

FOR A LOW CARBON ECONOMY



## Carbon Pricing and Fairness<sup>1</sup>

### Key Messages

- A carbon pricing policy, in the form of a carbon tax or emissions trading system (ETS), is a critical tool for transitioning Canada to a low-carbon economy. However, a key concern for policy-makers is how to manage the distribution of costs at the sectoral, regional and household levels. Absent any mitigation policies, carbon taxes and emissions trading schemes are inherently regressive, meaning that they disproportionately impact households with lower incomes.
- Both carbon taxes and emissions trading systems have the potential to be designed fairly; but at the same time, each instrument also has features that may increase its potential to impose disproportionate burdens upon vulnerable groups. Policy-makers must carefully design policies with fairness in mind so that they do not exacerbate existing inequality stemming from broader social disadvantages such as race, socio-economic status, and community remoteness.
- At the household level, a key concern for policy-makers is fairness. While fairness is a broad term that can encompass many objectives, it clearly requires that a carbon pricing policy not place a disproportionate burden on low-income individuals and communities. Low-income individuals are more vulnerable to the physical impacts of climate change, though they have a substantially lower carbon footprint than those with higher incomes. They must not bear a disproportionately greater share of the costs of a carbon pricing policy.
- The greatest determinant of the fairness of a carbon pricing policy (which is designed to raise the prices of carbon-intensive goods and services) is the choice of how revenues are spent.

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## The issue

The fairness of a carbon pricing policy is usually evaluated by assessing its impact on household income. While such information is essential to designing fair policies, consideration of additional factors, such as income at the individual level, socio-economic status, culture, gender, race, region or age, allows for the fairest policy design. This Policy Brief creates a framework for analyzing the fairness of a carbon pricing policy, and uses the British Columbia carbon tax as an example of its application.

## The Knowledge Base

Carbon pricing instruments are a key component of a greenhouse gas (GHG) emission reduction strategy due to their potential for stimulating transformative structural changes in the energy economy. They are often favoured as the most politically viable policy options, as compared to direct or “command-and-control” regulation, because of their flexibility and resulting economic efficiency.

There are many considerations involved in selecting and designing a carbon pricing policy, such as the relative costs of different options and their potential effectiveness.<sup>2</sup> One of the key considerations that influence the political acceptability of a carbon policy is its perceived fairness (i.e. how its costs will be allocated). To address the regressivity of a carbon price, policy-makers have many policy options, including offering rebates, credits or lump-sum payments to low-income households.

This section briefly surveys key concepts in climate justice and the distributional impacts of carbon pricing policies relevant to fairness in carbon pricing policies, and then offers a comparative framework for evaluating the fairness of cap-and-trade versus carbon taxes. There are other streams of research that are relevant to fairness at a broader level (i.e. not directly related to carbon pricing), including discussions of equity in the context of overall fiscal or tax policy<sup>3</sup> and discussions of allocating costs of environmental policy<sup>4</sup>, which are not covered in this Brief.

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2 National Round Table on the Environment and the Economy, *Getting to 2050: Canada's Transition to a Low-emission Future: Advice for Long-term Reductions of Greenhouse Gases and Air Pollutants* (Ottawa: NRTEE, 2007), online: NRTEE <<http://www.nrtee-trnee.com/eng/publications/getting-to-2050/Getting-to-2050-low-res.pdf>>; Dr. Christopher Bataille et al., *Final Report: Exploration of Two Canadian Greenhouse Gas Emissions Targets: 25% below 1990 and 20% Below 2006 Levels by 2020* (Vancouver: David Suzuki Foundation and Pembina Institute, 2009), online: Pembina <<http://pubs.pembina.org/reports/mk-jaccard-gov-and-engo-climate-targets-report-oct.pdf>>.

3 See for e.g., David G. Duff, “Tax Fairness and the Tax Mix” (Colloquium on Tax Policy and Public Finance, delivered at the New York University School of Law, 12 March 2009) [unpublished].

4 Ysé Serret and Nick Johnstone, eds., *The Distributional Effects of Environmental Policy* (Northampton, Massachusetts: Edward Elgar, 2006); Lawrence H. Goulder and Ian W. H. Parry, “Instrument Choice in Environmental Policy” (2008) 2:2 *Review of Environmental Economics and Policy* 152; Don Fullerton, “A Framework to Compare Environmental Policies” (2001) 68:2 *Southern Economic Journal* 224; Richard J. Lazarus, “Pursuing Environmental Justice: The Distributional Effects of Environmental Protection” (1993) 87:3 *Nw. U. L. Rev.* 787.

## Climate Justice (including Equity or Fairness Principles):

Climate justice issues are centered largely on questions of responsibility for past GHG emissions and accountability for future emissions, often in the context of international climate change negotiations. Different researchers have proposed principles of fairness or equity related to burden-sharing for GHG emissions reductions<sup>5,6,7</sup> which may be synthesized as follows:

### Causal responsibility/Polluter pays:

This principle suggests that those who are responsible for creating the emissions should pay for their abatement or regulation. In other words, those who emit more should be regulated or pay more. This principle can be applied at different scales, including by country, industry or economic sector, region or at the individual level. In Canada, low-income groups, due to stagnant or declining incomes, have not been responsible for Canada's 25% increase in emissions since 1990.<sup>8</sup> Given the carbon emissions resulting from excessive consumption of non-necessity and luxury items, another option would be to create an additional tax specifically on this type of good, as part of a larger tax reform package.

