



Government of the
Northwest Territories
Consultation on
Revenue Options 2010

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SUBMISSION

FROM: Alex Wood, Senior Director (Policy & Markets), Sustainable Prosperity

**TO: Honourable J. Michael Miltenberger
Minister of Finance
Government of the Northwest Territories
(c/o Revenue_Options@gov.nt.ca)**

DATE: November 1, 2010

RE: SP submission to GNWT consultation on Revenue Options 2010 Discussion Paper

Sustainable Prosperity (SP) is a national research and policy network, based at the University of Ottawa. SP focuses on market-based approaches to build a stronger, greener economy in Canada. It brings together business, policy and academic leaders to developing innovative ideas and inform policy development. Our *Low Carbon Economy Policy Research Cluster* synthesizes cutting-edge research and policy experiences on carbon pricing and its role in the transition to a low carbon economy, seeking to better understand how carbon taxes, cap and trade and other carbon pricing systems can effectively contribute to innovation and competitiveness for a more sustainable prosperity.

Sustainable Prosperity welcomes the opportunity to comment on the Government of the Northwest Territories (GNWT) 2010 discussion paper on Revenue Options, and commends the GNWT for its commitment to engagement and consultation on a possible carbon tax – an issue of critical importance to the territory’s economic, environmental, and social future.

Climate change presents a unique challenge for decision-makers: it is the greatest and widest-ranging market failure ever seen.¹ As a market failure, it presents a unique opportunity: the core policy response to this market failure, carbon pricing, also generates a new stream of revenue to government and with this revenue, choices and new opportunities for governments to support healthier communities, to shift to clean technologies, and to prepare for an increasingly carbon-constrained future.

¹ Nicolas Stern, *the Economics of Climate Change*. (Great Britain: Cabinet Office – HM Treasury, 2007) pp. xvi-xvii.

This submission is intended to support the government’s consideration of a possible carbon tax, and inform public debate on the detailed design of a carbon tax in the coming year. It is organized into five sections:

- 1) Initial comments
- 2) Tax shifting and the ecological and economic double dividend
- 3) Revenue from a carbon tax
 - a. Choices
 - b. Considerations
 - c. Accountability and transparency
- 4) Design of a carbon tax
 - a. Principles for the design of a carbon tax
 - b. Federal/provincial/territorial policy coordination
 - c. Tax coverage
 - d. Mitigation of impacts on rural and remote communities
 - e. Mitigation of impact on low income households
 - f. Mitigation of impacts on the competitiveness of firms
- 5) Conclusions

1) Initial Comments

By way of initial comments, we offer three thoughts. First, **we commend the GNWT for considering a carbon tax**. Economists widely agree that pricing carbon is the most efficient approach to reducing carbon emissions from an economic perspective. Pricing carbon has three principal advantages over a traditional ‘command and control’ approach to carbon regulation: (i) it provides an incentive to reduce emissions without favouring any one way of doing so; (ii) it can achieve reductions at much lower cost (thereby allowing for greater reductions); and (iii) it creates a continuous incentive for clean innovation, since there is an economic reward for each additional unit of emission reduction.²

Most economists also consider that a carbon tax has several advantages over the alternative pricing instrument, a cap and trade system. These include easier comprehensive coverage of emission sources, administrative simplicity and frugality (it uses existing public and private tax administration infrastructures), speed of establishment (BC’s carbon tax, for example, was developed and implemented in six months), low transaction costs, price certainty (critical for investment decisions), and transparency to consumers (critical for influencing behaviour).³ While a carbon tax does not guarantee a specific level of emission reductions (as a cap and trade system

² Ibid, and Robert Stavins, *Experience with Market Based Environmental Policy Instruments*, (Resources for the Future, November 2001). p.2

³ For example, Congressional Budget Office, op.cit; William D. Nordhaus, *Economic Issues in Designing a Global Agreement on Global Warming*, keynote address. (Climate Change: Global Risks, Challenges, and Decisions conference, Copenhagen, March 10-12, 2009); and *An Open Letter to the Leaders of Canada’s Federal Political Parties*, signed by 255 leading Canadian economists. October 6, 2008. At www.econ-environment.ca

does), this can be approximated by setting the tax rate at the right level to meet emission goals – a level that can be adjusted occasionally (as are some other tax rates). The use of a carbon tax or carbon tax with cap-and-trade, versus a cap-and-trade system alone is endorsed by a strong majority (66%) of thought leaders in Canada, with only 6% recommending a cap and trade alone.⁴ Furthermore, the NWT has only a few emission sources large enough to participate in a cap and trade system (3 sources above 100kt CO₂e in 2008),⁵ making a carbon tax the rational choice for carbon pricing.

