THE NORTHERN WAY

Making the Carbon Price Work for the NWT

This paper examines how the NWT can take advantage of these opportunities and create a "made in the North" solution that implements carbon pricing fairly, ensures vulnerable Northerners are not unfairly impacted and leverages the new federal funding to further reduce greenhouse gas emissions.

The NWT has a short window of opportunity to create its own carbon pricing mechanism or the Federal Government will impose a system. This paper sets out the opportunities, challenges and questions for Northerners to think about and discuss as a carbon price becomes a reality in the NWT.

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THE NORTHERN WAY:
MAKING THE CARBON PRICE WORK FOR THE NWT

"Climate change is a reality that Northerners see and feel every day and we must do our part to contribute to national and international efforts to address it."

Premier Bob McLeod commenting on the Government
of Canada's Technical Paper on the Federal Carbon Price Backstop
May 19, 2017

"Canadians realize that polluting is not free."

Minister Catherine McKenna announcing Canada's
Technical Paper on the Federal Carbon Price Backstop
May 18, 2017

1 INTRODUCTION

On Thursday, May 18th 2017 the Government of Canada provided details of how it will implement its national price on carbon for the first five years (2018 - 2022). The federal discussion document, *Technical Paper on the Federal Carbon Price Backstop*, is clear that provinces and territories that implement their own carbon pricing systems in their jurisdiction will have more autonomy and control over its design and key questions, including how the revenues can be utilized. The systems in each region adopted may vary, and while Canada has announced that the backstop approach will apply in the provinces, they have indicated that they are in discussions with the three territories to determine an approach that will work best in those regions.

The Northern Way has a very specific focus and purpose: because a price on carbon will be implemented in one way or another in the North, this report lays out the options and benefits for the Northwest Territories to take a lead in developing their own carbon pricing system. All Northerners have a stake and an interest in what happens next.

People in the Northwest Territories have been aware that the climate is changing for at least the last 30 years and governments have known that greenhouse gas (GHG) emissions play a significant role since they signed the Kyoto Accord in 1997. Canada signed onto the Paris Agreement in November 2015 – the first global agreement that recognizes the threat of climate change and sets GHG targets for each country to meet to avoid catastrophic climate change. As part of Canada's commitment to reducing our country's emissions, the Federal Government is implementing a national carbon price on GHG emissions that will take effect in 2018, starting at $10 per tonne of carbon dioxide equivalent (CO_2e) and rising to $50 per tonne of CO_2e by 2022. **The NWT has a short window of opportunity to create its own carbon pricing mechanism or the Federal Government will impose a system by January 1, 2018.**

In addition, the Federal Government has announced significant levels of new funding, starting in 2018, to "help the North get off diesel".

This paper sets out the opportunities, challenges and questions for Northerners to think about and discuss as a carbon price becomes a reality. The paper examines how the NWT can take advantage of these opportunities and create a "made in the North" solution that implements carbon pricing fairly, ensures vulnerable Northerners are not unfairly impacted and leverages the new federal funding to further reduce GHG emissions. Revenue collected from a carbon pricing mechanism along with federal and territorial funding represents a $320 million opportunity that will put the NWT on track to further reducing GHG emissions and doing their part in mitigating the effects of climate change.

This paper also proposes the creation of a short-term, collaborative working group, led by the GNWT. This Carbon Price Working Group would be tasked with making recommendations in response to the questions and challenges that arise, and developing a proposed work plan for the next five years, for consideration by Northerners, the GNWT and Indigenous governments. This GNWT-led Working Group would design, implement and review the carbon price.

Three years ago, Northerners signed the devolution agreement giving us greater responsibility in determining our future. It is up to Northerners to determine what is in our collective best interests, as together, a viable way forward is mapped out in the transition to an economy that emits less GHG emissions – solutions including energy efficiency and renewable energy. By doing so Northerners can build our economy and protect our environment by creatively managing the price on carbon and the revenues it generates.

By working collaboratively, the GNWT, Indigenous governments, communities, industry and Northerners, have resolved many difficult issues. Northerners achieved devolution, pioneered co-drafting of legislation between the GNWT and Indigenous governments, developed a world-class water strategy and negotiated ground breaking transboundary water agreements, all by working collaboratively. This same collaborative approach will work to get our thinking clear in regards to making the price on carbon work for us as we transition off fossil fuels and reduce our GHG emissions.

2 WHAT ARE NORTHERNERS' GOALS?

The goals of Northerners are an important consideration of an overall carbon pricing framework. The goals of a society must be forefront in mind and these goals should not be impacted or threatened with a new carbon pricing policy. For example, this paper suggests the four overall goals shown in the boxes to the right. In various forums over the last few years, Northerners have indicated that these goals are important to them.

These - and other - goals need to be thoroughly discussed by Northerners. They need to be considered as different carbon pricing mechanisms are being created.

3 HOW DOES A CARBON PRICE WORK?

Greenhouse gas (mostly carbon dioxide) emissions in the NWT are generated almost entirely from burning fossil fuels like diesel, gasoline, heating fuel, aviation fuel, propane, and natural gas. Reducing these emissions will require using energy more efficiently and eventually switching to renewable sources of energy. Fossil fuels are used in many aspects of life in the NWT and reducing fuel consumption will require both a significant change in societal behaviours including the implementation of technology.

Fortunately, societies change their behaviours all the time. Sometimes societies change on their own, such as with the adoption of smart phones and at other times societies change because their governments decide that a change is needed, such as with the adoption of recycling or new rules about pollution.

