

British Columbia's Carbon Tax

Exploring perspectives and seeking common ground

Matt Horne • Ekaterina Petropavlova • P.J. Partington
June 2012



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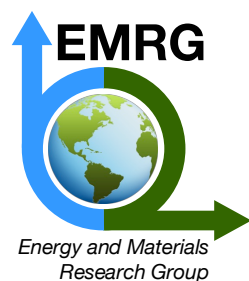
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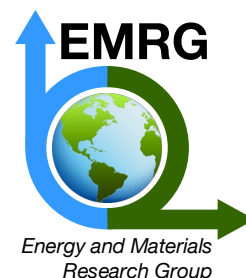
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1. Introduction

In 2008, British Columbia (B.C.) implemented a carbon tax as part of its efforts to reduce greenhouse gas (GHG) emissions. The carbon tax applies to almost all fossil fuel combustion in the province (77% of emissions), with the rate initially set at \$10 per tonne of GHG emissions (expressed in carbon dioxide equivalent; CO₂e), rising by \$5 per tonne per year until it reaches \$30 per tonne on July 1, 2012. The revenue from the carbon tax (projected to be \$1.17 billion in 2012/2013) is used for personal income tax cuts (projected to be \$287 million in 2012/2013), corporate tax cuts (projected to be \$721 million in 2012/2013),¹ low-income tax credits (projected to be \$190 million in 2012/2013) and the Northern and Rural Homeowner Benefit (projected to be \$77 million in 2012/2013).² According to the 2012 budget, no further increases or expansions are planned at this time.

In the past four years the carbon tax has been subject to its fair share of debate, but the policy has largely followed the initial design laid out in the 2008 provincial budget.³ Public support for the carbon tax also appears to be on the rise: a relatively recent poll from Environics Research Group shows 57% of British Columbians in support of the policy, the highest level of support measured since announcement of the carbon tax. The same poll found the percentage of British Columbians strongly opposed to the carbon tax is at an all time low of 23%, compared to a peak of 38% in July 2008.⁴

The provincial government announced a review of the carbon tax in the 2012 budget, indicating this year as an appropriate time to assess the impact of the policy. The budget indicated that the review would, "...cover all aspects of the carbon tax, including revenue neutrality, and will consider the impact on the competitiveness of B.C. businesses such as the agricultural sector, and in particular, B.C.'s food producers."⁵ It is expected that the results of that review will inform any changes made to the carbon tax in the 2013 budget and beyond.

¹ The three largest corporate tax cuts from 2012/13 through to 2014/15 are reductions in the corporate general and small business income tax rates and a tax credit for school property taxes payable by light and major industrial properties.

² British Columbia Ministry of Finance, *Budget and Fiscal Plan 2012/2013 – 2014/2015* (February 21, 2012), 68. http://www.bcbudget.gov.bc.ca/2012/bfp/2012_Budget_Fiscal_Plan.pdf.

³ The notable changes that have occurred include the Northern and Rural Homeowner Benefit introduced in 2009, the carbon tax rebates for local governments introduced in 2009, the addition of property tax reductions for farms and industrial properties, and the one-year exemption for greenhouse growers introduced in 2012. More generally, the balance of tax cuts and credits has shifted more towards business than anticipated in the 2008 budget with the actual personal versus business shares in 2010/2011 being 45% to 55%, compared to 62% to 38% forecast in the 2008 budget.

⁴ Environics Research Group, *Canadians continue to voice strong support for actions to address climate change, including an international treaty and carbon taxes* (December 1, 2011). <http://www.environics.ca/reference-library>.

⁵ British Columbia Ministry of Finance, *Budget and Fiscal Plan 2012/2013 – 2014/2015*, 66.

The research in this report commenced during the summer of 2011, prior to the announcement of the carbon tax review, but it is hoped that the findings will provide constructive input to the review and any discussions about B.C.'s carbon tax that are certain to follow.

1.1 Objectives

The following three objectives underpin this project:

1. Document evidence of any positive and negative environmental and economic impacts of the carbon tax to date.
2. Document the range of perspectives regarding the future design of B.C.'s carbon tax, with a specific focus on:
 - a. The carbon tax rate after the current schedule of increases finishes at \$30 per tonne on July 1, 2012.
 - b. The sources of GHG emissions that B.C.'s carbon tax applies to.
 - c. The use of any new carbon tax revenues.
3. Provide advice to the B.C. government, and other governments in Canada, on how to best navigate carbon tax design issues and communication challenges given the range of perspectives identified.

1.2 Methodology

The data for this project was collected through a total of 39 confidential interviews conducted between the summer and fall of 2011. We employed a non-probabilistic judgmental sampling technique, deliberately sampling across a spectrum, to obtain a wide variety of input. This technique is useful in situations where many members of the desired population are easily identified, but enumeration of all of them would be impossible. The sectors represented in those interviews are shown in Figure 1. Notable exceptions where participation was requested, but not secured, are freight businesses and labour unions.

The policy context has changed somewhat since the interviews were conducted. The most notable changes include:

- The announcement of a carbon tax review in February 2012, which the provincial government had not mentioned prior to that date.
- One-year carbon tax exemptions have been introduced for greenhouse growers in the province; the government had given no previous indication that it was planning to reduce the coverage of the carbon tax.
- California and Quebec currently plan to launch a cap-and-trade system on January 1, 2013, and it is now clear that B.C. will not be part of that system upon launch. At the time of research, it was still a possibility that B.C. would move ahead with California and Quebec on the same timeline.
- The provincial government introduced several changes to the carbon neutral requirements for the public sector following a review in late 2011 and early 2012, which is a related climate policy issue that a number of participants mentioned during interviews.



Figure 1 – Interview participants

Throughout this report, we compare the interview results with public polling that was completed in April 2011. That polling was commissioned as part of the same project, enabling direct comparisons between a number of the interview and polling questions. The poll was based on a representative sample of 830 British Columbians, conducted online from April 14 to 18, by the national research firm Strategic Communications, Inc. The poll's sample is reflective of B.C.'s actual regional, gender and age composition based on the 2006 Census. A probabilistic sample of this size would yield a margin of error of 3.4%, 19 times out of 20. The full results of the public polling are discussed in *Measuring the appetite for climate action in British Columbia*.⁶

1.3 Putting B.C.'s carbon tax in context

While B.C.'s carbon tax is pioneering in a North American context, carbon pricing has a much longer pedigree internationally. Increasingly, carbon taxes and cap-and-trade systems are being adopted around the world by governments trying to reduce GHG emissions. Some of the longest standing examples include:

- Finland, which introduced its tax in 1990, currently charges a rate of \$78 per tonne for transportation fuels and \$39 per tonne for heating fuels. Fuels for electricity generation are taxed separately.⁷
- Norway's tax, in place since 1991, currently ranges from \$16 per tonne to \$86 per tonne, depending on the sector. Following a recent increase, the sector with the highest rate is

⁶ Matt Horne, *Measuring the appetite for climate action in British Columbia* (The Pembina Institute, 2011) <http://www.pembina.org/pub/2233>.

⁷ Finland Ministry of the Environment, "Environmentally related energy taxation in Finland" (2012). <http://www.environment.fi/default.asp?contentid=147208&lan=en>.

offshore oil and gas production.⁸ Norwegian industry (including the offshore sector) also participates in the European Union's Emissions Trading Scheme.

- Sweden, whose tax has also been in place since 1991,⁹ currently charges a standard rate of \$106 per tonne and an industry rate of \$23 per tonne.⁹

In each of these economies, carbon taxes have helped to reduce greenhouse gas emissions, while average annual gross domestic product (GDP) growth since 1990 has outstripped that of the European Union and matched or exceeded the average of all high-income Organization for Economic Co-operation and Development (OECD) countries.¹⁰

Other examples of jurisdictions with carbon taxes include: Switzerland (increasing its rate next year from \$39 per tonne to \$65 per tonne),¹¹ Ireland (recently increased its rate to \$26 per tonne),¹² Quebec (charging \$3 per tonne since 2007 to help finance its climate change action plan),¹³ and Australia (beginning at \$23 per tonne carbon tax in July 2012 and increasing by 2.5% annually until 2015).¹⁴

Carbon taxes are not the only way of putting a price on carbon, and the other approaches being used in several jurisdictions merit mention to provide context for B.C.'s carbon tax. The largest system is the European Union's Emissions Trading Scheme (ETS), which is a cap-and-trade system that has been in place since 2005. For the past two years the allowance price has been fairly stable around \$20 per tonne, however, recent issues of oversupply have weakened the market significantly. Prices are expected to recover somewhat during the system's third phase, beginning next year, but many large emitters — including oil and gas giant Shell — are calling on governments to intervene and bolster the price so that there is an adequate incentive to invest in projects that reduce greenhouse gas emissions.¹⁵

In North America, nine states in the northeastern and mid-Atlantic U.S. (with a combined population over 40 million¹⁶) have operated the Regional Greenhouse Gas Initiative (RGGI)

⁸ Wall Street Journal, "Update: Norway Increase Oil Sector CO₂ Emissions Tax By NOK200 Per Ton," April 25, 2012. <http://online.wsj.com/article/BT-CO-20120425-712686.html>.

⁹ Jenny Sumner, Lori Bird and Hillary Smith, *Carbon Taxes: A review of experience and policy design considerations* (National Renewable Energy Laboratory, 2009). <http://www.nrel.gov/docs/fy10osti/47312.pdf>.

¹⁰ The World Bank, "GDP growth (annual %)." <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>.