### Ability to pay:

An "ability to pay" principle suggests that wealthier countries, regions or individuals should pay more for emissions abatement based on relative wealth and economic status. Concomitantly, those with less wealth or lower incomes should bear proportionately less responsibility for emissions abatement.<sup>9</sup>

### Protection of the most vulnerable /Equal burden sharing:

Regions, economic actors and individuals face different risks, vulnerabilities and costs of adjustment. This principle suggests that resources should be transferred to those that bear the greatest risks from climate change impacts, and climate policies should not leave the least well-off in worse shape. Specific measures may be required to ensure that the burden of adjusting to abatement policies is not disproportionately borne by particularly vulnerable individuals or groups, taking into account their contribution to emissions.

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5 M. Carzola and M. Toman, "International Equity and Climate Change Policy" in M. Toman, ed., *Climate Change Economics and Policy: An RFF Anthology* (Washington, D.C.: RFF Press, 2001) 235.

6 S. Klinsky and H. Dowlatabi, "Conceptions of Justice in Climate Policy" (2009) 9 *Climate Policy* 88.

7 Jotham Peters et al., *Taxing Emissions, Not Income: How to Moderate the Regional Impact of Federal Environmental Policy* (2010) No. 314 C.D. Howe Institute Commentary: Economic Growth and Innovation, online: C.D. Howe Institute <[http://www.cdhowe.org/pdf/Commentary\\_314.pdf](http://www.cdhowe.org/pdf/Commentary_314.pdf)>.

8 L. Osberg, "Have most North Americans already met their Kyoto Obligations? Trends in the CO<sub>2</sub> content of Consumption and the role of Income Inequality" (2008). Working Paper. Dalhousie University. Available at: <http://economics.dal.ca/Files/kyoto.pdf>.

9 See Albert Mumma and David Hodas, "Designing a Global Post-Kyoto Climate Change Protocol that Advances Human Development" (2008) *The Georgetown Int'l. Envtl. Law Review* 619 and Peter Singer, "A Fair Deal on Climate Change" *Carnegie Council Policy Innovations for a Fairer Globalization* (26 June 2007), online: Carnegie Council [http://www.policyinnovations.org/ideas/commentary/data/per\\_capita\\_emissions](http://www.policyinnovations.org/ideas/commentary/data/per_capita_emissions). Singer argues that the fairest way to cut global greenhouse gas emissions is to give each person on earth an equal share of the atmosphere's capacity to absorb our greenhouse gas emissions, regardless of who produces it.

### Procedural justice:

All stakeholders, especially those who will be adversely affected by proposed policies, should have a meaningful opportunity to contribute to decision-making.

### Analysis of Distributional Impact and Case Studies

Extensive research has been undertaken analyzing the distributional impacts of carbon taxes and emissions trading policies,<sup>10</sup> including a number of empirical analyses of the distributional impacts of specific instruments, most commonly carbon taxes.<sup>11</sup> Most of these analyses show that policies that put a price on carbon are regressive, since the direct and indirect costs of the policies represent a larger share of income and expenditures for low-income groups.

There are also a handful of case studies that attempt to consider the allocation or distribution issues taking into account not only income impacts, but also broader socio-economic, cultural and regional factors.<sup>12,13</sup> The main findings are summarized below.

### Regressive (income) Impacts

Absent government intervention, carbon pricing policies are regressive.<sup>14</sup> This conclusion is not surprising given that carbon pricing policies lead to higher prices for energy and other necessities, such as food. For example, at its initial rate of \$10 per tonne of carbon dioxide equivalent (CO<sub>2</sub>e) and absent any compensating policies, the British Columbia (B.C.) Carbon Tax was estimated by the Canadian Centre for Policy Alternatives to increase costs by 0.7% of income for families in the lowest income quintile, versus 0.3% of income for families in the highest income quintile.<sup>15</sup> The extent of an instrument's regressivity depends upon a variety of design factors for each instrument, such as the rate and scope of the measures.<sup>16</sup>