There are different approaches on how a government can change behaviour. In general, people will do what is easiest. To get them to stop doing something that is considered harmful (as in the case of burning fossil fuels that contribute to climate change), the government uses policies that make it more difficult to keep doing the "wrong" thing and easier to do the "right" thing. Policies usually combine some of these four approaches that use a combination of removing/creating barriers and incentives:

Action	Type	Purpose	Description	Example
Remove	Barrier	Do the right thing	Remove barriers preventing people from doing the right thing	People can't recycle if there is no recycling depot – so remove the barrier by opening recycling facilities
Create	Barrier	Stop doing the wrong thing	Create barriers to make it hard for people to do the wrong	We don't want children to start smoking so create a barrier by making it illegal to sell them cigarettes
Remove	Incentive	Stop doing the wrong thing	Remove incentives that encourage bad behaviour	We don't want people to use too much trucked water, so remove the incentive of providing extra water deliveries for free
Create	Incentive	Do the right thing	Create incentives that encourage good behaviour	Even with a recycling depot, people don't recycle, so create an incentive by refunding their deposit when they bring their bottles to the recycling centre.

This language of "barriers" and incentives" can also be used to talk about how to reduce GHG emissions. In general, to reduce emissions, the government needs to make it more difficult to keep using fossil fuels and easier to invest in renewable energy and efficiency. Putting a price on carbon is intended to create a barrier to using fossil fuels by making them more expensive. Directing the revenue collected towards ways to reduce the consumption of fossil fuels creates incentives to do the right thing.

CARBON PRICE = creates a barrier to help people *stop doing the wrong thing*. The barrier is a tax on the cost of fuel, which makes it more expensive.

A carbon price is a way that GHG emissions are reduced. However, Northerners need to be the ones to control how it is implemented in the North.

4 CARBON EMISSIONS IN THE NWT

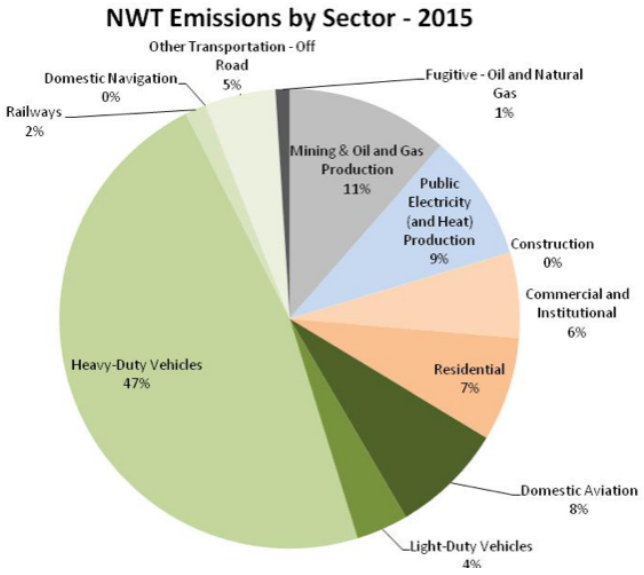
4.1 TOTAL NWT EMISSIONS

The NWT produces 1.4 megatonnes of carbon emissions each year. While this is not much given Canada's total (Canada's emissions were 722 megatonnes in 2015), our carbon use per person is more than 50% higher than average Canadians.[1] Northerners have an even higher responsibility to reduce our carbon emissions.

4.2 NWT EMISSIONS BY SECTOR

The graph on the right shows the carbon emissions created by different sectors in the NWT.[2] The graph separates industrial (mining, oil and gas) vehicle use and aviation from industrial production but most of the heavy and light duty vehicle and some of the aviation emissions are from use that is related to or supporting industrial activities. By far the greatest source of emissions appears to be related to industrial development, but all sources are important to consider and address. Greater clarity is needed as the carbon price is implemented in the NWT.

Under the Paris Agreement, the Federal Government has chosen 2005 as the reference year for its GHG reduction target of 30% by 2030. Comparing NWT emissions in 2015 shows that the NWT already has a head start with a 13% reduction from 2005 levels.



Source: Environment Canada (2017) p. 70.

5 CARBON PRICING MECHANISM – CARBON TAX OR CAP-AND-TRADE?

There are two main types of mechanisms to implement a carbon price: a tax or a cap-and-trade system. Both exist in Canada already (for example, BC and Alberta have a carbon tax, while Ontario and Quebec have a cap-and-trade system). Under a carbon tax, a tax is on GHG emissions generated by burning fuels. It puts a price on each tonne of GHG emitted. The tax rate would increase over time until GHG are reduced to target levels.

[1] GNWT, Northwest Territories Greenhouse Gas Emission Summary report, 2015, p. 3. Available at http://www.enr.gov.nt.ca/sites/default/files/final_4-nwt_greenhouse_gas_summary_report_2015.pdf

[2] Accurate statistics are a challenge in Canada's northern territories. Relatively small populations, remote locations and lack of technical capacity make accurate data gathering challenging and in terms of energy use, the opening or closing of a single mine can produce relatively large shifts from year to year. This report uses Environment Canada data for 2015 (Environment Canada, 2017) but all northern data should be considered as approximate estimates.

In a cap-and-trade system, the GNWT would put a firm limit, a "cap", on the overall level of carbon emissions and reduce that cap every year. As the cap decreases, total GHG emissions for every sector is set by regulation. Those that reduce their emissions below their target will have excess "quota" they can sell to those that go over their emissions quota.

For a small jurisdiction like NWT, a cap and trade system is likely not practical, being too cumbersome to structure and implement. **A carbon tax makes the most sense in the NWT because it is simpler to administer.**

The major issue is: what happens to the revenue? Does the government use it for their programs, etc. or does it get returned, in some way, back to society? If it does not stay within government, but is returned, it is referred to as being "revenue neutral".

