Assessing British Columbia's carbon tax design: Public and stakeholder perspectives

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1. Introduction

In 2008, British Columbia (BC) implemented the first broadly-based and revenue-neutral carbon tax in North America 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 per cent of emissions), with the rate initially set at $10 per tonne of GHG emissions (expressed in carbon dioxide equivalent), rising annually by $5 per tonne until it reached $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), 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) (BC Ministry of Finance, 2012). 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.[1] In the 2012 budget, the provincial government announced a review of the carbon tax that would, '...cover all aspects of the carbon tax, including revenue neutrality, and will consider the impact on the competitiveness of BC businesses...' (BC Ministry of Finance, 2012, p. 66). It is expected that the results of that review will inform any changes made to the carbon tax in the 2013 budget and beyond.

Since the carbon tax has been in place for more than four years and since the BC government is currently reviewing its impacts, this seems like an opportune time to explore different perspectives on BC's carbon tax - both the current design and possible changes to the policy post 2013. Our goals in this study are to:

1. Document evidence of any environmental and economic impacts of the carbon tax to date.
2. Document the range of perspectives regarding the future design of BC's carbon tax, with a specific focus on the carbon tax rate, sources of GHG emissions that BC's carbon tax applies to, and the use of any new carbon tax revenues.
3. Provide advice to the BC government, and other governments in Canada, on how to best navigate carbon tax design issues given the range of perspectives identified.

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 included local governments, academics, clean technology and energy companies, oil and natural gas companies, environmental organizations, transportation companies, student organizations, mining companies, forest products companies, cement and concrete companies, business organizations, non-profit housing organizations, media, university facilities, and agriculture companies. 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 important changes include the announcement of a carbon tax review in February 2012, the introduction of a one-year carbon tax exemption for BC's greenhouse growers, and BC's decision not to join a cap-and-trade system with California and Quebec on January 1 2013.[2]

Throughout this paper, we compare the interview results with public polling that was completed in April 2011 (Horne, 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 (margin of error 3.4 per cent), conducted online from April 14 to April 18 2011. The poll's probabilistic sample is reflective of BC's actual regional, gender and age composition based on the 2006 Census.

3. The impacts of BC's carbon tax

3.1 Overall perspectives

When asked to assess the overall consequences of the carbon tax and accompanying tax cuts for BC, a significant majority of participants felt they were very positive (18 per cent) or somewhat positive (46 per cent). 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 BC 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.

Although not as positive on balance, the results of public polling were similar. The most common response was 'Neutral/Neither positive or negative,' with 41 per cent 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 BC, that the tax and tax cuts were too small to have a significant visible impact, or that they did not know. Of those who did believe there were either positive or negative consequences, 55 per cent believed they were very or somewhat positive, while 45 per cent believed they were very or somewhat negative.

3.2 The impacts on 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 been in place for four full years and the rate (which is the degree to which it will influence decisions) has been relatively low.[3] 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. Sumner et al. (2009) summarize a selection of carbon taxes in use and, for all of the examples implemented in the early 1990s in Finland, Netherlands, Norway, and Sweden, they attributed part of those jurisdictions' success in reducing emissions to carbon taxes.

Since the carbon tax implementation, BC's per capita GHG emissions declined by 10 per cent from 2008 to 2010, and per capita petroleum consumption dropped by 15.1 per cent from 2008 to 2011 (Elgie, 2012). Similar reductions were observed in other fossil fuels covered by the tax, and they are greater than the changes observed in other parts of Canada. Of the participants in this study, 26 (67 per cent) were not aware of any evidence that the carbon tax had reduced GHG emissions, while 13 (33 per cent) were aware of some evidence. 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 and local governments' buildings and fleets. The carbon neutral commitments, grants available to the public sector, and the carbon tax rebate program for local governments 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, the most common explanation was that 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 influence businesses and individuals to make additional technology or behavioural changes. The lack of time to consider many opportunities was also mentioned.

3.3 The impacts on BC's economy

While the carbon tax is primarily intended to reduce GHG emissions, the government also selected it because it is widely considered to be one of the most economically efficient ways of achieving that environmental objective (BC Government, 2008). Since the carbon tax implementation, BC's GDP growth per capita has been higher than in the rest of Canada, indicating that the carbon tax has not harmed the provincial economy (Elgie, 2012). However, 82 per cent of our participants were not aware of any evidence of positive impacts that resulted from the carbon tax. 18 per cent of participants who reported seeing some evidence highlighted the positive impact for clean technology companies and, to a lesser extent, renewable electricity proponents. There were also anecdotal reports of the carbon tax, along with BC's other climate polices, 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 BC.

