TD 62-20(1) TABLED ON FEBRUARY 29, 2024

NWT CARBON TAX REPORT

LE RAPPORT ANNUEL SUR LA TAXE SUR LE CARBON

2022-2023

Le présent document contient la traduction française du sommaire et du message du ministre

Contents

Message from the Minister of Finance

I am pleased to present the annual carbon tax report documenting the Northwest Territories carbon pricing results for the fiscal year ended March 31, 2023.

The Northwest Territories carbon tax was introduced September 1, 2019 as one of the Government of the Northwest Territories' (GNWT) commitments under the Pan-Canadian Framework on Clean Growth and Climate Change and it is a key component of the GNWT's Climate Change Strategic Framework. The 2022-23 fiscal year marks the last year under the original federal carbon pricing benchmarks that brought the carbon price to $50 a tonne of greenhouse gas emissions on July 1, 2022. Starting April 1, 2023, the Northwest Territories carbon tax regime will be revised to comply with the more stringent federal carbon pricing benchmarks for the period 2023 to 2030.

The carbon tax is intended to encourage carbon conservation and substitution to reduce greenhouse gas emissions. The efforts of the GNWT, industry, businesses, and residents to reduce consumption of fossil fuels is encouraging but the reality is that economically viable and reliable options to replace carbon fuels are still limited in the Northwest Territories. Therefore, carbon tax revenue is returned to economy through the Cost of Living Offset to residents and several carbon tax rebates to minimise the effect of the carbon tax on the cost of living and prevent the creation of additional barriers to economic development. Any remaining carbon tax revenue is notionally invested in greenhouse gas emissions reducing initiatives; however, the GNWT uses more than residual carbon tax revenues in its efforts to reduce emissions.

Caroline Wawzonek
Minister of Finance

Message de la minister des Finances

J'ai le plaisir de présenter le rapport annuel sur la taxe sur le carbone, qui documente les résultats de la tarification du carbone dans les Territoires du Nord-Ouest (TNO) pour l'exercice terminé le 31 mars 2023.

La taxe sur le carbone a été introduite aux TNO le 1er septembre 2019 comme composante clé du Plan d'action du Cadre stratégique sur le changement climatique; elle s'inscrit dans les engagements du gouvernement des Territoires du Nord-Ouest (GTNO) pris au titre du Cadre pancanadien sur la croissance propre et les changements climatiques. L'exercice 2022-2023 était la dernière année visée par le modèle fédéral initial de tarification de la pollution par le carbone, qui a haussé la tarification du carbone à 50 $ la tonne d'émissions de gaz à effet de serre le 1er juillet 2022. À compter du 1er avril 2023, le régime de taxation du carbone des TNO sera révisé afin de se conformer aux normes fédérales plus strictes en matière de tarification du carbone pour la période de 2023 à 2030.

La taxe sur le carbone vise à encourager la conservation et la substitution des produits de carbone pour réduire les émissions de gaz à effet de serre. Les efforts déployés par le GTNO, l'industrie, les entreprises et les résidents pour réduire la consommation de combustibles fossiles sont encourageants, mais la réalité est que les options économiquement viables et fiables pour remplacer les combustibles carbonés sont encore limitées aux TNO. Par conséquent, les recettes tirées de la taxe sur le carbone sont remises en circulation dans l'économie ténoise grâce au programme de compensation du coût de la vie offert aux résidents et à plusieurs remises de la taxe sur le carbone, de façon à minimiser l'effet de la taxe sur le coût de la vie et à empêcher la création d'obstacles supplémentaires au développement économique. Le surplus des recettes est théoriquement investi dans les initiatives de réduction des gaz à effet de serre. Cela dit, le GTNO dépense plus que les surplus générés par la taxe sur le carbone dans ses efforts de réduction des émissions des gaz à effet de serre.

Caroline Wawzonek
Ministre des Finances

Introduction

The September 1, 2019 implementation of Northwest Territories carbon pricing fulfils the Department of Finance's assignment of Action Item 1.1 B (Implement NWT carbon pricing) under the *2019-2023 Climate Change Strategic Framework Action Plan* and meets the Government of the Northwest Territories' (GNWT) commitment on carbon pricing under the *Pan-Canadian Framework on Clean Growth and Climate Change*.

