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## Are Climate Change Policies Fair to Vulnerable Communities? The Impact of British Columbia's Carbon Tax and Australia's Carbon Pricing Policy on Indigenous Communities

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Karen Bubna-Litic\* and  
Nathalie J. Chalifour\*\*

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*This paper compares carbon pricing policies in British Columbia and Australia in order to identify differences between carbon taxes and emissions trading schemes (ETS) from a fairness perspective. We examine how taxes and trading systems impact indigenous communities in both jurisdictions. While the regressivity of carbon pricing is a critical part of any fairness assessment, we argue that socio-economic and cultural factors must also be taken into consideration. We discuss the importance of accompanying carbon pricing with policies that mitigate not only distributional impacts, but also additional impacts. These may be funded by the revenue generated by the policy or by other sources of government revenue. We argue in favour of devoting at least some portion of revenues generated by the instruments to climate change mitigation, versus tax cuts, since vulnerable communities are often disproportionately impacted by climate change. We conclude that carbon pricing policies have the potential to be designed in a way that is fair to indigenous communities. The devil is in the details. Both ETS and carbon taxes have cost implications for disadvantaged groups such as indigenous peoples, but they can both be designed in a way that compensates fairly for these impacts. Ultimately, it is a political choice.*

*Les auteures comparent les politiques d'établissements des prix du carbone en Colombie-Britannique et en Australie afin de déterminer, d'une perspective d'équité, les différences entre les taxes sur le carbone et les programmes d'échange de droits d'émission. Les auteures étudient les incidences des taxes et des programmes d'échange sur les collectivités autochtones en Colombie-Britannique et en Australie. Même si le caractère régressif de la tarification du carbone est un élément critique de toute évaluation du caractère équitable, les auteures avancent qu'il faut également prendre en considération les facteurs socio-économiques et culturels. Elles discutent de l'importance de jumeler la tarification du carbone à des politiques qui atténuent non seulement les impacts répartitifs, mais également les autres impacts. Ces politiques pourraient être financées par les recettes des politiques mêmes ou par d'autres sources de recettes publiques. Les auteures plaident pour que soit consacrée à ce financement une partie au moins des recettes provenant des instruments d'atténuation des effets du changement climatique, au lieu d'une réduction des impôts, puisque les collectivités vulnérables sont souvent celles qui souffrent le plus des incidences du changement climatique. Elles concluent qu'il est possible de donner aux politiques de tarification du carbone une orientation équitable envers les collectivités autochtones. Mais il faut porter une attention particulière aux détails : tant les programmes d'échange de droits d'émission que les taxes sur le carbone ont des conséquences financières pour les groupes défavorisés comme les peuples autochtones, mais il est possible de faire en sorte qu'ils offrent une indemnisation équitable pour ces impacts. Au bout du compte, le choix est un choix politique.*

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##### Introduction

One of the thorniest issues in the climate change debate is the tension between those countries and communities who are the most vulnerable to climate change<sup>1</sup> and those who bear the greatest responsibility for creating the problem.<sup>2</sup> Relatively less attention is devoted to considering how vulnerable populations within developed countries are impacted by

1. The poorest communities in developing countries form the most vulnerable group to the impacts of climate change. Stricken with the burden of poverty, their lack of education, and resources, both financial and informational, these communities are the least able to adapt to the effects of climate change. See Benjamin J Richardson et al, eds, *Climate Law and Developing Countries—Legal and Policy Challenges for the World Economy* (Williston, Vermont: Edward Elgar, 2009); ML Parry et al, eds, *Climate Change 2007—Impacts, Adaptation and Vulnerability: Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge UP, 2007), online: IPCC <[http://www.ipcc.ch/publications\\_and\\_data/ar4/wg2/en/contents.html](http://www.ipcc.ch/publications_and_data/ar4/wg2/en/contents.html)> [IPCC, *Impacts, Adaptation and Vulnerability*]. The Intergovernmental Panel on Climate Change (IPCC) has identified low-lying developing states and coastal settlements in developing countries, such as the mega-deltas of Asia and Africa, as the most vulnerable populations to the impacts of climate change. See Parry, *ibid* at “Summary for Policymakers.” The World Health Organisation (WHO) estimates that climate change has caused 140,000 deaths worldwide annually between 1970 and 2004. The major causes of death are malaria, malnutrition, diarrhoeal diseases, air pollution, and flooding. World Health Organization, *Fact Sheet: Climate Change and Health* (January 2010), online: WHO <<http://www.who.int/mediacentre/factsheets/fs266/en/index.html>>.

2. Most developing countries have a much smaller carbon footprint than developed countries. The 23 richest countries, which are home to only 14% of the world’s population, produce 40% of the world’s total emissions. This inequity has prompted experts working on climate change to call this phenomenon the world’s largest regressive tax, with the poorest paying for the behaviour of the rich. World Resources Institute, “Climate Analysis Indicators Tool 7.0” (2010), online: WRI <<http://cait.wri.org/>>.

climate change, including policies aimed at its mitigation.<sup>3</sup> When nations decide to implement carbon pricing policies to reduce greenhouse gas (GHG) emissions, how are the impacts of these policies distributed? Are they creating undue hardship for vulnerable communities? Are they fair policies?

We attempt to shed light on these questions by examining some of the most vulnerable communities<sup>4</sup> in two of the most prosperous nations—indigenous communities in Australia and Canada. Our choice of study countries is reflective of our respective expertise. We chose to study indigenous communities because these communities are expected to face a disproportionate burden from the impacts of climate change<sup>5</sup> and are disadvantaged from a socioeconomic perspective.<sup>6</sup> Our paper investigates whether these groups face an additional burden when mitigation policies, through carbon pricing, are introduced into these jurisdictions.

The two carbon pricing policies that have garnered the most attention in research and practice are carbon taxes and emissions trading (ETS). These two policies are frequently examined for their efficacy, efficiency, comprehensiveness, and impacts on competitiveness, among other factors, and they are often compared with one another in an ongoing debate about instrument choice and design.<sup>7</sup> While there are numerous

3. Kirk Smith, "The IPCC: Impressions from a Foot Soldier" (Speech delivered to the United Nations Association, International House, University of California, Berkeley, 24 October 2008); Peggy M Shepard & Cecil Corbin-Mark, "Climate Justice" (2009) 2:4 *Environmental Justice* 163.

4. We have used terms such as "vulnerable," "marginalized," and "disadvantaged" somewhat interchangeably in this paper. While we appreciate the breadth of these terms, their individual meanings, and the theoretical and nomenclatural debates they might each engender, we have opted not to define them precisely. We use the terms to refer generally to a given population's vulnerability to a variety of risks (social, physical, financial) and their underprivileged socioeconomic status. We also do not wish to suggest that all members of a group are disadvantaged. There is great variability and we wish to avoid victimizing the members of any group. For further reading on the meaning of these terms, see these examples of articles discussing their meanings in the context of health issues: Reann G LeBlanc, "Definitions of Oppression" (1997) 4 *Nursing Inquiry* 257; Anne Fink, "Toward a New Definition of Health Disparity: A Concept Analysis" (2009) 20:4 *Journal of Transcultural Nursing* 349; JH Flaskerud & BJ Winslow, "Conceptualizing vulnerable populations in health-related research" (1998) 47:2 *Nursing Research* 69.

5. IPCC, *Impacts, Adaptation and Vulnerability*, *supra* note 1.

6. We substantiate this point in Part II:1 and in the case studies.

7. See, e.g., National Round Table on the Environment and the Economy, *Achieving 2050: A Carbon Pricing Policy for Canada—Technical Report* (Ottawa: 2011), online: nrtee <<http://nrtee-trnee.ca/wp-content/uploads/2011/08/carbon-pricing-tech-background-eng.pdf>>; Paul Ekins & Terry Baker, "Carbon Taxes and Emissions Trading" (2001) 15:3 *J of Econ Surveys* 325.

studies considering the distributional impacts of carbon taxes,<sup>8</sup> there is relatively little discussion about the overall fairness of these policies<sup>9</sup> and even less analysis comparing the distributional aspects and fairness of the two approaches. In other words, few researchers are evaluating whether one policy is fairer and why. At first this may seem surprising given that a principal theme of the climate change debate has been how the costs and burdens of meeting *Kyoto Protocol* targets can be shared in a manner that is fair to all nations and affected groups.<sup>10</sup> There are, however, many explanations for the paucity of research offering direct comparisons of the fairness of carbon taxes and emissions trading systems. The fairness of a carbon tax or emissions trading system depends largely on its design.<sup>11</sup> Since these policy instruments are relatively recent, and researchers may perceive theoretical research on the question to be of limited value, the

8. See, e.g., Gilbert Metcalf, Aparna Mathur & Kevin Hassett, *Journal of Economic Surveys Distributional Impacts in a Comprehensive Climate Policy Package* (July 2011) online: National Bureau of Economic Research <<http://www.nber.org/papers/w16101>>; Mette Wier et al, "Are CO<sub>2</sub> Taxes Regressive? Evidence from the Danish Experience" (2005) 52 *Ecological Economics* 239; Simon Dresner & Paul Ekins, "The Distributional Impacts of Economic Instruments to Limit Greenhouse Gas Emissions from Transport" (London: Policy Studies Institute, 2004), online: PSI <<http://www.psi.org.uk/docs/rdp/rdp19-dresner-ekins-transport.pdf>>; Margaret Walls & Jean Hanson, "Distributional Aspects of an Environmental Tax Shift: The Case of Motor Vehicle Emissions Taxes" (1999) 52:1 *National Tax Journal* 53; David Anthoff & Richard SJ Tol, "On International Equity Weights and National Decision-Making on Climate Change" (July 2010) 60:1 *Journal of Environmental Economics and Management* 14; 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 & James K Boyce, "A Chinese Sky Trust? Distributional Impacts of Carbon Charges and Revenue Recycling in China" (2007) 35:3 *Energy Policy* 1771; Hamilton & 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 & Mette Weir, "Distributional Implications of Environmental Taxation in Denmark" (2003) 24:4 *Fiscal Studies* 477.

9. See Marc Lee & 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 11 [Lee & Sanger]; For a brief discussion on fairness see Lawrence H Goulder & Ian WH Parry, "Instrument Choice in Environmental Policy" (2008) 2:2 *Review of Environmental Economics and Policy* 152 at 164–166. Nathalie J Chalifour, "A Feminist Perspective on Carbon Taxes" (2010) 21:1 *CJWL* 169.

10. There is an emerging body of literature on climate justice that includes discussions of fairness in the context of international negotiations for climate policy. For instance, see Eric A Posner & Cass R Sunstein, "Justice and Climate Change," *Discussion Paper 2008–04* (Cambridge, MA: Harvard Project on International Climate Agreements, 2008); Richard SJ Tol et al, "Distributional Aspects of Climate Change Impacts" (2004) 14:3 *Global Environmental Change* 259; Sonja Klinsky & Hadi Dowlatabadi, "Conceptualizations of Justice in Climate Policy" (2009) 9:1 *Climate Policy* 88. See also Donald A Brown et al, *White Paper on the Ethical Dimensions of Climate Change* (Philadelphia: Pennsylvania State University, Rock Ethics Institute, 2006–2007), online: Rock Ethics Institute <[www.rockethics.psu.edu/climate](http://www.rockethics.psu.edu/climate)>.

11. For instance, see Grant Boyle, "A Review of Emerging GHG Emissions Trading in North America: Fragmentation or Progress?" (2008) 46:1 *Alta L Rev* 173 at 198–199.

opportunity for research on the fairness of actual policies has only recently arisen. A related explanation is that there is great diversity in the design of existing and proposed carbon pricing policies, including hybrid “tax and trade” plans, rendering it difficult to conduct a straightforward evaluation of the distributional impacts or fairness of one policy versus another.

Another explanation for the lack of research in this area may be the absence of an established methodology or conceptual framework within which to undertake such an assessment. As an assessment of fairness must, in our view, take into account more than tax incidence or financial cost, and the required methodology is complicated; it requires drawing from numerous disciplines, including law, economics, psychology, sociology, and others, to evaluate factors such as location, cultural habits, and lifestyle. An added complication is that most authors tend to write in support of either carbon taxes or emissions trading; therefore, their analyses may emphasize the fairness (or unfairness) of one method without devoting the same attention to the other. As Matthew Hennessey aptly observes: “what’s the difference between taxing carbon emissions and a market-based system of cap and trade?...Which is fairer? It depends who you ask.”<sup>12</sup>

Despite the numerous challenges involved in conducting this type of analysis, we attempt in this paper to contribute to the climate justice debate as well as the literature on the fairness of environmental policies by comparing the fairness of carbon taxes and emissions trading schemes using two case studies. The carbon tax case study, based on British Columbia’s carbon tax,<sup>13</sup> offers insights for jurisdictions opting for taxation. Australia passed the *Clean Energy Legislation Package 2011* and it came into force on 1 July 2012. This legislation puts a fixed price on carbon for three years, with plans to transition the tax into an ETS as of 1 July 2015. We have opted to analyse the future Australian ETS scheme in order to illustrate the difference in impacts upon indigenous communities between an ETS and a carbon tax. Although based on a number of assumptions relating to design,<sup>14</sup> the ETS case study showcases lessons for Australia’s transition into an ETS in 2015 as well as other jurisdictions designing an ETS. Both

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12. 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)> [Hennessey].

13. British Columbia is also pursuing a cap and trade system in collaboration with the Western Climate Initiative (planned for launch in 2012); however, this paper limits the scope of analysis to the carbon tax policy already in place.

14. As some features of the future ETS have not yet been detailed, our discussion will include some assumptions based on the former *Carbon Pollution Reduction Scheme*, which are likely to carry over into the new scheme.

case studies can, of course, be used to inform policy-makers in the design of hybrid systems. Our analysis by no means exhausts all aspects of the fairness question; it is a modest attempt to begin examining this important question through a comparative approach, hopefully paving the way for future research.

This paper has been structured to allow for a close analysis of context and a full exposition of two case studies using our own analytical framework. Part II looks at the impacts of climate change on indigenous communities and offers some thoughts about what fairness is and how we define this multi-faceted, complex concept for the purposes of the paper. Part III sets out a framework of analysis to enable a comparison of carbon pricing policies to better understand how they impact upon disadvantaged groups. In Part IV we use this framework to examine the fairness of British Columbia's carbon tax and Australia's proposed ETS regime with respect to the indigenous communities in the respective jurisdictions. Part V analyses what these two case studies show about the relative fairness of taxes and trading, and offers some thoughts about how the fairness of carbon pricing policies can be evaluated and what factors are most important in this exercise. We conclude in Part VI.

## I. *Background and context*

### 1. *Indigenous communities and climate change*

While the impacts of climate change will vary based on a wide range of factors, those in our society who are already more vulnerable, such as indigenous communities, are at greater risk of being impacted.<sup>15</sup> There are many reasons for this including:

their close relationship with the environment, their reliance on the land and sea for subsistence purposes, the fact that they are more likely to inhabit areas of more severe impact such as coastal regions, often have lower socioeconomic status, are more socially marginalized, and have less access to quality health care services.<sup>16</sup>

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15. IPCC, *Impacts, Adaptation and Vulnerability*, *supra* note 3. See also a quotation from Professor Lesley Hughes, co-author of the Climate Commission Report, *The Critical Decade—Climate Change and Health*: "Climate change will also disproportionately affect those people in our society that are already more vulnerable—so the elderly, those with existing heart and kidney disease, children, people in remote communities and especially indigenous communities": Interview of Leslie Hughes by Tony Eastly, *ABC News* (30 November 2011) online: <<http://www.abc.net.au/am/content/2011/s3379636.htm>>.