USING REVENUE GENERATED FROM CARBON TAX = creates an incentive by making money available to invest in solutions that reduce fossil fuel use

6 A CARBON TAX – WHAT ARE THE OPPORTUNITIES FOR NORTHERNERS?

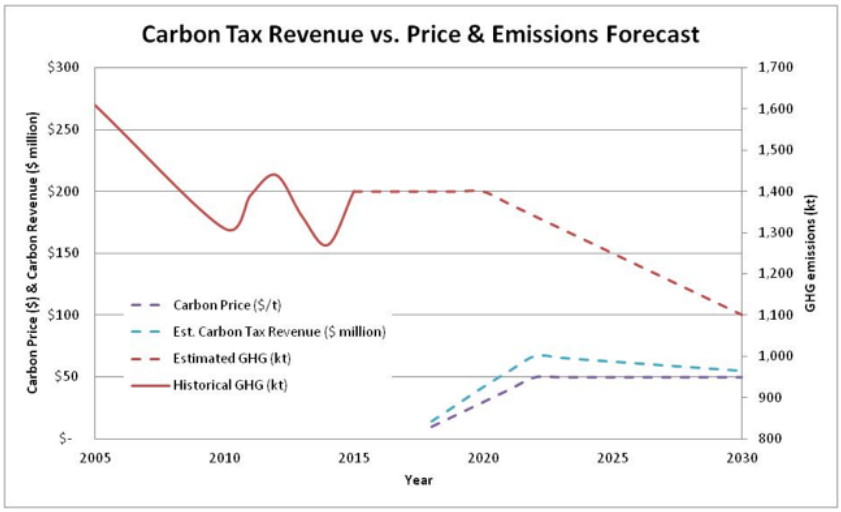
A carbon price will increase the price of fossil fuels, and so each of us that use fossil fuels will pay more. Assuming a carbon tax will be the chosen mechanism, the GNWT will collect the revenue from fossil fuels sales.[3] Together, Northerners need to plan out what the GNWT does with the carbon price revenues collected.

The total revenues generated by a carbon price depend on the price and the amount of fossil fuels consumed. Three past studies have modeled what the potential revenues from a carbon price in the NWT could be. All of these studies were completed before the Federal Government provided direction on their pricing scheme. The MK Jaccard study looks at a much higher hypothetical carbon price of $100 - $200 per tonne which some econo-mists suggest is the price that is needed to really discentivize fossil fuel use.[4,5] The revenue streams collected from the different studies range from $10 million up to $500 million (the later higher revenue being the MK Jaccard study).

Study	Annual GHG Emissions	Carbon Price	Annual Revenues
MK Jaccard and Associates (2011)[6]	1,700 kt in 2010, increasing to 2,500 kt in 2030 (not including Mackenzie Gas Pipeline)	4 scenarios starting at $10/t in 2012, increasing to $100 - $200/t in 2026	$17 million to $500 million
GNWT Finance (2012)	1,000 kt (not including natural gas or GNWT)	$10/t	$10 million
Ecology North (2015)	1,050 kt	$20/t for 5 years, then $30/t for next 5 years	$21 million to $31.5 million

[3] A carbon tax is likely, but GNWT has not yet indicated what mechanism they are wanting to use to apply the carbon price to Northerners.
[4] P.J. Partington, Matt Horne and Clare Demerse, Getting on Track for 2020: Recommendations for Greenhouse Gas Regulations in Canada's Oil and Gas Sector (Pembina Institute, 2013). http://www.pembina.org/reports/pi-getting-on-track-to-2020-partington-horne-demerse-02042013.pdf
[5] Mark Jaccard, "Want an effective climate policy? Heed the evidence," Policy Options, February 2, 2016. http://policyoptions.irpp.org/magazines/february-2016/want-an-effective-climatepolicy-heed-the-evidence/
[6] This study anticipated significant emissions growth based on the idea that 7 new NWT mines would open in the first few years, but in fact only one of these mines opened, while another mine closed.

However, none of the previous models match well with the current federal carbon price, so a new model was de-veloped for the purpose of this paper to illustrate the carbon revenues that are likely from 2018 - 2030. The model assumes that the carbon price and other actions reduce GHG emissions enough to meet Canada's target of 30% below 2005 levels by 2030 and illustrates historical and estimated future carbon emissions in NWT as well as the estimated carbon price and carbon revenues.[7]



This model also shows a correlation between the price of carbon and a reduction of carbon emissions.[8] This graph shows us that as people reduce fossil fuel consumption, less will be sold, which leads to declining carbon price revenues. In this model annual revenues are estimated to peak at $65 million in 2022 and then slowly decline after that as society becomes less dependent on fossil fuels to achieve our GHG emission reduction targets. Many experts agree, as this graph suggests, that as the price nears $50/t, it begins to more significantly affect behaviour, which results in faster reductions in GHG emissions. At even $50/t carbon pricing is unlikely to achieve all needed GHG reductions. This graph assumes that considerable additional funding and effort is put into reducing emission in addition to the $50/t price. This is main reason why those revenues should be directed into GHG reductions.

The total NWT carbon revenues over the first five years are estimated to be $200 million. The revenues collected are an opportunity for Northerners to transition to a society that is less dependent on fossil fuels.

7 COLLECTING AND RETURNING THE CARBON REVENUE

As stated, if the NWT doesn't develop its own carbon pricing mechanism, the Federal Government will impose a carbon pricing system. Some questions about their approach were answered in their federal carbon pricing backstop technical paper,[9] but not all. In particular, the Federal Government has indicated that they will return the carbon revenue that they collect back to the jurisdiction that it came from, but they have not said how they will do this. The Federal Government has stated that it is "open to feedback" on the best mechanism to return carbon revenue to each jurisdiction.