There was a similar story for the potential of negative impacts, with 77 per cent of participants not being aware of any evidence of such impacts. 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. 23 per cent of participants 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.

Participant examples typically focused on the increased cost incurred because of the carbon tax that most competitors outside BC 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 GHG-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.

4. The future of BC's carbon tax

4.1 Setting the rate

BC's carbon tax plateaued 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. We asked our participants this question providing that BC may remain the only jurisdiction in North America with a significant carbon price post 2013. The two most common perspectives that emerged from our interviews were: (1) the carbon tax should continue to increase after 2013, and (2) it should be maintained at $30 per tonne.

Of the 15 participants (41 per cent) 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:

1. Those who would like to see BC continuing to increase the carbon tax until the province has achieved its GHG reduction targets. These participants placed a high value on our moral obligation to deal with climate change and the need to demonstrate climate leadership to encourage other jurisdictions to take similar steps.
2. 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 policy impact. This grouping placed a similar value on the importance of dealing with the issue and demonstrating leadership. There was also a belief that BC 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 per cent) that wanted to see the rate maintained at $30 per tonne, most were concerned about the risk of BC 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 BC 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 per cent) 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 BC’s carbon price needed to immediately be more closely aligned with other carbon pricing systems, such as the European Union's. This group of participants included a range of sectors but all of the participants from emissions-intensive industries were included in one of these categories.

A similar question was also asked in the April 2011 public poll. 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 per cent) said they would like to see the tax increase. There were also a relatively large number of respondents (21 per cent) that did not know.

4.2 Setting the coverage

When BC 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).[4] 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 and carbon dioxide that is stripped and vented from raw natural gas at processing plants.

Although California and Quebec will launch a cap-and-trade system on January 1 2013, the other partners in the WCI, including BC, have not moved forward to implementation. BC and Ontario may still join in the near term, but this is still unclear. As a result of that uncertainty, a debate has emerged in BC as to how to best price the emissions where cap-and-trade was expected to be the main pricing tool.

BC's sources of emissions are represented in Figure 1. As shown, a carbon price is not currently applied to 25 per cent of the province's emissions (the white and vertically shaded sections).[5] It is not feasible to apply a carbon price to sources that are not accurately measured currently (the white sections), but there is a portion of provincial emissions that are accurately measured and could be subject to a carbon price (the vertically shaded section). If the carbon tax were broadened to include the non-combustion industry emissions in the vertically shaded section, it would increase the carbon tax's coverage from 75 to 82 per cent. At $30 per tonne, that would increase provincial revenue by $123 million.

[Insert Figure 1]

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 (31 per cent) declined to answer because they felt they did not understand the issues well enough. Of the 69 per cent of participants comfortable providing a perspective, almost all selected options that involved broadening the carbon price in BC to include non-combustion sources of emissions from large industry. While the question focused on the emissions from large industry, several participants also said it was important to address non-industrial gaps in BC's carbon pricing approach, specifically methane from agriculture and landfills and the emissions from international aviation.

The 5 per cent of participants that disagreed with broadened coverage did not feel that non-combustion sources 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, including those from cement production. If the carbon tax was applied to these sources, it is unlikely that a jurisdiction the size of BC 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 BC'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 GHG 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.

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

Beyond the general agreement that carbon pricing for large industry should be applied as broadly as possible, 17 participants (44 per cent) wanted to see the carbon tax maintained or broadened, with seven of those (18 per cent) comfortable with the idea of cap-and-trade complementing the carbon tax. Four participants (10 per cent) were agnostic between cap-and-trade or carbon tax as long as only one of the two approaches was used, and another four (10 per cent) preferred cap-and-trade alone. 27 participants (69 per cent) showed considerable skepticism about the effectiveness of cap-and-trade relative to the carbon tax.

The main reasons given for preferring a carbon tax was that it is simpler and more transparent. Participants were also concerned that cap-and-trade could be 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 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 do not double tax us.’

4.3 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 1 shows how that revenue has been spent since the carbon tax was implemented, with projections out to 2014/2015. As shown, the carbon tax revenue 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 per cent), personal income tax cuts (23 per cent), low income tax credits (15 per cent) and the northern and rural homeowner benefit (6 per cent). An important decision for BC 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.

[Insert Table 1]

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 (BC Government, 2011; BC Ministry of Finance, 2012).

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 GHG 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 do not know. They had the option of ranking up to three choices. The clear top choice, with 26 first ranked selections (68 per cent) and 32 selections overall (89 per cent), was investing in projects that reduce GHG emissions. 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 per cent). None of the participants disagreed with the government's decision to use a portion of current carbon revenues for low-income tax credits. Several participants 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 per cent) as low-income protection.

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 BC'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. Some participants 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.