Second, **the introduction of a price on carbon in 2012 would bring the NWT abreast of the majority of other Canadian jurisdictions.** As noted in the GNWT discussion paper, Alberta, BC, and Quebec have already put a price on emissions, through carbon taxes or a carbon compliance price for regulated emitters. In addition, BC, Ontario and Quebec have passed enabling legislation for a cap and trade system that would link to the Western Climate Initiative's system in 2012,⁶ and Saskatchewan has passed enabling legislation and draft regulations, including a carbon compliance price, to regulate large carbon emitters.⁷ In Manitoba, a carbon tax will be applied to coal combustion emissions this coming July, starting at \$10/tonne and rising to \$30/tonne.⁸ Thus all provinces except the Atlantic provinces are likely to have some form of a carbon price by 2012. Furthermore, the oil and gas and mining sectors that form the majority of the NWT's current and forecast future emissions will soon be subject to carbon pricing in most competitor Canadian jurisdictions.

Third, **we commend the GNWT for considering a carbon tax shift, as opposed to simply a tax.** Carbon taxes should rarely be pursued solely as a way to increase revenues. If revenues are appropriately recycled (as we discuss below), they can provide other environmental, social, and/or economic benefits. Moreover, as is discussed later in this submission, public support clearly favours the recycling of carbon revenues rather than its allocation to general government revenues.

2) Tax shifting and the ecological and economic double dividend

The GNWT discussion paper suggests that a carbon tax could be made revenue neutral to the government by flowing the revenue back to NWT residents and businesses through income tax reductions and credits. Additional options for revenue use and further perspectives on the strict interpretation of revenue neutrality, including recommendations for managing revenue neutrality in the context of fluctuating revenue, are provided in section 3, below.

⁴ McAllister Opinion Research, *the 2010 Global Thought Leader Survey on Sustainability*. (Alberta: Pembina Institute, May 2010).

⁵ Environment Canada, *Reported Facility Greenhouse Gas Data, 2008*. At www.ec.gc.ca/ghg-ges

⁶ Government of Ontario, *McGuinty Government Paves the Way for Future Cap-And-Trade System*. Press release, December 3, 2009. At www.news.ontario.ca/ene/en/2009/12/reducing-greenhouse-gas-emissions.html

⁷ Lin Gallagher. *Saskatchewan Climate Change Plan*. Saskatchewan Ministry of Environment. Presentation. (Canadian Energy Forum, February 9, 2010).

⁸ Government of Manitoba, *Manitoba Budget 2008, Budget Paper C: Taxation and Adjustments*. (April 9, 2008). p. C11

Tax shifting is not only politically appealing, but also offers the opportunity to reduce those taxes that create the largest distortions and disincentives to work, savings, and investment.

In so doing, governments maximize the likelihood of achieving economic as well as ecological benefits, the so-called “double dividend.” Substantial empirical research has been conducted to test this double-dividend hypothesis. Work by the Organization for Economic Co-operation and Development (OECD) to evaluate and summarize double-dividend research concluded that positive employment effects can be expected if the revenues from environmental taxes are used to finance reductions in income taxation. Likewise, the OECD concluded that positive effects on GDP can be expected if the revenues are used to finance reductions in taxes on investment.⁹ A study conducted by the World Bank reviewed 103 studies on environmental fiscal reform and employment impacts. The review revealed that 73% of studies showed a positive influence on employment, 24% showed a negative impact on employment and the remainder showed no impact on employment.¹⁰ An in-depth European Union study of the 25 billion Euros/year tax shifts undertaken by Denmark, Sweden, Finland, the United Kingdom, the Netherlands and Germany found that five of the countries experienced modest economic gains as a consequence of the carbon/energy tax shift while one country, the United Kingdom, experienced a neutral economic outcome.¹¹ (It is important to keep in mind that relative to the NWT, these European countries had higher labour taxes when they introduced their carbon taxes.)