16. Christopher Furgal & Jacinthe Seguin, "Climate Change, Health, and Vulnerability in Canadian Northern Aboriginal Communities" (2006) 114:12 *Environmental Health Perspectives* 1964, online: National Center for Biotechnology Information <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1764172/>>.

Indigenous populations often lack the economic and technical resources available to non-indigenous communities to respond to the social and environmental challenges of climate change. These challenges include the increased costs resulting from climate change policy, the potential for decreased availability of water and food, decreased security and availability of housing, and adverse health effects. These challenges are exacerbated by a lower economic standard of living and less access to education and training in indigenous communities.<sup>17</sup> Many indigenous communities also live in physically isolated, fragile, and harsh environments.<sup>18</sup> In Australia, the population of remote and very remote areas is made up of 25% of the indigenous population and 2% of the non-indigenous population.<sup>19</sup> Living remotely can increase vulnerability to the impacts of climate change; for example, it is expected that climate change will lead to greater frequency of extreme weather events<sup>20</sup> and emergency responses can be slow to reach remote indigenous communities. Active land management, such as controlled burning, can go some way towards alleviating the impact of extreme weather events, but in remote areas, there are often too few people to respond with these practices. In Australia, for example, isolated communities may have limited infrastructure and limited support from early warning devices.<sup>21</sup>

17. For details about income levels, see Part IV *Case Studies*. For details on education and training, see *Productivity Commission Report—Overcoming Indigenous Disadvantage Key Indicators 2011*, Online: Australia <[http://www.pc.gov.au/\\_data/assets/pdf\\_file/0010/111610/key-indicators-2011-overview-booklet.pdf](http://www.pc.gov.au/_data/assets/pdf_file/0010/111610/key-indicators-2011-overview-booklet.pdf)>.

18. Indigenous Business Australia (IBA), *Submission to the Carbon Pollution Reduction Scheme Green Paper* (10 September 2008) online: Australia <<http://www.climatechange.gov.au/en/submissions/cprs-green-paper/~media/submissions/greenpaper/0698-indigenous-business-australia.ashx>>.

19. Australian Bureau of Statistics, *4704.0—The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples* (2008), online: ABS <<http://www.abs.gov.au/ausstats/abs@.nsf/mf/4704.0>> [*4704.0 Health and Welfare*]. From the 2006 Census, 31% of Australia's indigenous population lived in major cities with 22% living in inner regional areas, 22% in outer regional areas and 24% living in remote or very remote Australia. Australian Bureau of Statistics, *4705.0—Population Distribution, Aboriginal and Torres Strait Islander Australians* (2006), online: ABS <<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4705.0Main+Features12006?OpenDocument>>. Very remote Australia makes up seventy-five per cent of the Australian land mass. Jon Altman, Geoff Buchanan & Libby Larsen, "The Environmental Significance of the Indigenous Estate: Natural Resource Management as Economic Development in Remote Australia," *Discussion Paper 286* (Canberra: Centre for Aboriginal Economic Policy Research, Australian National University, 2007) 286. 45% of the population of very remote Australia is indigenous and if one takes away mining and service towns, indigenous people comprise the majority (population) across very remote Australia.

20. IPCC, *Impacts, Adaptation and Vulnerability*, *supra* note 1.

21. Karen Bubna-Litic, "The Impacts of Carbon Pricing on Indigenous Communities: A Comparison of New Zealand and Australia" in LH Lye et al, eds, *Critical Issues in Environmental Taxation* (New York: Oxford UP, 2009) 349 at 358.

Indigenous communities in remote areas are often characterized not only by lower average incomes, but also by poor quality housing, overcrowding, and lack of connection to essential services.<sup>22</sup> For example, in 2008 34% of indigenous households in remote and very remote areas of Australia lived in dwellings with major structural problems, compared with 24.5% in non-remote areas.<sup>23</sup> In 2006, 25 discrete indigenous communities had no organised sewerage supply and 142 discrete indigenous communities reported sewerage overflows and leaks.<sup>24</sup> The poor quality of housing also increases vulnerability to extreme weather events.<sup>25</sup> Housing design can also have an impact. For instance, a study evaluating the impacts of climate change on communities in Nunavik and Labrador identified a problem resulting from the design of houses for northern climates. As a result they lacked appropriate ventilation for the increasingly warm days linked to climate change, which increased the risk of heat stress among elderly on the warmest days.<sup>26</sup> Indigenous communities may also be denied rights to property and land, which can make it difficult to access credit and agricultural extension services.<sup>27</sup> In Canada, there are ongoing and complex disputes over ownership of land within traditional territories, with numerous repercussions for the indigenous peoples whose ability to participate in the economy as autonomous entities is compromised.<sup>28</sup>

Another set of impacts is related to indigenous communities' reliance on traditional forms of sustenance, such as hunting, fishing, and forestry, otherwise known as the "hybrid economy." The 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) showed that in Australia, 80% of adults living in discrete indigenous communities fished or hunted for their livelihood.<sup>29</sup> Loss of access to these resources, through changes in the distribution of species and species abundance as a result of climate change impacts on biodiversity,<sup>30</sup> risks impoverishing indigenous

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22. Productivity Commission, *Overcoming Indigenous Disadvantage Report 2011*, online: APC <[http://www.pc.gov.au/\\_data/assets/pdf\\_file/0018/111609/key-indicators-2011-report.pdf](http://www.pc.gov.au/_data/assets/pdf_file/0018/111609/key-indicators-2011-report.pdf)>.

23. *Ibid.*, ch 9.3.

24. *Ibid.*

25. See Bubna-Litic, *supra* note 21.

26. Furgal & Seguin, *supra* note 16.

27. Alyson Brody, Justina Demetriades & Emily Esplen, *Gender and Climate Change: Mapping the Linkages—A Scoping Study on Knowledge and Gaps* 2008), online: BRIDGE <[http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/DFID\\_Gender\\_Climate\\_Change.pdf](http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/DFID_Gender_Climate_Change.pdf)> at 11.

28. See Kent McNeil, *Common Law Aboriginal Title* (Oxford: Clarendon Press, 1989); Kent McNeil, "The Vulnerability of Indigenous Land Rights in Australia and Canada" (2004) 42 *Osgoode Hall L J* 271.

29. Australian Bureau of Statistics, *4714.0—National Aboriginal and Torres Strait Islander Social Survey* (2002), online: ABS <<http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/4714.0/>>.

30. See Bubna-Litic, *supra* note 21 at 357.

people. For instance, wild food sources may diminish through biodiversity impacts of climate change forcing indigenous communities to rely more on non-traditional foods.<sup>31</sup> Indigenous communities in BC are heavily dependent upon forests and fisheries not only as a source of employment, but also for subsistence. Over the last 50 years, British Columbia has already experienced declining levels of precipitation and even more profound variations in climate,<sup>32</sup> and it is estimated that the forestry and fisheries in BC will be heavily impacted by climate change.<sup>33</sup>

In the Canadian north, climate change may impact upon food security because of changes in sea-ice access routes to hunting areas or ice-road stability, which can impact upon hunting and subsistence as well as the transportation of market foods.<sup>34</sup> Turner and Clifton suggest that “many Indigenous People are convinced that the effects of climate change are already being felt and that their ability to harvest and process their food for health and well-being is threatened.”<sup>35</sup> One study raises the possibility of impacts on mental health resulting from the reduced ability of community members to practise aspects of traditional lifestyles.<sup>36</sup> This is one example of the vulnerability of indigenous health to the impacts of climate change.

Additionally, increases in temperature are predicted to lead to heat stress and the spread of infectious diseases,<sup>37</sup> which will be exacerbated by limited access to health services. With the increased incidents of storms and droughts, remote indigenous communities may be exposed to contamination of drinking water through flooding and potentially unsafe releases of wastewater into the environment.<sup>38</sup> The impact of climate

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31. *Ibid.*

32. Nancy Olewiler, *Climate Change: BC's Progress toward a Low-Carbon Economy* (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. Olewiler notes that, according to experts at a climate change adaptation conference, “once in 50 years storms” now occur every 3 to 5 years.

33. *Ibid.* at 4-5.

34. Furgal & Seguin, *supra* note 16.

35. NJ Turner & H Clifton, “‘It’s so different today’: Climate change and indigenous lifeways in British Columbia, Canada” (2009) 19:2 *Global Environmental Change* 180 at 187. See also Arctic Athabaskan Council, *Climate Change in Northern Canada* (2007) online: AAC <[http://www.arcticathabaskancouncil.com/aac/files/climate\\_change/Climate%20Change%20in%20Northern%20Canada--AAC%20issues%20paper%20January%202008%20\(2\).pdf](http://www.arcticathabaskancouncil.com/aac/files/climate_change/Climate%20Change%20in%20Northern%20Canada--AAC%20issues%20paper%20January%202008%20(2).pdf)>.

36. Furgal & Seguin, *supra* note 16.

37. Climate Commission Report, *The Critical Decade: Climate Change and Health* (2011), online: <[http://climatecommission.gov.au/wp-content/uploads/111129\\_FINAL-FOR-WEB.pdf](http://climatecommission.gov.au/wp-content/uploads/111129_FINAL-FOR-WEB.pdf)>.

38. *Ibid.*

change on the Arctic and its Inuit population is well documented.<sup>39</sup> Some populations, such as indigenous women in Canada, are particularly vulnerable to climate change due to especially high rates of poverty, pronounced health impacts, and the general vulnerability of the Arctic to climate change.<sup>40</sup>

The fact that indigenous communities may be particularly vulnerable to the impact of climate change argues for implementing strong policies to reduce the GHG emissions causing climate change. It follows that effective carbon pricing policies are important to indigenous communities. Now we turn to the question of how to define fairness so that we may aim to design effective *and fair* carbon pricing policies.

## 2. *Defining fairness*

Fairness is one of those terms that is used ubiquitously and for which most people have an intuitive sense of meaning. Yet, it is a term that is not easily defined. As psychologist Skitka notes: “how people think about fairness is contingent on what frame they are using to understand their current situation.”<sup>41</sup> Further, notions of what is fair are intricately linked with related concepts of justice, equality, ethics, and morality. Gill North

39. See, for example, James D Ford, *Dangerous Climate Change and the Importance of Adaptation for the Arctic's Inuit population* (2009) 4:024006 Environmental Research Letters, online: IOPscience <[http://iopscience.iop.org/1748-9326/4/2/024006/pdf/1748-9326\\_4\\_2\\_024006.pdf](http://iopscience.iop.org/1748-9326/4/2/024006/pdf/1748-9326_4_2_024006.pdf)>. In fact, the Inuit Circumpolar Conference (ICC) submitted a petition to the Inter-American Commission on Human Rights (IACHR) in 2005 alleging violations of their human rights from global warming caused by greenhouse gas emissions from the US Inuit Circumpolar Council (Canada): Press Release, “Inuit Petition Inter-American Commission on Human Rights to Oppose Climate Change Caused by the United States of America” (7 December 2005), online: ICC <<http://www.inuitcircumpolar.com/index.php?Lang=En&ID=316>>. On 16 November 2006 the IACHR rejected the petition without prejudice, declaring that the evidence of the alleged harm was not sufficient to proceed. A year later the ICC requested a hearing with the IACHR to assist the Commission in recognizing the relationship between climate change and human rights. On 1 February 2007, the Commission invited the Centre for International Environmental Law (CIEL), Earthjustice, and the ICC to submit testimonials on global warming's impact on human rights and specifically the vulnerable Inuit community. Centre for International Environmental Law, *Testimony of Sheila Watt-Cloutier* (1 March 2007), online: CIEL <[http://www.ciel.org/Publications/IACHR\\_WC\\_Mar07.pdf](http://www.ciel.org/Publications/IACHR_WC_Mar07.pdf)>. The Commission was predicted to release a report on climate change and human rights in 2010, but the report has not been issued as of time of writing. Policy Research Initiative, *Climate Change, Well-being and Human Rights* (23 June 2010), online: Canada <<http://www.horizons.gc.ca/doclib/2010-0042-eng.pdf>>.

40. See Erin Wolski, “Culturally Relevant Gender-based Analysis: A tool to promote equity” (2008–2009) 11:1 Canadian Women's Health Network 26 at 26, who notes that over 40% of Aboriginal women in Canada live in poverty.

41. Linda Skitka, “Exploring the ‘Lost and Found’ of Justice Theory” (2009) 22:1 Social Justice Research 98 at 104.

notes that, “[p]hilosophers, lawyers and economists have been debating notions of justice, morality, fairness and equality for many centuries.”<sup>42</sup>

Many of the discussions about the fairness of environmental policies have centred on their distributive aspects.<sup>43</sup> In other words, the focus has been largely on how the costs and benefits of environmental policies are distributed among various members of a given collective.<sup>44</sup> Distributive justice is undoubtedly a major component of fairness, but it can be seen as one piece of a larger puzzle. For instance, fairness requires not only distributive (substantive) justice, but also procedural justice,<sup>45</sup> which focuses on questions such as who is engaged in the design of the policy and the political acceptability of the process.<sup>46</sup> While we acknowledge the complexities involved, we will define fairness as incorporating both substantive and procedural justice.

42. Gill North, “Efficiency, Fairness & Irrationality: Incompatible or Complimentary?” (2009) 24:2 BFLR 311 at 330. There is no shortage of discussion about the meaning of the terms justice and fairness and their application: from the Rawlsian normative theory of justice [John Rawls, *Political Liberalism* (New York: Columbia University Press, 1996)] to Edith Brown Weiss’ discussion of fairness to future generations [*In Fairness to Future Generations: International Law, Common Patrimony and Intergenerational Equity* (Tokyo: United Nations UP, 1989)].

43. For example, Ysé Serret & Nick Johnstone, eds, *The Distributional Effects of Environmental Policy* (Paris: OECD, 2006); 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 UL Rev 787. See also David G Duff, “Tax Fairness and the Tax Mix” (Delivered at the colloquium on Tax Policy and Public Finance, New York University School of Law, 12 March 2009), [unpublished].

44. Distributive justice concerns the distribution of social resources or “the perceived fairness of the shape, end state or outcome of the resource allocation”: Kjell Y Törnblom & Riël Vermunt, “An Integrative Perspective on Social Justice: Distributive and Procedural Fairness Evaluations of Positive and Negative Outcome Allocations” (1999) 12:1 Social Justice Research 39 [Törnblom & Vermunt].

The literature on distributive justice has exploded over the last three decades. Barry Markovsky & C Wesley Younts, “Prospects for Distributive Justice Theory” (2001) 14:1 Social Justice Research 45. Spanning numerous disciplines, including sociology, psychology, economics, political sciences, philosophy, and law, the literature contains numerous theories that can be loosely classified into micro and macro levels and procedural and distributive definitions of justice. A more recent trend has been interdisciplinary research which attempts to provide a more comprehensive and rich approach to distributive justice. See, Dahlia Moore, “The Sense of Justice—An Introduction” (2001) 14:3 Social Justice Research 233.