By signing the *Pan-Canadian Framework on Clean Growth and Climate Change* on December 6, 2016, the GNWT committed to introducing a territorial carbon price that would increase annually to $50/tonne of greenhouse gas emissions by July 1, 2022.

The Northwest Territories carbon pricing plan was devised through discussions with the 18th Legislative Assembly, stakeholders, and the federal government. These discussions on Northwest Territories carbon pricing implications resulted in a carbon pricing design that met federal benchmark price and coverage requirements while recognising the barriers to reducing carbon fuel use in the territory.

The GNWT's carbon pricing approach attempts to reduce greenhouse gas emissions by encouraging carbon conservation and substitution while minimising the effect on the local cost of living and avoiding the creation of additional barriers to economic development. The GNWT has made investments in alternative energy options for territorial residents and businesses a priority and expects to continue making alternative energy investments while working closely with the federal and other Northwest Territories governments, residents, and businesses to provide reliable, affordable alternatives to carbon-intensive fuels for communities.

Description of Carbon Tax and Rebates

Northwest Territories carbon tax rates have increased annually from $20/tonne starting September 1, 2019 to $50/tonne on July 1, 2022 as required by the federal minimum national stringency standards (Table 1). Carbon tax is added to the retail price at the point of purchase.

Carbon tax does not apply to the following:

- Indians and Indian Bands as defined in the federal *Indian Act* when making purchases or taking delivery of fuels on NWT reserves;
- Fuel purchased by visiting military forces under the *Visiting Forces Act (Canada)*;
- Fuel use for aviation; and
- Fuel in sealed, pre-packaged containers of ten litres or less.

Table 1: Carbon tax rates and effective dates

	Effective date				
Fuel Type	**Sept 1, 2019**	**July 1, 2020**	**July 1, 2021**	**July 1, 2022**	**April 1, 2023**
Gasoline	4.7	7.0	9.4	11.7	14.31
Diesel	5.5	8.2	10.9	13.7	17.38
Aviation Gas	3.1	4.6	6.2	7.7	10.06
Aviation Jet Fuel	5.1	7.7	10.2	12.8	14.65
Propane	3.5	5.3	7.1	8.9	11.57
Naphtha	3.8	5.8	7.7	9.6	12.39
Butane	Exempt	Exempt	Exempt	Exempt	Exempt
Natural Gas	Exempt	Exempt	Exempt	Exempt	Exempt

The following describes the offsetting expenditures put in place to help reduce the carbon tax burden on taxpayers. Except for the Cost of Living Offset established under the *Income Tax Regulations*, carbon tax offset expenditures are set out in the *Petroleum Products and Carbon Tax Regulations*:

Heating Fuel Rebate: a 100 per cent point-of-sale rebate of carbon tax paid on heating fuel for residents, governments, and business entities other than prescribed large emitters.

Electrical Power Producers Rebate: a point-of-sale rebate provided to public utilities equal to the carbon tax they pay for fuel used in electricity production for distribution to their customers.

Cost of Living Offset (COLO): a tax-free, non-income tested quarterly benefit that increases annually in step with carbon tax rate increases. The COLO is administered by the Canada Revenue Agency on behalf of the GNWT and consists of two components:

- An amount paid to all NWT personal income tax filers aged 18 years or over; and
- An amount paid to families with children under the age of 18 years.

Large Emitters Offset: large emitters are prescribed in the *Petroleum Products and Carbon Tax Regulations*, as determined by the Minister of Finance. During 2022-23 three designated large emitters: Ekati diamond mine, Diavik diamond mine, and Gahcho Kué diamond mine received the large emitters offset that is comprised of two elements:

- Monthly rebates of 72 per cent of total carbon tax paid by the large emitter during the month, and
- Large Emitter Greenhouse Gas Emissions Reduction Grants: individual accounts are maintained for each large emitter that record 12 per cent of all carbon tax paid by each emitter during the fiscal year. Large emitters may apply for grants against their accounts to fund greenhouse gas emission reducing investments. Government assistance is based on an applicant's account balance.

The guidelines for the large emitter emissions reductions grant are posted on the Department of Finance[1] website. According to the guidelines approved projects must reduce greenhouse gas emissions by 5 per cent relative to the base level.