7 Data on fuel consumption in the NWT is not very precise, and the industrial sector of the NWT economy is unpredictable, so the model can only be expected to produce rough estimates.

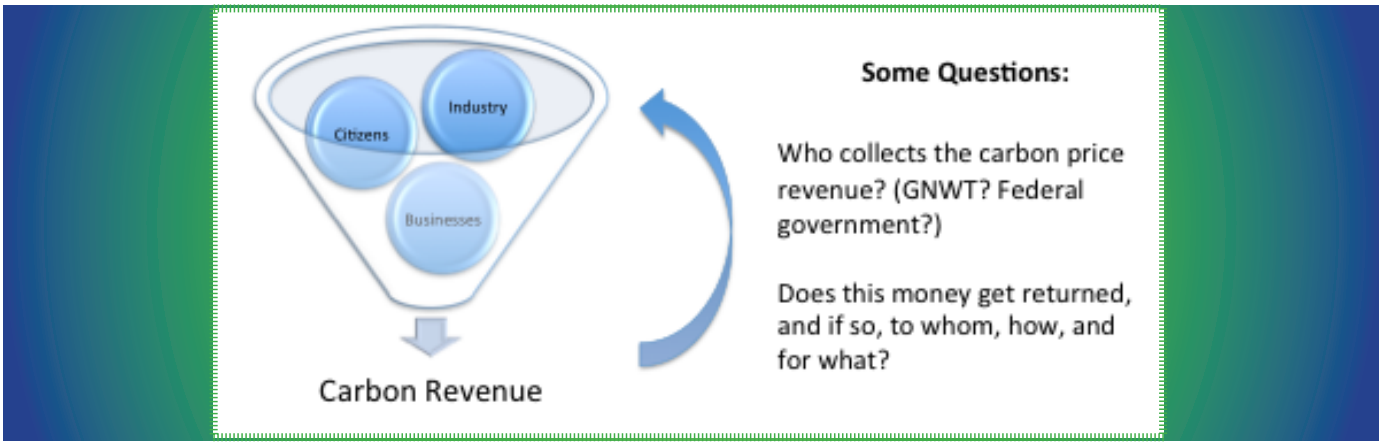
8 This model assumes that: the NWT will achieve a GHG emissions reduction of 30% over 2005 levels by 2030 (emissions numbers are from Environment Canada (2017); the emission level for the most recent year, 2015 (1,400 kt) will continue for the years 2016 to 2018, after that emissions are estimated to decrease by 21 kt per year from 2019-2030 in order to achieve the 30% below 2005 target of 1,130 kt by 2030; all fossil fuels will be charged a carbon price, and all sectors will pay, including government; the carbon price starts at $10/t and rises at $10/t/year to $50t/year and then remain at $50t/yr until 2030; the Mack-enzie Gas Project will not be built and that, new mines open as older mines close.

9 https://www.canada.ca/en/services/environment/weather/climatechange/technical-paper-federal-carbon-pricing-backstop.html

A Clean Energy Canada blog on May 18, 2017 states "*The governments in Canada that are pricing carbon today have chosen to invest those revenues in various ways: tackling climate change, cutting taxes, providing rebates for households and businesses, or a mixture of all of the above. The federal news release alludes to one of those options - giving revenues "back to individuals and businesses" - but presents it as just one example that Ottawa is still "evaluating.""*

The GNWT has not yet publicly stated whether it will create its own system or prefer the federal backstop system to operate in the NWT.

If the Federal Government imposes a system similar to their backstop framework in the NWT, it appears that Northerners will not have a say in how the revenue is to be returned. If the GNWT applies its own system, it can both collect and keep the carbon revenue … and work with Northerners to decide where the revenue is best used to benefit Northerners the most.



8 A COLLABORATIVE PROCESS, INVOLVING CITIZENS, INDIGENOUS GOVERNMENTS, AND INDUSTRY

"...we are working with the federal government already on understanding the impacts of carbon pricing in the territory…I anticipate that the federal government will engage meaningfully and directly with the GNWT on this paper, beyond the engagement process open to all Canadians….We will continue to work with Canada to provide our residents with a clear vision for a fair and effective carbon pricing approach in the NWT."

Premier Bob McLeod commenting on
the Government of Canada's Technical Paper
on the Federal Carbon Price Backstop
May 19, 2017

The Premier indicated that there is still work and analysis to be done regarding how carbon pricing will be implemented in the NWT and what the effects will be. This paper anticipates that need and suggests a process to meet it.

In the NWT some of the best, most ground-breaking achievements in the past decade have been because of the collaborative approach used on tough, complicated issues like devolution and co-drafting critical legislation like the Wildlife Act. This report suggests a similar, collaborative approach be used in doing the additional work and study the Premier indicates is required.

Reducing carbon emissions in the NWT is going to take more effort than has been applied so far. Participation by all sectors will be required and the best way to ensure success is to engage all sectors in a collaborative process. The GNWT has completed a number of energy charrettes and public consultations over the past few years, but "consultation" does not go far enough. No one party has all the answers. There is enormous interest in this issue. There is also an enormous amount of skill, experience and creativity waiting to be tapped into, that when brought together, as has been done in the past, will allow the NWT to build the necessary road map forward on this issue.

Specifically, the report recommends the creation of a GNWT-led Carbon Revenue Working Group. The working group, with a clear mandate and timelines, will be tasked with doing the work and study necessary to develop a clear set of recommendations addressing the many issues related to the implementation and review of carbon pricing in the NWT. These recommendations will be presented publicly to the GNWT for their consideration.