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- 10 See for e.g., Nic Rivers, "Distributional Impacts of Climate Change Policy in Canada" Working Paper (January 2011); Simon Dresner and Paul Ekins, "The Distributional Impacts of Economic Instruments to Limit Greenhouse Gas Emissions from Transport", PSI Research Discussion Paper 19 (London: Policy Studies Institute, 2004); David Anthoff and Richard S.J. Tol, "On International Equity Weights and National Decision-Making on Climate Change", Working paper FNU-127 (Hamburg: Hamburg University and Centre for Marine and Atmospheric Science, Research Unit Sustainability and Global Change, 2007); Amy C. Christian, "Designing a Carbon Tax: The Introduction of the Carbon-Burned Tax (CBT)" (1991-1992) 10 *UCLA J. Envtl. L. & Pol'y* 221; Mark Brenner, Matthew Riddle, and James K. Boyce, "A Chinese Sky Trust? Distributional Impacts of Carbon Charges and Revenue Recycling in China" (2007) 35:3 *Energy Policy* 1771; K. Hamilton and G. Cameron, "Simulating the Distributional Effects of a Canadian Carbon Tax" (1994) XX:4 *Canadian Public Policy – Analyse de Politiques* 385; Stefan Speck, "Energy and Carbon Taxes and Their Distributional Implications" (1999) 27:11 *Energy Policy* 659; Henrik Klinge Jacobsen, Katja Birr-Pedersen, and Mette Weir, "Distributional Implications of Environmental Taxation in Denmark" (2005) 24:4 *Fiscal Studies* 477; Sarah E. West & Robertson C. Williams III, "Estimates from a Consumer Demand System: Implications for the Incidence of Environmental Taxes" (2004) 47 *Journal of Environmental Economics and Management* 535 at 535, concluding that "[m]ost studies suggest that environmental taxes tend to be at least mildly regressive, making such taxes less attractive options for policy"; Shi-Ling Hsu, "Carbon Tax Heuristics and Politics: The Case of the Gasoline Tax" (2008) SSRN, online: SSRN <<http://ssrn.com/abstract=1121039>>.
- 11 Margaret Walls and Jean Hanson, "Distributional Aspects of an Environmental Tax Shift: The Case of Motor Vehicle Emissions Taxes" (1999) 52:1 *National Tax Journal* 53; Mette Wier, "Are CO<sub>2</sub> Taxes Regressive? Evidence from the Danish Experience" (2005) 52 *Ecological Economics* 239.
- 12 See for e.g., see Nathalie J. Chalifour, "A Feminist Perspective on Carbon Taxes" (2010) 22: 1 *C.J.W.L.* 169; Karen Bubna-Litic, "The Impacts of Carbon Pricing on Indigenous Communities: A Comparison of New Zealand and Australia" in L.H. Lye et al., eds., *Critical Issues in Environmental Taxation* (New York: Oxford UP, 2009) 349; Joy Clancy and Ulrike Röhr, "Gender and Energy: Is There a Northern Perspective?" (2003) 7(3) *Energy for Sustainable Development*
- 13 See Karen Bubna-Litic and Nathalie J. Chalifour, "Are Climate Change Policies Fair to Vulnerable Communities? The Impact of British Columbia's Carbon Tax and Australia's Proposed Emission Trading Scheme on Indigenous Communities" (forthcoming).
- 14 Gilbert E. Metcalf and David Weisbach, "The Design of a Carbon Tax" (2009) 33 *Harv. Envtl. L. Rev.* 499; S. Stoft, "Revenues from Carbon Pricing: Why Their Use Is, in Essence, Funded by a Capitation Tax" (2009) SSRN, online: SSRN <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1317507](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1317507)>. However, note Shi-Ling Hsu and Robin Elliot, "Regulating Greenhouse Gases in Canada: Constitutional and Policy Dimensions" (2009) 54 *McGill L.J.* 463, which argues that to conclude that carbon taxes are regressive based on selective anecdotes is too simplistic. The authors question whether regressivity should be assessed based on lifetime income or consumption versus a snapshot in time, and whether methodologies are sufficiently complex (for instance, taking into account price elasticity of impacted goods). *Ibid.* at 510-511.
- 15 Marc Lee and Toby Sanger, *Is B.C.'s Carbon Tax Fair? An Impact Analysis for Different Income Levels* (Vancouver: CCPA, 2008), online: CCPA <[http://www.policyalternatives.ca/documents/BC\\_Office\\_Pubs/bc\\_2008/ccpa\\_bc\\_carbontaxfairness.pdf](http://www.policyalternatives.ca/documents/BC_Office_Pubs/bc_2008/ccpa_bc_carbontaxfairness.pdf)>.
- 16 See Kevin A. Hassett et al., "The Incidence of a U.S. Carbon Tax: A Lifetime and Regional Analysis", Working Paper No. 14241 (Cambridge, Massachusetts: National Bureau of Economic Research, 2007), online: National Bureau of Economic Research <<http://www.nber.org/papers/w13554.pdf>> at 14. See also Shi-Ling Hsu, "Carbon Tax Heuristics and Politics: The Case of the Gasoline Tax" (2008) SSRN, online: SSRN <<http://ssrn.com/abstract=1121039>>.

### Additional Impacts

The distribution of costs based on income level is a very important question with respect to fairness. However, there are additional factors which are often not considered in evaluations of distributional impacts and in designing mitigating strategies. Factors such as location, socio-economic status (beyond income), culture, age, gender and race may influence the distribution of costs. It is important to consider these additional factors in measuring distributional impacts and in designing appropriate offsetting policies.

For instance, women's greater role as primary caregivers for children and elderly parents often allows less flexibility to choose lower-carbon methods of transportation such as car-pooling or public transit. Indigenous communities, in addition to their lower average incomes, may be more vulnerable to the regressive impacts of a carbon price due to factors such as remote living conditions, poor quality housing and subsistence lifestyle.<sup>17</sup> Remote communities already face many challenges that will likely be exacerbated by climate change and the policies enacted to mitigate it. For example, they often pay higher costs on home repairs, food and other items, often have difficulty accessing emergency services and have a higher reliance on private transport to access health, food and education services. Climate change will raise the risk of damage to buildings and infrastructure, and a carbon price will raise the cost of energy, which they are highly dependent on. While related to income levels, these vulnerabilities can be targeted through insightful mitigation strategies that take these conditions into account.

### Revenue Use

Although carbon pricing policies have distributional impacts (measured by income and additional factors), there are many policy options available to offset these impacts, which can ideally be funded by revenue generated by the policy.

One of the defining features of a carbon tax is its generation of a relatively transparent and predictable stream of revenue. This allows governments to make clear revenue use objectives and plans, especially towards reducing the tax's regressivity. The idea of tax-shifting suggests carbon tax revenue should be allocated to reducing distortionary taxes, such as those on income, as the ensuing economic efficiency yields a double dividend.<sup>18</sup> However, this option tends to exacerbate existing inequality, because the decrease in income taxes does not offset the rise in effective consumption tax (due to the effects of the carbon tax) for low-income groups. Access to revenue may also be considered, as low-income individuals may not pay income tax, so cannot take advantage of tax cuts.

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17 See Bubna-Litic and Chalifour, *supra* note 13.

18 Richard D. Morgenstern, "Environmental Taxes: Is There a Double Dividend?" (1996) 38:3 *Environment* 16; Don Fullerton and Gilbert E. Metcalfe, "Environmental Taxes and the Double Dividend Hypothesis – Did you Really Expect Something for Nothing?" (1998) 73:1 *Chicago-Kent Law Review* 221.

In the case of emissions trading, if allowances are auctioned, then the permits generate revenue which could be used to fund measures to offset regressivity. If all of the allowances are grandfathered, then the initial allocation produces no government revenue, which can represent “a de facto wealth transfer to large polluters.”<sup>19</sup> In many emissions trading schemes, only some permits are grandfathered (often the initial ones), with the remainder being auctioned. Emissions trading systems are more vulnerable to manipulation by stakeholders looking to gain financially (i.e. companies and sectors seeking free permits).