¹¹ Confédération Suisse, Département de l'Environnement, des Transports, de l'Énergie et de la Communication, "Le Parlement adopte le texte qui fonde la future politique climatique de la Suisse," (December, 2011). <http://www.bafu.admin.ch/klima/00493/06577/11879/index.html?lang=fr>.

¹² Ireland Department of Finance, *Summary of 2012 Budget and Estimates Measures Policy Changes*. <http://www.budget.gov.ie/Budgets/2012/Documents/Summary%20of%202012%20Budget%20and%20Estimates%20Measures%20Policy%20Changes.pdf>.

¹³ Sumner, Bird and Smith, *Carbon Taxes*.

¹⁴ Australian Government, "An overview of the Clean Energy Legislative Package." <http://www.cleanenergyfuture.gov.au/clean-energy-future/an-overview-of-the-clean-energy-legislative-package/>.

¹⁵ Barbara Lewis, "EU green goals depend on CO₂ market-Acciona," *Reuters*, May 3, 2012. <http://www.reuters.com/article/2012/05/03/us-eu-carbon-acciona-idUSBRE8420W020120503>.

¹⁶ Calculated for the nine current RGGI member states from U.S. Census Bureau 2011 population estimates, available by state at <http://quickfacts.census.gov/qfd/index.html>.

since 2009.¹⁷ RGGI is a cap-and-trade system that applies to power plants in the region. Allowances currently trade at \$2 per tonne¹⁸ and a program review is currently underway.¹⁹ California will be launching a mandatory cap-and-trade system with Quebec in 2013, with allowance prices expected to range from \$19-\$34 per tonne in 2013 and from \$31-\$55 per tonne in 2020, depending on offset availability.²⁰ Alberta's Specified Gas Emitters Regulation (SGER), launched in 2007, is a baseline and credit system that requires major emitters to reduce their emissions intensity by up to 12%.²¹ Firms can comply by trading, purchasing Alberta offsets or paying into a technology fund at \$15 per tonne. As a result, regulated emitters pay up to \$15 per tonne on up to 12% of their emissions.

Within the Asia-Pacific region, New Zealand has operated a mandatory emissions trading system since 2008. Australia intends to transition their carbon tax to a cap-and-trade system in 2015 and Australia and New Zealand have signaled their intentions to link systems at that time.²² South Korea, the world's twelfth-largest economy, recently approved a cap-and-trade system that will launch in 2015.²³

Many other major emerging economies are also exploring carbon pricing: South Africa is planning to introduce a partial carbon tax of \$15 per tonne in 2013, rising 10% per year to nearly \$30 per tonne by 2020,²⁴ China is launching seven pilot emissions trading systems this year with the aim of crafting a national system by 2016,²⁵ and Mexico's new climate law creates a voluntary carbon market.²⁶

The carbon price incentive provided by these taxes and market systems are presented in Table 1.

¹⁷ RGGI Inc, "About the Regional Greenhouse Gas Initiative (RGGI)," fact sheet, http://rggi.org/docs/RGGI_Fact_Sheet.pdf.

¹⁸ RGGI Inc., "RGGI Auction Sells 20.9 Million CO₂ Allowances," press release, June 8, 2012, http://rggi.org/docs/PR060812_Auction16.pdf.

¹⁹ RGGI Inc, "Program Review," http://rggi.org/design/program_review.

²⁰ Allowance prices cited in 2010 USD, modelled based on a fully linked system. WCI Economic Modelling Team, *Discussion Draft Economic Analysis Supporting the Cap-and-Trade Program – California and Québec* (Sacramento, CA: WCI Inc, 2012), 6. Available at <http://www.westernclimateinitiative.org/document-archives/Economic-Modeling-Team-Documents/Discussion-Draft-Economic-Analysis-Supporting-CA-and-QC-Linking/>.

²¹ Alberta Regulation 139/2007, "Climate Change and Emissions Management Act: Specified Gas Emitters Regulation." Available at <http://www.canlii.org/en/ab/laws/regu/alta-reg-139-2007/latest/alta-reg-139-2007.html>.

²² Greg Ansley, "Aussies confirm carbon link to NZ," *nzherald.co.nz*, May 8, 2012. http://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=10804140.

²³ Sangim Han, "South Korean Parliament Approves Carbon Trading System," *Bloomberg*, May 3, 2012. <http://www.bloomberg.com/news/2012-05-03/south-korean-parliament-approves-carbon-trading-system.html>

²⁴ Deloitte, "Carbon tax and Energy." http://www.deloitte.com/view/en_ZA/za/services/taxservices/theannualbudget/170314b16e6a5310VgnVCM3000001c56f00aRCRD.htm.

²⁵ Rob Elsworth, "China's emissions trading pilots are starting to take shape as the EU's flagship climate policy looks increasingly fragile," *Sandbag*, April 24, 2012. <http://www.sandbag.org.uk/blog/2012/apr/24/chinas-emissions-trading-pilots-are-starting-take/>

²⁶ Erik Vance, "Mexico passes climate-change law," *Nature News*, April 20, 2012. <http://www.nature.com/news/mexico-passes-climate-change-law-1.10496>

Table 1 – Examples of current and pending carbon prices around the world

Jurisdiction	2012/13 carbon price, if applicable (\$ CAD/t)	Start date
<i>Carbon taxes</i>		
Australia	\$23	2012
Finland	\$78 (transportation fuels) and \$39 (heating)	1990
British Columbia	\$30	2008
Ireland	\$26	2010
Norway	\$16 - \$86 depending on sector	1991
Quebec	\$3	2007
South Africa	\$15	2013
Sweden	\$106 (personal)/ \$23 (industry)	1991
Switzerland	\$39 (rising to \$65 in 2013)	2008
<i>Market systems</i>		
Alberta	Maximum \$15	2007
California/Quebec	Minimum \$10 for auctioned allowances	2013
China	(Pilot trading systems launching 2012)	2012/16
European Union	\$5 to 20	2005
Northeast U.S.	\$2	2009
South Korea	(ETS launching 2015)	2015

2. Points of consensus

Given the often-polarized nature of the climate change debate in Canada, it is important to highlight three points of consensus that emerged from the interviews:

1. Climate change represents a serious threat to the environment and the economy — globally, in Canada and in British Columbia.
2. Government policy will be needed to minimize those risks and protect our environment and economy.
3. Carbon taxes are one of the important policies government can rely on to minimize the risk represented by climate change.

3. The impacts of B.C.'s carbon tax

3.1 Overall perspectives

When asked to assess the overall consequences of the carbon tax and accompanying tax cuts for B.C., a significant majority of participants felt they were very positive (7 responses / 18%) or somewhat positive (18 responses / 46%). The results are shown in Figure 2. As discussed in the following sub-sections, there was limited evidence to substantiate these perspectives — either positive or negative. For example, many of participants that saw positive consequences had comments along the lines of: “*the carbon tax was the right thing to do, and it is positive step for the province*”, or “*the carbon tax positions B.C. well for the future*”. In their detailed responses, the vast majority of participants felt that it was too early to tell what the overall consequences were, and many also felt that the net environmental and economic impact for the province would be small given the current rate schedule.

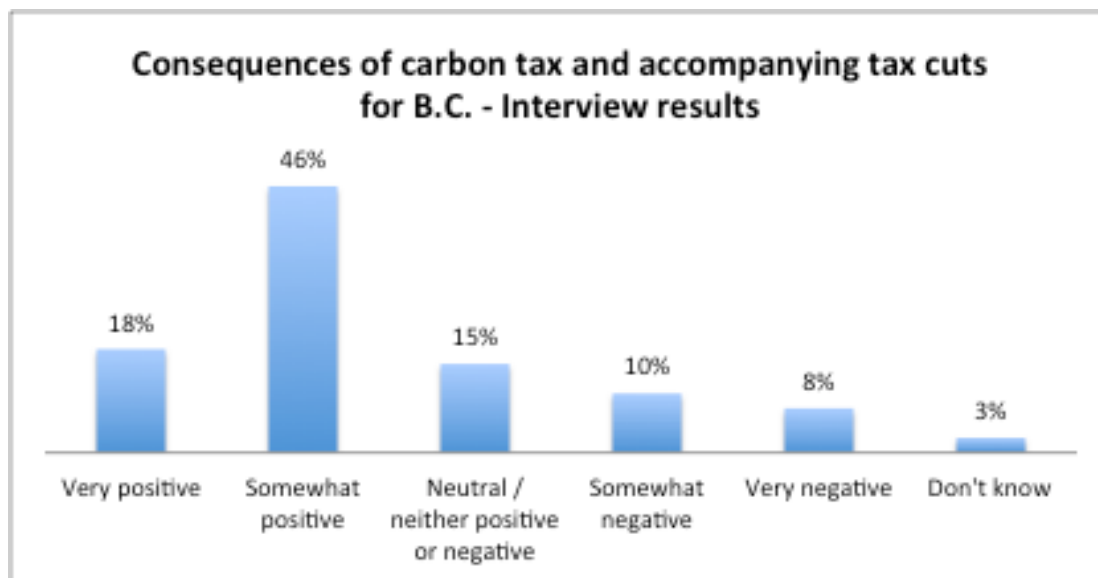


Figure 2 – Overall consequences of the carbon tax and accompanying tax cuts

Although not as positive on balance, the results of public polling were similar (see Figure 3). The most common response was ‘Neutral/Neither positive or negative,’ with 41% of the respondents selecting that option. Possible interpretations of this result are that respondents felt it was too early to tell if the carbon tax and tax cuts were having a positive or negative impact for B.C., that

the tax and tax cuts were too small to have a significant impact, or that they did not know.²⁷ Of those who did believe there were either positive or negative consequences, 55% believed they were very or somewhat positive, while 45% believed they were very or somewhat negative.