[1] https://www.fin.gov.nt.ca/en/services/carbon-tax

The GNWT continues to prioritize investments in alternative energy options that can provide reliable and affordable alternatives to carbon-intensive reliance for communities and businesses.

Carbon Tax Administration

Carbon tax is levied on the final consumer and is administered through the fuel tax system by the Department of Finance's Taxation Section.

Businesses that sell fuel in the territory can apply to become GNWT fuel tax collectors. Fuel tax collectors collect carbon tax from purchasers at the time of sale or importation and remit the tax to the GNWT with their monthly fuel and carbon tax return. No fines or charges have been levied against fuel tax collectors under the *Petroleum Products and Carbon Tax Act* or *Regulations* since the carbon tax was introduced.

Introduction

La mise en œuvre, le 1er septembre 2019, de la tarification du carbone aux Territoires du Nord-Ouest (TNO) répond à la mesure de suivi 1.1B du ministère des Finances en vertu du Plan d'action du Cadre stratégique sur le changement climatique de 2019-2023 et respecte l'engagement du gouvernement des Territoires du Nord-Ouest (GTNO) en matière de tarification du carbone en vertu du Cadre pancanadien sur la croissance propre et les changements climatiques.

En signant le Cadre pancanadien sur la croissance propre et les changements climatiques le 6 décembre 2016, le GTNO s'est engagé à introduire une taxe sur le carbone aux TNO, laquelle augmenterait annuellement pour atteindre 50 $ par tonne d'émissions de gaz à effet de serre d'ici le 1er juillet 2022.

Le plan de tarification du carbone des TNO a été conçu à la suite de discussions entre la 18e Assemblée législative, divers intervenants et le gouvernement fédéral. Ces discussions sur les répercussions de la tarification du carbone aux TNO ont donné lieu à une conception de la tarification du carbone qui répond aux exigences fédérales en matière de prix de référence et de couverture, tout en tenant compte des obstacles à la réduction de la consommation de combustibles carbonés sur le territoire.

L'approche de tarification du carbone du GTNO vise à réduire les émissions de gaz à effet de serre en encourageant la conservation et la substitution des produits de carbone et en limitant le plus possible la hausse du coût de la vie et la création d'obstacles supplémentaires au développement économique. Le GTNO a décidé de prioriser les investissements dans des options d'énergie de remplacement pour les résidents et les entreprises, et prévoit de poursuivre ces investissements, tout en travaillant en étroite collaboration avec le gouvernement fédéral et les autres ordres de gouvernement, les résidents et les entreprises des TNO afin d'offrir aux collectivités des solutions de rechange fiables et abordables aux combustibles à forte intensité carbonique.

Description de la taxe sur le carbone et des remises

Les taux de taxation du carbone aux TNO ont augmenté chaque année, passant de 20 $ la tonne le 1er septembre 2019 à 50 $ la tonne le 1er juillet 2022, conformément aux exigences minimales prévues par les normes nationales de rigueur du gouvernement fédéral (Tableau 1). La taxe sur le carbone est directement ajoutée au prix du combustible dans les lieux de vente de combustible.

La taxe sur le carbone ne s'applique pas aux catégories suivantes :

- Carburant acheté par les Premières Nations et leurs bandes selon la définition de la *Loi sur les Indiens* ou livré à celles-ci dans une réserve des TNO;
- Carburant acheté par les forces militaires en visite en vertu de la *Loi sur les forces étrangères présentes au Canada*;
- Carburant d'aviation;
- Carburant dans des conteneurs scellés et préemballés de dix litres ou moins.

Tableau 1 : Taux de la taxe sur le carbone et dates d'entrée en vigueur

	Entrée en vigueur				
Type de combustible	**1er sept. 2019**	**1er juillet 2020**	**1er juillet 2021**	**1er juillet 2022**	**1er avril 2023**
Essence	4,7	7,0	9,4	11,7	14,31
Diésel	5,5	8,2	10,9	13,7	17,38
Carburant d'avion	3,1	4,6	6,2	7,7	10,06
Carburéacteur	5,1	7,7	10,2	12,8	14,65
Propane	3,5	5,3	7,1	8,9	11,57
Naphta	3,8	5,8	7,7	9,6	12,39
Butane	Exemption	Exemption	Exemption	Exemption	Exemption
Gaz naturel	Exemption	Exemption	Exemption	Exemption	Exemption

La description ci-dessous explique les dépenses compensatoires mises en place pour aider à réduire le fardeau de la taxe sur le carbone pour les contribuables. À l'exception de la compensation du coût de la vie établie en vertu du *Règlement de l'impôt sur le revenu*, les dépenses de compensation de la taxe sur le carbone sont énoncées dans le *Règlement sur les taxes sur les produits pétroliers et sur le carbone*.