45. Procedural justice concerns the “perceived fairness of the process of resource allocation, or the way in which the final resource allocation is accomplished”: Törnblom & Vermunt, *supra* note 44 at 40.

46. Some posit that the distributive and procedural aspects of distributive justice cannot be considered separately. Törnblom & Vermunt, *supra* note 44 citing J Brockner & B Wiesenfeld, “An Integrative Framework for Explaining Reactions to Decisions: Interactive Effects of Outcomes and Procedures” (1996) 120:2 Psychological Bulletin 189. Törnblom and Vermunt developed an integrative theory of justice that assumes interdependence between distributive outcome, distribution procedure, and outcome valence, and posits that “people’s conception of the overall or total fairness of a situation is, in different degrees, assumed to be based on” these three factors. Törnblom & Vermunt, *supra* note 44 at 43.

Scholarship relating to justice and fairness often includes references to equality and equity as objectives against which we measure fairness. Like with justice and fairness, there is an impressive breadth and complexity of literature discussing these terms, with a variety of often evolving or even conflicting theoretical underpinnings. The concept of “equity” has widely varying meanings within different disciplines. For example, the “equity principle,” which has become a “central paradigm in the empirical study of distributive justice in psychology, social psychology and sociology,”<sup>47</sup> holds that people expect rewards to (1) reflect their level of investment and contribution and (2) correspond to the level of reward others receive in return for the same level of investment and contribution.<sup>48</sup> In economics, equity usually refers to distributional fairness or a fair distribution of welfare.<sup>49</sup> In common law, equity usually refers to the set of remedies traditionally offered by courts of equity, in which litigants seek “fair” remedies not available under common law principles. Equity also has a specific meaning in the context of intergenerational equity.<sup>50</sup> Relying upon discussions by Professor Edith Brown Weiss in her seminal work *In Fairness to Future Generations*,<sup>51</sup> Collins notes: “equity concerns the just allocation of benefits...and presumably also burdens.”<sup>52</sup> Equity in the context of international climate change policy incorporates the concept of “common but differentiated responsibility.”<sup>53</sup> Discussions of equity also arise in fiscal policy; for example, tax policy is generally concerned with horizontal equity, which aims to ensure that taxpayers in similar financial circumstances bear similar tax burdens (based on ability to pay), and

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47. Clara Sabbagh, “A Taxonomy of Normative and Empirically Oriented Theories of Distributive Justice” (2001) 14:3 *Social Justice Research* 237 at 249.

48. *Ibid*, citing George C Homans, *Social Behaviour: Its Elementary Forms* (New York: Harcourt Brace Janovich, 1974). The equity principle has been subject to numerous criticisms, including those who note it is not universally applicable to the distribution of all social resources in different contexts and that it represents middle-class conceptions lodged in Western values of individualism, competition and instrumentalism. *Ibid* at 251 citing EE Sampson, “On Justice as Equality” (1975) 31 *J Soc Issues* 45.

49. *Business Dictionary.com*, online: <<http://www.businessdictionary.com/definition/economic-equity.html>>, sub verbo “economic equity”.

50. Lynda M Collins, “Revisiting the Doctrine of Intergenerational Equity in Global Environmental Governance” (2007) 30 *Dal LJ* 79.

51. Weiss, *supra* note 42.

52. See Collins, *supra* note 50 at 32.

53. Article 3 of the *United Nations Framework Convention on Climate Change* states: “The parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effect thereof”: 9 May 1992, 1771 UNTS 107 (entered into force 21 March 1994) [UNFCCC].

vertical equity, which posits that people with greater ability to pay should pay more taxes (in order to promote a fair distribution of net income).<sup>54</sup>

Equality, which suggests an objective of equal treatment or sameness, has been criticized on the basis that fairness does not necessarily result from treating everyone in the same way. As Donna Greschner argues, formal equality

is at best problematic for aboriginal women and men because... aboriginal societies are grounded in notions of harmony, complementarity and balance, not sameness. At worst, the sameness conception of equality is a tool of cultural impoverishment and assimilation.<sup>55</sup>

Currently, the approach of substantive equality, which evolved from human rights and constitutional law, is concerned with difference in society. The goal of substantive equality is to transform social patterns of discrimination.<sup>56</sup> The basic idea is to challenge mainstream norms and overcome historical disadvantage in order to achieve an outcome that reflects “the belief that each member of society has equal moral worth and as a consequence is entitled to equal consideration in how society is organized and structured.”<sup>57</sup> Penney asserts that “substantive equality is a principle that affirms differences not through categorization, but by recognizing them and accounting for them within a broader constitutional framework.”<sup>58</sup> It focuses on equality of results rather than equality of opportunity.

In this paper, we opt to use substantive equality as our criterion of fairness because it looks at equality in the context of real difference and as a social construct. As Justice Rosalie Abella has observed:

It is the very dynamism of equality that makes it so elusive an objective. In examining the theories of equality promulgated through history,

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54. Within the field of public finance, there are studies examining the incidence of taxation as compared with government expenditures to determine the overall increase or decrease in welfare for citizens within the jurisdiction. See Tibor Barna, *Redistribution of Incomes through Public Finance* (Oxford: Clarendon Press, 1945) (one of the seminal works on fiscal incidence). See also Andrew Chamberlain & Gerald Prante, *Who Pays Taxes and Who Receives Government Spending? An Analysis of Federal, State and Local Tax and Spending Distributions, 1991–2004*, (2007), online: The Tax Foundation <<http://www.taxfoundation.org/news/show/2282.html>> for a discussion of fiscal incidence in the US. See also, Duff, *supra* note 43.

55. Donna Greschner, “Aboriginal Women, the Constitution and Criminal Justice” (1992) UBCL Rev 338 at para 5.

56. Gillian Calder, Book Review of *The Gender of Constitutional Jurisprudence* by Beverley Baines & Ruth Rubio-Marin, eds (2006) 44 Alta L Rev 465 at para 20.

57. Patricia Hughes, “Recognizing Substantive Equality as a Foundational Constitutional Principle” (1999) 22 Dal LJ 5.

58. Jonathan Penney, “A Constitution for the Disabled or a Disabled Constitution? Toward a New Approach to Disability for the Purposes of Section 15(1)” (2002) 1 JL & Equality 83 at para 43.

one is struck by the obvious—the extent to which its cogency and implementation are affected by the social environment from which it draws oxygen.<sup>59</sup>

Having settled on substantive equality as a yardstick against which to consider the fairness of carbon pricing policies, we look more closely at fairness in the context of carbon taxes and emissions trading.

### 3. *Fairness in carbon taxes and emission trading schemes*

There has been a lot of discussion in the context of international climate change negotiations as to what is the fairest way to cut global greenhouse gas emissions. While the end result has been a form of “common but differentiated responsibility,” various commentators have proposed a per capita allowance as the fairest approach,<sup>60</sup> which suggests that an equality principle informs their notion of fairness.

With respect to fairness at the state level, we have already noted that there is research discussing and assessing the distributional effects of carbon taxes, but relatively less research on the distributional impacts of ETS and comparing the potential for taxes and trading to be designed in a way that maximizes fairness defined more broadly (i.e., going beyond distributional effects). In this section, we attempt to summarize what has been written about how these two carbon pricing policies compare with respect to fairness. We identify three issues that can influence the fairness of carbon pricing policies: regressive impacts, procedural fairness, and distribution of any revenue gains.

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59. Rosalie Abella, “The Dynamic Nature of Equality” in S Martin & K Mahoney, eds, *Equality and Judicial Neutrality* (Toronto: Carswell, 1987) 3 at 4.

60. This idea has been suggested by several authors, including Albert Mumma & David Hodas, “Designing a Global Post-Kyoto Climate Change Protocol that Advances Human Development” (2008) *The Georgetown Int’l Envtl L Rev* 619. Peter 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. He suggests to first set a global target beyond which climate change could become extremely dangerous. Then divide that total by the world’s population, and calculate each person’s share of the total. The next step would be to allocate to each country a greenhouse gas emissions quota equal to the country’s population, multiplied by the per person share and finally, allow countries that need a higher quota to buy it from those that emit less than their quota. The practical benefits of such a suggestion include giving developing nations a strong incentive to accept mandatory quotas, because if they can keep their per capita emissions low, they will have excess emissions rights to sell to industrialized nations. Rich countries will benefit too because they will be able to choose their preferred mix of reducing emissions and buying up emissions rights from developing nations. This proposal has real potential because it will allow developing countries to develop and at the same time to develop with the least emissions possible. It is, of course, dependent on the total number of emissions available and the stringency of the cap. Peter Singer, *A Fair Deal on Climate Change* (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)>.

a. *Regressive impacts*

Absent government intervention, both carbon taxes and ETS are regressive, meaning that they have a greater impact on low income individuals or families than on wealthier ones. This is not surprising given that both are carbon pricing policies that lead to higher prices. The extent of their regressivity will be determined by a variety of design factors for each instrument, such as the rate and scope of the measure. Neither policy is necessarily more nor less regressive—the degree of regressivity will depend on the extent of the price increases generated by the policy. The extent of regressivity can also be influenced by the methodology used to measure it. For instance, Hassett et al find variation in regressivity when the impacts of a carbon tax are measured using lifetime spans versus shorter time-frames.<sup>61</sup>

Despite some variability, the fact that carbon taxes are regressive in the absence of mitigating policies is widely acknowledged and discussed in the literature.<sup>62</sup> Carbon pricing policies are designed to increase prices of carbon intensive goods and services, so it is no surprise that they render certain goods and services more expensive for people with lower incomes. One study notes that the top 20% of US households spend 2.3% of their after-tax income on gasoline while the lowest quintile spend 9.1%, which is four times as high.<sup>63</sup> This means that low income households are bearing a greater relative burden of the price increase created by a carbon tax on gasoline. At its initial rate of ten dollars per tonne of CO<sub>2</sub>e and absent any compensating policies, the BC carbon tax was estimated to increase costs

61. See Kevin A Hassett, Aparna Mathur & Gilbert E Metcalf, *The Incidence of a US Carbon Tax: A Lifetime and Regional Analysis Working Paper No 14241* (Cambridge, Massachusetts: National Bureau of Economic Research, 2007), online: National Bureau for Economic Research <<http://www.nber.org/papers/w13554.pdf>> at 14. See also Shi-Ling Hsu & Robin Elliot, "Regulating Greenhouse Gases in Canada: Constitutional and Policy Dimensions" (2009) 54:3 McGill LJ 463.

62. See for example, Gilbert E Metcalf & 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" (2 January 2009) online: SSRN <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1317507](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1317507)>. However, note Hsu and Elliot suggest it may be simplistic to conclude that carbon taxes are regressive based on selective anecdotes. They question, for instance, 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.

63. Carbon Tax Center, *Managing Impacts: Demographics* (6 July 2010), online: <CTC <http://www.carbontax.org/issues/softening-the-impact-of-carbon-taxes/>>. The Carbon Tax Center (CTC) is careful to point out that in absolute terms the rich would shoulder a greater burden of the carbon tax: "when all household outlays for gasoline are apportioned among quintiles, the highest-earning quintile accounted for 32% of the total, while the lowest quintile contributed just 9%." See also Hassett, *supra* note 61.

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>64</sup>

The research shows that emissions trading without offsetting policies is also regressive. A survey of economic models concluded that if a cap and trade system was announced ten years in advance, 94 to 96 percent of the costs would be initially born by consumers.<sup>65</sup> The distribution of those costs would be regressive, with the Congressional Budget Office (CBO) estimating that “the price rises resulting from a 15 percent cut in CO<sub>2</sub> emissions would cost the average household in the lowest one-fifth (quintile) of the income distribution about 3.3 percent of its average income. By comparison, a household in the top quintile would pay about 1.7 percent of its average income.”<sup>66</sup> The CBO suggests that the regressivity exists regardless of how permits are allocated.<sup>67</sup> Modelling in Australia has found that the impact of a \$23 carbon price will result in an overall household increase of \$9.90, reflecting a consumer price increase of 0.7% in the fixed price period (2012–2013) and increasing another 0.2% with the introduction of the ETS in 2015–2016.<sup>68</sup> Earlier modelling found that the impact of a \$25 carbon price would result in an increase of 2.2% in annual expenditures for a working-age, social security dependent family using utility-adjusted figures, as compared to a 0.4% increase for a high-income tertiary educated household.<sup>69</sup>

We will explore the issue of regressive impacts further in each case study, and elaborate our findings in the discussion section (Part V).

#### b. *Procedural fairness*

Questions of procedural fairness raise more variability between carbon taxes and ETS. One aspect of evaluating procedural fairness involves

64. See Lee & Sanger, *supra* note 9.

65. Mark Lasky, *The Economic Costs of Reducing Emissions of Greenhouse Gases: A Survey of Economic Models* (Washington, DC: Congressional Budget Office, 2003), quoted in CBO, “Trade-offs in Allocating Allowances for CO<sub>2</sub> Emissions” (April 2007), online: CBO <<http://cbo.gov/publication/19445>> at note 3 [CBO].

66. *Ibid* at 3.

67. Regardless of how the allowances were distributed, most of the cost of meeting a cap on CO<sub>2</sub> emissions would be borne by consumers, who would face persistently higher prices for products such as electricity and gasoline. Those price increases would be regressive in that poorer households would bear a larger burden relative to their income than wealthier households would: *ibid* at 1.

68. Australian Government Treasury, *Modelling a Carbon Price*, online: Australia <<http://www.archive.treasury.gov.au/carbonpricemodelling/content/default.asp>> at 8.

69. Modelling by the National Institute of Economic and Industry Research (NIEIR) in 2007, referenced in Damian Sullivan & Josie Lee, “A National Energy Efficiency Program for Low-Income Households: Responding Equitably to Climate Change” in Imogen Jubb, Paul Holper & Wenju Cai, eds, *Managing Climate Change: Papers from the Greenhouse 2009 Conference* (Collingwood: CSIRO Publishing, 2010) 155 at 156 [Sullivan & Lee].

considering the extent to which the public can meaningfully participate in the process of selecting and designing the policy. In Australia, indigenous groups are much less likely than industry counterparts to be present in the consultation processes relating to policy development. In developing the Clean Energy Legislative Package, the Australian government established 2 roundtables<sup>70</sup> that would advise ministers to help inform the positions the government took to the Multi-Party Climate Change Committee.<sup>71</sup> One was a nineteen member business roundtable,<sup>72</sup> with an Industry Transitional Assistance Working Group of 15 members and an Energy Sector Working Group comprising 16 members. There was also a NGO Roundtable<sup>73</sup> with 20 members, of which one was the North Australian Indigenous Land and Sea Management Alliance. This potential for under-representation is complicated by the fact that less mainstream cultural groups are not well represented among the decision-makers and other influential players in the policy process.<sup>74</sup>

Another aspect of procedural fairness relates to the negotiating power of stakeholders involved in the policy process. Large, well-financed companies and industry groups are often resourced to lobby for favourable treatment in the development of policies. It could be argued that taxation offers fewer avenues of influence to groups with disparate negotiating powers, as compared to an ETS, but this depends on the actual design of the tax. In the fixed price period of the Australian carbon pricing policy, industry groups were able to receive free carbon units to meet their carbon liability under the *Jobs and Competitiveness Program*<sup>75</sup> as well as additional assistance under specific industry initiatives. Generally the flexibility of initial design in an ETS, as opposed to a tax, creates more opportunity for industry groups to lobby in favour of grandfathering permits. The relatively less powerful lobby force of groups arguing for

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70. Australian Government, Department of Climate Change and Energy Efficiency, *Roundtables on Climate Change*, online: Australia <<http://www.climatechange.gov.au/government/initiatives/roundtables-on-climatechange.aspx>>.