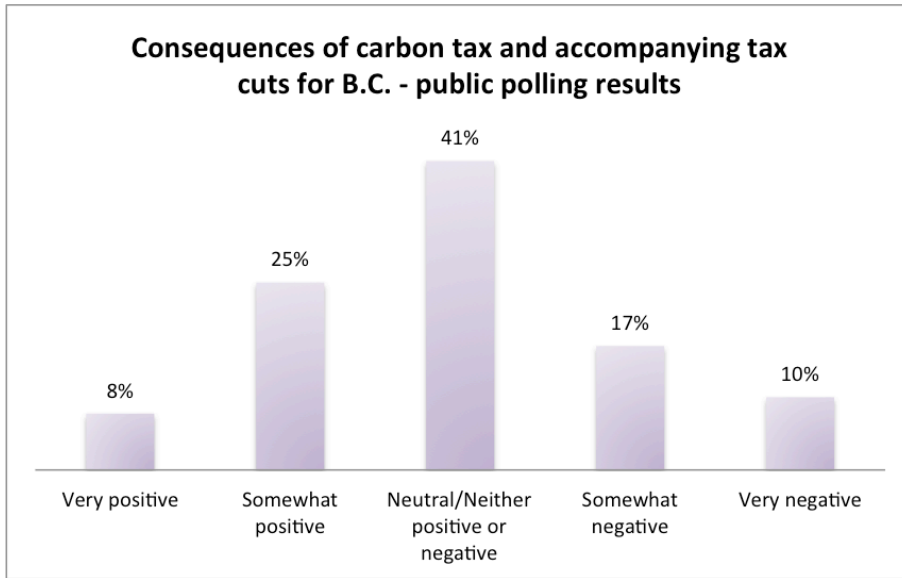


Figure 3 – Overall consequences of the carbon tax and accompanying tax cuts – public poll

3.2 Is the carbon tax reducing greenhouse gas emissions?

The primary purpose of the carbon tax is to reduce GHG emissions, so an important test of the policy’s effectiveness is whether or not it is helping to achieve that desired result. The challenge in assessing that result now is that major shifts to lower-carbon sources of energy take time. The carbon tax has not yet been in place for four full years and the rate (which is the degree to which it will influence decisions) has been relatively low.²⁸ In jurisdictions that have had carbon taxes in place for longer and at higher rates, there is strong evidence showing that those policies are helping to reduce emissions. For example, Sumner et al. summarize a selection of carbon taxes in use and, for all of the examples implemented in the early 1990s (Finland, Netherlands, Norway, Sweden and Denmark), they attributed part of those jurisdictions’ success in reducing emissions to carbon taxes.²⁹

We are not aware of any economy-wide evidence that shows the carbon tax helped to reduce greenhouse gas emissions in 2008 or 2009. That is not surprising given the relatively modest impact predicted by modelling commissioned by the provincial government for the 2008

²⁷ While the question was identical, the options to answer the question differed slightly because ‘Don’t know’ was not an option in the public poll.

²⁸ Compounding this is the fact that data on GHG emissions in Canada are produced with a time lag of almost a year and a half, e.g., 2010 data was made available in April of 2012.

²⁹ Sumner, Bird and Smith, *Carbon Taxes*. The carbon tax rates in those countries differ from country to country and sector to sector within each jurisdiction (see Table 1), with the impact of the carbon tax depending on the rate and the availability and cost of solutions to reduce GHG emissions.

budget.³⁰ Of the participants in this study, 26 (67%) were not aware of any evidence that the carbon tax had reduced GHG emissions, while 13 (33%) were aware of some evidence (see Figure 4).

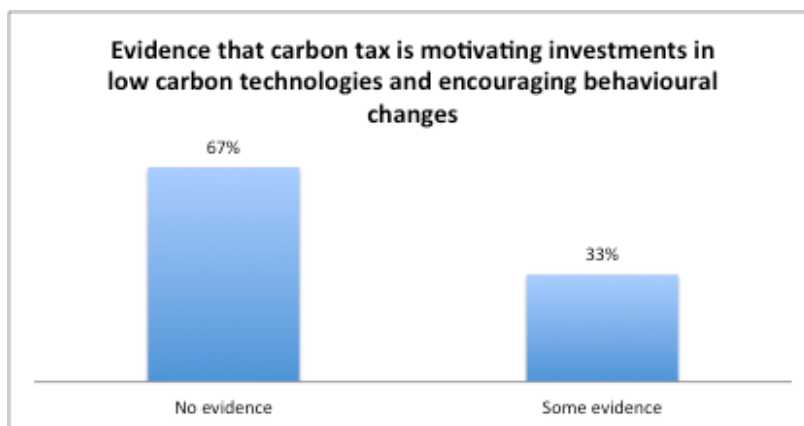


Figure 4 – Evidence that the carbon tax has reduced greenhouse gas emissions

The evidence that was seen tended to be anecdotal in nature and typically based on respondents’ own direct experiences. In all cases, the carbon tax was viewed as one of several factors contributing to a decision to invest in technology that would reduce GHG emissions. The most common types of examples cited were:

- Investment in energy efficiency and fuel-switching technology within public sector buildings. The carbon neutral requirements (which represent an additional \$25 per tonne for the public sector) and grants available to the public sector were also cited as contributing factors.
- Investment in energy efficiency and fuel-switching technology within local governments’ buildings and fleets. The carbon neutral commitments and the carbon tax rebate program were also cited as contributing factors.

Several private sector fuel-switching examples were also mentioned, along with increased interest in understanding opportunities to reduce GHG emissions and increased capacity to assess those opportunities.

From the participants who did not see any evidence of reduced GHG emissions, two main explanations were offered:

1. The incentive to reduce energy costs has already encouraged companies to act on the most cost-effective opportunities, and that the relatively low rate of the carbon tax is not sufficient on its own to make the business case for additional technology changes.

³⁰ Modelling by M.K. Jaccard and Associates estimated that the carbon would reduce GHG emissions in B.C. by three million tonnes per year by 2020 without any additional climate change policies.

³¹ Interestingly, the local governments that mentioned the carbon tax rebate program viewed this as an additional incentive to help them to reduce GHG emissions. The program could also be interpreted as undercutting the carbon tax’s incentive to reduce emissions because the more they do to reduce emissions, the smaller their rebate becomes. From an internal accounting perspective, however, the participating local governments seem to have isolated the two policies.

Similarly, the price of the carbon tax alone is too low to have a significant influence on the behaviour of individuals (e.g., encouraging someone to take transit instead of driving).³²

2. There has not been enough time for very many opportunities to even be considered, because most individuals and companies will only make changes when there is a need to make an investment (e.g., someone will only consider an energy efficient car when they are already planning to buy a new car).

3.3 Is the carbon tax impacting the economy?

While the carbon tax is primarily intended to reduce GHG emissions, it was also selected because it is widely considered to be one of the most economically efficient ways of achieving that environmental objective. As with the environmental impacts, we are not aware of any economy-wide or sector-specific studies that attribute positive or negative impacts to the carbon tax and accompanying tax cuts. So while there have been positive and negative impacts to different parts of B.C.'s economy, we haven't seen any evidence attributing those changes to the carbon tax and accompanying tax cuts.

Regarding the potential of positive impacts, 32 participants (82%) were not aware of any evidence supporting such claims (see Figure 5). The six participants who reported seeing some evidence highlighted the positive impact for clean technology (cleantech) companies and, to a lesser extent, renewable electricity proponents. There were also anecdotal reports of the carbon tax, along with the province's other climate policies, serving as an attraction to professionals wanting to work in a 'green' jurisdiction. Several participants described the tax cuts financed by the carbon tax as an important part of the policy that they believed would translate into positive economic impacts for B.C.

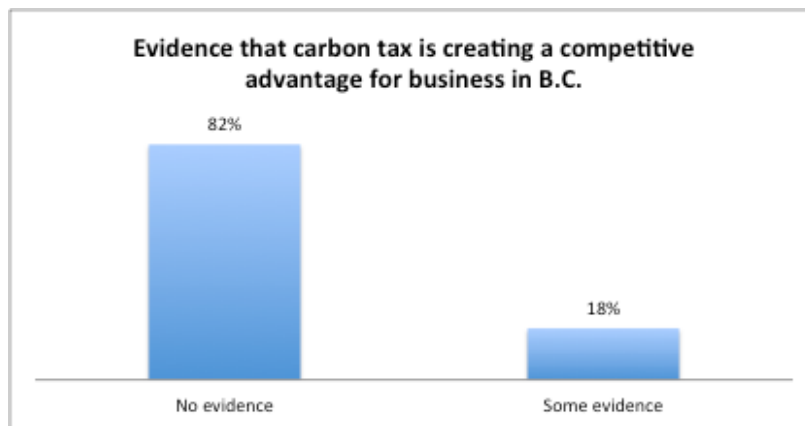


Figure 5 – Evidence that the carbon tax is creating a competitive advantage for business

³² We did not ask about the combined impact of policies that influence energy prices in instances where the carbon tax is not the only measure in place. Two notable examples would be the public sector, where an additional \$25 per tonne is charged because of the province's carbon neutral requirements, and transportation in Metro Vancouver where gas taxes also serve as an incentive to use transit and/or use more efficient vehicles.

There was a similar story for the potential of negative impacts, with 30 participants (77%) not being aware of any evidence of such impacts (see Figure 6). Of those not seeing any evidence, many felt that the relatively low rate and the accompanying tax cuts helped to minimize any potential negative impacts, and resulted in the carbon tax being a relatively small factor in a business' overall competitiveness compared to factors such as the exchange rate or other taxes.