The limited research that has been conducted on the GDP and welfare impacts of different uses of carbon revenue for Canada concludes that the specific choices of which taxes are reduced will influence the net impact of the carbon price on the jurisdiction’s international competitiveness, economic efficiency, household welfare, and greenhouse gas reductions. For example, the National Roundtable on the Environment and the Economy conducted general equilibrium modeling of revenue use options for a Canada wide cap-and-trade system with full auctioning. They concluded that cuts in corporate taxes stimulate growth more than other tax cuts, and cuts in labour and payroll taxes do not stimulate growth as much as cuts in corporate taxes, but perform better than cuts in sales taxes.¹² Modelling of the possible economic and environmental effects of a large-scale green fiscal reform in the UK, conducted by the UK’s Green Fiscal Commission, reached parallel conclusions about the significant influence on greenhouse gas emissions and GDP of different choices for how revenue is recycled.¹³

⁹ OECD, *Environmentally Related Taxation in OECD Countries: Issues and Strategies*. (Paris, France: OECD, 2001).

¹⁰ Benoit Bosquet, “Environmental Tax Reform: does it work: A survey of the empirical evidence.” *Ecological Economics* 34. (Elsevier, 2000).

¹¹ Paul Ekins, *An assessment of ETR on the competitiveness of selected industrial sectors*. COMETR (Competitiveness Effects of Environmental Tax Reforms), Work package 3. (March 2007).

¹² National Roundtable on the Environment and the Economy, *Technical Report on Achieving 2050: A Carbon Pricing Policy for Canada*. (Ottawa: NRTEE, 2009).p. 52 and 53.

¹³ Green Fiscal Commission, *A Major Green Fiscal Reform for the UK: Results for the Economy, Employment, and the Environment*. Briefing Paper Five. (March 2010). At www.greenfiscalcommission.org.uk

3) Revenues from a carbon tax

3.a) Choices

There are many worthy choices for how to direct the estimated \$11.2 million/year in new revenue arising from a \$10/tonne CO₂e carbon tax (equivalent to 0.9% of the \$1.36 billion 2010-2011 forecast GNWT revenues). For reasons elaborated more fully below we urge the GNWT to apportion some carbon tax revenue to climate-related programs as well as tax reductions. In reviewing other carbon pricing programs and proposals (Canadian and international), we have identified four broad categories of potential revenue use that are relevant to the territorial context, each with some merit for reasons of economy, equity, competitiveness, or environment:

- i) **broad fiscal priorities** such as improving the economic efficiency of the tax system (by using the fiscal space created by carbon revenue to reduce distortionary taxes e.g. on income);
- ii) **alleviating inequitable impacts of the carbon tax** (as discussed further below re: remote communities, low income households, and vulnerable industries);
- iii) **faster adoption of low carbon practices and technologies** (by GNWT departments, communities, businesses and institutions, and individuals through funding and technical support programs for increasing energy efficiency, accelerating adoption of renewable and carbon neutral energy, and demonstration and pilot projects in alternative energies and emerging technologies);
- iv) **climate adaptation programs** (adaptation plans to address the ongoing and expected impacts of climate change and related infrastructure upgrades).

3.b) Considerations

Public opinion

Public opinion research consistently finds that the use to which funds generated through carbon pricing are put is decisive to public acceptance of a carbon price.¹⁴ Canadian focus group testing in 2007 found that participants would be unlikely to support any form of carbon pricing unless the revenue was spent to help solve the climate change problem and make Canada catch up to other countries, rather than contributing to general government coffers. Two thirds of focus group participants prioritized a “virtual cycle” of investments in new, clean technologies such as wind and solar power and improving the efficiency of public transport. Secondary priorities included the healthcare system, environmental sustainability training and consumer rebates. Tax cuts, whether for individuals or companies were “seen as a non-starter that would deprive the government of additional means to tackle global warming.”¹⁵

Naturally, regional and current research would be needed to confirm if these polls reflect the perspectives of NWT taxpayers in 2010. The research does, however, point to a quandary for policy makers: while economic modelling identifies strong double dividends (ecological and economic)

¹⁴ Harris/Decima, *Tax Environmental Harm, Reward Environmental Good* (May 7, 2008); McAllister Opinion Research, *Carbon Pricing Focus Groups 2007*, (December 2007); BBC World Service Poll and GlobeScan, *Most would pay higher energy bills to address climate change says Global Poll*, (November, 2007).