71. Australian Government, Minister for Climate Change and Energy Efficiency, Media Release, "government to seek business, environment and non-Government organisations' views on climate change" (September 2010) online: Australia <<http://www.climatechange.gov.au/en/minister/greg-combet/2010/media-releases/September/mr20100927a.aspx>>.

72. Australian Government, Department of Climate Change and Energy Efficiency, *Business Roundtable*, online: Australia <<http://www.climatechange.gov.au/government/initiatives/roundtables-on-climatechange/business-roundtable.aspx>>.

73. Australian Government, Department of Climate Change and Energy Efficiency, *Non-Government Organisation Roundtable*, online: Australia <<http://www.climatechange.gov.au/government/initiatives/roundtables-on-climatechange/ngo-roundtable.aspx>>.

74. For example, there is currently one indigenous member of Federal Parliament, elected to represent a seat in Western Australia in August 2010.

75. *Clean Energy Act 2011* (Cth), ss 143-158.

auctioning permits to create revenue for mitigating policies may be less able to influence design. In Australia, the coal and steel industries lobbied hard and received favourable treatment in the design of the scheme over and above industry assistance for emissions intensive, trade exposed industries under the *Jobs and Competitiveness Program*.<sup>76</sup> For example, the steel industry is to receive \$300m over 4 years for those producing more than 500,000t of crude carbon steel under the *Steel Transformation Plan*<sup>77</sup> and the coal industry will receive \$1.3b over 6 years in structural adjustment to manage their emissions under the *Coal Sector Jobs Package*<sup>78</sup> and \$70m over 6 years to support investment in carbon abatement policies under the *Coal Mining Abatement Technology Support Package*.<sup>79</sup>

Processes for choosing and developing carbon pricing policies vary widely among jurisdictions, and it is difficult to point to carbon taxes or ETS as offering an inherently better opportunity for fair representation of different voices. However, given that ETS schemes 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. Of course, if these new institutional and administrative structures are created in a way that does not ensure adequate and meaningful representation of various perspectives, as could be argued with only one representative of indigenous communities on the Australian roundtables,<sup>80</sup> opportunities for additional fairness are lost. In contrast, the implementation of a carbon tax can be done in the context of existing institutional and administrative structures, and 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.

### c. *Revenue use*

The third issue, and arguably the most important to fairness, is what is done with the revenue generated from taxes and emissions trading scheme, if any. One of the defining features of carbon taxes is that they generate a relatively clear and predictable stream of revenue. That revenue can be used in numerous ways and a key issue in assessing fairness is how that

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76. *Ibid.*

77. Clean Energy Future, *Support for the Steel Industry*, online: Australia <<http://www.cleanenergyfuture.gov.au/support-for-the-australian-steel-industry/>>.

78. Australian Government, Department of Climate Change and Energy Efficiency, *Coal Mining Assistance*, online: Australia <<http://www.climatechange.gov.au/government/initiatives/coal.aspx>>.

79. *Ibid.*

80. To put this in perspective, it should be noted that around 22% of Australia's land is in indigenous ownership.

revenue is used. David Duff argues that the fairness of any tax expenditure should depend solely on the justice of the regulatory goal that it is trying to achieve.<sup>81</sup> While this is a sound proposition, we argue that policy-makers should be attentive to the risks of creating unintended distributional consequences in allocating revenue. For instance, a carbon tax policy has a regulatory goal of addressing climate change, which would suggest that allocating carbon tax revenues towards climate change mitigation would be fair. If, however, the tax expenditures are aimed at improving energy efficiency (in line with the regulatory goal), but are designed in a way that makes them inaccessible to certain segments of society, i.e., renters, then they are not necessarily fair.

In the case of emissions trading, if allowances are auctioned, then the permits generate revenue, which could be used to fund policies to offset regressivity. If all of the allowances are given away for free (grandfathered), then the initial allocation produces no government revenue with which to fund policies to offset impacts. Some writers characterize grandfathering permits as “a de facto wealth transfer to large polluters.”<sup>82</sup> The CBO is quite specific with its concern in this respect:

Because most of the cost of the cap would ultimately be borne by consumers, giving away nearly all of the allowances to affected energy producers would mean that the value of the allowances they received would far exceed the costs they would bear. As a result, that allocation strategy would increase producers' profits without lessening consumers' costs. In essence, such a strategy would transfer income from energy consumers—among whom lower-income households would bear disproportionately large burdens—to shareholders of energy companies, who are disproportionately higher-income households.<sup>83</sup>

Under the new Australian *Clean Energy Legislative Package*, in the fixed period (2012–2015) free carbon units may be bought back by the government at a discounted rate representing present market value.<sup>84</sup> This could be seen as a windfall gain or evidence that those emissions intensive, trade-exposed companies have reduced their emissions through changing practices and, therefore are producing less carbon emissions than their allocated free carbon units.

In many emissions trading schemes, only some permits are grandfathered (often the initial ones) with the remainder being auctioned. We will examine the issue of revenue use—a critical aspect of designing

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81. Duff, *supra* note 43.

82. Hennessey, *supra* note 12.

83. CBO, *supra* note 65 at 2.

84. *Supra* note 75, s 116.

fair carbon pricing policies—in the context of both case studies below. It is important to point out that there is nothing to preclude a government from devoting resources outside of those generated by a carbon pricing policy to offsetting policies. In fact, many governments resist earmarking revenue as it can limit government spending flexibility; however, devoting revenues generated from a carbon pricing policy is one way to ensure that there are sufficient revenues available to mitigate distributional impacts and address other fairness challenges.

## II. *The analytical framework*

Putting a price on carbon is an important part of any climate change plan. Pricing carbon, however, will impact on indigenous communities and other disadvantaged groups in many ways, with the extent of that impact influenced by their specific consumption and production activities. On the consumption side, the overall price impact of the policy on an individual household's welfare will depend on many factors, such as the actual carbon price, the extent to which the carbon costs are reflected in the price of goods, individual consumption patterns, the individual household's level of disposable income, the assistance provided to households by the government to manage the impacts of the scheme, and the ability of the household to adjust consumption patterns in response to higher carbon prices. On the production side, the economic sector in which a person is employed will influence the impact of a carbon pricing policy on that individual. For indigenous communities, these could include agriculture, fishing, forestry, mining, and tourism.

In order to frame the discussion of our case studies and facilitate a comparison of carbon taxes and ETS, we have developed the following framework (summarized in Table 1 below) and identified criteria to be used in assessing the fairness of climate change policies.

### 1. *Design*

The basic design elements of a carbon pricing policy, scope and rates, will largely determine the extent to which prices of goods and services increase. In addition, the policies for how any revenue generated will be used are very important in determining the fairness of a measure. In our discussion on design, we will therefore describe the scope, rate, and revenue-use policies related to the carbon tax and ETS.

### 2. *Cost implications*

A key consideration in assessing the fairness of a carbon pricing measure is to determine the direct and indirect costs of the measure and how those costs are distributed among those who bear them. It is also important to

consider what factors beyond income levels might impact upon a person's ability to deal with increased costs. As such, in this section, we identify as relevant factors for consideration: the direct and indirect costs of the policy (absent any mitigating policies), how those costs are distributed among different income levels (regressivity), and other factors (socio-economic and cultural factors) that influence the ability to deal with greater costs. Specifically, in relation to socio-economic and cultural factors, we examine remoteness, housing, and employment in impacted sectors. There are many links between income levels and the socio-economic and cultural factors that we discuss in this section. For instance, type and quality of housing is obviously linked to income levels; however, we believe that it is important to grant these factors separate consideration in order to adequately assess fairness in policy choice and design.

### 3. *Impact of complementary policies*

We also evaluate how policies accompanying the carbon tax or ETS impact upon indigenous communities. We focus on the policies for using the revenue generated by the measure (rather than evaluating the broader climate change plans in which the carbon tax or emissions trading schemes are embedded) and any exemptions or mitigation policies in addition to revenue use (if any) that are integral to the carbon pricing policy.

### 4. *Impact of outcome (effectiveness in reducing GHG emissions)*

A fourth component of our framework is how the policy will impact upon climate change itself. An effective carbon pricing policy that succeeds in reducing GHG emissions and slowing the impact of climate change will have a beneficial positive impact on vulnerable communities, because, as the IPCC has found, vulnerable communities are disproportionately impacted by climate change.<sup>85</sup> A carbon pricing policy is meant to have a transformative impact upon the economy by redirecting investments into low-carbon activities. We believe it is relevant to consider the effectiveness of the policies in addressing climate change because failure to mitigate will place a disproportionate burden on indigenous communities. Because there is little research on the effectiveness of carbon pricing policies,

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85. IPCC, *Impacts, Adaptation and Vulnerability*, *supra* note 1.

given how recent they are,<sup>86</sup> we note the relevance of this issue but do not analyze it in this paper.

*Table 1: Framework for Assessing Fairness of a Carbon Pricing Policy*

Design	Cost Implications	Impact of complementary policies
Scope	Direct and indirect costs	Policies regarding use of revenue (if any)
Rate	Regressive impacts	Exemptions and mitigation policies outside of revenue use (if any)
Policies for Revenue Use	Socio-economic/cultural challenges of adapting to increased costs	

### III. Case studies

#### A. BC carbon tax

##### 1. Design

British Columbia implemented a carbon tax as part of its climate change strategy, which aims to reduce the province's GHG emissions to 33% below 2007 levels by 2020.<sup>87</sup>

##### a. Scope

The carbon tax, which came into force on July 2008, is a consumption tax on the purchase or importation of fuels, including gasoline, diesel, natural gas, and coal.<sup>88</sup> It applies to virtually all GHG emissions from residential, commercial, and industrial sources burning fossil fuel in the province. This accounts for an estimated 73% of the province's GHG emissions. The carbon tax does not cover GHG emissions from non-combustion sources,

86. There have been some predictions made; for instance, modelling done for the BC government predicted a 4% decrease in GHG emissions from business-as-usual levels by 2020 attributable to the BC carbon tax. See Government of British Columbia, *Climate Action Plan* (Victoria: Climate Action Secretariat, Office of the Premier, June 2008) cited in Marc Lee, *Fair and Effective Carbon Pricing: Lessons from B.C.* (2011), online: Policy Alternatives <<http://www.policyalternatives.ca/publications/reports/fair-and-effective-carbon-pricing>> at 13 [Lee, "Fair and Effective"].

87. See British Columbia, *Climate Action Plan* (2008), online: BC <[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. These GHG emissions targets are embodied in the *Greenhouse Gas Reduction Targets Act*, SBC 2007, C 42.

88. *Carbon Tax Act*, SBC 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 Env'tl L 87.

such as emissions from industrial processes in cement and aluminium production and methane emitted from landfills.<sup>89</sup>

First Nations (as defined within the federal *Indian Act*<sup>90</sup>) are exempted from paying the carbon tax on fuel when the sale occurs on reserve land.<sup>91</sup> Sales of fuel off-reserve are subject to the carbon tax unless the fuel is purchased for delivery to a reserve.

b. *Rate*

The rate of the tax is established for five years, starting at \$10 per tonne of carbon dioxide equivalent (CO<sub>2</sub>e) (2.4 cents per litre for gasoline) on 1 July 2008 and rising by \$5 per year to achieve \$30 per tonne of CO<sub>2</sub>e (6.67 cents per litre) by 1 July 2012.<sup>92</sup> The BC government has not declared its intentions for the carbon tax post 2012. The October 2011 *Speech from the Throne* referred to the role of the carbon tax in reducing GHG emissions, but did not specify what would happen post 2012.<sup>93</sup> As part of consultations for the next budget, an all-party finance committee recommended freezing the rate of the carbon tax at the 2012 level.<sup>94</sup>

89. See Lee & Sanger, *supra* note 9 at 9; Matt Horne, *Building a Low-Carbon Economy in British Columbia: Recommendations to Strengthen B.C.'s Carbon Tax* (2010), online: Pembina Institute <<http://bc.pembina.org/pub/1961>>.

90. RSC, 1985, c 1-5.

91. British Columbia, Ministry of Finance, *Tax Bulletin - MFT-CT 002*, (July 2010, Revised October 2010), online: BC <[http://www.rev.gov.bc.ca/documents\\_library/bulletins/mft-ct\\_002.pdf](http://www.rev.gov.bc.ca/documents_library/bulletins/mft-ct_002.pdf)>.

92. *Carbon Tax Act*, *supra* note 88. See also, Government of British Columbia, Ministry of Finance, *Tax Schedule: Carbon Tax Rates by Fuel Type – From January 1, 2010* (September 2009, revised November 2010), online <[http://www.fin.gov.bc.ca/tbs/tp/Carbon\\_tax\\_rates\\_by\\_fuel\\_type\\_from\\_Jan\\_2010.pdf](http://www.fin.gov.bc.ca/tbs/tp/Carbon_tax_rates_by_fuel_type_from_Jan_2010.pdf)>. The *Act* creates an administrative system for the collection of taxes that mirrors that of the province's existing fuel taxes: see ss 3, 17, 13(2). Gasoline prices in BC 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.

93. British Columbia, *Speech from the Throne* (3 October 2011), online: BC <[http://www.leg.bc.ca/39th4th/Speech%20from%20Throne\\_Oct%202011\\_WEB.pdf](http://www.leg.bc.ca/39th4th/Speech%20from%20Throne_Oct%202011_WEB.pdf)>.

94. British Columbia, Select Standing Committee on Finance and Government Services, *Report on the Budget 2012 Consultations* (15 November 2011) at 41. As required under the *Carbon Tax Act*, the British Columbia Government reports all carbon tax revenues and rebates through the 2012-13 fiscal year. British Columbia, Ministry of Finance, *Budget and Fiscal Plan 2010/11–2012/13* (2 March 2010), online: BC <[http://www.bcbudget.gov.bc.ca/2010/bfp/2010\\_Budget\\_Fiscal\\_Plan.pdf](http://www.bcbudget.gov.bc.ca/2010/bfp/2010_Budget_Fiscal_Plan.pdf)> at 105 [*BC Fiscal Plan*]. However, this period, which extends to 2012–2013 is referred to as the “phase-in period,” indicating the provincial government has considered this tax as a critical component of its long term *Climate Action Plan* which extends to 2020, *supra* note 87 at 11.

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>95</sup> The carbon tax revenue is used to reduce the small business corporate income tax rate, the general corporate income tax rate, and the two lowest provincial personal income tax rates by 5%.<sup>96</sup> Importantly from the perspective of fairness, the carbon tax's revenue is also used to fund a low-income tax credit.<sup>97</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 1 July 2011.<sup>98</sup> This means that the low-income tax credit will have increased by 15.5% over the first five years of the tax, while the rate of the carbon tax itself increased by 150%.<sup>99</sup>

The government has financed a few additional measures from carbon tax revenues in subsequent budgets. For instance, in 2009 the government announced the creation of a "Northern and Rural Homeowner Benefit" of up to \$200 for homeowners outside of the major urban areas.<sup>100</sup> Beginning in the 2011 tax year, this credit is additional to an existing homeowner

95. According to the "Green Blog" of the *New York Times*, the BC government had projected \$1.85 billion in revenue for the first three years, though this figure will likely be reduced with falling oil prices and the recession: John Lorinc, "British Columbia's Carbon Tax Survives," *The New York Times* (14 May 2006), online: The New York Times <<http://green.blogs.nytimes.com/2009/05/14/british-columbias-carbon-tax-survives/>>. Since the implementation of the British Columbia Carbon Tax on 1 July 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, *supra* note 94 at 105–106. Ministry of Finance, "Myths and Facts about the Carbon Tax," online: BC <<http://www.fin.gov.bc.ca/tbs/tp/climate/A6.htm>>.