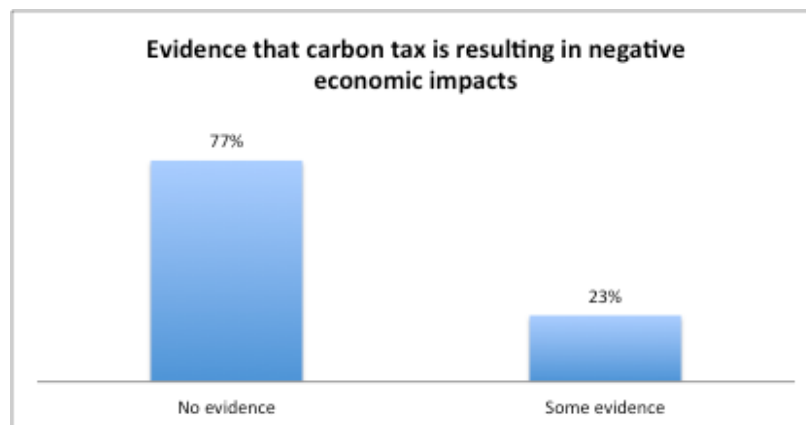


Figure 6 – Evidence that the carbon tax is resulting in negative economic impacts

The nine participants (23%) seeing evidence of negative economic impacts mentioned the following sectors where they were aware of, or directly experiencing, negative economic impacts: cement, forest products, greenhouse growers and mining.³³

Participant examples typically focused on the increased cost incurred because of the carbon tax that most competitors outside B.C. would not face, thereby placing them at a competitive disadvantage. Several participants were able to cite how their carbon tax costs were higher than the tax cuts they received, while the others were not aware of the magnitude of the tax cuts for their business.

The examples pointed to two situations where the carbon tax and accompanying tax cuts likely represent a net cost:

1. Where businesses are particularly greenhouse gas intensive such that the tax cuts received are smaller than the carbon tax paid, and
2. Where businesses are not profitable and do not directly benefit from corporate income tax cuts.

Recognizing that these situations exist and not all businesses will be able to pass on their costs to their customers, an important question is how significant that overall net cost is relative to other factors influencing competitiveness such as exchange rates, labour cost and other taxes. The answer to that question will depend on the specific sector and we were not provided with any analysis that assessed how material that net cost would be on the overall competitiveness of a sector. Having those answers would be helpful in shaping carbon tax decisions in the future, but producing the analysis was beyond the scope of this research.

³³ The cement sector in particular stressed that cement imports to B.C. have increased dramatically since 2008; their contention is that the carbon tax has been a major factor in that shift.

4. Setting the rate

Based on current B.C. government commitments, the carbon tax is scheduled to plateau at \$30 per tonne on July 1, 2012. A key debate about the future of the policy is what should happen to the rate in 2013 and beyond. Figure 7 shows the participant responses when asked what should happen to the carbon tax rate after 2012/2013 assuming that B.C. is still the only jurisdiction in North America with a significant carbon price. The two most common perspectives were: 1) that the carbon tax should continue to increase above 2012/2013, and 2) that it should be maintained at \$30 per tonne.

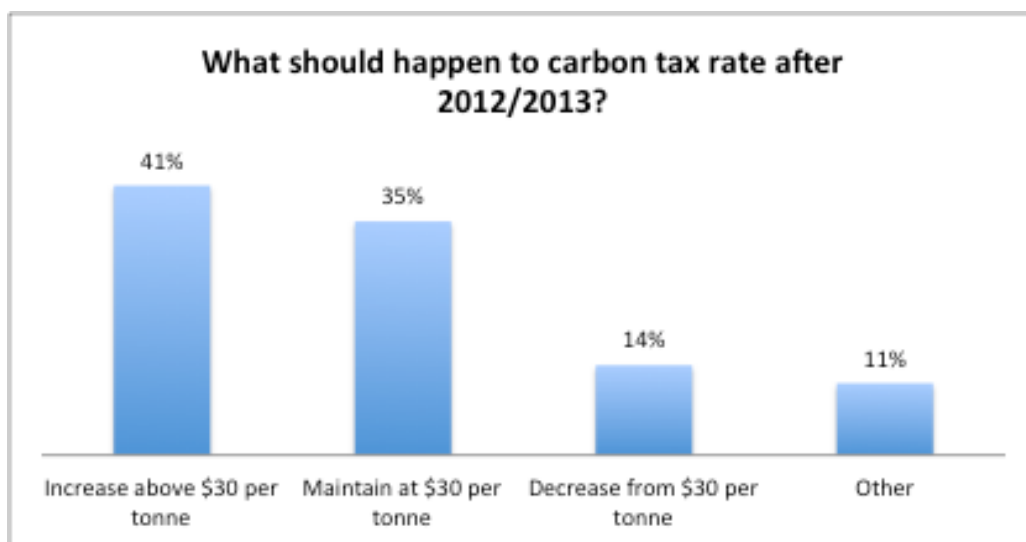


Figure 7 – Perspectives on future changes to the carbon tax rate

Of the 15 participants (41%) that wanted to see the carbon tax continue to increase, most did not have specific suggestions about the pace at which the rate increases should happen. Where specific suggestions were made, they ranged from a few more annual increases of \$5 per tonne to annual increases averaging \$20 per tonne until 2020. In general, there were two groupings of participants wanting to see continued increases:

- Those who would like to see B.C. continuing to increase the carbon tax (and moving forward with its Climate Action Plan) until the province has achieved its GHG reduction targets. These participants placed a high value on what they viewed as a moral obligation to deal with climate change. They also supported the idea of B.C. demonstrating leadership on climate policy because of the potential to encourage other jurisdictions to take similar steps.

- Those who think the carbon tax has been a positive step, and would like to see the province commit to a few more annual increases and then re-assess the economic and environmental impact. This grouping placed a similar value on the importance of dealing with the issue and demonstrating leadership. There was also a belief that B.C. should not be too far ahead of competitor jurisdictions on carbon pricing, but that the threshold had not yet been reached.

Of the 13 participants (35%) that wanted to see the rate maintained at \$30 per tonne, most were concerned about the risk of B.C. being placed at a competitive disadvantage by having a carbon price higher than competing jurisdictions. These participants were not necessarily any less concerned about climate change, but they did not place the same value on B.C. moving ahead of other jurisdictions. Instead, they pointed to broader action on a national or international scale as the piece that should come first.

There were also five participants (14%) that wanted to see the carbon tax rate reduced or eliminated. These participants offered a similar rationale to those who wanted to maintain the rate but felt B.C.'s carbon price needed to immediately be more closely aligned with other carbon pricing systems, such as the European Union's. The group of participants that wanted to maintain or decrease the carbon tax included a range of sectors but all of the participants from emissions-intensive industries were included in one of these categories. See Table 1 in Section 1.3 for examples of carbon prices in other jurisdictions.

A similar question was also asked in the April 2011 public poll, with the results shown in Figure 8. The question differed in that respondents were not given any information about carbon prices in the rest of North America and they were not given the opportunity to say the carbon tax should decrease. A narrow majority said that the carbon tax should not continue to increase, while a surprisingly large number (29%) said they would like to see the tax increase. There were also a relatively large number of respondents (21%) that did not know.

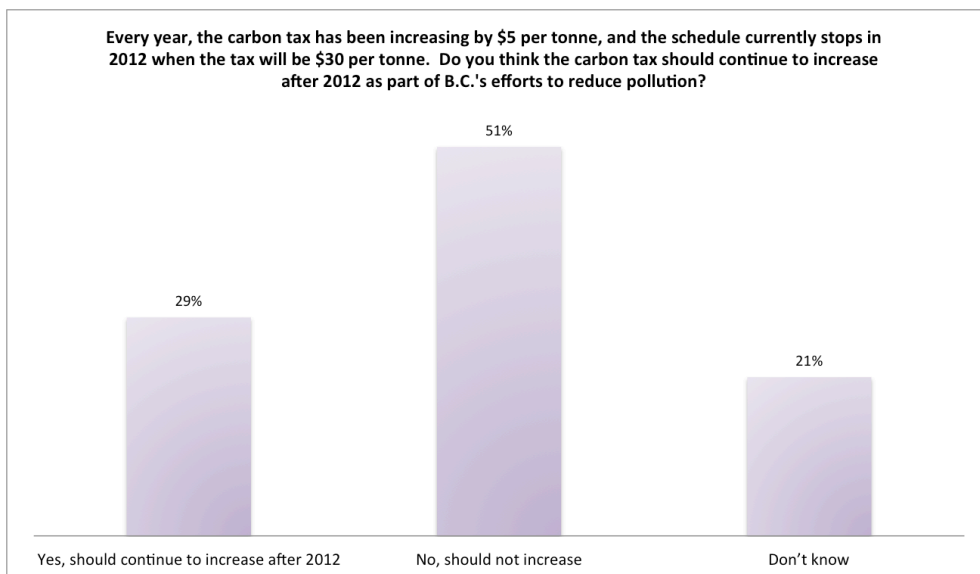


Figure 8 – Perspectives on future changes to the carbon tax rate – public poll

5. Setting the coverage

When B.C. introduced its Climate Action Plan in 2008, the carbon tax was its centerpiece. At the time, the province committed to replace the carbon tax for large industry with a cap-and-trade system through the Western Climate Initiative (WCI).³⁴ See Box 1 for a comparison of carbon tax and cap-and-trade approaches. Part of the reason for that commitment was to address a gap in the carbon tax's coverage in that it did not apply to non-combustion GHG emissions. Non-combustion emissions include sources such as methane from the decomposition of matter in landfills, carbon dioxide produced during the chemical conversion process used in the production of clinker (a component of cement), or carbon dioxide that is stripped and vented from raw natural gas at processing plants.