Remboursement sur le mazout de chauffage : remboursement à 100 % de la taxe sur le carbone payée au point de vente par les résidents, administrations publiques et autres sociétés, à l'exception des grands émetteurs.

Remboursement pour les producteurs d'électricité : remboursement au point de vente versé aux services publics d'un montant équivalent à celui de la taxe sur le carbone applicable au carburant utilisé pour produire l'électricité distribuée à leurs clients.

Compensation du coût de la vie : compensation trimestrielle non imposable et non fondée sur le revenu, qui augmente chaque année en phase avec la hausse de la taxe sur le carbone. Cette compensation est administrée par l'Agence du revenu du Canada au nom du GTNO et est divisée en deux volets :

- Un montant versé à tous les contribuables des TNO de 18 ans ou plus;
- Un montant versé aux familles avec des enfants de moins de 18 ans.

Compensation pour les grands émetteurs : cette compensation est prescrite dans le *Règlement sur les taxes sur les produits pétroliers et sur le carbone*, tel que déterminé par le ministre des Finances. Pour l'exercice 2022-2023, trois grands émetteurs désignés (les mines de diamants Ekati, Diavik et Gahcho Kué) ont reçu la compensation pour les grands émetteurs, qui comprend deux éléments :

- Remboursement mensuel de 72 % de la taxe sur le carbone payée durant le mois;
- Subventions de réduction des émissions de gaz à effet de serre pour les grands émetteurs : des comptes individuels sont tenus pour chaque grand émetteur qui enregistre 12 % du total de la taxe carbone payée au cours de l'exercice. Les grands émetteurs peuvent demander des subventions en fonction de l'état courant de leurs comptes pour financer des investissements de réduction des émissions de gaz à effet de serre. L'aide gouvernementale est basée sur le solde du compte d'un demandeur.

Les lignes directrices relatives aux subventions de réduction des émissions de gaz à effet de serre pour les grands émetteurs sont affichées sur le site Web du ministère des Finances[2]. Selon les lignes directrices, les projets approuvés doivent réduire les émissions de gaz à effet de serre de 5 % par rapport au niveau de base.

Le GTNO continue de donner la priorité aux investissements dans les énergies de remplacement pour diminuer la dépendance des collectivités et des entreprises aux combustibles riches en carbone.

Administration de la taxe sur le carbone

La taxe sur le carbone est prélevée auprès du consommateur final et administrée dans le cadre du régime de taxe sur les carburants, par le Service de la fiscalité du ministère des Finances.

Les entreprises qui vendent du carburant sur le territoire peuvent présenter une demande pour devenir des percepteurs de la taxe sur le carburant du GTNO. Ces derniers perçoivent la taxe sur le carbone auprès des acheteurs au moment de la vente ou de l'importation et la reversent au GTNO avec leur déclaration mensuelle de taxe sur le carburant et le carbone. Aucune amende ni aucuns frais n'ont été imposés aux percepteurs de la taxe sur le carburant en vertu de la *Loi de la taxe sur les produits pétroliers et la taxe sur le carbone* ou de son règlement depuis l'instauration de la taxe sur le carbone.

[2] https://www.fin.gov.nt.ca/fr/services/taxe-sur-le-carbone

Fiscal Year Results

The following tables provide 2022-23 carbon pricing results for the twelve-month period April 1, 2022 to March 31, 2023. Tables also include 2019-20 (September 1 to March 31) and 2020-21 and 2021-22 (April 1 to March 31) carbon pricing data for comparison. Large emitter trust account balances at fiscal year-end are shown in Table 4 and Table 5 shows 2022-23 carbon emissions by source.