¹⁵ McAllister Opinion Research, *Carbon Pricing Focus Groups 2007*, (December 2007). Six focus groups in Calgary, Toronto, and Montreal, n=80. Participants were asked to choose their preference from a list of 11 revenue recycling options.

from tax shifting (section 2), public opinion research suggests that the public wants carbon pricing revenues to be used in accelerating the fight against climate change, and actual experience with a carbon tax in BC shows that alleviating the inequitable impacts of a carbon tax is also key to maintaining public support (sections 4.d. to 4.f, below) . For this reason, **we recommend that revenue raised through an NWT carbon tax be recycled to all four categories of potential use identified above.**

Broad fiscal priorities and revenue neutrality

Revenue from a carbon tax is reasonably predictable and reliable. The dominant short term factor in revenue levels is the performance of the economy. Experience in British Columbia suggests that if the GNWT wishes to manage carbon tax revenue in a revenue neutral fashion, it should incorporate some adaptability to revenue fluctuations. BC’s carbon tax revenues for 2008/09 were expected to be \$338 million, and the BC government implemented income tax reductions designed to fully return this estimated revenue to taxpayers. However, actual carbon tax revenue was only \$300 million due to the economic recession. Because income tax reductions are not readily reversed, the BC government’s 100% revenue neutrality commitment left \$38 million of the income tax reductions unfunded.¹⁶ Presumably the inverse situation would occur in times of unexpected GDP growth.

Fiscal prudence therefore suggests that rather than committing to a strict 100% annual recycling of revenue into tax reductions, the commitment should be to recycle a fixed level of the carbon tax revenue into tax reductions, with the balance of revenue allocated on an annual basis to programs to alleviate impacts on low-income and remote communities. Low carbon energy programs and climate adaptation programs.

Alleviating inequitable impacts of the carbon tax

This category of expenditure is integral to the good design of a carbon tax for economic, equity, and environmental reasons. This is discussed in more detail in sections 4.d to 4.f, below. Experience in BC demonstrates that careful anticipation of the social justice impacts of a carbon tax (i.e. on rural and remote communities, and low income households) is vital to its public acceptance.

Faster adoption of low carbon practices and technologies

At an initial level of \$10/tonne CO₂e, the carbon tax will be insufficient on its own to drive the shift to new practices and to support the emergence of new technologies at the pace necessary to meet emission reduction targets. Public investment to accelerate low carbon practices, and to support demonstration and pilot projects in alternative and emerging technologies is most needed at this early stage. It subsides as (and if) the carbon tax rate rises, driving higher individual and private-sector demand for low carbon technologies.¹⁷ Faster uptake in low carbon practices and

¹⁶ Government of British Columbia, *Budget and Fiscal Plan 2009/10-2011/12*. (February 17, 2009). p.72

¹⁷ National Roundtable on the Environment and the Economy, *Achieving 2050: A Carbon Pricing Policy for Canada*. (Ottawa: NRTEE, 2009) p. 25-26 and Roger Martin and Alison Kemper, *Carbon Pricing, Innovation, and Productivity: Implications for Canadian Policy Makers*. (Ottawa: Sustainable Prosperity, 2010).

technologies also translates into avoided higher mitigation costs later, and conversely reduces the cost of future, more stringent, reduction targets.¹⁸ In addition, there are and will continue to be sectors of the economy that are relatively insensitive to the impacts of carbon pricing or regulation, and for which investment policies will be required: for example, tenanted buildings in which the building owner has no incentive to improve the energy efficiency of the building, because utility costs are borne by the tenant, or the demonstration stage of emerging technologies such as wind and geothermal.