Box 1: Comparing cap-and-trade and carbon tax approaches to reducing GHG emissions

Greenhouse gas emissions can be priced through carbon taxes or cap-and-trade systems (or a combination of the two). A carbon tax sets the price directly, while a cap-and-trade system limits total emissions, and allows firms to buy and sell rights to emit within the limit (the cap). This has the effect of putting a price on emissions because as the limit declines, the scarcity and value of the emission rights will increase.

There is often debate about which approach is the best way to put a price on carbon. In fact, neither approach is inherently better, with any differences depending entirely on the way an individual tax or cap-and-trade system is designed. The environmental and economic effects — how much will emissions be reduced and who will pay — depend on the emissions price, the sectors to which it applies, and what any revenues are used for. Elements of both approaches can also overlap: cap-and-trade systems often apply price floors and ceilings to give a measure of price certainty, and carbon taxes can be designed to adjust if they are not having the desired effect on emissions.

The effects depend much less on the choice between carbon tax or cap-and-trade system than on proper design. Either a carbon tax or cap-and-trade system, or a combination of the two, is capable of providing an environmentally effective outcome, and either can fail to deliver if it is poorly designed.

Although California and Quebec have moved forward with cap-and-trade regulations and they are intending to have their systems up and running by January 1, 2013, the other partners in the WCI, including B.C., have not moved forward to implementation. B.C. and Ontario may still join in the relatively near term, but the picture is much less clear than it seemed in 2008 and 2009. As a result of that uncertainty, a debate has emerged in B.C. as to how to best price the emissions where cap-and-trade was expected to be the main pricing tool.

³⁴ Created in February 2007 by the governors of Arizona, California, New Mexico, Oregon and Washington, the WCI was designed with the long-term commitment to reduce regional GHGs and fight climate change by focusing on a market-based cap-and-trade system. The provinces of British Columbia, Ontario, Quebec and Manitoba, along with Utah and Montana, joined the group. The design of the cap-and-trade system has continued to advance and California and Quebec are preparing to launch joined systems on January 1, 2013. No other states or provinces are currently scheduled to join that system.

B.C.'s sources of emissions are represented in Figure 9, and as shown, a carbon price is not currently applied to 25% of the province's emissions (the green and grey sections).³⁵ It is not feasible to apply a carbon price to sources that are not accurately measured currently (the green sections), but there is a portion of provincial emissions that are accurately measured and could be subject to a carbon price (the grey section). If the carbon tax were broadened to include the non-combustion industry emissions in the grey section, it would increase the carbon tax's coverage from 75% to 82%. At \$30 per tonne, that would increase provincial revenue by \$126 million.

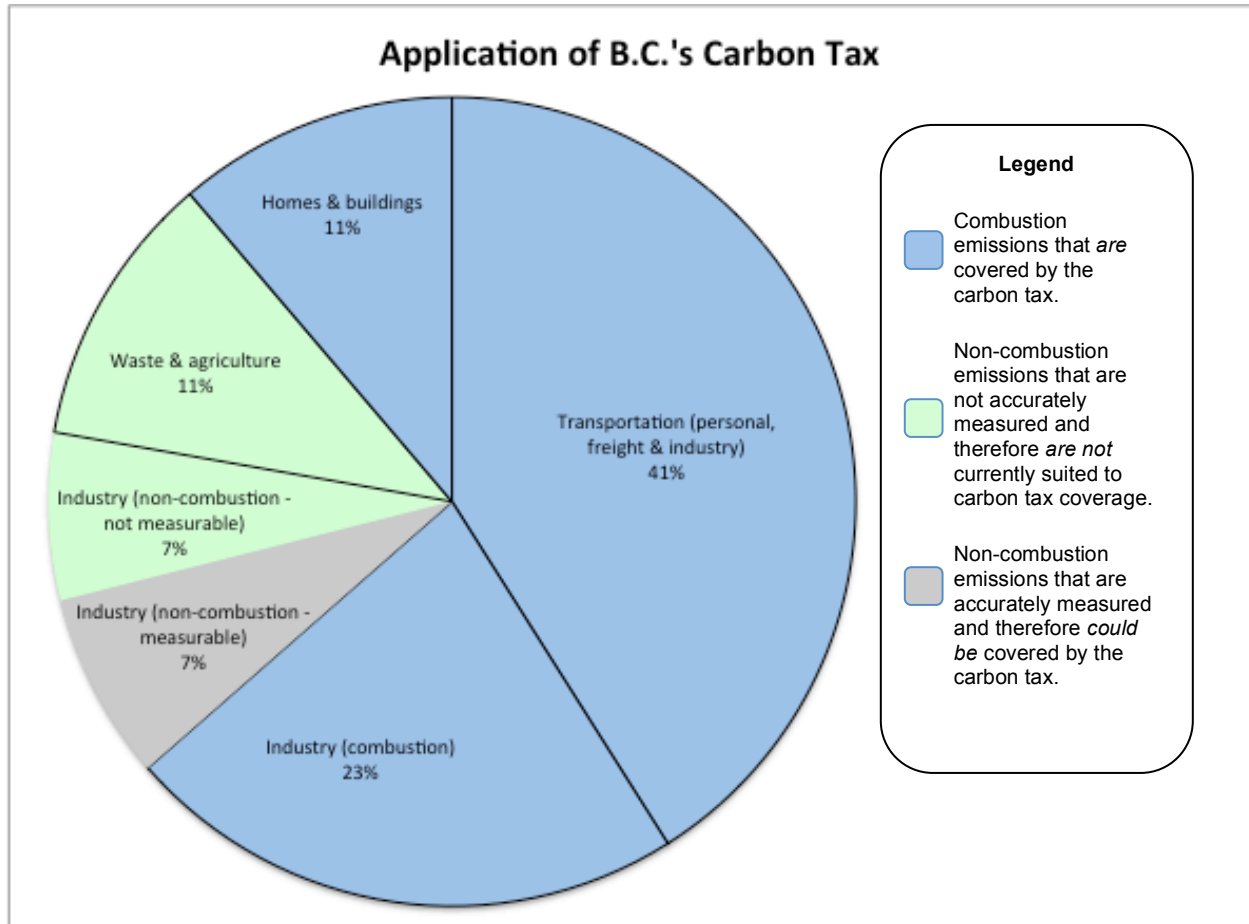


Figure 9 – Application of B.C.'s carbon tax

In asking participants about their perspectives on cap-and-trade versus carbon taxes and how to deal with the emissions from non-combustion sources from industry, a significant number (12 of 39) declined to answer because they felt they did not understand the issues well enough. The specific question they were asked was:

³⁵ Percentages derived from 2010-year data in the National Inventory Report from Environment Canada. The breakdown of industrial emissions has some uncertainty because of the way in which Environment Canada groups some combustion and non-combustion sources for the natural gas sector.

The provincial government is proposing to implement a cap-and-trade system with California, Quebec, Ontario and potentially additional jurisdictions. B.C. has said the cap-and-trade system will apply to large industry in the province.

The carbon tax is currently applied to the fossil fuels combusted by large industry (66% of their total emissions). It does not apply to their non-combustion sources such as methane leaking from natural gas pipelines or carbon dioxide stripped from raw natural gas.

Thinking about the greenhouse gas emissions from large industry in B.C., please indicate your preferred option and explain why:

- a. Implementing cap-and-trade and removing the carbon tax from those sources.*
- b. Implementing cap-and-trade and maintaining the carbon tax coverage as is.*
- c. Implementing cap-and-trade and broadening the carbon tax to include all emissions from large industry.*
- d. Not implementing cap-and-trade and maintaining the carbon tax coverage as is.*
- e. Not implementing cap-and-trade and broadening the carbon tax to include all emissions from large industry.*
- f. Other (please specify).*
- g. Don't know*

Of the 27 participants (69%) comfortable providing a perspective, almost all selected options that involved broadening the carbon price in B.C. to include non-combustion sources of emissions from large industry (Figure 10). While the question focused on the emissions from large industry, several participants also said it was important to address non-industrial gaps in the province's carbon pricing approach. The specific examples cited were methane from agriculture and landfills and the emissions from international aviation.

The two participants (5%) that disagreed with broadened coverage did not feel that non-combustion sources of emissions should be covered if there was not a way of reducing those emissions. This argument could be made for several sources of non-combustion emissions (e.g., those from cement production). If the carbon tax was applied to these sources, it is unlikely that a jurisdiction the size of B.C. would be able to motivate the research and development needed to reduce those sources of emissions. With the broader application of carbon pricing, research and development will accelerate and may lead to new and more affordable solutions to reduce non-combustion emissions.

In the absence of such solutions at reasonable cost, applying B.C.'s carbon tax to non-combustion emissions could lead to a combination of three outcomes: 1) it could cause customers to switch to an entirely different products/services that have lower greenhouse gas intensity, 2) it could cause customers to have to pay a bit more for the product/service, or 3) as cement producers contend in the cement sector, it could cause customers to switch to imported products/services that do not have to pay the carbon tax. The first two outcomes could be viewed as desirable outcomes of an environmental tax policy, while the third would be a failure because the global environmental impact is unchanged but the jurisdiction with the tax has lost some economic activity.