9 OPPORTUNITIES FOR INVESTMENT

Transitioning off fossil fuels is now a global, national and territorial imperative that will need significant resources available to achieve. Combined with the potential $24 million (or more) per year already "on the books" from federal government funding,[10] the total funds available for transition investment over five years could be $320 million. This includes money already in the territorial budget, the carbon tax revenues and the money identified in the federal budget to assist the North with the transition.

Success will be achieved by partnerships and collaboration among northerners - the GNWT, Indigenous governments, communities, industry, the private sector and Northwest Territories Power Corporation (NTPC). There is much to be learned from four renewable energy initiatives: the Colville Lake hybrid micro-grid solar PV-battery installation, the Lutsel K'e/Bullfrog Power solar PV project (which developed the first power purchase agreement (PPA) in the NWT with NTPC), the Diavik wind project, and the wood pellet heating technology already in wide use in the NWT. The main lesson is that the transition to renewables can be done on time, on budget and save money in large mines and small communities (from decreased fossil fuel use). As electricity-related GHG emissions are only 10% of NWT emissions, progress in other GHG emitting sectors is critical.

The Inuvik wind project is a clear example of the opportunity for the GNWT, Indigenous governments, the private sector and private investors to work together to fund, build and potentially privately own wind installation and sell the power back to NTPC. There is a similar opportunity in all 26 off-grid communities and Yellowknife. What is needed is the willingness of the GNWT to work with the other interested parties to develop and implement this type of process, without driving up the cost of living as a result of our energy needs. Small, individual, community renewable energy projects may not be economically attractive on their own. If bundled together by region (similar to the way the GNWT has bundled water treatment plant projects together), there may be a viable opportunity that maximizes economies of scale while being financially attractive.

Like Lutsel K'e, off-grid communities could build, install, own renewable energy infrastructure and sell the power to NTPC. This would mean a modest revenue stream for the community, potential training and employment. For NTPC and the GNWT it would mean not having to come up with scarce capital dollars, allowing for a more ambitious schedule to transition off renewables. The key to this scenario is a fair PPA that all parties support. This is a deal maker to create a positive business case in developing these types of projects. Currently NTPC offers about 32 cents/kw for the displaced cost of diesel. This is an arbitrary amount and needs to be revisited. If NTPC were to become the power provider for the mines and the mines said they would pay NTPC the 32 cents/kw for their displaced cost of diesel, NTPC would not be able to do it for that price. So there is room to move and to make this approach work.

[10] See Section 9 of this report for the explanation supporting this figure.

Before us is an opportunity to create lasting economic development in small communities and potentially in the resource sector. The Federal government is very supportive of our energy transition, as evidenced by the financial resources they have allocated in their Budget 2017, with the proviso that economic opportunities in remote, Indigenous communities be maximized. The economic benefits of the shift to renewables have been demonstrated around the world. Those same opportunities can now be available in the NWT.

10 HOW COULD CARBON REVENUES BE SPENT?

If GNWT decides to implement its own system, rather than have the federal system imposed on it, there are a number of options on how to best use carbon revenues.

This paper assumes that Northerners would not want the GNWT to charge a price on carbon where all revenues go into general revenues of the GNWT. It is assumed that Northerners would like the system to be "revenue neutral" where revenues are only used in a way that directly meets Northerners goals related to reducing GHGs.

10.1 GENERAL OVERVIEW OF OPTIONS

There are different options for how the carbon revenue collected can be used by Northerners (this is also called 'revenue recycling'). Various revenue recycling options each have different pros and cons, and each will have different implications for the NWT's environmental and economic performance (Ecofiscal Commission, 2016). Selecting the appropriate mix of revenue recycling options requires careful consideration of the NWT's unique social, economic and geographic circumstances. A number of options are available for recycling revenues from NWT's carbon price.

1. Return Revenues to Households. Carbon tax revenues could be returned directly back to households. Carbon pricing is potentially regressive, as lower-income households tend to spend more of their income on energy (transportation fuels, home heating and power) than higher-income households (Ecofiscal Commission, 2016). Transfers back to those households can help alleviate this burden. The NWT could distribute rebate cash back to households. Recycling all the revenue in this fashion is called a "carbon fee and dividend" and is highly progressive (Osberg, 2016; Ecofiscal Commission, 2016). However, this is not likely to reduce carbon emissions as much as some other options since households are free to spend the rebate cash any way they wish.

A more moderate option is targeted rebates using a portion of revenue for lower income households only. This is the approach Alberta has taken (as part of their overall revenue from the province's carbon levy). At a $30/tonne tax, recycling 10% of revenues in this way could fully eliminate direct regressive impacts on low-income households (Rivers, 2012).

2. Provide Transitional Support to Emissions Intensive and Trade Exposed (EITE) Industries. Carbon taxes present additional challenges for GHG emissions intensive and trade exposed (EITE) sectors (Ecofiscal Commission, 2016). Specific to the NWT, this applies to the mining sector. Because these firms' emissions are so high compared to the rest of the economy, a carbon tax can present significant new costs, which can allow international competitors to undercut them and take their business. This can lead to "carbon leakage" — where carbon pricing simply pushes emissions to another jurisdiction. Leakage is a big reason why providing transitional support to EITE sectors can make sense. This type of transitional support can lower the average cost to comply with the carbon pricing regulation, while still rewarding emissions reductions (Leach et al., 2015). However, by keeping GHG emissions in EITE sectors higher than it would be otherwise, it can also result in a smaller overall reduction in carbon emissions (Ecofiscal Commission, 2016). Such support for EITE sectors should fulfil the following criteria: It must be targeted, allocated to sectors where leakage is of primary concern; it must be temporary, so that firms receive support only while competitive jurisdictions catch up on carbon pricing; and it must be transparent with respect to how EITE is defined and how performance standards are set (Ecofiscal Commission, 2016).