A similar question was asked in the 2011 public polling.[6] The top choice, which 56 per cent 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 per cent of respondents), generally aligning with the participant responses. Support for reducing personal income taxes was the next most preferred option (40 per cent), which was considerably higher than the participant ranking — possibly explained by the fact that the respondents would directly benefit from the tax cuts.

5. Conclusion

Despite the often-polarized nature of the climate change debate in Canada, our interviews showed that there is an encouraging degree of consensus regarding the need for governments to address climate change and the important role that carbon taxes can play in that response. There is also a dominant view that BC's carbon tax and accompanying tax cuts have been positive for the province.

In terms of the future design of BC's carbon tax, five key conclusions can be drawn from the interviews. First, there are split perspectives on whether to continue increasing the carbon tax rate or to maintain the rate at $30 per tonne. If government decides to continue increasing the rate, we recommend that it develops a schedule of carbon tax rates for a term that provides some certainty and predictability for British Columbians and BC businesses. 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. If government decides to maintain the rate, we recommend that it explains 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.

Second, carbon pricing should be applied as broadly as possible within the province. There was less agreement regarding the specific approach(es) that would best achieve that outcome, but 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 BC, we offer recommendations for both cap-and-trade and carbon tax scenarios. 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. 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.

Third, 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. The majority of participants preferred investing revenue 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. The second most preferred option was protecting low-income British Columbians, which would be a particularly important priority if the new revenue came from increasing the carbon tax rate.

Fourth, regardless of the policy design choices the BC government makes, it would be beneficial to continue researching the impacts and benefits of the carbon tax — both economic and environmental. 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 BC can make necessary adjustments and other jurisdictions can learn from the province's experiences.

Finally, many participants highlighted the government's lack of communication with individuals, communities and businesses about the carbon tax. Based on this view, we recommend that the BC government increases communication about the carbon tax and other climate change initiatives in the future.

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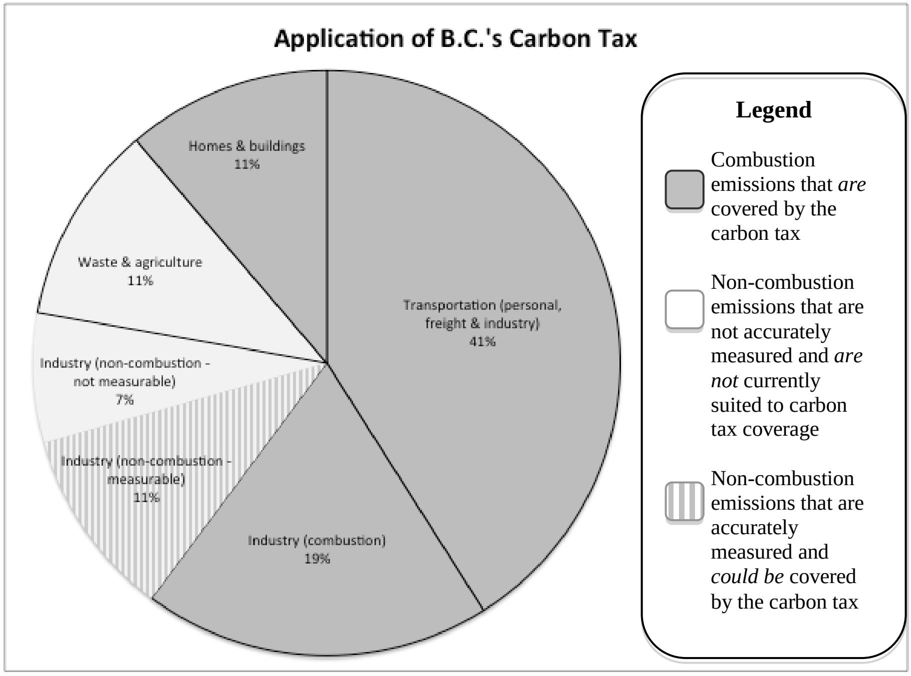

Figure 1. Application of BC's carbon tax

Table 1. Tax reductions paid for by BC's 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: BC Ministry of Finance, 2010 (Table 3, p. 106), 2011 (Table 2, p. 46) and 2012 (Table 2, p. 68)

[1] 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. 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 per cent to 55 per cent, compared to 62 per cent to 38 per cent forecast in the 2008 budget.

[2] At the time of research, it was still a possibility that BC would move ahead with California and Quebec on the same timeline.

[3] 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.

[4] Created in February 2007, the WCI cap-and-trade system was designed to reduce regional GHG emissions in many of the US states and Canadian provinces.

[5] Percentages derived from 2010 data in the National Inventory Report from Environment Canada.

[6] 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.