For all of these reasons, **we recommend that a portion of the NWT carbon tax revenue be allocated to expanding programs to stimulate and accelerate the deployment and adoption of low-carbon practices (e.g., grants, loans, rebates, and direct technical support for communities, businesses and institutions, and individuals), and demonstration and pilot projects in low-carbon alternative energy and emerging technologies.** Many of these initiatives are already underway, e.g. through the Arctic Energy Alliance.¹⁹ A focus on energy-inefficient housing stock should be a priority.

Climate adaptation

Climate adaptation investments are particularly relevant in the NWT context, where warming temperatures, permafrost melting, changing rain, snow, and land conditions, melting sea-ice, earlier springs, and shifts in the distribution of animals and plants are already occurring. In addition to mitigating carbon emissions, governments need to initiate programs to reduce vulnerability to the impacts of climate change. Adaptation is a local issue with direct economic and social benefits and security implications to NWT individuals, businesses, and communities. These investments need to include adaptation plans, studies and data collection, plus already-present adaptation needs such as upgrading physical infrastructure to adapt to thawing permafrost, and improving disaster management capacity.²⁰ **We recommend that a portion of the carbon revenue be allocated to climate adaptation investments.**

3.c) Accountability and transparency

North American governments are increasingly assuming a high onus of accountability in accounting for how carbon revenue is used, beyond customary fiscal policy practices. Stakeholder consent for carbon pricing, with its 'new tax' association, appears to be contingent on parallel consent for the use to which the revenue will be put. **We recommend that the GNWT commit to annual reporting of the amount of carbon tax revenue that has been collected in the preceding year, how it has been used, how much revenue is forecast for the coming year, and the plans for how this will be allocated.**

¹⁸ Sustainable Prosperity, *Public Investment in Low-Carbon Technologies and Infrastructure: Operating Assumptions and Principles*. Background Paper. (Ottawa: Sustainable Prosperity, December 2009).

¹⁹ Arctic Energy Alliance, www.aea.nt.ca

²⁰ National Round Table on the Environment and the Economy, *True North: Adapting Infrastructure to Climate Change in Northern Canada*. (Ottawa: NRTEE, 2009).

4. Design of a carbon tax

4.a) Eight principles for the design of a carbon tax

Sustainable Prosperity, based on an expert dialogue between leaders from business, non-profits and academia, has developed eight principles to guide Canada’s approach to carbon pricing, whether this be implemented through a carbon tax (as is being discussed in the NWT), through a cap and trade system, or through a combination of both.²¹ *The following section reflects a carefully negotiated expert consensus text intended for a national context; in respect for the consensus, the text cannot be amended, but we underline that some interpretation for a territorial (rather than national) context is necessary.*

No matter the instrument, a carbon pricing policy should be:

- ✓ **Comprehensive, with no exemptions:** A price signal should apply across the economy, providing an incentive to all businesses and households to cut emissions. In a cap and trade system, emission permits should be fully auctioned or priced (some transitional accommodation may be needed, such as for energy-intensive, trade-exposed sectors).
- ✓ **Nation-wide:** The federal government should take the lead in pricing carbon, or establish a common framework for a minimum carbon price. A balance is needed between allowing regional innovation while avoiding costly policy fragmentation.
- ✓ **Simple and readily implemented:** Policies should avoid complex rules and exceptions. Ones with shorter lead-times to take effect are preferable, since fast implementation will make long-term deep emission reductions less expensive.
- ✓ **Transparent and accountable:** There should be transparency with respect to policy objectives (e.g. price and/or quantity targets) and implementation, and use of revenues.
- ✓ **Complemented where a price signal alone is insufficient:** Non-price policies (e.g. regulations or incentives) should also be used in certain situations, such as for activities that are price inelastic, or to stimulate accelerated technology research and development.

The carbon price itself should be:

- ✓ **Environmentally effective:** The price should be set at a level that will achieve the jurisdiction’s interim and long term emissions reduction targets.
- ✓ **Comparable to that in other countries:** To minimize competitiveness impacts and avoid trade sanctions, Canada’s carbon price should be in line with other countries’. This does not nullify the need for initial leadership in adopting carbon pricing.
- ✓ **Predictable but adaptable:** A strong carbon price should be initiated swiftly. It should rise steadily to enable adjustment and planning. It should be recalibrated if required by changing science, international goals, or emissions reduction response. An independent advisory panel would promote transparency and objectivity.