In terms of how revenues should be allocated, policy-makers aiming to create fair policies can opt to dedicate some of the revenue from carbon pricing policies to targeted mitigation strategies that address specific vulnerabilities. For example, some revenues can be allocated towards supporting investment by lower-income groups in solutions that will help ease their transition to low-carbon consumption, such as home retrofits and more efficient vehicles and other technology. Of course, these policies must take into account the characteristics of the user group. For example, low-income families may rent, rather than own homes, and may rely upon public transit rather than own a vehicle.

In addition to ensuring a thorough investigation of distributional impacts, policy-makers may wish to undertake meaningful consultations with communities living in disadvantaged circumstances. Developing a rich understanding of issues relevant to particular communities would allow for policies targeted at specific vulnerabilities. Mitigation strategies can be designed to target not only regressivity writ large, but additional programs can be designed to reach individuals and households that are facing additional vulnerabilities due to factors such as remote living.

### **Procedural Fairness**

Procedural fairness relates to the negotiating power of stakeholders involved in the policy process, as well as whether there is adequate representation in the selection, design and implementation of a carbon pricing policy. Large, well-financed companies and industry groups are often better resourced than groups such as Indigenous communities, to lobby for favourable treatment, and as such are often overrepresented in the policy development process. Insufficient consultation with marginalized groups is further complicated by their under-representation in decision-making fora and government.

There are features of a carbon tax or emissions trading system (ETS) that enable (or hinder) the extent to which the public can participate in the selection and design of the policy. The flexibility of initial design in an ETS creates an opportunity for engagement, which is less

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19 Matthew Hennessey, “Cap and Trade vs. Carbon Tax” in Policy Innovations for a Fairer Globalization (19 November 2007), online: Carnegie Council <[http://www.policyinnovations.org/ideas/briefings/data/cap\\_tax](http://www.policyinnovations.org/ideas/briefings/data/cap_tax)>.

likely in the design of a carbon tax. Given that generally ETS mechanisms require the development of institutional and administrative structures, as well as elaborate enabling legislation, there may be greater opportunity to create mechanisms to promote fair representation of different perspectives in the process. In contrast, a carbon tax can be implemented in the context of existing institutional and administrative structures, with modest legislative adjustments. As such, there is less flexibility and opportunity to enhance fairness through inclusion of different cultural perspectives in the existing structures.

## An Analytical Framework for Measuring Fairness

Below is a framework of analysis to facilitate a comparison of carbon tax and ETS policies for their fairness outcomes.<sup>20</sup> In the following section, the framework is used to examine the impact of British Columbia (B.C.)'s Carbon Tax on Aboriginal communities.

### 1. Design

The basic design elements describe scope, rate and revenue-use policies.

- a) Scope – who and what is subject to the tax or trading system
- b) Rates – tax or cost of initial permits
- c) Revenue use

### 2. Cost Implications

What are the direct and indirect costs of the measure, and how are these costs distributed? What factors beyond income levels might impact on a person's ability to deal with increased costs?

- a) Direct and indirect costs
- b) Regressive impacts (i.e. distributional impacts measured by income)
- c) Socio-economic/cultural challenges of adapting to increased costs (i.e. distributional impacts measured by non-income factors)

### 3. Impact of Related Policies

This element examines the accompanying policies for revenue use (as opposed to evaluating the broader climate change plans in which the carbon tax or emissions trading systems are embedded) and any exemptions or mitigation policies in addition to revenue use (if any) integral to a carbon pricing policy.

- a) Policies regarding use of revenue (if any)
- b) Exemptions and mitigation policies outside of revenue use (if any)

### 4. Impact of Outcomes: effectiveness in reducing GHG emissions

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<sup>20</sup> See Karen Bubna-Litic and Nathalie J. Chalifour, "Are Climate Change Policies Fair to Vulnerable Communities? The Impact of British Columbia's Carbon Tax and Australia's Proposed Emission Trading Scheme on Indigenous Communities" (forthcoming).

In the following section, the framework is used to examine the impact of British Columbia (B.C.)'s Carbon Tax on Aboriginal communities.

This final element encourages policymakers to consider how a legislative instrument will impact upon climate change itself. Because marginalized groups (such as indigenous communities) are particularly vulnerable to the impacts of climate change, it is relevant to examine the effectiveness of the policy in question to fulfill its purpose of climate change mitigation since a failure to reduce GHG emissions will impact differently upon individuals based on their relative vulnerability.

## British Columbia's Carbon Tax

### 1. Design

In 2008 the B.C. Carbon Tax came into force, implemented as part of the province's climate change strategy, which aims to reduce the province's GHG emissions by 33% below 2007 levels by 2020.<sup>21</sup>

#### a) Scope

This consumption tax applies to the purchase or import of fuels, including gasoline, diesel, natural gas and coal.<sup>22</sup> It applies to virtually all GHG emissions from residential, commercial and industrial sources burning fossil fuel in the province, which accounts for about 73% of the province's GHG emissions. The carbon tax does not cover GHG emissions from non-combustion sources, such as emissions from industrial processes in cement and aluminium production and landfill methane emissions.<sup>23</sup>

#### b) Rate

The rate of the tax is established for five years, starting at \$10 per tonne of CO<sub>2</sub>e (2.4 cents per litre for gasoline) on July 1, 2008 and rising by \$5 per year to achieve \$30 per tonne of CO<sub>2</sub>e (7.23 cents per litre) by July 1, 2012.<sup>24</sup>

#### c) Policies for Revenue Use

The Carbon Tax Act requires that revenue generated by the tax be used to reduce other taxes and to fund a tax credit system, thus embodying a revenue neutrality principle.<sup>25</sup> Specifically, the revenue is being used to reduce the small business corporate income tax rate, the general

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21 See British Columbia, Climate Action Plan (2008), online: <[http://www.livesmartbc.ca/attachments/climateaction\\_plan\\_web.pdf](http://www.livesmartbc.ca/attachments/climateaction_plan_web.pdf)>. The plan includes a variety of initiatives, including participating in the Western Climate Initiative, a regional cap and trade program, and investments in such things as public transit. Ibid. These GHG emissions targets are embodied in the Greenhouse Gas Reduction Targets Act, S.B.C. 2007, C. 42.