Table 2 shows the fuel volumes since the carbon tax was introduced on September 1, 2019. The small size of the Northwest Territories economy and only three full years of data means that conclusions about fuel consumption trends should not be made using year-over-year comparisons of changes in volumes since the carbon tax was introduced. The size of the mines can distort overall year-over-year changes; as an example from 2021-22 to 2022-23, total diesel heating fuel consumption increased 0.7 per cent; however, by removing the 9.4 per cent decline in diesel heating fuel use by the mines, the increase for the rest of the economy was 6 .4 per cent.

Table 2: Carbon tax volumes (2019-20 to 2022-23[3])

Total volumes (thousands)	2019-20	2020-21	2021-22	2022-23
Gasoline (litres)	29,917	44,982	45,586	45,667
Aviation gasoline (litres)	723	1,427	1,571	1,558
Aviation gasoline turbo jet (litres)	18,586	34,987	43,159	50,786
Motive & non-motive diesel (litres)	133,292	191,150	233,764	240,488
Natural gas (m^3)	283	596	409	463
Natural gas heating (m^3)	442	592	1,010	2,769
Railway diesel (litres)	63	114	118.734	98.127
Diesel for heating (litres)	57,624	79,831	71,414	71,899
Propane (litres)	906	2,226	1,942	1,562
Propane for heating (litres)	20,811	26,207	23,249	21,537
Naphtha (litres)	-	11	8	10
Mine volumes (thousands) (subset of total volumes				
Diesel (litres)	99,089	216,485	167,141	167,466
Diesel for heating (litres)	18,832	26,919	25,749	23,331

[3] A fiscal year is April 1 to March 31, but 2019-20 reflects volumes from September 1, 2019 (the carbon tax effective date) to March 31, 2020.

Table 3 shows the gross carbon tax revenues and offsets since the carbon tax was introduced on September 1, 2019. Carbon tax revenue was $47.7 million in 2022-23, $1.3 million higher than projected in the 2022-23 budget. Carbon tax revenues grow even if volumes are decreasing because the carbon tax rates are increased each year by $10 a tonne of greenhouse gas emissions.

Table 3 suggests that there was $5.4 million in 2022-23 carbon tax revenue remaining after the carbon tax offsets were removed that could be used to make other greenhouse gas emission-reducing investments However, the residual does not include large emitter accounts or administration costs. The remaining carbon tax revenue is considered general revenue to be allocated among GNWT priorities. Since one of the GNWT's priorities is to reduce greenhouse gas emissions, residual carbon tax revenue technically can be seen to contribute to emissions reduction.

The carbon tax rebates are tied to fuel consumption; but the Cost of Living Offset (COLO) is an estimate of the household carbon tax burden paid directly or indirectly when businesses pass the tax to consumers through increased prices. Although the COLO is not directly tied to the amount of carbon tax collected it is part of the expenditures related to the carbon tax. Annual COLO benefits were paid to individuals and families as follows:

- 2019-20- $104 for an adult and $120 a child paid in two equal payments in October 2019 and April 2020;
- 2020-21- $156 for an adult and $180 a child paid quarterly July 1, 2020 to June 30, 2021;
- 2021-22- $208 for an adult and $240 a child paid quarterly July 1, 2021 to June 30, 2022: and,
- 2022-23- $260 for an adult and $300 a child paid quarterly July 1, 2022 to June 30, 2023.

The Canada Revenue Agency issues quarterly COLO payments on behalf of the GNWT in July, October, January, and April to territorial residents who filed an income tax and benefit return for the previous year. COLO payments were made to 21,954 households in the final quarter of the 2022-23 benefit year, comprised of 13,303 single recipients with no children, 5,377 couples, 1,878 single parent families and 1,396 two parent families.

Table 3: Carbon tax revenue (2019-20 to 2022-23[4] [5])