96. See British Columbia, *Carbon Tax*, online: BC <[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)>.

97. 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.

98. *BC Fiscal Plan*, *supra* note 94 at 106.

99. Lee, "Fair and Effective," *supra* note 86 at 16.

100. British Columbia, Ministry of Finance, *Budget and Fiscal Plan 2010/11–2012/13* (17 February 2009), online: BC <[http://www.bcbudget.gov.bc.ca/2009/bfp/2009\\_Budget\\_Fiscal\\_Plan.pdf](http://www.bcbudget.gov.bc.ca/2009/bfp/2009_Budget_Fiscal_Plan.pdf)> at 73.

grant.<sup>101</sup> Because First Nations on reserve do not collect carbon taxes, the First Nations Tax Commission has expressed concern that they do not have an existing fund with which to finance provision of the grant.<sup>102</sup>

The government has also financed, effective February 2011, a new credit for biomethane from carbon tax revenues. Biomethane is a carbon neutral renewable fuel produced from biomass. The measure exempts biomethane from payment of the carbon tax. When biomethane is blended with a taxable fuel, the biomethane proportion of the blend is exempted from the tax when actual proportion of biomethane is known. The credit is equal to the carbon tax payable on the specified volume or percentage of biomethane.<sup>103</sup> Finally, the government has also issued rebates up to 100% of carbon tax paid to local governments and school boards for being carbon neutral by 2012.<sup>104</sup>

## 2. *Cost implications*

### a. *Direct and indirect costs*

The Canadian Centre for Policy Alternatives (CCPA) reports that \$200 was paid in carbon taxes per household on average in 2010.<sup>105</sup> An earlier study by the CCPA estimated that when the tax rate rises to \$30 per tonne of CO<sub>2</sub>e in 2012, fuel costs will rise to an estimated \$760 per household annually.<sup>106</sup>

### b. *Regressive impacts*

It is not surprising that direct and indirect cost increases represent a greater financial burden on people with lower average incomes. The CCPA estimates that in 2010 the carbon tax represented 1.3% of income for households in the lowest decile as compared to 0.3% of income for households in the top decile.<sup>107</sup> In 2012 the regressivity increases, with the

101. British Columbia, Ministry of Finance, *Home Owner Grant*, online: BC <[http://www.sbr.gov.bc.ca/individuals/Property\\_Taxes/Home\\_Owner\\_Grant/basic\\_hog.htm](http://www.sbr.gov.bc.ca/individuals/Property_Taxes/Home_Owner_Grant/basic_hog.htm)>.

102. First Nations Tax Commission, *Information Bulletin: BC Carbon Tax Reduction Measures and Impact on First Nation Property Tax* (15 March 2011), online: FNTC <[http://173.236.209.42/media/FNTC%20Info%20Bulletin%20-%202011%20Carbon%20Tax%20in%20BC\\_2011%2003%2015.pdf](http://173.236.209.42/media/FNTC%20Info%20Bulletin%20-%202011%20Carbon%20Tax%20in%20BC_2011%2003%2015.pdf)>.

103. British Columbia, Ministry of Finance, *Budget and Fiscal Plan—2011/12 to 2013/14* (3 May 2011), online: BC <[http://www.bcbudget.gov.bc.ca/2011/bfp/2011\\_Budget\\_Fiscal\\_Plan.pdf](http://www.bcbudget.gov.bc.ca/2011/bfp/2011_Budget_Fiscal_Plan.pdf)> at 42.

104. British Columbia, Ministry of Community, Sport and Cultural Development, *Climate Action Revenue Incentive Program*, online: BC <<http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.htm>>.

105. Lee, "Fair and Effective," *supra* note 86 at 17.

106. Lee & Sanger, *supra* note 9 at 6. This includes direct and indirect costs.

107. Lee, "Fair and Effective," *supra* note 86 at 17.

carbon tax representing 1.8% of income for the lowest decile and 0.45% for the highest decile.<sup>108</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 income of \$27,097 in the non-Aboriginal population.<sup>109</sup> This trend of lower incomes for Aboriginal people is applicable in BC as well.<sup>110</sup>

Because they are disproportionately represented in lower income categories, Indigenous people in BC bear a greater proportion of a carbon tax's regressivity, absent appropriate mitigation policies. It is important to note that First Nations living on reserve do not have to pay the carbon tax on fuel sold on the reserve. This certainly reduces the cost of the carbon taxes for these First Nations. It does not address the indirect costs of the tax, such as higher prices of foods or other goods and services that have an intensive carbon component to their production. The exemption also does not help indigenous communities living off reserve.

c. *Socio-economic/cultural challenges of adapting to increased costs*

i. *Remoteness*

Indigenous peoples live in different parts of British Columbia. It is estimated that 62% of First Nations live off reserve in BC.<sup>111</sup> The 2006 Canadian Census found that 76% of the off-reserve First Nations populations lived in urban areas. Of this off-reserve population, 47% lived in metropolitan centres, 31% in small urban centres, and 21% in rural areas. It is difficult to offer any reliable commentary about remoteness for the off-reserve populations.

Remoteness is a factor for the approximately 50% of Indigenous peoples that live on reserves or in rural settlements off-reserve. There are approximately 1600 First Nations reserves in British Columbia; forty-five of these reserves are located within municipal boundaries and another

108. *Ibid* at 19.

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

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

111. Statistics Canada, *Aboriginal Peoples in Canada in 2006: Inuit, Métis and First Nations, 2006 Census* (2008), online: Statistics Canada <<http://www12.statcan.ca/census-recensement/2006/as-sa/97-558/pdf/97-558-XIE2006001.pdf>> at 42 [2006 Census]. The 2006 *Aboriginal Census* documented that 40% of First Nations lived on-reserve, and of that group 98% were status Indians.

thirty are immediately adjacent to a municipality.<sup>112</sup> The vast majority, however, are located in remote areas, often far from urban centres.<sup>113</sup>

The question of remoteness is relevant when considering a community's dependence on energy-intensive goods and services and transportation. Statistics Canada has documented cost of living trends generally in rural areas of Canada. In one report, the price of transporting goods to rural locations was found to have declined due to greater efficiency in trans-shipment by truck and rail. In contrast, the price of air transport of cargo and people to rural regions has increased in the past decade.<sup>114</sup> Telecommunication technology has decreased the cost of communication services for rural areas; however, the price of transporting people by either public, e.g., plane, train, bus, or private mode, e.g., motor vehicle, relative to the overall trend of the Consumer Price Index (CPI) has translated into higher costs for travelling to rural locations. This increased cost is tied to higher gasoline prices and the higher costs to insure a vehicle.<sup>115</sup> Indigenous communities living in remote areas are dependent on private transportation options to access services such as schools, medical care, and shopping, which are often located long distances away. As energy costs rise, the impact upon remotely located communities will be greater than those located in urban areas given the former's greater dependency on private transportation and the longer distances they must travel. Remote communities also have access to fewer alternatives to goods and services whose costs rise due to rising energy prices.

In 2007, British Columbians spent approximately 13% of their gross income on transportation, or an average of \$9,896 per household.<sup>116</sup> As illustrated below, however, rural households tend to spend more on transportation than urban counterparts due to factors such as greater travelling distances and higher reliance on private modes of transport. Many Indigenous Canadians must contend with these greater relative

112. BC Assessment, *Assessment Services for First Nations*, online: BC <<http://www.bcassessment.ca/govt/local-government/Pages/AssessmentServicesforFirstNations.aspx>>.

113. See this federal government map, which locates First Nations reserves and settlements in BC: Natural Resources Canada, *The Atlas of Canada—Canada—Indian and Inuit Communities—British Columbia* (1984), online: Canada <[http://atlas.nrcan.gc.ca/auth/english/maps/archives/reference/indian\\_inuit/mcr\\_4029](http://atlas.nrcan.gc.ca/auth/english/maps/archives/reference/indian_inuit/mcr_4029)>. This second map shows the territory of British Columbia as it is divided among First Nations: First Nations, *Land Rights and Environmentalism in BC*, online: <<http://www.firstnations.de/img/01-0-first-nations.jpg>>.

114. Ray D Bollman, *Factors Driving Canada's Rural Economy: 1914–2006* (2007), online: Statistics Canada <<http://www.statcan.gc.ca/pub/21-601-m/21-601-m2007083-eng.pdf>> 7-13.

115. *Ibid.*

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

transportation cost increases given their often rural location. While the 2006 census documented an increase in the percentage of Indigenous peoples living in an urban area to 54%, there is still a large number in rural areas, mostly living on-reserve.<sup>117</sup> The 2001 US “National Household Travel Survey” (which includes both work and non-work travel) suggests that the vehicle is essential to mobility in rural areas, regardless of income levels.<sup>118</sup> The survey demonstrated that all income, race, and age groups in rural areas are almost entirely dependent on cars for travelling purposes, and that there is not much difference between the use of cars by lower income and high income households.<sup>119</sup> This means that lower income groups in rural areas bear a greater relative burden to cover the cost of transportation and gasoline.

Communities living in remote areas of BC depend on 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 impact the natural resources upon which they depend.

Another factor to consider is that remote tourism could decrease, as aviation and boating costs increase. To the extent that remote communities in British Columbia rely on this form of tourism for income, rising energy prices could have a disproportionate impact. The *Aboriginal Cultural Tourism Blueprint Strategy for British Columbia* published in 2005 by the Aboriginal Tourism Association of British Columbia (ATBC), found that 31% of Indigenous tourism products in 2003 were adventure tourism products such as guided tours, river rafting, golf courses, hiking trails, and horseback riding. Tourism was defined as tourism owned by or involving Aboriginal peoples, typically focusing on the relationship between heritage, history, values, land, lifestyle, entertainment, and art.<sup>120</sup>

The Haida Gwaii area, as an example of a remote British Columbia region, and its First Nation have been studied for their 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. This region

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117. 2006 Census, *supra* note 111 at 12.

118. John Puchner & John Renne, “Urban-Rural Differences in Mobility and Mode Choice: Evidence from the 2001 NHTS” (2004), online: Victoria Transport Policy Institute <[http://www.vtpi.org/pucher\\_ur.pdf](http://www.vtpi.org/pucher_ur.pdf)> at 8. For instance, only 11% of poor rural households have no vehicle as compared to 27% of poor urban households (falling below an annual income of \$20,000).

119. *Ibid* at 11.

120. Aboriginal Tourism Association of British Columbia, *Aboriginal Cultural Tourism Blueprint Strategy for British Columbia* (November 2005), online: ATBC <[http://www.aboriginalbc.com/Corporate/Info/atbc\\_blueprint\\_strategy\\_full-report.pdf](http://www.aboriginalbc.com/Corporate/Info/atbc_blueprint_strategy_full-report.pdf)> at 3, 6.

is populated primarily by First Nations although there is also a strong military presence.<sup>121</sup> In 2003, the largest employment sector was natural resources (29% of the population), followed by the service sector at 7%, which was highly dependent on tourism. The challenge of seasonal employment in this region will certainly be further aggravated by climate change.<sup>122</sup> In light of Haida Gwaii's reliance on ecological and cultural tourism, increased prices for fossil fuels will constrain revenues from tourism. In a report on land use planning by the British Columbia Ministry of Sustainable Resource Management, the recorded distribution of visitor activities in Gwaii Haanas National Park Reserve in 1997 was 41% kayaking, 28% powerboating, 20% sailboating, 7% air transport combined with power-boating, 2% kayak mothershipping, with 2% categorized as "other."<sup>123</sup> This remote community has 20 to 30 businesses licensed to operate commercial air or boat trips in Gwaii Haanas. This case study was directed at providing information on the impact of global warming on the region's economy. It also provides useful information on the community's reliance on fossil fuel to earn income in tourism by attracting visitors for adventure sport. Increased costs for fuel could adversely impact business in tourism, an important job sector for remote communities.

## ii. *Housing*

The type and quality of housing can influence how carbon pricing policies will impact a given family. For instance, people living in poor quality housing are more vulnerable to damage from extreme weather events. 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.<sup>124</sup> Census statistics for BC document 32.4% of on-reserve Aboriginal housing requiring minor repairs and 36.5% requiring major repairs. Off-reserve, 32.3% of Aboriginal housing required minor repairs and 13.5% required major

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121. Teresa Ann Conner, "Social Vulnerability and Adaptive Capacity to Climate Change Impacts: Identifying Attributes in Two Remote Coastal Communities on Haida Gwaii, British Columbia" (MA Thesis, University of Victoria Geography Faculty, 2005) [unpublished] at 78-79.

122. *Ibid* at 90-91.

123. Land Use Plan Process Management Team, *Background Report: Haida Gwaii/Queen Charlotte Island Land Use Plan* (Victoria: Ministry of Sustainable Resource Management, 2003), online: British Columbia <[http://archive.ilmb.gov.bc.ca/slrp/lrmp/nanaimo/haidagwaii/docs/HGQCI\\_Background\\_Report.pdf](http://archive.ilmb.gov.bc.ca/slrp/lrmp/nanaimo/haidagwaii/docs/HGQCI_Background_Report.pdf)> at 151.

124. *2006 Census*, *supra* note 111 at 16.

repairs. For non-Aboriginal households in BC, 24.5% required minor repairs and 6.8% were in need of major repairs.<sup>125</sup>

Another factor to consider is that of home ownership. Income levels will certainly influence the ability of home-owners to make necessary changes; however, whether one is a home-owner or a renter will also influence the ability of the person to make the changes. 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.

According to the Canadian Mortgage and Housing Corporation (CMHC), 43% of Aboriginal people in BC are renters.<sup>126</sup> This is a greater proportion of renters than in the non-Aboriginal population. The *Royal Commission Report on Aboriginal Peoples* compared non-Aboriginal Canadian and Aboriginal housing indicators. 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. As elaborated in the Discussion section, attention can be paid to these factors in order to design mitigation policies that are broadly available and, where this is not possible, create targeted policies to offset any disproportionate impact.

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 on financial resources; increased costs for home construction and maintenance could impede progress on addressing overcrowding problems. In a CCPA report on housing in

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125. 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/StatisticsBySubject/AboriginalPeoples/CensusProfiles/2006census.aspx>> at 13 [*Statistical Profile 2006*].

126. The 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.” CMHC, *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)>.