22 Carbon Tax Act, S.B.C. 2008, c. 40. For a thorough overview of the measure, see David G. Duff, "The Reality of Carbon Taxes in the 21st Century: Carbon Taxation in British Columbia" (2008) 10 Vt.J. Envtl. L. 87.

23 Marc Lee and Toby Sanger, Is B.C.'s Carbon Tax Fair? An Impact Analysis for Different Income Levels (Vancouver: CCPA, 2008), online: CCPA <[http://www.policyalternatives.ca/documents/BC\\_Office\\_Pubs/bc\\_2008/ccpa\\_bc\\_carbontaxfairness.pdf](http://www.policyalternatives.ca/documents/BC_Office_Pubs/bc_2008/ccpa_bc_carbontaxfairness.pdf)> at 9.

24 Carbon Tax Act, S.B.C. 2008, c. 40, Schedule II. The Act creates an administrative system for the collection of taxes that mirrors that of the province's existing fuel taxes. (Ibid., ss. 3, 17, 13(2)). Gasoline prices in B.C. have varied by roughly 70 cents over the last 3 years. The distributional impacts of these price changes are, of course, greater than those for the much smaller changes attributable to the carbon tax. We raise this not to undermine the importance of doing a fairness analysis of carbon pricing instruments, but to highlight the need to consider fairness at all times. For instance, the fluctuating gas prices due to the market create hardships for disadvantaged groups such that governments should ensure a strong policy base to protect these groups against the impacts of these market conditions.

25 Since the implementation of the British Columbia Carbon Tax on July 1, 2008, the provincial government reports the tax has generated \$848 million in revenue. For the 2009-2010 fiscal year, the Budget reports a revised forecast amount of \$542 million in revenue derived from the British Columbia Carbon Tax. Revenue from the 2008-2009 fiscal year was \$306 million. The Budget also projects that the 2010-2011 fiscal year will produce \$727 million in carbon tax revenue. 2011-2012 fiscal year will generate \$928 million and 2012-2013 fiscal year is estimated to return \$1,137 million. British Columbia, Ministry of Finance, Budget and Fiscal Plan 2010/11 – 2012-13 (2 March 2010), online: British Columbia <[http://www.bcbudget.gov.bc.ca/2010/bfp/2010\\_Budget\\_Fiscal\\_Plan.pdf#tax](http://www.bcbudget.gov.bc.ca/2010/bfp/2010_Budget_Fiscal_Plan.pdf#tax)> at 105, 106. Ministry of Finance, "Myths and Facts about the Carbon Tax", online: British Columbia <<http://www.fin.gov.bc.ca/tbs/tp/climate/A6.htm>>.



corporate income tax rate, and the two lowest provincial personal income tax rates by 5%.<sup>26</sup>

The carbon tax's revenue is also used to fund a low-income tax credit.<sup>27</sup> The "Low-Income Climate Action Tax Credit" provided \$100 for adults and \$30 for children (\$100 for the first child in single-parent families) in the tax's first year, phased-out above incomes of \$30,000 for individuals and \$35,000 for families. However, when the carbon tax increased by 50% in 2009-10, the credit only increased by 5% bringing it to \$105 per adult and \$31.50 per child. The 2009-2010 Budget reports that the Low Income Climate Action Tax Credit will increase to \$115.50 per adult, and \$34.50 for each child, effective July 1, 2011.<sup>28</sup> This lack of parallel increase between the amount of the tax and the low-income tax credit has been criticized as being unfair to low income individuals.<sup>29</sup>

## 2. Cost Implications

### a) Direct and Indirect Costs

The Canadian Centre for Policy Alternatives (CCPA) conducted a study in 2008 that estimated the distributional impact of the B.C. Carbon tax. The study estimated the impact of the tax on direct consumption of fossil fuels as well as indirect consumption (fossil fuels in other goods and services purchased).<sup>30</sup> At the rate of \$10 per tonne of CO<sub>2</sub>e, the tax was estimated to raise direct and indirect fuel costs by \$253 per household annually. When the carbon tax rate rises to \$30 per tonne of CO<sub>2</sub>e in 2012, fuel costs are estimated to rise by \$760 per household annually.<sup>31</sup>

### b) Regressive Impacts

The CCPA study confirmed that the carbon tax alone (that is, not taking into account the impact of any mitigating policies) is regressive. Specifically, the authors estimated that, while the increased costs in the tax's first year absorb 0.4% of average income for all households, the carbon tax would represent 0.7% of income for the lowest quintile of households versus only 0.3% for the highest quintile of households.<sup>32</sup>

The average income for Aboriginal Canadians is lower than for non-Aboriginals. Nationally, Aboriginal people had a median income of \$18,962 in 2006, as compared to a median

The carbon tax alone (that is, not taking into account the impact of any mitigating policies) is regressive.

26 See British Columbia, "Carbon Tax", online: British Columbia <[http://www.gov.bc.ca/yourbc/carbon\\_tax/ct\\_planet.html?src=/planet/ct\\_planet.html](http://www.gov.bc.ca/yourbc/carbon_tax/ct_planet.html?src=/planet/ct_planet.html)>.