3. Cut personal or corporate income taxes. The NWT could use carbon tax revenues to cut personal or corporate income taxes – as British Columbia has done (Murray & Rivers, 2015). Personal tax cuts could be designed to be progressive, with larger rate reductions for lower income-tax brackets. However, the households with the very lowest incomes pay no income tax at all, so this approach can be regressive without additional policies (Ecofiscal Commission, 2016). Corporate tax cuts are one way to address competitiveness concerns, but across-the-board cuts cannot target EITE sectors. Additionally, corporate tax cuts can worsen regressivity (Ecofiscal Commission, 2016). Reducing income taxes would likely stimulate fossil fuel consumption, production, and investment. Some of this new economic activity could be associated with greater GHG emissions, but the carbon price would help provide an incentive for new growth to be "cleaner".

4. Fund Critical Infrastructure Projects. Revenues can also fund critical infrastructure projects. The economic and environmental benefits that can result are highly dependent upon the nature of the investments. Investments in public transit, for example, could drive both economic and environmental benefits, whereas new bridges might improve mobility and trade but are less likely to drive further emissions reductions (Ecofiscal Commission, 2016). It is also difficult to predict the impact investments in infrastructure will have on either household fairness or business competitiveness, as this is highly dependent on the nature of the investments and the identity of the primary users and beneficiaries. Perhaps the strongest argument for recycling carbon pricing revenues into infrastructure investments is that such investments can spur economy-wide productivity improvements that enhance long-term economic growth (Ecofiscal Commission, 2016). With a carbon price in place, this growth will also be "cleaner".

5. Invest in Renewable Energy and Energy Efficiency. The NWT could recycle revenues by making them available for renewable energy projects and energy efficiency programs. In this sense, carbon revenues could be earned back by citizens, industry or government when used on projects that reduce carbon emissions. Clean technologies can drive additional emissions reductions, complementing the carbon pricing policy to make it more cost-effective, especially in the longer term (Ecofiscal Commission, 2016). When paired with a carbon tax, these investments can lead to environmental benefits – for example, driving further emissions reductions, reducing the need to add capacity to electricity grids, or reducing reliance on diesel. The high installation costs of renewable energy technologies remains a significant obstacle to commercial development in remote northern communities (Arriaga et al, 2013). If increasing renewable energy penetration is an objective of Northerners, revenues could be recycled to help overcome some of these financial barriers.

These options need not be mutually exclusive. **In fact, finding the right combination of revenue-recycling options is critical to ensuring that the NWT's overall climate change strategy is best suited to its unique needs and priorities** (Ecofiscal Commission, 2016).

10.2 NWT REVENUE OPTIONS PROPOSED BY PREVIOUS STUDIES

Two of the three studies noted in Section 6 assumed that carbon price revenues would be returned to individuals and businesses through tax breaks or cash payments. Ecology North (2015) proposed that just under half be directed to renewable energy and efficiency funding. **None of the reports did a detailed analysis of why they chose these options but these choices are the fundamental issue that needs to be addressed by Northerners.**

Study	Est'd Annual Carbon Revenues	Revenue Goes to
MKJA (2011)	$17 million to $500 million	• 1/3 corporate tax reductions • 2/3 personal income tax reductions (BC Model)
GNWT Finance (2012)	$10 million	• GNWT Admin • Corporate and personal income tax reductions or other redistribution mechanisms
Ecology North (2015)	$21 million to $31.5 million	• 47.5% renewable energy funding • 2.5% admin • 50% tax reductions

10.3 A DEEPER LOOK AT THREE CARBON REVENUE OPTIONS TO MEET NORTHERNERS' GOALS

As the collected revenue from carbon pricing increases, how it is spent could have significant impacts on NWT society as a whole. This relates back to NWT's goals and is important when considered revenue recycling options.

Three of the many options discussed above were selected and are discussed below. These options look at returning carbon revenues to Northerners and the matrix following examines how these options compare to each of the four goals (suggested in Section 2 above):

- Reducing GHG emissions
- Not increasing the overall cost of living / business / industrial activity
- Building greater local energy security
- Building stronger local economies

Option 1. Return the money to each sector through "cash-back" payments or tax-breaks.
This is a combination of revenue recycling options 1, 2 & 3 (outlined in Section 10.1). Carbon revenues are returned to sectors of the economy on a revenue-neutral basis so that each sector gets back the revenue from the carbon prices paid by that sector. The revenues returned to residents could be directed to lower income earners and the revenues returned to industry could be focused on industries that were most impacted. The key point is that they revenues would be "no strings attached" in terms of requiring investments in carbon emissions reductions.

Option 2. Return the money back by to communities (residents and local businesses) through renewable energy / efficiency incentives.
This is a combination of revenue recycling options 4 and 5 (Section 10.1) with a focus on NWT communities. Carbon revenues generated by industry, road transport and aviation would not be returned to those sectors, but would be added to funding for communities.

Option 3. **Return the money back by to each sector through renewable energy / efficiency rebates.** This is a "hybrid" of the 2 options above. Carbon revenues would be returned to each sector, but in the form of re-bates and incentives to invest in renewable energy and energy efficiency. This would be an expanded version of the rebates and grants already funded by the GNWT and delivered through the Arctic Energy Alliance.