Canada, it was found that both urban Aboriginal groups and Aboriginal groups on reserves often live in overcrowded households.<sup>127</sup>

iii. *Employment in impacted sectors*

The impacts of climate change will be felt throughout the BC economy. However, some sectors are more vulnerable to changes in climate and climate change mitigation policies. A report for the Business Council of British Columbia identified the following sectors as those that will incur the greatest impacts in BC: forestry, the energy sector, mining and smelting, agriculture, fisheries, transportation, and tourism / recreation.<sup>128</sup>

While Aboriginal people work in all industries of the economy, they are more highly represented in certain sectors. 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>129</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>130</sup>

A Statistics Canada report determined that Aboriginals off-reserve experienced a greater loss in employment from the economic recession in comparison to the non-Aboriginal population. The Aboriginal employment rate dropped 3.2%, where non-Aboriginals experienced a drop of 1.9%. The study found this trend was most pronounced in BC and Alberta, with a major loss in employment for Aboriginals in the manufacturing sector of 30% as opposed to 8% for non-Aboriginals. The same trend was documented in construction with a 16% drop as compared to a 5% decline in employment for non-Aboriginals.<sup>131</sup> In the core age group of comparison for this study (25 to 54 yrs), British Columbia had the greatest decline in employment rate: 5.6% to 65.1%.<sup>132</sup> The unemployment rate

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

128. Nancy Olewiler, *supra* note 32 at 3.

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

130. *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. *Statistical Profile 2006*, *supra* note at 13.

131. Carly Weeks, "Natives Bore Brunt of Job Losses in Canada, Statscan Study Shows" *The Globe and Mail* (13 May 2010), online: Immigration Watch Canada <<http://www.immigrationwatchcanada.org/2010/05/14/natives-bore-brunt-of-job-issues-in-canada-statscan-study-shows/>>.

132. *Statistical Profile 2006*, *supra* note 125 at 13.

increase was also substantial in BC, rising 4 percentage points to 14.4%. The Métis in BC experienced the greatest drop in employment rate of 13.6%, which is the lowest employment rate of Métis in any province or region in Canada.<sup>133</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). It is, however, difficult to draw generalized conclusions as employment in other sectors, such as renewable energy, could increase and we do not have data about the rate of employment of indigenous people in these sectors. The main point is that policy makers should aim to understand these impacts and select and design policies in a way that mitigates potentially unfair impacts on vulnerable groups.

### 3. *Impact of complementary policies*

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

Having considered the cost implications of the carbon tax, we now consider, from a fairness perspective, the impact of the various policies for how the revenue is to be used, considering in particular how the policies impact upon Aboriginal communities.

In contrast to Québec's modest redevance annuelle, BC's carbon tax revenues are not directed towards climate change mitigation or adaptation strategies.<sup>134</sup> Rather, British Columbia promised to return all of the revenue raised by the measure to taxpayers in the form of tax reductions and credits. The government believed this "revenue-neutral" approach to be essential in garnering adequate public support for the measure. In fact, they probably believed this to be a way to increase the measure's appearance of "fairness" since it produces what economists have identified

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133. *Ibid* at 14.

134. *Règlement sur la redevance annuelle payable à la Régie des télécommunications du Québec par une société exploitante*, RQ, c R-8.01, r 1.1.

as a “double dividend.”<sup>135</sup> However, when examined more closely, the tax shifting approach may not adequately take into account the perspective of vulnerable communities, since the tax cuts created by tax shifting may themselves be regressive and/or may not be accessible to certain groups.<sup>136</sup>

A 2008 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>137</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 in the first place. It is beyond the scope of this paper to assess the complex income tax policies applicable to Aboriginal people in Canada. We can, however, state with confidence that Aboriginal people are disproportionately represented in low income categories, so it follows that the double burden of regressivity described earlier will apply to the tax cuts as it did in the case of the costs of the carbon tax.

Revenue from the carbon tax is 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. Since Aboriginal peoples often do not have any enough income to pay taxes, this feature ensures they still have access to the credit, thus bolstering the measure’s fairness. In addition, the CCPA study shows that the credit created a net positive benefit for low-

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135. The double dividend hypothesis is based on the premise that income taxes tend to “distort” economic behaviour (for example, taxes on labour discourage work effort; taxes on savings reduce capital). See Richard D Morgenstern, “Environmental Taxes: Is There a Double Dividend?” (1996) 38:3 *Environment* 16 at 16. The double dividend is said to arise when environmental taxes are used to address an environmental problem (producing an environmental benefit—the first dividend) and the revenue is used to reduce distortionary taxes (producing the benefit of reducing distortions on work effort and efficiency—the second dividend). There are various critiques of the hypothesis. See, for example, Don Fullerton & Gilbert E Metcalfe, “Environmental Taxes and the Double Dividend Hypothesis—Did you Really Expect Something for Nothing?” (1998) 73:1 *Chicago-Kent L Rev* 221-256. However, the majority of economists accept the “weak” double dividend theory which posits that: “revenue recycling through cuts in distortionary taxes improves welfare relative to recycling through lump-sum payments”; Organisation for Economic Co-operation and Development, *The Political Economy of Environmentally Related Taxes* (Paris: OECD, 2006) at 12.

136. See, for example, Kathleen Lahey’s critique of reductions in income tax for women on the basis that they are not equally accessible to women and since these reductions may impact an important tax base for social programs of benefit to women. Kathleen A Lahey, “What About Women? Gender Analysis of Discussion Paper on New Brunswick’s Tax System,” *New Brunswick Advisory Council on the Status of Women* (31 July 2008), online: ACSWCCCF <<http://76.12.152.213/media/arsw/riles/documents/What%20About%20Women.pdf>>.

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

income families in its first year, meaning that these families receive more in credits than they pay in the tax.<sup>138</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 produced 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>139</sup>

What would it take to create a fair carbon tax policy? We argue that a singular emphasis on tax-shifting may be misguided. While returning carbon tax revenues to taxpayers through various policies is fine, we argue that the apportionment of those revenues should take into account the impacts on vulnerable groups. While the refundable low-income tax credit is very important to address regressivity and should be expanded to cover the full increases in the tax,<sup>140</sup> the government could further increase the measure's fairness by including policies that promote social justice for communities that are particularly vulnerable to climate change. Designing these policies would require further analysis to identify specific vulnerabilities and target policies appropriately. For instance, our case study suggested that Aboriginal groups may be more vulnerable to job losses in heavily impacted sectors. Policies that invest in job-training and promote transition strategies for these communities could help address disproportionate impacts.

Fairness must be a factor in the choice of allocating revenues from carbon tax revenues to be sure that the spending policies do not contribute to the already greater vulnerability to climate change of marginalized communities. Rather, revenues should be devoted to ensuring that these communities are not disproportionately impacted by carbon pricing policies.

In sum, how does the province's choice with respect to revenue-use impact upon Aboriginal communities in BC? Certainly, the creation of a low-income tax credit to offset distributional impacts for low-income families is important; however, as the CCPA study concludes, the province needs to ensure that the amount of the credit rises concomitant with the tax

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138. See Lee & Sanger, *supra* note 9 at 9.

139. *Ibid.*

140. With respect to feasibility, one could point to the fact that the low-income credit has shrunk from representing one-third of revenues in 2008–09 to 19% in 2010–11, to 12% by 2012–13. See Lee, "Fair and Effective", *supra* note 86 at 5. In other words, it is a question of political priority rather than lack of revenue available.

rate after the first year. The corporate and income tax cuts disproportionately benefit non-Aboriginal people. Instead of using revenues to fund these tax cuts, the province could have used the revenue in ways that helped address climate change and promoted social justice. Investing the funds in climate change projects such as public transit and promoting energy efficiency in public buildings and residences would yield environmental benefits.

b. *Exemptions and other mitigation policies*

The BC *Climate Action Plan* includes a wide variety of measures aimed at climate change mitigation and adaptation. To the extent that Aboriginal communities are particularly vulnerable to climate change, investments in climate change mitigation and adaptation would promote social justice. The province could do even more by directing funds into climate change projects that are in line with Aboriginal communities' priorities, such as strategies to address vulnerabilities in forestry, fisheries, and tourism. Public investments into programs such as these could have benefits for the climate, along with important social benefits. We have not evaluated the measures in the *Climate Change Action Plan* outside of the carbon tax though we believe that it would be a worthwhile undertaking that would allow for a more fulsome assessment of how the impacts of climate change (and the burdens and benefits of its corresponding policies) are distributed among various segments of society.

B. *Emissions trading in Australia*

The debate about instrument choice is well illustrated by Australia's numerous changes of direction about the appropriate carbon pricing policy.<sup>141</sup> On 8 November 2011, Australia passed legislation introducing a carbon tax to begin 1 July 2012 which will transition to an ETS on 1 July 2015. The legislation describes the carbon pricing policy as comprising a fixed price period for three years from 1 July 2012, transitioning to a flexible price period from 1 July 2015. We have some details of the ETS that will begin on 1 July 2015, but not all. For this reason, we will use the design features of the ETS as known from the current legislation and we will assume other design features taken from the former *Carbon Pollution Reduction Scheme* (CPRS).

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141. For instance, in 2008, Australia had designed an ETS known as the *Carbon Pollution Reduction Scheme* (CPRS). The legislation which would have introduced the ETS to Australia beginning from July 2011 was blocked by the opposition and then shelved by the prime minister in April 2010.

## 1. *Design of the ETS*

### a. *Scope*

Most of Australia's emissions come from electricity generation, transport, and agriculture. The ETS from 2015 will cover stationary emissions, fugitive emissions (other than from decommissioned coal mines), industrial processes, and waste emissions and will include four of the six greenhouse gases: carbon dioxide, methane, nitrous oxide, and perfluorocarbons from aluminium smelting.<sup>142</sup> Coverage is based on an exception basis and will include scope 1 emissions released into the atmosphere as a direct result of the operation of the facility within Australia unless expressly exempted.<sup>143</sup> Exemptions include agriculture and emissions from combustible biofuels and biomass, including combustion of methane from landfill, emissions from land clearing, and forestry.<sup>144</sup> The ETS will place obligations on facilities that emit more than 25,000 tonnes CO<sub>2</sub>e per annum and certain landfill facilities that emit 10,000 tonnes CO<sub>2</sub>e per annum,<sup>145</sup> which amounts to approximately 500 Australian companies and will cover 65% of Australia's emissions.<sup>146</sup> Households and light commercial vehicles will not face a carbon price on the fuel they use for transport. Agriculture, fishing, and forestry industries will not pay a carbon price for the fuel they use.<sup>147</sup> Other business transport emissions will be subject to an equivalent carbon price imposed through changes in fuel tax credits or changes in excise and these large users of fuel can opt-in to the scheme.<sup>148</sup>

### b. *Rate*

The short-term reduction target is 5% of 2000 levels by 2020, with a long-term target of 80% reduction by 2050.<sup>149</sup> A national scheme cap will be set for each year by the independent Climate Change Authority from 2015, and carbon units equal to that cap will be issued or auctioned. Because of the large number of free permits planned to be allocated to emissions intensive, trade-exposed industries, there will be less revenue raised

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142. *Clean Energy Bill*, *supra* note 75, ss 30(11) and (12). The remaining greenhouse gases will not be covered by the carbon pricing mechanism, but will be subject to an equivalent carbon price using existing import and manufacturing levies under the *Ozone Protection and Synthetic GHG Management Act*.

143. *Ibid*, s 30(1).

144. *Ibid*, s 30.

145. *Ibid*, s 32.

146. Australia Government, *Securing a Clean Energy Future: The Australian Government's Climate Change Plan*, online: Australia <<http://www.cleanenergyfuture.gov.au/wp-content/uploads/2011/07/Consolidated-Final.pdf>> at 27.

147. *Ibid* at 29.

148. *Clean Energy Bill*, *supra* note 75, ss 92A-G.

149. *Ibid*, s 3. See also, *Securing a Clean Energy Future*, *supra* note 145 at xi.

initially than if all allocations were auctioned.<sup>150</sup> In the fixed price period, the price of the carbon units will be \$23/tonne, increasing each year by 2.5% to \$25.40 in 2014.<sup>151</sup> For the first three years of the ETS there will be a price ceiling set at \$20 above the international price and will rise by 5% in real terms each year. The price floor will start at \$15 and rise at 4% in real terms each year.<sup>152</sup>

c. *Policies for revenue use*

The government has committed to using the revenue generated by the ETS to assist Australian households and businesses<sup>153</sup> to adjust to the scheme through direct cash assistance and tax offsets. More than half the revenue raised will go to assist households.<sup>154</sup> All increases will be permanent and will increase over time.<sup>155</sup> There will be increases in social security benefits, allowances, and pensions to compensate for the anticipated increases.<sup>156</sup> These include lump sum clean energy advances payable to people in receipt of social security payments before the commencement of the carbon pricing scheme. Following this payment, there will be clean energy supplement payments to keep in line with consumer price index increases due to the carbon price.<sup>157</sup> Taxpayers with an annual income less than \$80,000 will receive tax cuts of at least \$300 per year.<sup>158</sup> The tax free threshold is to increase from \$6000 to \$18,200 in 2012 and increase again

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150. The Australian government will allocate free AEU's to the most emissions intensive trade exposed (EITE) activities in various industries. Industries that have emissions intensity between 1000-1999 tonnes of CO<sub>2</sub>e per million dollars of revenue, or between 3000-5999 tonnes of CO<sub>2</sub>e per million dollars of value added in the specified assessment period will receive permits for 66% of their baseline emissions. Those who have emissions intensity above 2000 tonnes of CO<sub>2</sub>e / million dollars of revenue or above 6000 tonnes of CO<sub>2</sub>e per million dollar value added in the assessment period will receive permits for 94.5% of their baseline emissions. This rate of assistance will be reduced at a rate of 1.3% per year (which is the carbon productivity contribution) to encourage EITE industries to contribute to national carbon reduction. When similar obligations are placed on competitors, either through domestic action or an international agreement, this assistance will cease.

151. *Clean Energy Bill*, *supra* note 75, s 100.

152. *Ibid*, ss 100 & 111.

153. About 40% of carbon price revenue will be allocated to help businesses and support jobs: *Securing a Clean Future*, *supra* note 145 at xv.

154. Australian Government, *Clean Energy Future: Supporting Australian Households*, online: Australia <<http://www.cleanenergyfuture.gov.au/wp-content/uploads/2011/07/supporting-australian-households.pdf>>.

155. *Securing a Clean Future*, *supra* note 146 at 39.

156. This household assistance will provide higher payments, equivalent to a 1.7% increase, to pensioners, veterans, self-funded retirees, and families. This bill also establishes new supplements for low-income families, single income families, and certain households that have significantly higher than average electricity costs due to a medical condition, ageing, or disability: *Clean Energy (Household Assistance Amendments) Bill 2011* (Cth).

157. *Ibid*.

158. *Supra* note 154.

to \$19,400 in 2015.<sup>159</sup> There is also the availability of an annual income supplement of \$300.<sup>160</sup>

## 2. *Cost implications*

### a. *Direct and indirect costs*

Under Australia's ETS, goods and services that are carbon intensive will cost more over time than goods that are not. It has been recognised by the government that the price of consumer goods will increase.<sup>161</sup> The overall impact of the scheme on an individual household's welfare will depend on factors including household consumption patterns and the ability of households to adjust consumption patterns in response to higher carbon prices. We argue that the most vulnerable in our communities will be less able to adjust their consumption patterns; for example, they may not be able to afford to expend the upfront costs of buying more energy efficient appliances. In remote areas, the increased cost of transport as a result of carbon pricing will increase the cost of food even more than for those in urban areas and there may be less opportunity for those in remote communities to have the choice to change their consumption patterns to less energy intensive food products.