27 This credit was paid in June 2008. The government paid a one-time climate action dividend payment of \$100 to every resident of the province in the first year of the tax, but this was not financed through carbon tax revenues.

28 British Columbia, Ministry of Finance, Budget and Fiscal Plan 2010/11 – 2012-13 (2 March 2010), online: British Columbia <[http://www.bcbudget.gov.bc.ca/2010/bfp/2010\\_Budget\\_Fiscal\\_Plan.pdf#tax](http://www.bcbudget.gov.bc.ca/2010/bfp/2010_Budget_Fiscal_Plan.pdf#tax)> at 106.

29 Marc Lee and Toby Sanger, Is B.C.'s Carbon Tax Fair? An Impact Analysis for Different Income Levels (Vancouver: CCPA, 2008), online: CCPA <[http://www.policyalternatives.ca/documents/BC\\_Office\\_Pubs/bc\\_2008/ccpa\\_bc\\_carbontaxfairness.pdf](http://www.policyalternatives.ca/documents/BC_Office_Pubs/bc_2008/ccpa_bc_carbontaxfairness.pdf)>.

30 Ibid. at 5.

31 Ibid. at 6.

32 Ibid. at 6.

income of \$27,097 in the non-Aboriginal population.<sup>33</sup> This trend of lower incomes for Aboriginal people is applicable in B.C. as well.<sup>34</sup> Because they are disproportionately represented in lower income categories, this means that Aboriginal people in B.C. bear a greater proportion of a carbon tax's regressivity, absent appropriate mitigation policies. This disproportionate representation could be considered a form of additional or "double burden" regressivity.

### *c) Socio-Economic/Cultural Challenges of Adapting to Increased Costs*

#### *i. Remoteness*

Remoteness is a factor for the approximately 50% of Aboriginal peoples that live on reserves or within rural settlements off-reserve in B.C. The question of remoteness is relevant when considering a community's dependence on energy-intensive goods and services and transportation. Aboriginal communities living in remote areas are dependent upon private transportation options to access services such as schools, medical care and shopping, which are often located long distances away. Remote communities have a lower ability to substitute less carbon-intensive goods and services, due to the limited selection. As energy costs rise, the impact upon remotely located communities will be greater than those facing shorter distances and lower costs to access basic necessities.

In 2007, British Columbians spent approximately 13% of their gross income on transportation, or an average of \$9,896 per household.<sup>35</sup> Rural households tend to spend more on transportation than their urban counterparts due to factors such as greater travelling distances and higher reliance on private modes of transport.

Aboriginal communities living in remote areas of B.C. depend upon traditional means of subsistence, including hunting and fishing. Increases in the costs of food could put more pressure on hunting and fishing for food, which, in combination with potential climate change impacts, could reduce the availability and reliability of the natural resources upon which they depend.

Another factor to consider is that remote tourism could decrease, as aviation and boating costs increase. In 2003, 31% of Aboriginal tourism products were adventure tourism products such as guided tours, river rafting, golf courses, hiking trails and horseback

Aboriginal people in B.C. bear a greater proportion of a carbon tax's regressivity, absent appropriate mitigation policies.

33 Daniel Wilson and David Macdonald, *The Income Gap between Aboriginals and the Rest of Canada* (Ottawa: CCPA, 2010), online: CCPA <<http://www.policyalternatives.ca/sites/default/files/uploads/publications/reports/docs/Aboriginal%20Income%20Gap.pdf>> at 3.

34 BC Stats, "Earnings Profile of Aboriginal Peoples – 2006 British Columbia in BC Stats", online: British Columbia <<http://www.bcstats.gov.bc.ca/data/cen01/abor/aborbc.pdf>> at 14.

35 Statistics Canada, "Income, Pensions, Spending and Wealth" in *Canada Year Book 2009* (Ottawa: Ministry of Industry, 2009), online: Statistics Canada <<http://www.statcan.gc.ca/pub/11-402-x/2009000/pdf/income-revenu-eng.pdf>> 215 at 230.

riding.<sup>36</sup> To the extent that remote Aboriginal communities in British Columbia rely upon this form of tourism for income, rising energy prices could have a disproportionate impact.

The Haida Gwaii area, as an example of a remote British Columbia Aboriginal region, and its First Nation, has been studied for its vulnerability, adaptive capacity and resiliency against climate change. The communities of Haida Gwaii are highly dependent on natural resource employment, an industry highly susceptible to climate change impacts. In 2003, the largest employment sector was natural resources (29% of the population), followed by the service sector which was highly dependent on tourism, at 7%. The challenge of seasonal employment in this region will certainly be further aggravated by climate change.<sup>37</sup> In light of Haida Gwaii's reliance on ecological and cultural tourism, increased prices for fossil fuels will constrain revenues from tourism.

## ii. Housing

The type and quality of one's housing can influence how carbon pricing policies will impact upon a given household. For instance, people living in poor quality housing are more vulnerable to damage from extreme weather events. Aboriginal peoples in B.C. are more likely than the non-Indigenous population to live in housing requiring both major and minor repairs. According to the 2006 census, Aboriginal people across all metropolitan areas were two to three times more likely than the non-Aboriginal population to live in dwellings needing major repairs. Census statistics for B.C. document 32.4% of on-reserve Aboriginal housing requiring minor repairs, and 36.5% requiring major repairs.<sup>38</sup> Off-reserve, 32.3% of Aboriginal housing required minor repairs, and 13.5% requiring major repairs. For non-Aboriginal households in BC, 24.5% required minor repairs and 6.8% were in need of major repairs.<sup>39</sup>

Another factor to consider is that of home ownership. Income levels will certainly influence the ability of home-owners to make the necessary changes. However, whether one is a home-owner or a renter will also influence the ability of the person to make the changes. Further, climate change mitigation policies that are directed at refurbishing buildings to improve energy efficiency, or incentives for installing better insulation or purchasing energy efficient appliances, may simply not be accessible to tenants, who are most often subject to the decision-making of their landlords with respect to property improvements.