Gross carbon tax revenues (thousands of dollars)	2019-20	2020-21	2021-22	2022-23
Gasoline	1,406	2,890	4,012	5,086
Aviation gas	-	-	-	-
Aviation gas turbo jet	-	-	-	-
Motive & non-motive diesel	7,331	14,495	23,902	31,827
Natural gas	11	32	30	42
Natural gas for heating	17	31	73	254
Rail	4	9	12	13
Diesel for heating	3,169	6,007	7,302	9,468
Propane	28	94	113	115
Propane for heating	645	1,107	1,348	1,617
Naphtha	-	0.9	0.8	1.2
Total gross carbon tax revenues	**12,611**	**24,666**	**36,793**	**48,423**
Carbon tax offsets				
Carbon tax rebate for heating fuel (non-large emitters)	2,364	5,929	7,940	10,750
Large emitter rebate of 72% of carbon tax paid	4,670	8,577	14,248	17,914
Carbon tax rebate for fuel used in electrical generation for distribution	583	1,379	1,808	3,461
Total carbon tax offsets	**7,616**	**15,885**	**23,996**	**31,427**
Net carbon tax revenue reported in Public Accounts	**4,994**	**8,782**	**12,797**	**16,298**
Other carbon tax revenue recycling				
Cost of Living Offset (COLO)	4,116	6,511	8,668	10,889
Total carbon tax recycling	**11,733**	**22,396**	**32,664**	**43,014**
Net carbon tax revenue	**878**	**2,270**	**4,129**	**5,409**

[4] For Public Accounts reporting, rebates that reduce the amount of tax that a taxpayer would otherwise pay reduce gross tax revenues. Therefore, carbon tax rebates are netted from gross carbon tax revenues for Public Accounts purposes.

[5] A fiscal year is April 1 to March 31, but 2019-20 reflects volumes from September 1, 2019 (the carbon tax effective date) to March 31, 2020.

Table 4 compares carbon tax revenues from different sources with revenue returned through carbon tax expenditures. Large emitter grant accounts are included in the table as expenditures although none of the large emitters have drawn down account funds for greenhouse gas emission-reducing investments. The GNWT had a notional $1.6 million above carbon tax recycling revenue to invest in 2022-23 greenhouse gas emission-reducing projects.

Table 4: Carbon tax revenues and expenditures (2019-20 to 2022-23)[6]

NWT carbon tax revenues (millions of dollars)	2019-20	2020-21	2021-22	2022-23
Residents, small business & governments				
Diesel fuel, propane & natural gas for heating	2.8	5.8	8.0	10.1
Community government heating	0.14	0.14	0.3	0.7
Motive diesel	1.7	3.8	4.6	7.5
Gasoline	1.4	2.9	4.0	5.1
Large emitters				
Facility fuel use	6.5	11.9	19.7	24.9
Other items				
Railway diesel & non-heating propane & natural gas	0.04	0.1	0.2	0.2
Total	**12.6**	**24.7**	**36.8**	**48.4**
Rebate & benefit expenditures	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Residents, small business & governments				
100% Heating rebate	2.4	5.9	7.9	10.8
Annual rebate to electricity producers	0.6	1.4	1.8	3.5
COLO benefit	4.1	6.5	8.7	10.9
Large emitters				
Large emitter rebates	4.7	8.6	14.2	17.9
Large emitter grant accounts	0.7	1.7	2.1	3.4
Other items				
NWT carbon tax & benefit administration	0.3	0.3	0.4	0.4
Total	**12.8**	**24.4**	**35.2**	**46.8**
Residual	**-0.2**	**0.3**	**1.6**	**1.6**

[6] Table 4 COLO administration expenses, large emitter grant accounts and carbon tax rebates shown in budget documents as expenses are not reported as expenses in Public Accounts. Therefore, Table 4 amounts will not match 2022-23 Public Accounts reporting.

Individual large emitter accounts hold 12 per cent of all carbon tax paid by large emitters during the fiscal year. Large emitters can apply to use these funds for greenhouse gas emission reducing investments in accordance with the Large Emitter Grant Policy[7]. Table 5 shows accumulated fiscal year-end grant balances. None of the large emitters have accessed their grant accounts.

Table 5: Large emitter grant account balances[8]

	March 31, 2020	March 31, 2021	March 31, 2022	March 31, 2023
Gahcho Kué Diamond Mine	$201,168	$595,511	$1,144,626	$2,088,576
Diavik Diamond Mine	$336,862	$1,006,075	$1,879,931	$3,296,767
Ekati Diamond Mine	$129,728	$446,644	$1,146,260	$2,182,597
Total	**$667,758**	**$2,048,230**	**$4,170,817**	**$7,567,940**

[7] https://www.fin.gov.nt.ca/sites/fin/files/resources/large_emitters_ghg_reducing_investment_grant_policy_jan_26_2020.pdf

[8] Imperial Oil Resources NWT Limited is also prescribed as a large emitter but did not qualify for grant balances in any of the four fiscal years.

