

These differences no doubt have important policy implications. Given the substantial costs involved with mitigation and the transformation of energy systems, the public will inevitably be called upon to bare some of the costs of climate policy. Moreover, given the extent of cultural, economic and political ties between the two countries – to the point of considerable implicit and explicit policy harmonization – opinion trends in both countries will have an impact on the shared fate of both publics. If past research is any indication, public opinion moves in sequence with various contextual and individual level factors over time (Brulle, Carmichael & Jenkins 2013; Borick & Rabe 2013). As a result, the patterns identified here are also likely to change over time, making continued temporal comparison an important intellectual and practical endeavor to track in the foreseeable future.

# Appendix

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## Methodology

Findings included in this report are drawn from multi-year nationally representative telephone surveys using random digit dialing samples in the United States and Canada. Three of the four waves analyzed in this report include landlines and cell phones. The 2011 Canadian sample includes landlines only. The following table presents the sample size and margin of error for each of the respective samples:

Country/Year	Fielding Dates	Sample Size	Cell phones included?	Margin of Error
Canada 2011	January 13 – February 4, 2011	1214	No	+/-2.8%
Canada 2013	October 10 – October 20, 2013	1502	Yes	+/-2.5%
United States 2010	November 15 – December 9, 2010	916	Yes	+/- 3%
United States 2013	October 3 – October 14, 2013	984	Yes	+/-3.5%

*Note: Margin of Errors are calculated at a 95% level of confidence*

All data summarized in this report are weighted to reflect population estimates in both Canada and the United States. Specifically, Canadian results are weighted according to gender, age, language and region to reflect the latest population estimates from Statistics Canada (2011). American results are weighted to gender, race, income, educational attainment and age to reflect the most recent population estimates in the United States according to the 2010 US census. Percentages throughout

this report are rounded upward at the .5 mark, thus many totals in the results will not equal 100 percent.

The survey instruments were designed by Chris Borick (Muhlenberg College), Barry Rabe (University of Michigan) and Erick Lachapelle (Université de Montréal). All Canadian survey waves were administered via telephone in either English or French and were conducted by Leger in Montréal Quebec. The Canadian think-tank, Canada 2020 and the Université de Montréal supported the 2013 wave of the Canadian survey.<sup>2</sup> All of the United States surveys were conducted by the Muhlenberg College Institute of Public Opinion in Allentown, Pennsylvania and were funded by Muhlenberg College and the Center for Local, State, and Urban Policy (CLOSUP) at the Gerald Ford School of Public Policy at the University of Michigan.

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