The type and quality of one's housing can influence how carbon pricing policies will impact upon a given household.

36 Aboriginal Tourism Association of British Columbia, Aboriginal Cultural Tourism Blueprint Strategy for British Columbia (November 2005), online: ATBC <[http://www.aboriginalbc.com/Corporate/Info/Blueprint\\_\\_Strategy\\_\\_for\\_\\_BC](http://www.aboriginalbc.com/Corporate/Info/Blueprint__Strategy__for__BC)> at 3, 6.

37 Ibid. at 90-91.

38 Statistics Canada, Aboriginal Peoples in Canada in 2006: Inuit, Métis and First Nations, 2006 Census (Ottawa: Minister of Industry, 2008), online: Statistics Canada <<http://www12.statcan.ca/census-recensement/2006/as-sa/97-558/pdf/97-558-XIE2006001.pdf>> at 16.

39 BC Stats, "British Columbia Statistical Profile of Aboriginal Peoples 2006: Aboriginal Peoples Compared to the Non-Aboriginal Population with Emphasis on Labour Market and Post Secondary Issues" (2006), online: British Columbia <<http://www.bcstats.gov.bc.ca/data/cen01/abor/aborbc.pdf>> at 13.

According to the CMHC, 43% of Aboriginal people in B.C. are renters.<sup>40</sup> This is a greater proportion of renters than in the non-Aboriginal population. The percentage of Canadians living in tenant-occupied dwellings was measured at 37.10%, as compared to 48.70% of the Aboriginal population, not including those Aboriginals living in band-owned housing. To the extent that these tenants are constrained in their ability to react to increased energy prices or access incentive programs, the policies may be unfair.

A final factor to consider in the context of housing is the issue of overcrowding. Overcrowding in homes can lead to a variety of health and safety problems. While the connection to climate change is not direct, the need for renovations or improvement of housing infrastructure to accommodate larger numbers depends upon financial resources and increased costs for home construction and maintenance could impede progress on addressing overcrowding problems. In a CCPA report on housing in Canada, it was found that both urban Aboriginal groups and Aboriginal groups on reserves live in overcrowded households.<sup>41</sup>

### *iii. Employment in impacted sectors*

The impacts of climate change will be felt throughout the B.C. economy. However, some sectors are more vulnerable to changes in climate and climate change mitigation policies. Research identified the following sectors as those that will incur the greatest impacts in B.C.: forestry, the energy sector, mining and smelting, agriculture, fisheries, transportation and tourism/recreation.<sup>42</sup>

While Aboriginal people work in all industries of the economy, they are more highly represented in certain sectors. For instance, they are two times more likely to be employed in the natural resources sector, and two times less likely to be employed in professional, scientific, technical, financial and insurance sectors, than non-Aboriginals.<sup>43</sup>

In the 10 provinces, 7% of off-reserve Aboriginals between the ages of 25 and 54 years were part of the natural resources labour force, as compared to an estimated 4% of the non-Aboriginal population in 2007.<sup>44</sup> A recent study released by Statistics Canada determined that Aboriginals off-reserve experienced a greater loss in employment from the economic

Research identified the following sectors as those that will incur the greatest impacts in B.C.: forestry, the energy sector, mining and smelting, agriculture, fisheries, transportation and tourism/recreation.

40 The Canadian Mortgage and Housing Corporation (CMHC) defines an Aboriginal household as "any household in which at least one spouse, common-law partner, or lone parent self-identified as Aboriginal, or at least 50 per cent of household members self-identified as Aboriginal. If any member of the family household identified as Indian (Status or Non-Status), Métis, or Inuit, then the household is classified accordingly." Canadian Mortgage and Housing Corporation, "Aboriginal Households in Canada, by Aboriginal Identity, Location and Tenure, Canada, Provinces and Territories, 2006" (2006), online: CMHC <[http://www.cmhc-schl.gc.ca/en/corp/about/cahoob/data/data\\_014.cfm](http://www.cmhc-schl.gc.ca/en/corp/about/cahoob/data/data_014.cfm)>.

41 Andrew Jackson, Home Truths: Why the Housing System Matters to All Canadians (Ottawa: CCPA, 2004) at 56

42 Nancy Olewiler, Climate Change: BC's Progress toward a Low-Carbon Economy (Business Council of British Columbia Outlook 2020 Project, 2009), online: Business Council of British Columbia <[http://www.bcbc.com/Documents/2020\\_200910\\_Olewiler.pdf](http://www.bcbc.com/Documents/2020_200910_Olewiler.pdf)> at 3.

43 Dominique Pérusse, "Aboriginal People Living Off-reserve and the Labour Market: Estimates from the Labour Force Survey, 2007" (Ottawa: Ministry of Industry, 2007), online: Statistics Canada <<http://www.statcan.gc.ca/pub/71-588-x/71-588-x2008001-eng.pdf>> at 13

44 Ibid. at 14. In the British Columbia natural resources sector, which includes forestry, wood, paper manufacturing as well as other primary industries (agriculture, fishing, trapping, and mining), on-reserve Aboriginals form 18% of the experienced labour force, while off-reserve Aboriginals form 10.8% of the natural resources labour force. In comparison, non-Aboriginals form 6.6 % of the experienced labour force in this sector. BC Stats, "British Columbia Statistical Profile of Aboriginal Peoples 2006: Aboriginal Peoples Compared to the Non-Aboriginal Population with Emphasis on Labour Market and Post Secondary Issues" (2006), online: British Columbia <<http://www.bcstats.gov.bc.ca/data/cen01/abor/aborbc.pdf>> at 13.

recession in comparison to the non-Aboriginal population. The Aboriginal employment rate dropped 3.2%, where non-Aboriginals experienced a drop of 1.9%. In the core age group of comparison for this study (25 to 54 years), British Columbia was found to have the greatest decline in employment rate, which fell by 5.6% to 65.1%.<sup>45</sup> The Métis in B.C. experienced the greatest drop in employment rate, 13.6%, resulting in the lowest employment rate of Métis in any province or region in Canada.<sup>46</sup> These statistics suggest that Aboriginal people may bear a disproportionate impact of employment losses in impacted sectors due to climate change (both its impacts and the impacts of policies, such as carbon pricing).