The ETS will increase energy and fuel prices, which will in turn impact a variety of products and services. The government estimated the cost of living increases from the ETS with a \$23 carbon price for 2012–13 at 0.7% rising to 0.9% with the introduction of the ETS in 2015–2016.<sup>162</sup> Electricity prices are predicted to rise by \$3.30 per week and gas by \$1.50 per week, with food rising by \$0.80, making a total of \$9.90<sup>163</sup>; these increases will be felt more strongly by low income households.

### b. *Regressive impacts*

The estimated price increases from the ETS will impact groups differently based on their income levels. In 2008, the median household weekly income for indigenous people was \$445. This compares to \$746 for non-indigenous households.<sup>164</sup> Indigenous Australians are disproportionately

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159. Minister for Climate Change and Energy Efficiency, Joint Media Release, "Household assistance to flow under clean energy legislation" (8 November 2011), online: Australia <<http://www.climatechange.gov.au/minister/greg-combet/2011/media-releases/November/mr20111108b.aspx>>.

160. *Ibid.*

161. *Modelling, supra* note 68.

162. *Ibid.*

163. *Ibid.*

164. *Productivity Commission Report, supra* note 22 at ch 4.9.

represented amongst Australia's low income households.<sup>165</sup> They are more than twice as likely as other Australians to be in the lowest income quintile and almost four times less likely to be in the highest quintile.<sup>166</sup> The measure of financial stress, or the poverty indicator, is a household's ability to raise \$2,000 within a week of an emergency.<sup>167</sup> Comparing the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) and the 2006 General Social Survey, 47% of the indigenous population was under financial stress. This compared to 13% for the non-indigenous population. It is clear that indigenous communities, which are disproportionately represented in low-income groups, may experience greater hardship than non-indigenous communities in the face of direct and indirect price increases due to the ETS. We describe this as a double burden of regressivity.

*c. Socio-economic/cultural challenges of adapting to increased costs*

In addition to having less income, socio-economic and cultural factors unique to indigenous groups can influence the impact of price increases due to an ETS. Here, we discuss remoteness, housing and employment in impacted sectors.

*i. Remoteness*

The poverty indicator increases dramatically in remote communities and this will be exacerbated by the increased costs pursuant to a carbon price. The financial stress of indigenous Australians in remote areas is approximately 64%.<sup>168</sup> That is, approximately 64% of indigenous Australians living in remote areas fall within this poverty indicator and 45% of the population of very remote Australia is indigenous. Putting this in proportion, the population of remote and very remote areas is made up of 25% of the indigenous population and 2% of the non-indigenous population.<sup>169</sup>

Living remotely may also make it more difficult to adjust consumption patterns to cope with increased costs because of the limited access to

165. Australian Bureau of Statistics, *4713.0 Population Characteristics, Aboriginal and Torres Strait Islander Australians 2006* (4 May 2010), online: ABS <<http://www.abs.gov.au/Ausstats/abs@nsf/mf/4713.0>> [4713.0 Population].

166. *Ibid.*

167. This measure is an ABS indicator, introduced in the 2001 Census and expanded in the 2008 NATSISS. Australian Bureau of Statistics, *4714.0 – National Aboriginal and Torres Strait Islander Social Survey, 2008* (2008), online: ABS <<http://www.abs.gov.au/ausstats/abs@nsf/Latestproducts/4714.0Main%20Features112008?opendocument&tabname=Summary&prodno=4714.0&issue=2008&num=&view=>>>.

168. This is based on the poverty indicator: see *ibid.*

169. *4704.0 Health and Welfare*, *supra* note 19.

alternatives. Fuel prices, for example, will increase as a result of an ETS. This will have a more pronounced impact on the cost of food in remote locations than in urban areas due to additional transport costs. Many indigenous groups living remotely rely on customary ways of living, such as fishing and hunting and these increases in the cost of food may put more pressure on the “hybrid” economy of hunting and fishing.<sup>170</sup> If the hybrid economy diminishes, this will shift consumption patterns towards non-traditional sources of food, resulting in an increased cost burden. This could also lead to a more processed diet, making these communities more susceptible to obesity, diabetes, and other health-related problems.<sup>171</sup> This loss may also have an impact on the commercial farming of native foods and the use of native plants for arts and crafts industries.<sup>172</sup>

One way to minimize fuel costs is to use public transport, but the ability to do so depends on the availability and proximity of public transport services. Remote area indigenous communities are likely to be dependent on private transport options, as public transport is usually not available, and they may need to travel long distances to access services, such as shopping, schooling, and medical care.<sup>173</sup> Another factor is that reducing the use of private transport may keep costs down, but reducing mobility may lead to isolation and social exclusion.

Tourism in remote areas<sup>174</sup> may be impacted through increased costs and longer term environmental degradation, especially those that rely on currently vulnerable ecosystems, such as the Great Barrier Reef and Kakadu.<sup>175</sup> A carbon price will apply to domestic aviation and shipping.<sup>176</sup> If a similar price does not apply to international aviation and shipping this could make domestic tourism less competitive compared to international tourism and hurt the indigenous tourism market.

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170. See Part II, Background and Context, above at 11.

171. Climate Action Network Australia, *Climate Change Impacts in Australia*, online: CANA <<http://www.cana.net.au/general-info/climate-change-impacts-australia>>.

172. *Ibid.*

173. For a comparison with non-indigenous Australians, see *supra* note 22.

174. 600 indigenous rangers are employed around Australia, mostly in remote areas. See *Working on Country Scheme*, online: Australia <<http://www.environment.gov.au/indigenous/workingoncountry/index.html>>.

175. The Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Synthesis Report states that: “Water security problems are projected to intensify by 2030 in southern and eastern Australia. Significant loss of biodiversity is projected to occur by 2020 in some ecologically rich sites including the Great Barrier Reef and Queensland Wet Tropics. Other sites at risk include Kakadu...”: online: IPCC <<http://www.ipcc.ch/ipccreports/assessments-reports.htm>>.

176. *Supra* note 146 at 29.

## ii. *Housing*

Low income earners are more vulnerable to climate change impacts because they tend to live in more marginal areas and in poor quality houses.<sup>177</sup> As discussed earlier, those living in poor quality housing with a lack of connection to essential services may be more heavily impacted by storm damage<sup>178</sup> and, as the cost of repairs will increase through a carbon price, this will be felt more acutely in remote indigenous communities. Another issue with housing relates to home ownership. In 2006 a majority of indigenous people (63%) aged 18 years or over were living in rented dwellings.<sup>179</sup> The proportion renting was lower in major cities and regional areas (around 58%) than in remote areas (82%).<sup>180</sup> Overall, in 2006, only 35% of indigenous people aged 18 years and over lived in a home owner/purchaser household.<sup>181</sup> Low home ownership rates limit the ability to take up government incentives for climate change adaptation because renters have less ability and no financial incentive to invest in capital energy efficiency improvements, such as insulation.<sup>182</sup> Regulations that required landlords to insulate rental properties would improve energy efficiency but this may result in a flow-on to increased rents. The impact on renters is uncertain. Would they move to cheaper accommodation or simply be under increased financial stress? As a high proportion of indigenous Australians live in rental accommodation,<sup>183</sup> many do not have the opportunities to invest in housing infrastructure to minimize climate change impacts.

Overcrowding, which is prevalent in remote and very remote areas,<sup>184</sup> can also put stress on basic household facilities which may make them more vulnerable to damage from climate events. Overcrowding is often a result of inadequate, inappropriate, or poorly maintained housing stock. This can have very serious health risks because if a house has sufficient working taps, tubs, showers, toilets, insect screens, and protection from the weather it will be much better able to prevent the disease transmission that can occur in crowded households. In remote and very remote areas in

177. See Part II, Background and Context, above at 10.

178. *Ibid.*

179. 4713.0- *Population Characteristics*, *supra* note 165 at Table 33.

180. *Ibid.*

181. *Ibid.*

182. A recent Australian government initiative to install insulation sought to minimize energy costs as they became less affordable as a result of the economic downturn, but renters would not be able to take advantage of this and would only benefit if their landlords decided to take up this offer.

183. A higher proportion of Indigenous adults (68.8%) than non-Indigenous adults (28.6 per cent) lived in either public, community or private rental housing: *supra* note 22 at ch 8.

184. In 2008, overcrowding rates for indigenous Australians were more than five times that of non-indigenous Australians and overcrowding was most common in very remote areas, where 58.2% of indigenous people lived in overcrowded households compared to 13.3% in urban areas: *ibid* at ch 9.

particular, it is more expensive and logistically more difficult to construct and maintain infrastructure. Pricing carbon will only increase construction costs and this will disproportionately impact on these remote indigenous communities that need to improve their housing infrastructure.

This has been recognized under the *Clean Energy Legislative Package* and the government has allocated \$40m under the *Remote Indigenous Energy Program*.<sup>185</sup>

### iii. *Employment in impacted sectors*

People who work in industries that change due to climate change (and its related mitigation policies) will also be impacted. For example, one Australian study suggested that the industries that will be most affected by a carbon price are those with a high emissions intensity, with access to few substitutes, and with limited capacity to pass on the emissions price (those with overseas competitors).<sup>186</sup> Thus, in Australia the most vulnerable sectors are coal-fired electricity production and agriculture, though natural resources industries such as mining are also likely to be impacted.

The extent to which indigenous communities are affected by changes in labour due to climate change depends on where they are employed. Statistics from the Australian Bureau of Statistics in 2006<sup>187</sup> show that there was a higher percentage of total employment of indigenous workers (as compared to non-indigenous workers) in the mining industry, administration, safety and support services, education and training, health care, and social assistance. It is not possible to draw conclusions based on this data about the extent to which indigenous communities may be impacted relative to non-indigenous communities. However, it is something that should be considered when climate change mitigation policies are created so that appropriate offsetting programs (such as incentives to hire indigenous workers) can be created if needed to address unfair impacts. A related consideration is that jobs will be created due to climate change (i.e., in alternative energy technologies) and it would be important to consider who is benefitting from these new jobs and how to ensure that indigenous workers have fair access to new employment opportunities.

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185. Australian Indigenous Health Infonet, *Remote Indigenous Energy Program*, online: AIHI <<http://www.healthinfonet.ecu.edu.au/key-resources/programs-projects?pid=1123>> [*Remote Indigenous Energy Program*].

186. Ross Garnaut, *Garnaut Climate Change Review—Final Report* (September 2008), online: Garnaut Review <<http://www.garnautreview.org.au/index.htm>>.

187. Australian Bureau of Statistics, *4713.0—Population Characteristics*, *supra* note 165 at “Table of Contents.”

### 3. *Impact of complementary policies*

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

We have considered the cost implications of the ETS and described the Australian government's policies for revenue use. We will now consider the impact of these revenue use policies, with particular emphasis on how fair they are to indigenous Australians. It needs to be recognised that there is more uncertainty as to the amount of revenue generated from an ETS than a tax, depending on the setting of the cap and the allocation of the permits. This makes it more difficult for governments to apply funding to mitigation policies. Of course, a government may choose to offer an assistance package irrespective of revenues generated from an ETS. Such an assistance program could be delivered through the tax system,<sup>188</sup> in the form of tax rebates to low income earners, or outside of the tax system. The government has announced that more than half of the revenue raised will go to assist households in the form of tax cuts.<sup>189</sup> Like the CPRS, the *Clean Energy Legislative Package* specifically attempts to avoid any regressive impacts of the tax rebates,<sup>190</sup> unlike the impacts of the tax rebates under the BC carbon tax.<sup>191</sup> The government has attempted to minimise the regressive impacts of the policy with tax cuts focusing on lower income households. The government has stated that 90% of low income households will receive assistance that exceeds their predicted impact of the carbon price by 20%.<sup>192</sup> This is a recognition of the distributional impacts of a carbon price but these tax cuts may not be equally accessible to indigenous and non-indigenous Australians by virtue of the fact that indigenous people often do not have enough income to pay taxes in the first place. We have identified the socio-economic/cultural challenges faced by indigenous communities due to factors such as remoteness, reliance on traditional lifestyles, lack of housing infrastructure, and employment patterns. Across the board tax cuts do not factor in any of these challenges that will result in an unfair burden continuing to be placed on indigenous Australians. In 2015, there will be adjustments through the social security system for low income households and pensioners and there will be an annual low income supplement of \$300 from 1 July 2012.<sup>193</sup> This supplement will be administered by Centrelink and there are eligibility criteria to be met. This

188. See, *Carbon Pollution Reduction Scheme Amendment (Household Assistance) Bill 2010* (Cth).

189. *Supporting Australian Households*, *supra* note 154.

190. *Ibid*, see the analysis of the household assistance package at 17-35.

191. See discussion in the BC carbon tax case-study, above.

192. *Supra* note 146 at 40.

193. Australian Government, Department of Human Services, "Low Income Supplement", online: <<http://www.humanservices.gov.au/customer/services/centrelink/low-income-supplement>>.

supplement will be administered by Centrelink and there are eligibility criteria to be met. The details of this low income supplement will be released closer to July 2012,<sup>194</sup> It is intended to help some low-income households who might not receive enough assistance through tax cuts or government payments to offset their average expected cost impact under a carbon price. This has the potential to compensate remote households for the expected double cost burden. Unlike the BC “Low Income Climate Action Tax Credit” this supplement is not independent of income, which may be a disadvantage.

b. *Exemptions and other mitigation policies*

The Australian government has included a suite of measures to transition to a low carbon economy. These include an expanded renewable energy target,<sup>195</sup> investment in renewable energy technologies,<sup>196</sup> and energy efficiency initiatives.<sup>197</sup> The government has also allocated \$250m over six years from 2010–11 to expand the “Low Carbon Communities Program,”<sup>198</sup> which pilots energy efficiency programs for low income households. There has been a recent consultation period and details of the program will be released in 2012.<sup>199</sup> The government recognises that community voluntary action plays an important role in reducing GHG emissions.<sup>200</sup>

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194. *Ibid.*

195. See *Renewable Energy (Electricity) Act 2000* (Cth), together with various feed-in-tariff schemes administered by the States.

196. \$10b over 5 years from 2012–13 to establish the Clean Energy Finance Corporation to help commercialise and deploy renewable energy and transform existing manufacturing businesses: Australian Government, *Clean Energy Finance Corporation*, online: Australia <<http://www.climatechange.gov.au/government/initiatives/clean-energy-finance-corporation.aspx>>; \$3.2b over 9 years from 2011–2012 to establish the Australian Renewable Energy Agency to support Research and Development, demonstration and commercialisation of renewable energy through competitive grants: Australian Government, *Arena Factsheet*, online: Australia <<http://www.ret.gov.au/Department/Documents/clean-energy-future/ARENA-FACTSHEET.pdf>>; \$1.2b over 7 years from 2011–12 for Clean Technology Program: Australian Government, *Clean Technology Program*, online: Australia <<http://www.innovation.gov.au/Industry/CleanEnergyFuture/Pages/CleanTechnologyProgram.aspx>>.

197. Enhancement of the National Energy Savings Initiative. See, *2010 Report of the Prime Minister's Task Group on Energy Efficiency*, online: Australia <<http://www.climatechange.gov.au/~media/submissions/pm-taskforce/report-prime-minister-task-group-energy-efficiency.pdf>>.