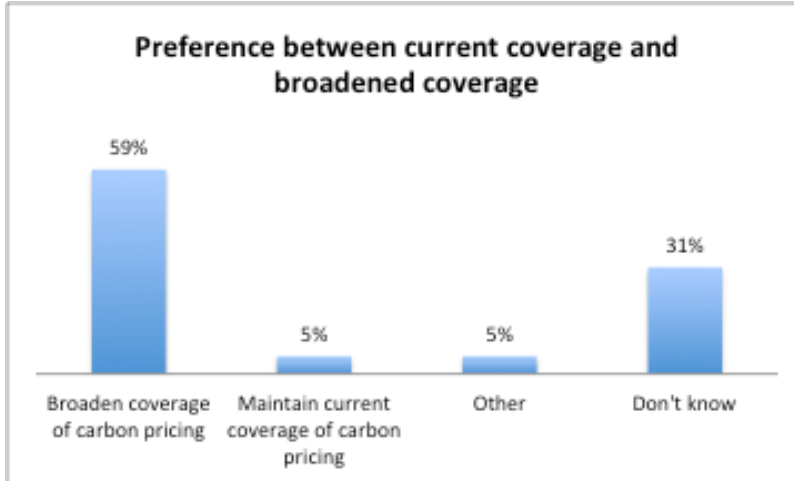


Figure 10 – Preference between current coverage and broadened coverage

These results are similar to those found in the public polling conducted in April 2011 (Figure 11). In that research, 69% of respondents somewhat agreed or strongly agreed that the carbon tax should be broadened to cover measurable non-combustion sources. Only 10% somewhat disagreed or strongly disagreed with the idea. The relatively high percentage of respondents (21%) that neither agreed nor disagreed could be an indication that many did not know enough about the issue to offer a response, especially since ‘Don’t know’ was not provided as an option.

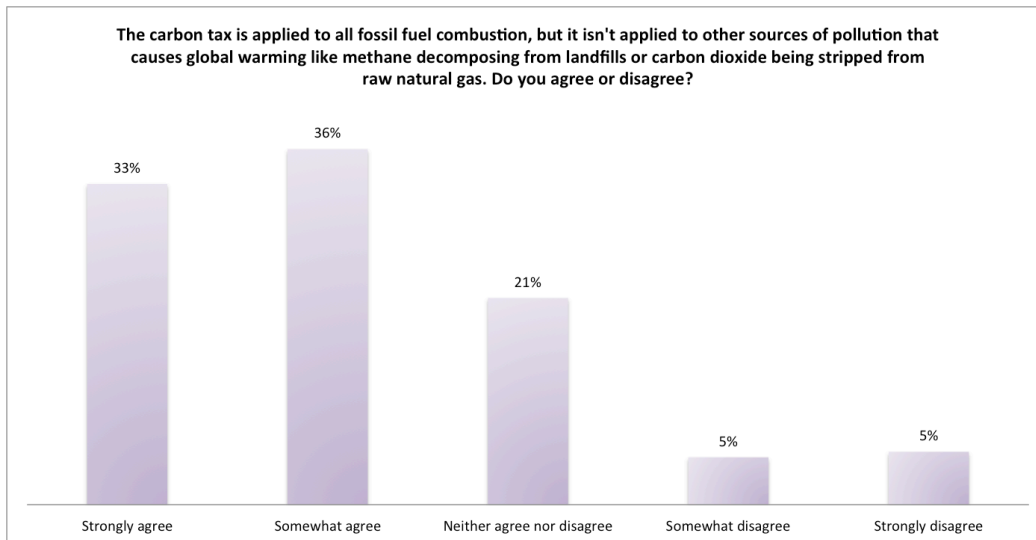


Figure 11 – Perspectives on broadened carbon tax – public poll

Beyond the general agreement that carbon pricing for large industry should be applied as broadly as possible, Figure 12 shows what the preferred approaches to apply that pricing were for participants. The 27 participants that felt comfortable answering showed considerable skepticism about the effectiveness of cap-and-trade relative to the carbon tax. Seventeen participants (44%) wanted to see the carbon tax maintained or broadened, with seven of those comfortable with the idea of cap-and-trade complementing the carbon tax (18%). Four participants (10%) were

agnostic between cap-and-trade or carbon tax as long as only one of the two approaches was used, and another four (10%) preferred cap-and-trade alone.

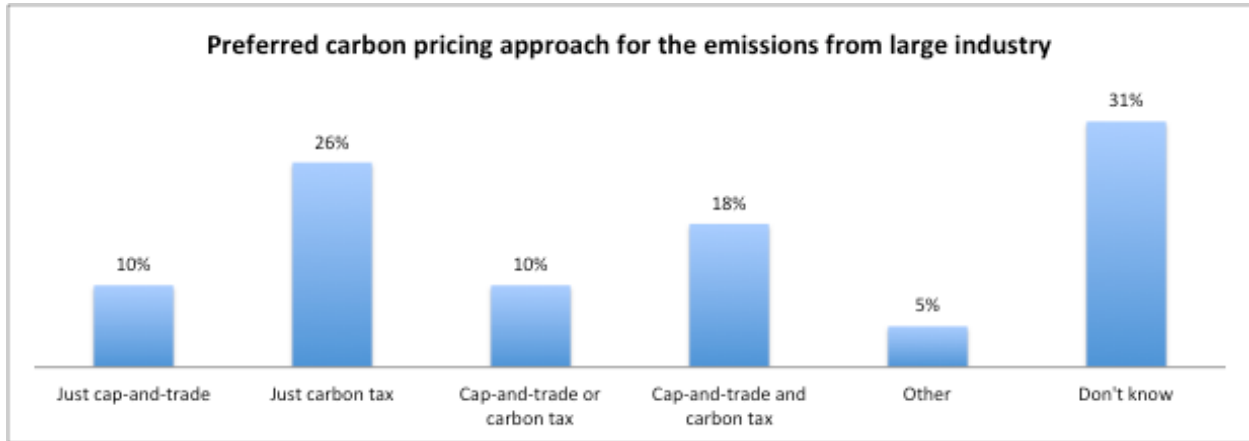


Figure 12 – Preferred carbon pricing approach for the emissions from large industry

The main reasons given for preferring a carbon tax was that it is simpler and more transparent; there were also concerns that cap-and-trade was subject to gaming that would undermine its effectiveness. The public polling questions only asked about carbon taxes, so it is not possible to assess if the responses shown in Figure 11 would have been similar if a cap-and-trade system was the approach tested.

Another way to look at the results is to test the degree to which there is support for one carbon pricing system (carbon tax or cap-and-trade) versus overlapping systems (the carbon tax complemented with cap-and-trade). While there was some support for a complementary approach, most preferred the idea that only one carbon price be applied to large industry. This perspective was unanimous within the industry participants, and can be summed up by the sentiment, *“whatever the system government chooses, please pick one and don’t double tax us”*.

6. Investing the revenue

The Carbon Tax Act currently requires all of the revenue collected by the carbon tax (estimated to be \$1.17 billion in 2012/2013) to be used to pay for tax cuts and tax credits. Table 2 shows how that revenue has been spent since the carbon tax was implemented, with projections out to 2014/2015. The same information is summarized in Figure 13. As shown, the carbon tax revenue (the green line) has been lower than the total of business and personal tax cuts and credits, and is projected to continue to be revenue negative until 2014/2015. Looking at 2012/2013 numbers in more detail, it is evident that the revenue is being used to pay for business tax cuts (57%), personal income tax cuts (23%), low income tax credits (15%) and the northern and rural homeowner benefit (6%).³⁶ An important decision for B.C. regarding any significant new carbon tax revenue — either from increasing the rate or broadening the base — is what those new revenues should be used for.³⁷

Table 2 – Tax reductions paid for by B.C. carbon tax revenue (\$ millions)

	Actuals			Projections			
	08/09	09/10	10/11	11/12	12/13	13/14	14/15
Carbon tax revenue	306	542	741	960	1,172	1,241	1,261
Business tax cuts/credits	100	370	474	671	721	669	676
Personal and low income tax cuts/credits	213	359	391	481	554	572	585
Total tax cuts	313	729	865	1,152	1,275	1,241	1,261

Source: B.C. *Budget and Fiscal Plans*³⁸

³⁶ British Columbia Ministry of Finance, *Budget and Fiscal Plan 2012/2013 – 2014/2015* (February 21, 2012), 68. http://www.bcbudget.gov.bc.ca/2012/bfp/2012_Budget_Fiscal_Plan.pdf

³⁷ The government could also change the way that current revenue is invested, but we chose to focus our questions on what to do with any additional carbon tax revenue.

³⁸ B.C. *Budget and Fiscal Plan* 2010 (Table 3, page 106), 2011 (Table 2, page 46) and 2012 (Table 2, page 68).