The analysis demonstrates that the third option ("Returning carbon revenues to each sector as rebates and incentives to help switch towards renewable energy and efficiency") would provide the best way of meeting the four stated goals. If the goals are different, the preferred option mix may be different.

If the overall goal of a carbon price is to reduce emissions in line with Canada's international commitments, it is clear that a $50/t carbon price alone will not be enough. Combined with government funding, redistributing the carbon price revenues as financial incentives to adopt energy efficient or renewable energy solutions has the potential to drive the changes required. While returning the money as cash payments or tax rebates with "no strings attached" would help make the argument that the carbon price was not creating a net increase in the cost of living or doing business in the NWT, it will not provide the additional local benefits that come from investing in renewable energy and efficiency. The challenge is to design energy incentives in such as way that they do not create unacceptable disparities between the "winners and losers", particularly for the most vulnerable in NWT society.

While this analysis demonstrates a preferred option, this direction should ultimately be discussed on an open, collaborative way through the Carbon Revenue Working Group proposed in Section 8 above.

	Revenue recycling option considered		
Goals (from Section 8 above)	"Cash-back" payments or tax-breaks to all payees.	Recycle revenue to communities (residents and local businesses)	Return the money back to each sector through RE / EE rebates.
Goal 1: Reduce greenhouse gas emissions			
Goal 2: Do not Increase cost of living / business / industry, especially for the most vulnerable			
Goal 3: Building greater local energy security (energy self sufficiency)			
Goal 4: Building stronger local economies			

Green – best way to meet goal / Yellow – partly meets goal / Red – does not meet goal

A more detailed version of the above table, providing rationale for the assessments of "red", "green", and "yellow", is included at the end of this report.

11 NEW FEDERAL FUNDING – WHAT ARE THE OPPORTUNITIES?

The Federal Government has already recognised that the North faces unique challenges. A series of announcements in the last federal budget promised roughly $45 million per year of federal funding over the next 10 years to help "the North" move away from diesel. Beginning in 2018, this money would be split by the three northern territories and the two additional Inuit regions. In addition, the GNWT has been spending $9 million per year on incentive programs (aimed at residents, smaller businesses and community governments) and the GNWT Capital Asset Retrofit Program that invests in energy efficiency and renewable energy programs within GNWT assets (GNWT, 2016). By way of example, if at least one third of the federal funding will be accessible the NWT, it would be reasonable to estimate that $24 million per year of government funding for energy efficiency and renewable energy is already "on the books". It is likely that these funds may require matching territorial dollars, although cost-sharing arrangements are not publicly known at this time.

Combined with carbon revenues collected from the NWT, these revenues could significantly benefit Northerners if they are allocated towards initiatives that meet Northerners' goals.

12 RECOMMENDATIONS

12.1 RECOMMENDATION 1: DEVELOP A "MADE IN THE NWT" CARBON PRICING PLAN

The GNWT should create and implement its own carbon tax system. If the Federal Government applies their carbon pricing framework in the NWT, Northerners may have little or no say in how the revenue is returned.

12.2 RECOMMENDATION 2: KEEP IT SIMPLE - APPLY THE CARBON PRICE TO ALL FOSSIL FUELS

Applying a carbon price to all fuels, and at the same time as collecting existing fuel taxes where that is already done, is the simplest and least costly method of implementing a carbon price.

12.3 RECOMMENDATION 3: THE CARBON TAX SHOULD BE REVENUE NEUTRAL

The carbon tax should be revenue neutral. The best means of returning the revenues to Northerners should be addressed by the Carbon Revenue Working Group, but it should be returned in ways that address the need to reduce GHGs.

12.4 RECOMMENDATION 4: CREATE A CARBON REVENUE WORKING GROUP

A Carbon Revenue Working Group (CRWG) should be created, led by the GNWT, overseen by the Minister's Energy and Climate Change Committee of Cabinet, to be comprised of representatives from Indigenous governments, industry, the transportation sector, small businesses, organisations and the public. The CRWG should have a clear mandate and timelines, and be tasked with developing a comprehensive set of recommendations addressing the issues relating to implementing the carbon price in NWT. These recommendations should be presented publicly to the GNWT for their consideration.

12.5 RECOMMENDATION 5: CARBON REVENUE WORKING GROUP SHOULD ADDRESS KEY QUESTIONS

The main task facing the Carbon Revenue Working Group should be to answer questions relating to implementing, collecting, and recycling carbon pricing and the revenues collected. There are many to be addressed, but some key questions include:

- What are the key goals Northerners seek to achieve with a carbon price?
- Who collects the carbon price revenue? (GNWT? Federal Government?)
- Should the GNWT itself be subject to a price on carbon?
- Should it apply to all fuels (including heating fuels)?

- What is the best combination of revenue recycling options to ensure that NWT's overall climate change strategy is best suited to its unique needs and priorities?
- What should be done with carbon revenues? If a carbon tax is chosen, should it be revenue neutral?
- Should there be a consolidated Carbon Opportunities fund?
- What are the most viable alternative pathways to reducing emissions in each of the NWT's energy sectors?
- What are the key barriers along those pathways what additional incentives are needed to make them attractive?
- How could the GNWT recycle carbon pricing revenues to provide both certainty to investors and extra incentives for early adopters?

12.6 RECOMMENDATION 6: A CARBON OPPORTUNITIES FUND

The GNWT should create a Carbon Opportunities Fund, overseen by the Ministers' Energy and Climate Change Committee of Cabinet, that consolidates existing funds and revenues from a carbon price along with already committed Federal Government and GNWT funding. The Carbon Price Working Group could help define the goals of the fund to best meet Northerners goals including reducing GHG emissions, reducing costs of living, building greater local energy security (self sufficiency), and creating local economic strength, opportunity and diversity.