### 3. *Impact of Related Policies*

#### *a. Policies regarding use of revenue*

The CCPA study evaluated the impacts of the tax reductions that are part of the carbon tax policy and found them to be regressive. For instance, in 2010-11, the personal income tax cuts produce \$562 for the top 20% of earners versus \$5 for the bottom 20%.<sup>47</sup> In addition to their regressive impacts, these tax cuts are not equally accessible to Aboriginal versus non-Aboriginal people by the simple fact that indigenous people often do not earn enough income to pay income taxes or may be exempt from paying taxes. The corporate and income tax cuts disproportionately benefit non-Aboriginal people.

Revenue from the carbon tax was also used to create the Low Income Climate Action Tax Credit, which is targeted at individuals (rather than households) and is refundable. Making the credit refundable ensures the credit is available irrespective of income, thus bolstering the measure's fairness. In addition, the CCPA study shows that the credit creates a net positive benefit for low-income families in its first year, meaning that these families receive more in credits than they pay in tax.<sup>48</sup> Arguably, this overall net benefit compensates for the regressivity of the personal and corporate tax cuts. However, this progressivity is lost after the first year, as the credit is not scheduled to rise in line with the carbon tax rate. Taking into account the Low Income Tax Credit discussed above, the CCPA study showed that the policy package as a whole produces a regressive outcome in 2010-11, with a \$311 net benefit for the top 20% of households compared to \$47 net loss for bottom 20% of households.<sup>49</sup>

45 BC Stats, "British Columbia Statistical Profile of Aboriginal Peoples 2006: Aboriginal Peoples Compared to the Non-Aboriginal Population with Emphasis on Labour Market and Post Secondary Issues" (2006), online: British Columbia <<http://www.bcstats.gov.bc.ca/data/cen01/abor/aborbc.pdf>> at 13.

46 Ibid. at 14.

47 Ibid. at 13. The corporate tax cuts have a similarly regressive outcome, producing \$603 for the top quintile and \$28 for the bottom quintile.

48 Marc Lee and Toby Sanger, *Is B.C.'s Carbon Tax Fair? An Impact Analysis for Different Income Levels* (Vancouver: CCPA, 2008), online: CCPA <[http://www.policyalternatives.ca/documents/BC\\_Office\\_Pubs/bc\\_2008/ccpa\\_bc\\_carbontaxfairness.pdf](http://www.policyalternatives.ca/documents/BC_Office_Pubs/bc_2008/ccpa_bc_carbontaxfairness.pdf)> at 9.

49 Ibid.

### *b) Exemptions and mitigation policies outside of revenue use*

Policies that invest in job-training and promote transition strategies for these communities could help address disproportionate impacts. In fact, the B.C. Climate Action Plan includes an array of measures, some of which are undoubtedly positive for Aboriginal communities. For example, the Remote Community Clean Energy Program provides financial incentives for communities to help develop clean energy alternatives and efficiency solutions. A number of the projects funded through this initiative have benefited First Nations communities in B.C.<sup>50</sup>

## Implications for policy-makers:

1. Selecting and designing carbon taxes and emissions trading systems in a way that increases their fairness will enhance the political viability of current and future carbon pricing policies, and ensure that they are compatible with, and integrated into, broader sustainable development policy objectives.
2. Broadly defined objectives of fairness can be brought into instrument selection and design of carbon pricing policies to ensure that the costs of the policies are distributed among individuals in a way that reflects fairness principles such as the Ability to Pay and Protection for the Most Vulnerable. The changes required are often modest and would not need to detract from broader objectives of effectiveness or efficiency.
3. Policy-makers should consider how a carbon pricing policy will impact individuals and households based not just on household income level, but also on other factors such as income at the individual level, socio-economic status, culture, gender, race, region and age. Then they can ensure that mitigation strategies that offset these particular vulnerabilities are built into the policy's design.
4. Policy-makers can opt to dedicate some of the revenue from carbon pricing policies to offset distributional impacts, as well as investing in climate change mitigation. Mitigation strategies can be designed to ensure that vulnerable groups can access the relief. For instance, since tax cuts are often not practically accessible to those who do not file tax returns due to insufficient taxable income or exemptions, direct payments may be a more appropriate mechanism for offsetting distributional impacts. Since home improvement incentives are not accessible to renters, concomitant policies that are targeted to renters can be offered.

Selecting and designing carbon taxes and emissions trading systems in a way that increases their fairness will enhance the political viability of current and future carbon pricing policies.

<sup>50</sup> For example, funds have been directed at upgrading a local run-of-river hydro project in Klemtu, energy efficiency upgrades to residential and commercial buildings throughout Haida Gwaii/Queen Charlotte Islands and a new energy efficiency program for the Xwemalhkww Nation. See British Columbia, Climate Action Plan (2008) online: British Columbia <[http://www.livesmartbc.ca/attachments/climateaction\\_plan\\_web.pdf](http://www.livesmartbc.ca/attachments/climateaction_plan_web.pdf)> at 48.