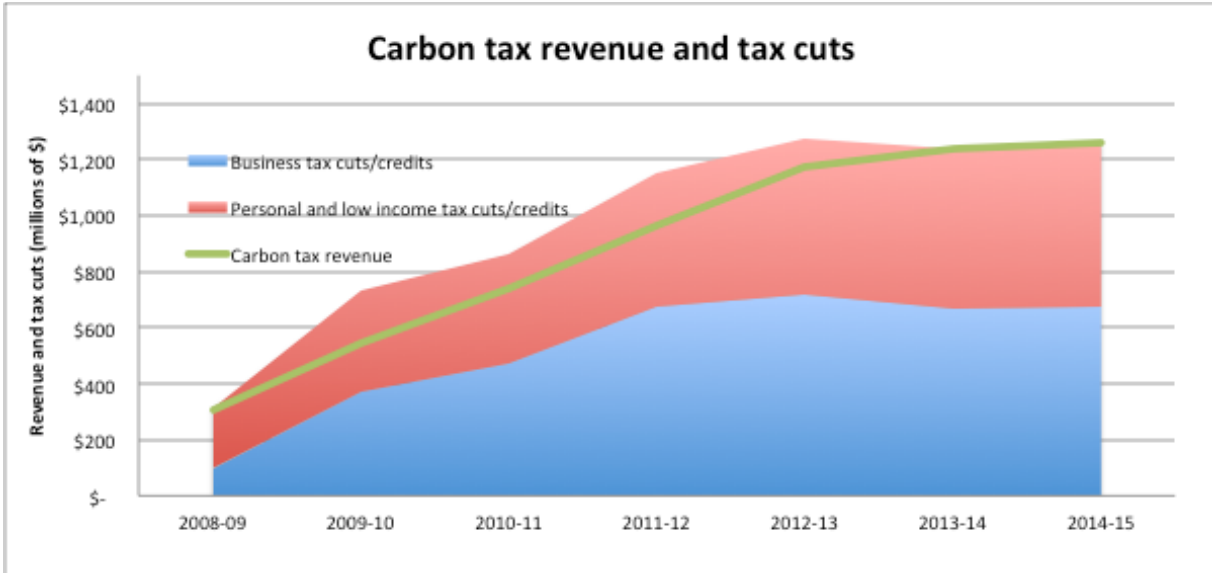


Figure 13 – Tax reductions paid for by B.C. carbon tax revenue

The government has defended the importance of the carbon tax being revenue neutral since it was first implemented. More recently, however, both Premier Clark and Finance Minister Falcon have said they are open to considering changing the revenue neutral requirement for any new carbon tax revenues.³⁹

When asked about their preferred uses for any new carbon tax revenue, participants were given the following options: investing in projects that help to reduce greenhouse gas emissions, investing in other government priorities, protecting low-income households from increased energy prices, reducing personal income taxes, reducing corporate taxes, reducing government deficit, other and don't know. They had the option of ranking up to three choices.

The results are shown in Figure 14. The clear top choice, with 26 first ranked selections (68%) and thirty-two selections overall (89%), was investing in projects that reduce GHG emission. While there was clear support for the idea of using some revenue for climate solutions, participants were split on whether or not the allocation of current funding should be changed. Many were supportive of the revenue neutral model for the first phase of the carbon tax and liked the idea of a change for any additional revenue. Others disagreed with the tax cuts and would prefer to see current revenue and additional revenue allocated differently.

The second overall preferred option was protecting low-income households from increased energy prices with 21 overall selections (71%). None of the participants disagreed with the government's decision to use a portion of current carbon revenues for low-income tax credits.

³⁹ In a 2011 open letter (www.newsroom.gov.bc.ca/.../Letter_to_editor_May6-2011.pdf), Premier Clark stated: "In the future, I am open to considering using the carbon tax to support regional initiatives, such as public transit." Minister Falcon's 2012 Budget and Fiscal Plan (www.bcbudget.gov.bc.ca/2012/bfp/2012_Budget_Fiscal_Plan.pdf) states on page 66: "Over the next year, the government will undertake a comprehensive review of the carbon tax and its impact on British Columbians. The review will cover all aspects of the carbon tax, including revenue neutrality...".

Several did mention that they considered the current level of the credits inadequate and that approaches such as energy-efficiency retrofits for low-income housing might be effective complements to the low-income tax credits over time. After the top two, all of the remaining options received much lower levels of support, of relatively similar magnitude. The third highest rated option was reducing personal income taxes, which received less than half as many selections (9 participants or 33%) as low-income protection.

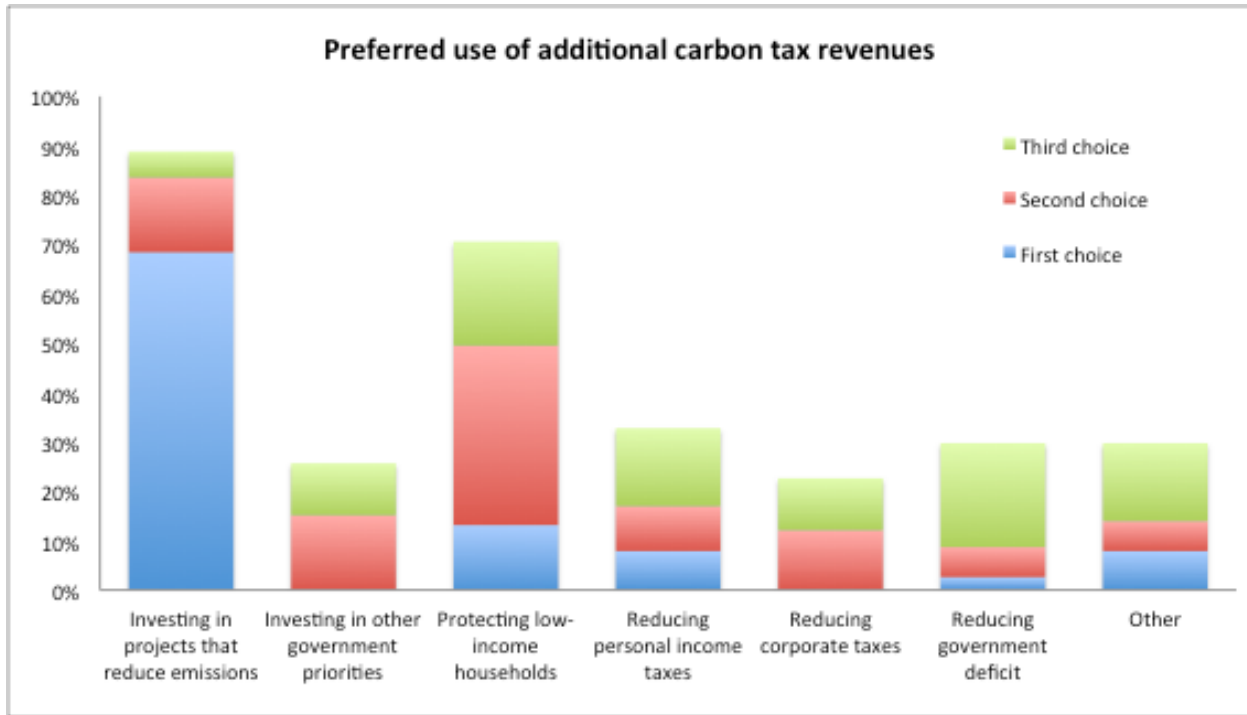


Figure 14 – Preferred use of additional carbon tax revenues

Participants’ reasons for supporting using some revenue for projects that reduce GHG emissions can be grouped into three categories: (1) it would help build public support for the policy if there was a more direct link to solutions, (2) it would help increase the environmental effectiveness of the policy if more money was invested in solutions, and (3) it would be a more effective way of mitigating competitiveness impacts for emissions-intensive industry if some revenue was targeted towards projects in those sectors.

We did not ask participants in detail about the types of projects they would prioritize, but several categories emerged from the interviews: projects that directly benefit British Columbians, such as transit or home energy efficiency investments; projects that directly benefit B.C.’s more emissions-intensive industries, such as fuel-switching projects at mills or carbon capture and storage projects at natural gas facilities; research and development into new climate change solutions; and solutions targeted specifically at rural British Columbia. If the government decides to move away from revenue neutrality, finding an acceptable balance between these different opportunities will be important.

A large number of participants that supported the idea of using carbon tax revenue to invest in climate change solutions also highlighted the importance of making those investments in a transparent manner that ensured government resources were being used wisely. A sub-set of

those also pointed to the Alberta Climate Change and Emissions Management Fund and the Pacific Carbon Trust as the types of organizations that could effectively invest in GHG reduction projects. We did not ask all participants about these models, so we are not in a position to comment on if there is broad support for either approach.

A similar question was asked in the 2011 public polling, with somewhat surprising results (see Figure 15).⁴⁰ The top choice, which 56% of respondents included in their selections, was “Investing in other government priorities like health care and education”. This was the second least popular choice of the participants in this study, and most participant responses showed an aversion to the idea. Investing in projects that reduce emissions was the second most popular option (selected by 49% of respondents), generally aligning with the participant responses. Support for reducing personal income taxes was the next most preferred option (40%), which was considerably higher than the participant ranking — possibly explained by the fact that the respondents would directly benefit from the tax cuts.