²¹ See www.sustainableprosperity.ca

4.b) Federal/provincial/territorial policy coordination

In an ideal world, Canada would have either a national carbon pricing policy, or a national framework ensuring a common carbon price across the country.

In the absence of such national policy, the majority of Canadian provinces have now demonstrated climate leadership and initiated their own carbon pricing programs or proposals. The advantage of this, from a provincial and territorial perspective, is the ability to tailor policy to regional emission profiles and political cultures, and the opportunity to invest carbon pricing revenues in provincial or territorial priorities. The disadvantage, from both an economic and social union perspective, is the emergence of a fragmented national carbon policy landscape, with widely different approaches, emissions coverage, and carbon prices across the country. This reduces the economic efficiency of meeting emission reduction targets and brings a risk of carbon leakage (production moving to jurisdictions with lower carbon prices, with no reduction in emissions) and potential loss of competitiveness for some firms in jurisdictions that have demonstrated initial carbon leadership.

The key to making this “bottom-up” carbon policy work is to have a common price and common reduction targets. The policies themselves do not need to be the same (i.e., a cap and trade only regime can co-exist with a hybrid regime and with a carbon tax only regime). This is demonstrated by the Western Climate Initiative, a partnership of 11 provinces and states taking co-operative actions and implementing a joint strategy to reduce greenhouse gas emissions.²² WCI partners have significant flexibility in the choice of which policies to use to meet their targets, within rules established to ensure equal rigour in their approaches.

We recommend that the GNWT aim to ultimately coordinate its carbon price with that of other Canadian jurisdictions. We also recommend that the GNWT evaluate observer or partner status with co-operative multi-jurisdictional initiatives, in particular the Western Climate Initiative.

In an eventual scenario where the Canadian federal government implements a carbon pricing policy, an equivalency agreement will be desirable to maintain policy coherence. This will be a common need of all the Canadian jurisdictions that have implemented carbon pricing, and as such should not act as a deterrent to the NWT taking climate leadership with a carbon tax.

4.c) Tax coverage

We support the GNWT proposal for a tax levied on fossil fuels according to their carbon content. This point of levy provides the most ‘tax visibility’ to final consumers (in contrast to alternative upstream or mid-stream points of levy), an important consideration given that the intent of carbon price is to influence behaviour.

We encourage the GNWT to use the broadest possible tax base for the carbon tax—on all emissions from fossil fuel combustion. This broad tax base enables emission reductions to be achieved at the least possible total cost to the NWT economy. (Other non fossil fuel-combustion

²² www.westernclimateinitiative.org. Within Canada, BC, Manitoba, and Ontario are full WCI partners. The Yukon, Saskatchewan, New Brunswick and Nova Scotia are observers.

emissions such as landfill methane, hard-to-measure fugitive emissions, or industrial process emissions, and non fossil fuel-combustion are better addressed through cap and trade or regulation.) While there is likely to be some pressure to exempt vulnerable households and industries from the tax, we suggest that it is better to maintain the tax's incentive to reduce emissions and alleviate inequitable economic or competitiveness impacts through revenue recycling or other measures, as described in more detail, below.²³

4.d) Alleviating inequitable impacts on rural and remote communities

Distance, remoteness, and limited transportation infrastructure and alternatives already make for high costs of transportation in the NWT, influencing the price of goods and fuel and access to basic services. Many communities need to drive or fly long distances to access basic services that are not available in small communities. For these reasons, an NWT carbon tax package needs to be designed to eliminate disproportionate impacts on rural and remote communities.

Experience from BC points to this also being key to political acceptance of a carbon tax. Rural and remote BC communities felt they were being unfairly burdened by the carbon tax, because of their need to travel, a lack of vehicle and transportation mode options, and higher home heating requirements. These northern and rural protests catalyzed into an influential resistance to the carbon tax and the focal point of political campaigning against the tax.²⁴ (Interestingly, Statistics Canada data showed that residents in the Lower Mainland drive as much as three times further to work than commuters in rural and northern BC,²⁵ but the *perception* of inequity determined the debate.) The BC government eventually responded by introducing a Northern and Rural Homeowner benefit of up to \$200 for homeowners in the areas of the province outside of major metropolitan centres.