198. Australian Government, Department of Climate Change and Energy Efficiency, *Low Carbon Communities*, online: Australia <<http://climatechange.gov.au/government/initiatives/low-carbon-communities.aspx>>.

199. The author has made a submission focussing on the particular needs of indigenous Australians.

200. “Voluntary action will be recognised under the carbon price in four ways. First, the government will take voluntary action into account when setting pollution caps. Voluntary action will be treated as additional when accounting for Australia’s pollution reduction targets after 2012. Second, in the carbon pricing mechanism’s flexible price period, carbon permit holders may voluntarily cancel their permits. Third, a tax-deductible Pledge Fund will be established to help individuals buy and cancel carbon permits. Fourth, any purchases of accredited GreenPower from the start of the carbon pricing mechanism will be treated as voluntary action.” See *supra* note 146 at 30.

The suite of transition measures recognises that Australian households are responsible for around 25% of covered emissions, so the measures are intended to accelerate energy efficient uptake by households and to increase the level of renewable energy generated by households. These are positive initiatives, but it is important to consider how the initiatives will impact indigenous communities. Will the incentive measures be equally accessible to indigenous communities as compared to non-indigenous communities? Many of the incentives relate to options that only home owners or relatively high income earners can take advantage of.<sup>201</sup> These incentives may include household retrofits, insulation rebates, solar panel rebates, incentives for solar hot water systems, and renewable energy options, as well as rating systems to encourage the purchase of energy efficient appliances and cars. There are significant barriers and market failures to the uptake of energy efficiency measures in low income households<sup>202</sup> and these will be exacerbated in indigenous communities due to their remoteness, poor quality housing, and high percentage of renters.<sup>203</sup> In very remote areas, non-indigenous households were 8 times more likely than indigenous households to own their own homes.<sup>204</sup> The Low Income Energy Efficiency Program may help to break down some of these barriers. It aims to develop projects to improve the energy efficiency of low income households in a range of geographic locations. Expressions of interest for the \$100m program closed in April 2012 and the successful grants will be announced before the end of 2012.

There are a number of additional programs that may benefit indigenous communities, both directly and indirectly. These include the allocation of \$946m in 2011–12 for the Biodiversity Fund to support restoration and protection of biodiverse carbon stores,<sup>205</sup> allowing indigenous groups to conserve and protect their land, and a regional structural adjustment assistance package worth \$200m over 7 years from 2012–2013 for regions strongly affected by the introduction of a carbon price. Programs directed to indigenous communities include \$40m over five years from 2012 for the Remote Indigenous Energy Program<sup>206</sup> to provide around 55 remote indigenous communities with funding to install renewable energy systems,

201. As an example, see the solar rebate scheme.

202. Sullivan & Lee, *supra* note 69 at 155.

203. Renters find it hard to derive benefit from emission reduction initiatives because they have less incentive to outlay the capital costs of emission reduction activities such as insulation, renewable energy options, hot water systems, and cooking appliances.

204. *4713.0 Population Characteristics*, *supra* note 165.

205. Australian Government, Clean Energy Future, *Biodiversity Fund*, online: Australia <<http://www.cleanenergyfuture.gov.au/biodiversity-fund/>>.

206. *Remote Indigenous Energy Program*, *supra* note 185.

reducing reliance on diesel generation. Also in place is an investment of \$22m over 5 years from 2012–13 for the ongoing Indigenous Carbon Farming Fund, which will provide support for Indigenous Australians to implement projects under the Carbon Farming Initiative, specifically providing specialists to work with Indigenous communities to develop carbon farming projects and develop low-cost estimation and reporting tools for abatement activities likely to have high indigenous participation, such as savannah fire management.<sup>207</sup>

#### IV. Discussion

In this section, we will draw upon the case studies to consider which design features of carbon taxes and emission trading schemes make them more (or less) amenable to being implemented in a way that is fair. Although evaluating the fairness of carbon pricing instruments is undeniably difficult and will not yield simple answers, we believe that our case studies illustrate the necessity of doing so.

Our first main and general point is that evaluations of fairness require consideration of a broad array of factors, from basic design features to revenue-use policies. Certain groups, such as indigenous communities, are impacted not only by the cost increases resulting from both carbon pricing policies, but may be less able to access the policy options offered to mitigate the cost increases. As such, it is essential to consider the entire policy package to assess how fair a carbon pricing policy is. Our second point, also general in nature, is that fairness evaluations must consider not only how the cost burden of carbon pricing policies is distributed across income groups, but also how the burden is distributed among groups according to demographics such as race, gender, and region. While there is, as our case studies illustrate, overlap between income levels and demographic groups, the socio-economic and cultural characteristics of particular communities is worthy of consideration in determining the fairness of a policy.

We will now move through the analytical framework we applied to discuss what findings emerged. Starting with design, we note that breadth of coverage is most important from the perspective of the effectiveness of the measure. Although we did not evaluate the effectiveness of either measure, it is safe to say that the broader the coverage of GHG emissions the more effective the measure should be in terms of reducing emissions (other factors being equal). As indigenous groups are uniquely vulnerable to climate change, broader coverage should be positive for them. That

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207. Australian Government, Department of Climate Change and Energy Efficiency, *Indigenous Carbon Farming Fund*, online: Australia <<http://www.climatechange.gov.au/government/initiatives/indigenous-carbon-farming-fund.aspx>>.

said, having an exemption for carbon taxes on reserve is, in our view, a reasonable compromise between the goal of maximizing the effectiveness of the carbon price and reducing the burden on First Nations living on reserve. A reasonable compromise in the Australian context would include the range of complementary initiatives specifically targeting indigenous communities, such as the Remote Indigenous Energy Program.<sup>208</sup>

Differences between breadth of coverage in ETS and carbon taxes are relatively minor. The Australian ETS will cover 65% and the BC carbon tax 73% of GHG emissions. Further, there is nothing inherent in ETS or carbon taxes to suggest that one will necessarily lead to broader coverage (and, therefore, more effectiveness, holding the rate constant). Some might argue that it is easier to create industry or company specific exemptions from ETS than carbon taxes (especially downstream ones), or that carbon taxes are more likely to apply broadly. It is possible, however, to create exceptions in both policies and, thus, evaluations of fairness must consider the specific design of a given carbon pricing policy.

The same conclusions can be drawn with respect to the rate of the carbon pricing policy. The rate is relevant to the effectiveness of the measure; however, both ETS and carbon taxes can establish variable rates. The BC carbon tax established an initial rate of \$10 per CO<sub>2</sub>e, rising to \$30 within a given time period. The Australian ETS in 2015 will start at around \$26, with a ceiling cap of \$20 above the international rate with a price floor of \$15. One factor that distinguishes the two measures is that the amount of revenue raised from carbon taxes may be more predictable, since a greater number of variables will influence the price of emissions permits and because initial permits may be grandfathered. This leads us to a discussion of revenue, which we believe to be the most important point.

We believe that the generation of revenue and the choice of how to spend that revenue is the single greatest determinant of the fairness of a carbon pricing policy. In this regard our comparison suggests that carbon taxes may be fairer at a general level because a key feature of carbon taxes is that they inevitably generate revenue. Predictable revenue streams may be helpful in designing and implementing mitigation policies. In contrast, revenue projections from an ETS can be less certain, as they rely upon variables such as future carbon prices and exchange rates. Further, an emissions trading scheme will only generate revenue if permits are auctioned rather than grandfathered; however, there is nothing to prevent an ETS scheme from being designed in a way that generates revenue and applies it in a fair manner. Nor is it a foregone conclusion that a government

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208. *Supra* note 206 and 207.

will only create offsetting policies with revenue generated from a carbon tax. Governments can, as illustrated by the Australian case study, offer complementary measures to the ETS.<sup>209</sup> Similarly, there is nothing to ensure that revenue from carbon taxes, once generated, will be allocated fairly. So, as is often the case, the devil is in the details—in this case, the design details.

While a more predictable revenue stream may make carbon taxes more advantageous from a fairness perspective, the issue of how the revenue is spent is critical. Certain tax policies or principles may make taxes less flexible. We highlight two in particular: dedicating revenue (or earmarking) and tax-shifting. With respect to dedicating revenues, there is often a resistance within finance departments to earmark tax revenue for particular purposes, as this can reduce government flexibility to allocate revenue where it is needed based on a variety of circumstances. In contrast, there is no such practice in ETS that would create resistance to allocating revenue from permits to particular programs. This issue may not be a major constraint as the BC carbon tax illustrates that governments can overcome resistance to earmarking (the carbon tax revenues in that case are dedicated to specific tax cuts and the low-income tax credit).

Another point of interest in distinguishing ETS from carbon taxes is the “tax-shifting” mentality that has arisen around environmental taxes. A great deal of momentum for environmental taxes was created some years ago when environmentalists and economists realized that they could agree wholeheartedly that redirecting taxes from “goods,” such as income and employment, to “bads” such as pollution and resource use, was economically efficient and environmentally beneficial. While this momentum was very positive in helping to expand the environmental policy toolbox to include economic instruments, it may have created a rigidity that limits alternative approaches, such as directing revenue to funding environmental policies. One advantage of an ETS system may therefore be that there is less entrenchment in the tendency to want to use revenues for tax cuts, versus climate change mitigation, so it may be more politically feasible to offer targeted assistance to disadvantaged groups. Of course, there is nothing to prevent a carbon tax policy from being designed so that revenue is directed to climate change mitigation, as was done in Quebec, or to offset disproportionate impacts, but it may

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209. It is estimated that the Australian government’s tax concession will cost around \$14.9m, which is about half the revenue expected in the fixed price period. No estimates are yet available for the flexible price period but relatively small fluctuations would be expected.

be a harder political battle.<sup>210</sup> In sum, while taxes have more predictable revenue streams, they may be somewhat less flexible given the resistance to ear-marking and the tax-shifting mentality. However, the bottom line is that both instruments have the potential—should the political will be present—to generate revenue and dedicate that revenue to policies that are fair. So what, in our view, is needed to create fair mitigation policies?

To ensure a fair mitigation policy, we argue that revenue should first be used to offset regressivity as well as the additional cost impacts to disadvantaged groups, taking into account factors outside of revenue. Care should be taken to design the policies in a way that maximizes their accessibility to vulnerable groups. For instance, direct payments may need to be used rather than tax rebates in order to ensure that they reach target groups (who may not have enough income to justify filing a tax return). When tax rebates are used, they should be refundable and targeted at individuals versus households. BC's *Low Income Tax Credit* is both refundable and targeted at individuals, which are positive features in an analysis of fairness.

When direct payments are used, they also need to be designed in a way that maximizes accessibility. For example, the *Low Income Supplement Payment* introduced as part of the compensation package for household assistance under the Australian ETS is an annual payment of \$300, coming into force on 1 July 2012.<sup>211</sup> A qualifying person needs to lodge a claim for this low income supplement. Care needs to be taken in designing such programs to ensure that they are administratively accessible; for example, would members of remote indigenous communities be in a position to take advantage of these payments?

Direct payments should also be designed to take into account additional costs faced by particular groups. The modelling used to help design the ETS household assistant package<sup>212</sup> did not take into account the additional expenses on goods and transport that those living in remote areas will have to pay. Other measures in a given assistance package, such as encouraging the uptake of energy efficiency measures, although helpful to many groups, may not be equally accessible to renters or low-income households. Climate change mitigation policies should be designed to be widely accessible to all, including vulnerable groups such as indigenous communities. For instance, as there are a higher percentage of renters in indigenous communities, mitigation policies must be designed to ensure

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210. For instance, Québec's redevance annuelle has targeted revenue into climate change mitigation policies: *supra* note 134.

211. *Supra* note 194.

212. *Supra* note 154.

that they are not uniquely available to homeowners; for example, insulation retrofits and solar panel rebates would not be accessible to tenants.

Once revenue is used to offset regressivity and other vulnerabilities due to socio-economic or cultural factors, we would argue that remaining revenue should be prioritized towards climate change mitigation, rather than general tax cuts or other measures that bolster public support for the measure. This is well illustrated by the transitional support under Australia's *Clean Energy Legislative Package*. Even though tax cuts may increase economic efficiency, the economic gains of addressing climate change, were they to be measured, may very well be greater. The difficulty, of course, comes when politicians believe that the only way to pass a measure like a carbon tax is by offering tax cuts. However, with strong support for policy action on climate change, a measure that remained revenue neutral but directed revenues at climate change mitigation rather than tax cuts might also be politically viable.

From the perspective of procedural fairness, neither taxes nor emissions trading schemes stand out as necessarily more or less fair. As we noted, the breadth of taxes may render the political discussion surrounding their implementation more accessible to the general public, thus enhancing procedural fairness. At the same time, there is nothing that precludes an ETS from being designed with a public process that engages various segments of society, and not only the business stakeholders who will ultimately be the permit holders. One feature that may distinguish carbon taxes is that the direct costs of taxes renders the distributional impacts more visible and measurable. As such, they may enable a discussion of fairness in the tax instrument design or reform. But once again, neither carbon taxes or ETS is inherently better from a procedural fairness standpoint.

### *Conclusion*

This paper has argued that the fairness of carbon pricing policies must be assessed using more than the consideration of income. As already well established in the literature, regressivity of carbon pricing instruments is a critical part of any fairness assessment; however, we have argued that there are a number of socio-economic and cultural factors characteristic of certain vulnerable groups, such as indigenous communities, that lead to a double burden of regressivity. In other words, the impact of carbon pricing policies is affected by more than income levels.

We have argued that a singular emphasis on tax-shifting may be misguided and that, while returning carbon tax revenues to taxpayers through various policies is fine, the apportionment of those revenues should take into account the impacts on vulnerable groups. All elements

of carbon pricing policies must be evaluated to ascertain how they will impact upon vulnerable groups. We have also argued that targeted policies to mitigate this double burden be implemented with a carbon price. This may be funded by the revenue generated by the policy or by other sources of government revenue. We have argued that governments should de-prioritize tax cuts in favour of mitigating impacts on vulnerable groups. We have also argued in favour of devoting revenues generated by the instruments to climate change mitigation in addition to, or instead of, tax cuts.

Our analysis has shown that both carbon taxes and ETS policies have the ability to engineer social justice outcomes through the revenue that they generate and both the BC carbon tax and an Australian ETS use the tax system for this purpose. At the same time, however, the tax system is a relatively blunt instrument. The particular disadvantage of Indigenous communities cannot be completely overcome by tax credits or allowable deductions, nor will it be overcome by the suite of general complementary measures or energy efficiency initiatives because of Indigenous communities' remoteness, household type, and higher employment in impacted sectors. As the Canadian case study demonstrated, something as simple as a "Low Income Tax Credit" can go a long way towards mitigating regressivity. Such programs, however, must rise concomitant with tax increases and they must be accompanied by additional programs to reduce the additional burden of cost increases for indigenous communities. We have shown that there is a need for programs to specifically target vulnerable populations. An example would be a specific incentive aimed at making indigenous rental accommodation more energy efficient. On a positive note, Australia's proposed carbon pricing policy includes some examples of targeted programs for indigenous communities, such as the *Remote Indigenous Energy Program*, but more can be done.

We conclude that carbon pricing policies have the potential to be designed in a way that is fair to indigenous communities, but that the devil is in the details. Both ETS and carbon taxes have cost implications for disadvantaged groups such as indigenous peoples, but they can both be designed in a way that compensates fairly for these impacts. Ultimately, it is a political choice.