12.7 RECOMMENDATION 7: GNWT SHOULD BE SUBJECT TO THE PRICE ON CARBON

As the GNWT itself is a source of GHG emissions, GNWT departments and agencies should not be exempt from carbon pricing. The GNWT should lead by example, and similarly, should be subject to incentives and disincentives to change behaviour. For example, GNWT departments could be eligible to access carbon revenues if they are able to demonstrate that they are reducing emissions from their operations.

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Goals (set out in Section 8.3 above)

Goal 1 - Reduce greenhouse gas emissions
The carbon price, on its own, will reduce carbon emissions by motivating modest investments in Energy Efficiency and Renewable Energy.
Additional funding from the Federal Government will motivate additional investments in Energy Efficiency and Renewable Energy, but will not be enough to create enough carbon emissions reductions.
Targeted rebates and programs in addition to carbon price and Federal Government funding will further reduce barriers and motivate additional investments in Energy Efficiency and Renewable Energy.
For the carbon price to work, it must send a steady, long-term price signal. Politicians, residents, businesses and industry must feel that the carbon pricing system is fair, or they will lobby against it and potentially remove the long-term price signal.
Goal 2 – Do not Increase cost of living / business / industry, especially for the most vulnerable
Those who already use 100% renewable energy will see no direct increase in costs.
Those whose fossil fuel use is already subsidized will see no direct increase in costs. This includes the most vulnerable people in the NWT – those who live in social housing or receive income support.
Residential power bills will not increase because all residential "rate-payers" are subsidized to the Yellowknife hydro-power rate, which is not linked to the price of fossil fuels.
"Cash back" based on sector by sector averages will offset the impact of a carbon price on energy costs, but within each sector, those using above avg. quantities of fossil fuels will see their net costs increase, while those using below avg. quantities of fossil fuels will see their net costs decrease. This creation of "winners" and "losers" is meant to motivate investment, but could have un-intended consequences if, for example, businesses in communities with hydro-power and businesses in communities running on diesel generators were considered to be in the same sector. The NWT is a diverse place and addressing all potential unintended consequences would become overly complicated.
Returning revenues through Renewable Energy and Efficiency incentives will encourage investment in alternatives and, in the long run, reduce the impact of higher fossil fuel costs. Those that are able to access incentives will benefit more and designing a "fair" system that equally benefits everyone will be a challenge.
Without additional incentives, investments in renewable energy and energy efficiency will mostly be made by those who have financial and technical capacity. In the long run, those with resources will benefit from their investments in EE and RE, while those who are unable to make changes will experience higher costs.
Even if the most vulnerable people in the NWT are already protected from direct energy price increases by subsidies, there will still be indirect impacts, such as on the price of food and transportation. The effects are "regressive", meaning that low income people spend a larger portion of their budget on food and essential transportation and will therefore experience a higher % increase in their cost of living.
Even though all NWT residents power bills are not impacted by the carbon price (due to subsidies in the power rate structure), middle-income earners will be more impacted than high or low income because they spend a high portion of their income on heating and essential transport and are not subsidized. In addition, middle income earners spend a higher percentage of their income on indirectly impacted things like food an essential travel (relative to high income earners).
Goal 3 - Building greater local energy security (self sufficiency)
Investments in energy efficiency & renewable energy create increases in energy security.
Goal 4 – Build stronger local economies
Investments in energy efficiency & local renewable energy create jobs for local trades
Investments in local renewable energy sources would build local economies (wind, solar, wood & wood chips)
TOTAL

Revenue recycling option considered		
Cash-back" payments or tax-breaks to all payees.	**Recycle revenue to communities (residents and local businesses) through RE / EE incentives. No money for industry, road transport or aviation.**	**Return the money back to each sector through RE / EE rebates.**
True	True	True
True	True	True
No additional carbon reductions	Additional carbon reductions In communities only (only 25% of total emissions)	Additional reductions NWT-wide
Revenue-neutral cash-back to each sector could be perceived as "fair", depending on implementation.	Communities would be pleased, but industry and transport sectors might perceive this as unfair.	Revenues returned to each sector as EE and RE incentives, could be perceived as "fair", depending on implementation
True	True	True
True	True, if they implement RE or EE.	True, if they implement RE or EE.
True	True	True
True	No cash-back	No cash-back
No EE and RE incentives	True in communities Not true in industry and transport sectors	True
True	True in industry and transport – communities get extra help	Extra help to all sectors to overcome barriers and benefit from long term savings.
Cash-back could focus most vulnerable individuals	Incentives to stores could help keep them from passing on costs. Transportation not eligible, so costs might be passed on.	NWT wide incentives could be targeted at stores and essential transportation, reducing impact in the longer term
Cash-back could be higher for middle income earners.	Incentives to encourage middle income to invest in RE & EE could offset increases in heating and vehicles. Greater incentives available for middle income earners because no incentives to industry and transportation.	NWT wide incentives encourage investment by middle income people as well as addressing indirect cost increases in the long term.
No increase	Additional investments focused in NWT communities	Additional investments NWT-wide
Cash back could result in modest investments	Additional investments focused in NWT communities	Additional investments NWT-wide
Modest investments	Additional investments focused in NWT communities	Additional investments NWT-wide
Green – 6 Yellow – 5 Red - 4	Green – 7 Yellow – 6 Red - 2	Green – 11 Yellow – 3 Red - 1

Green – best way to meet goal / Yellow – partly meets goal / Red – does not meet goal

NOTES


THE
NORTHERN
WAY
Making the Carbon Price
Work for the NWT