We recommend that an NWT carbon tax be accompanied by a rural and remote communities benefit, adjusted by region and designed to offset the relatively greater transportation costs for these communities.

4.e) Alleviating regressive impacts on low income households

A carbon tax package can be designed in a number of ways. Like any policy, it can be designed to be regressive—i.e. costing a larger percentage of a low-income household's budget than a high-income household's budget. Under such a design, low-income NWT households could spend a larger percentage of their household budget on heating and transportation post-carbon tax and be less able to afford investments in energy efficiency or low-carbon alternatives than high-income households.

²³ The issue of an exemption for fuel for commercial air services has been raised. In BC, fuel purchased in BC for use on routes that originate, or end in, BC without any intervening stopovers in BC, or the portion of the fuel used on routes that include intervening stopovers in BC, is not taxed. Social equity concerns about the impact on remote and fly in communities can be addressed through a tax credit for rural and remote communities, section 4.d.

²⁴ Earncliffe Strategy Group, *Review of Media Opinion on Carbon Pricing, February 15, 2008-July 20, 2008*. Presented at Sustainable Prosperity's Montebello Retreat, February 2009.

²⁵ David Suzuki Foundation, *Frequently Asked Questions about the BC Carbon Tax*. At www.smartgrowth.bc.ca/Portals/0/Downloads/FAQsCarbonTax_SuzukiFdn.pdf

Fortunately the carbon tax package does not need to be regressive. One benefit of a carbon tax is that it provides revenues which can be used to address this. By combining the carbon tax with deliberate policies to make it fair for low income households, the incentive for households to reduce emissions can be maintained but disproportionate impacts on low income households can be neutralized. The choice of mechanisms for how to address regressivity must consider how to reach residents who do not pay tax, and how to specifically target the lowest income households.

Analysis of the impact of BC's overall package of carbon tax, accompanying income tax reductions and Low Income Climate Action Tax Credit across income groups²⁶ concluded that the policy package had been moderately progressive in its first year, meaning that the bottom 20% of BC families, by income, had a small net gain from the policy package (albeit smaller in absolute dollars than the gain of the top 20% of BC families). This analysis confirms that the regressive impacts of a carbon tax can be successfully addressed.

This analysis also looked at several methods of transferring benefits to low income households (low-income tax credits; per household transfers; or a refundable tax credit gradually phased out above a certain income threshold, similar to the federal Canada Child Tax Benefit). It concluded that low-income tax credits were the most redistributive model, providing the greatest benefit to the two lowest quintiles, while the per household transfer benefitted the bottom quintile only.²⁷ This analysis suggests that the GNWT should use income-adjusted tax credits rather than per household transfers to alleviate the regressive impacts of the carbon tax.

Policies to alleviate the regressivity of a carbon tax need to take into account any carbon tax rate increases. Analysis of the schedule of BC's income tax reductions and Low Income Climate Action Tax Credit increases concluded that they are not keeping up with the annual \$5/tonne CO₂e carbon tax increases. In other words, the impact of the carbon tax package on low income households has shifted from an initially positive economic impact to a negative economic impact.²⁸ This analysis suggests that income tax reductions and tax credits should be indexed to any future increases in the carbon tax rate, to continue to mitigate potential regressive impacts of the carbon tax.

We recommend that the GNWT:

- a) analyze the impact of alternative packages of carbon tax and accompanying income tax cuts, tax credits and/or per household transfers across different income levels in order to best mitigate impacts on low income households; and**
- b) include measures to alleviate the regressivity of a carbon tax on low income households in any carbon tax package.**

²⁶ Marc Lee and Toby Sanger, *Is BC's Carbon Tax Fair? An Impact Analysis for Different Income Levels*. (Vancouver: Canadian Centre for Policy Alternatives, 2008).

²⁷ Ibid.

²⁸ Ibid.

4.f) Mitigation of impacts on the competitiveness of firms

Concern that a carbon tax would affect the cost competitiveness of firms, and lead to loss of market share or even the emigration of business to jurisdictions without similar carbon pricing, has been used as an argument against implementing carbon pricing policies. This is potentially an environmental as well as an economic concern: if these impacts shift production to locations with higher carbon intensities, the ecological effectiveness of the carbon policy is also diminished since there is no net reduction in global emissions.