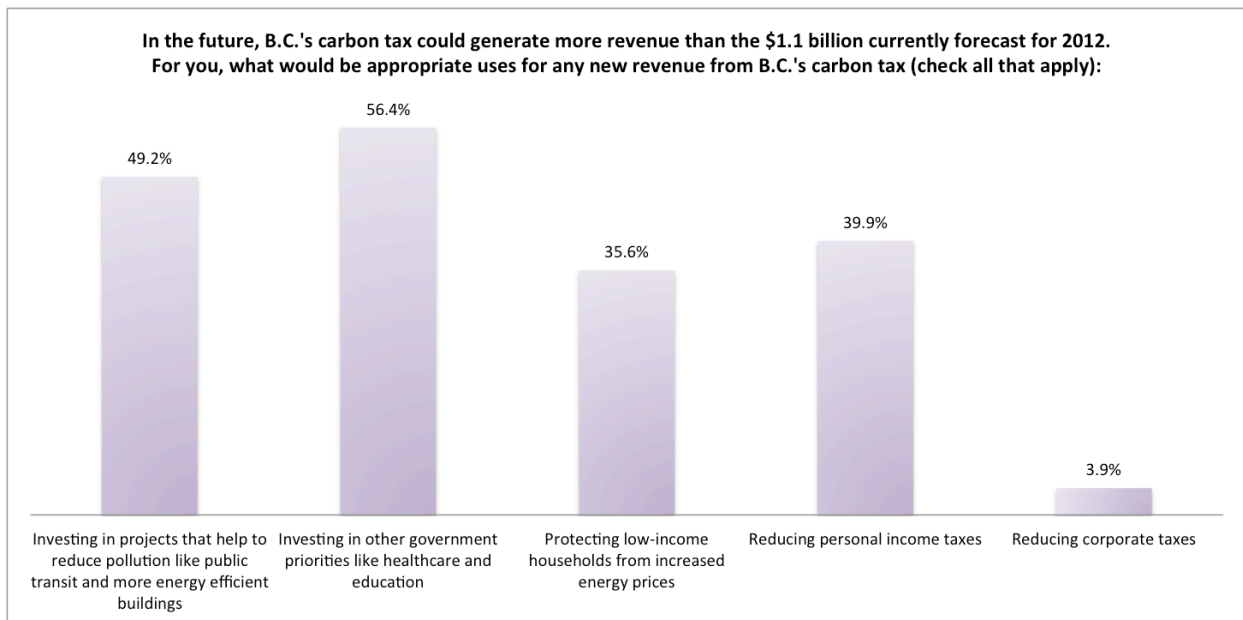


Figure 15 – Preferred use of additional carbon tax revenues – public poll

⁴⁰ The main difference was that the public polling question did not ask respondents to rank their choices and allowed them to choose as many options as they wanted. On average, respondents selected 1.8 choices compared to an average of 2.4 choices from the participants in this study.

7. Next steps

7.1 Research into the impacts and benefits

Regardless of the policy design choices the B.C. government makes, it would be beneficial to continue researching the impacts and benefits of the carbon tax — both economic and environmental. As discussed, there is limited amount of evidence available to understand how well the carbon tax is working. With the most ambitious carbon pricing system in North America, the successes and challenges should be documented so that B.C. can make necessary adjustments and other jurisdictions can learn from the province's experiences.

7.2 Setting the rate

On the question of what to do with the carbon tax rate after 2012, participants were mostly split between wanting to see the rate continue to increase and wanting to maintain the rate at \$30 per tonne. Without a dominant point of view emerging from the interviews, we offer advice for two scenarios:

1. If government decides to continue increasing the rate, it should provide a schedule of carbon tax rates for a term that provides some certainty and predictability for British Columbians and B.C. businesses (the carbon tax was initially implemented with a five-year schedule). Government should also explain how it intends to assess and respond to concerns about potentially negative impacts on economic competitiveness and the potential for economic activity shifting to other jurisdictions. Additional increases in the carbon tax would likely increase these concerns, based on participant responses.
2. If government decides to maintain the rate, it should explain how it intends to continue moving towards its climate change objectives without additional incentive from the carbon tax, and indicate the policy instruments it will rely upon instead. While it is a simple, transparent and efficient policy instrument, the carbon tax is not the only tool at the province's disposal to reduce greenhouse gas emissions. It would also be helpful to explain the conditions that government would like to see change (e.g. a certain number of trading partners adopting similar policies) prior to revisiting discussions about rate.

7.3 Setting the coverage

Based on participant responses, we would advise government to apply carbon pricing as broadly as possible within the province. There was less agreement regarding the specific approach or approaches that would best achieve that outcome, but as discussed, there was a significant preference for carbon taxes compared to cap-and-trade. Recognizing that many participants chose not to answer this set of questions and that it will be strongly influenced by policy choices outside of B.C., we offer recommendations for both cap-and-trade and carbon tax scenarios:

1. If government decides to implement cap-and-trade, the rules should be as simple and transparent as possible to alleviate concerns that the system will be subject to abuse. If

the rules are not simple and transparent, there is a risk that perceived or actual flaws in cap-and-trade could undermine support for climate policy more generally, and the remaining elements of the carbon tax more specifically. Likewise, government should be careful to avoid cap-and-trade design that is significantly weaker than the incentive already provided by the carbon tax. A situation in which climate policy is relaxed for one part of the economy could potentially undermine public support.

2. If government does not implement cap-and-trade, a “plan B” should be developed and implemented to apply a price to the emissions not covered by the carbon tax that were intended to be covered by cap-and-trade. The simplest approach (and one that was supported by many of the interview participants) would be to broaden the carbon tax such that gaps in coverage are closed where possible.

7.4 Investing the revenue

If the government has additional carbon tax revenue — either from an increased rate or broader tax base — we would advise a move away from a purely revenue neutral model. While participants supported a wide range of priorities, the strongest preference was for investing in projects that help to reduce emissions. These results aligned strongly with public polling conducted in 2011. Decisions would need to be made about what percentage of revenue would not be used for additional tax cuts and which types of GHG reduction projects would receive support — participants mentioned investment opportunities such as transit, public sector buildings and large industrial facilities. The second most preferred option was protecting low-income British Columbians, which would be a particularly relevant priority if the new revenue came from increasing the carbon tax rate.

Appendix 1 – Questions

Questions regarding B.C.’s current carbon tax policy

1. (*mention link to public poll*) Based on your experiences, how would you describe the consequences of the carbon tax and accompanying tax cuts for British Columbia?
 - a. Very positive
 - b. Somewhat positive
 - c. Neutral / neither positive or negative
 - d. Somewhat negative
 - e. Very negative
 - f. Don’t know
2. What evidence, if any, have you seen that B.C.’s carbon tax is motivating investments in energy-efficient or low-carbon technologies, and encouraging behavioral changes?
3. What evidence, if any, have you seen that B.C.’s carbon tax is creating a competitive advantage for businesses in B.C. (e.g. a company becoming more competitive because they use less carbon-intensive fuels than their competitors)?
4. What evidence, if any, have you seen that B.C.’s carbon tax is resulting in negative economic impacts (e.g. a company reducing investment in B.C. because the carbon tax makes other jurisdictions more attractive)?
5. How does the value of tax cuts you’ve received compare with the costs of carbon taxes you pay?
6. To what extent are you able to pass carbon tax costs on to your consumers (*if applicable*)?
7. What are your perspectives on the government’s efforts to communicate with British Columbians and B.C. businesses about the carbon tax?
8. Are there other comments you’d like to make about B.C.’s current carbon tax policy?

Questions regarding potential changes to B.C. carbon tax policy

1. If B.C. is still the only jurisdiction in North America with a significant carbon price in 2012, what should the B.C. government do to the carbon tax rate after 2012/2013 (e.g. continue increasing it by \$5 per tonne per year)? Why?
2. How would your answers change if carbon taxes or cap-and-trade systems were adopted in other parts of North America?
3. How far into the future should the price schedule extend (e.g. when first implemented, the carbon tax schedule increased from \$10 per tonne to \$30 per tonne over 5 years)?
4. (*mention link to public poll*) Assuming that the B.C. government decides to continue increasing the carbon tax by \$5 per tonne per year for another 3 years, please rank up to 3 options that the resulting revenue could be used for:

- a. Investing in projects that help to reduce greenhouse gas emissions
 - b. Investing in other government priorities
 - c. Protecting low-income households from increased energy prices
 - d. Reducing personal income taxes
 - e. Reducing corporate taxes
 - f. Reducing government deficit
 - g. Reducing other taxes (please specify)
 - h. Other (please specify)
 - i. Don't know
5. (*mention link to public poll*) The provincial government needs to raise revenue to provide various services to British Columbians. Much of that revenue comes from taxes. If government needed additional tax revenue, what are the top ways (rank up to 3) to collect it:
- a. Personal income taxes
 - b. Corporate income taxes
 - c. Sales taxes
 - d. Property taxes
 - e. Carbon taxes
 - f. Other (please define)
 - g. Don't know
6. The provincial government is proposing to implement a cap-and-trade system with California, Quebec, Ontario and potentially additional jurisdictions. B.C. has said the cap-and-trade system will apply to large industry in the province.
- The carbon tax is currently applied to the fossil fuels combusted by large industry (66% of their total emissions). It does not apply to their non-combustion sources such as methane leaking from natural gas pipelines or carbon dioxide stripped from raw natural gas.
- Have you considered the pros and cons of using cap-and-trade systems compared to carbon taxes or a combination of the two?
7. If yes to 6, thinking about the greenhouse gas emissions from large industry in B.C., please indicate your preferred option and explain why:
- a. Implementing cap-and-trade and removing the carbon tax from those sources.
 - b. Implementing cap-and-trade and maintaining the carbon tax coverage as is.
 - c. Implementing cap-and-trade and broadening the carbon tax to include all emissions from large industry.
 - d. Not implementing cap-and-trade and maintaining the carbon tax coverage as is.
 - e. Not implementing cap-and-trade and broadening the carbon tax to include all emissions from large industry.
 - f. Other (please specify).
 - g. Don't know

8. Within Canada and the U.S., there has been debate as to whether carbon pricing is preferable to command-and-control regulations. In B.C., a mix of pricing and regulation is being used.

You may be familiar with B.C.'s requirement that 93% of new electricity generation come from near-zero emissions sources. If you were told that the carbon price needed to achieve a comparable outcome works out to about \$100 per tonne, compared to the carbon tax price of \$30 per tonne, would you support the policy? Why or why not?

9. Process-wise, what do you think are appropriate next steps for the B.C. government as it considers what changes, if any, to make in the carbon tax after 2012?
10. Are there other comments you'd like to make about potential changes to B.C.'s carbon tax policy?