Despite the prominence of this concern in public debate, only a very small percent of industries are vulnerable (1-3 % in countries such as the UK, US, Germany).²⁹ To be vulnerable, a sector must combine the following properties:

- **An intensive emitter of greenhouse gases**--either directly or indirectly through emission-intensive electrical consumption--such that the imposition of a carbon price would make up a significant portion of that sector's value added.
- **Intense exposure to international market**, either as an exporter or as the manufacturer of a product that can be easily substituted with an import of the same or functionally-same good; and
- **No cost-effective technologies** available or in the pipeline to respond by lowering carbon intensity.

These first two properties can be assessed using precise criteria, such as those proposed in recent US draft climate legislation (Box 1).³⁰ In the time available for this Revenue Options consultation, it is not possible for us to analyze the potential vulnerability of NWT firms. However, the growing momentum toward carbon pricing policies in what are presumably the NWT's natural "export" markets (i.e. Canadian provinces and U.S. Northwest states) goes some way to alleviate this concern. To ensure that this is the case, **we recommend that an analysis of potential vulnerability of NWT firms be done in this next stage of carbon tax consideration, using precise criteria such as those developed for US, EU, and Australian cap and trade legislation.**

²⁹ Peter Wooders, Julia Reinaud, Aaron Cosbey, *Options for Policy-Makers: Addressing Competitiveness, Leakage, and Climate Change* (Winnipeg: International Institute for Sustainable Development, October 2009), p. 16-17; and Trevor Houser, Rob Bradley, Britt Childs, Jacob Werksman, Robert Heilmayr, *Levelling the Carbon Playing Field: International Competition and US Climate Policy Design* (Washington: Peterson Institute for International Economics and World Resources Institute, May 2008), p. xvi.

³⁰ HR2454, 11th Congress, 1st Session. *American Clean Energy and Security Act of 2009*. Section 764 (b) (2) (A); *American Power Act of 2010*, discussion draft, May 12 2010.

Box 1: US Criteria for Trade Vulnerable Sectors

Energy or greenhouse gas intensive:

- *Purchased energy and fuel costs above 5 % of the value of shipments; or*
- *The number 20 times the tons of direct and indirect CO₂e emissions above 5% of the value of shipments;*

AND

Trade intensive:

- *Value of imports + exports above 15% of value of total shipments + imports.*

OR

Very high energy or greenhouse gas intensity:

- *Energy or greenhouse gas intensity, as calculated above, higher than 20%.*

Vulnerability also depends on the level of the carbon price. Empirical evidence from the first phase of the European Union cap and trade carbon pricing regime, with generally low prices, did not reveal significant competitiveness impacts.³¹ It is also being observed that predicted impacts of carbon pricing on firms (through econometric models) have been significantly overstating what has been observed empirically.³²

For this reason, we recommend that

a) firms identified as potentially vulnerable, through the analysis above, be monitored when a carbon tax is introduced; and,

b) the GNWT adopt BC’s approach, which is to consider mitigation measures for industry on the basis of ex-post demonstration of actual vulnerability, rather than forecasts.

5. Conclusions

The GNWT has taken a wise step forward in considering a carbon tax package. Such a package, if properly designed, can have positive economic, social and environmental effects. It can also provide credibility to northerners urging other governments - in Canada and abroad - to take action on climate change, which constitutes a serious threat to northern livelihoods and communities.

We thank you for the opportunity to comment on the Revenue Options Discussion Paper 2010. Please do not hesitate to contact us with any questions you might have.

³¹ Julia Reinaud, *Issues behind competitiveness and carbon leakage: Focus on heavy industry*. Paris: International Energy Agency. Retrieved from http://www.iea.org/textbase/papers/2008/Competitiveness_and_Carbon_Leakage.pdf.

³² op cit; and Aaron Cosbey, *Border Tax Adjustment, Background Paper, Trade and Climate Change Seminar*, June 18-20 2008, Copenhagen Denmark. (Winnipeg: International Institute for Sustainable Development, 2008).