Measuring Movement towards a Less Carbon Intensive Economy

Measuring the ability of the Northwest Territories carbon tax to reduce carbon emissions is complicated by the many variables affecting carbon fuel consumption. Isolating the effect of the carbon tax would be difficult with only four years of data collected since the introduction of the tax. Other factors like changing retail fuel prices, weather and economic activity can influence fuel consumption and make it difficult to isolate carbon tax effects without many years of data.

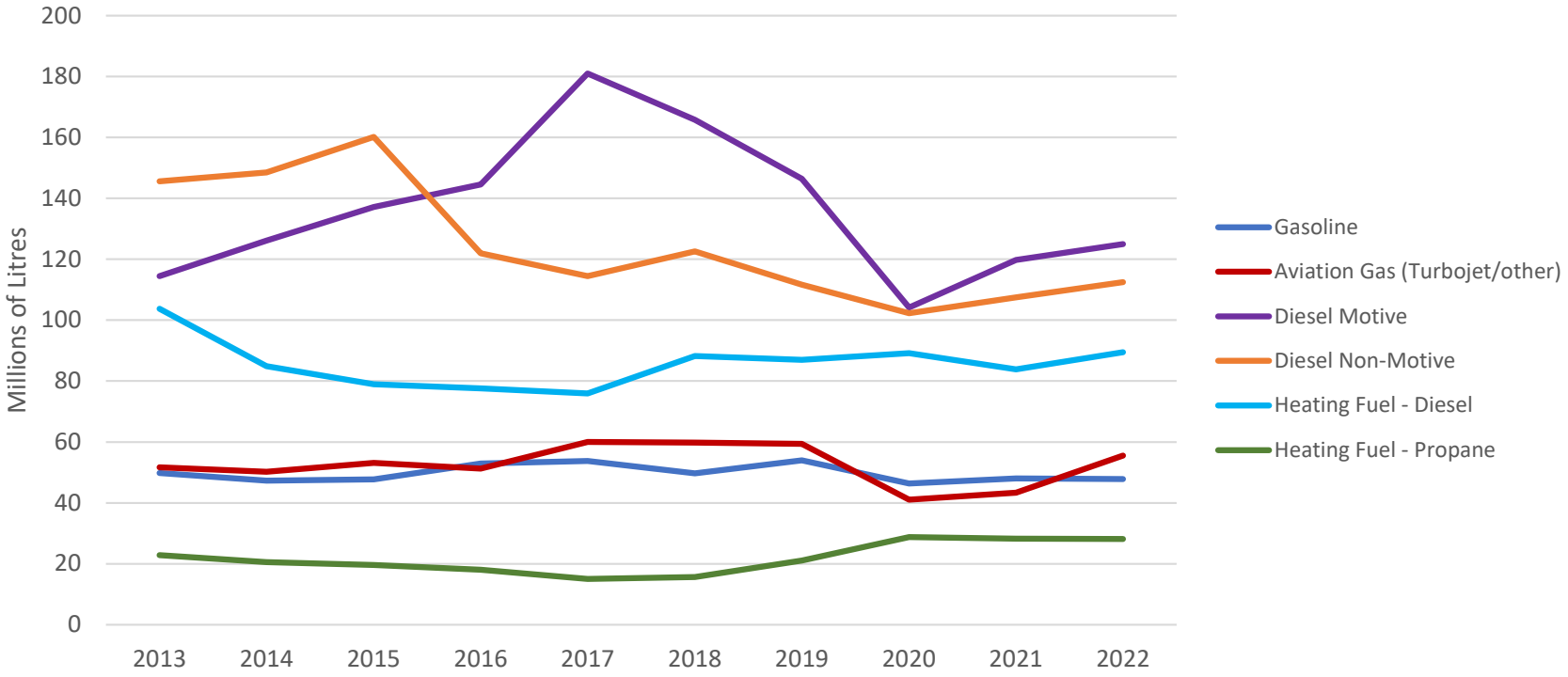
Table 6 estimates annual fiscal year (April to March) Northwest Territories carbon tax emissions since the introduction of the carbon tax on September 1, 2019.

Table 6: Estimated NWT greenhouse gas emissions from carbon tax data

Fuel Type	2022-23 Fuel volume	CO_2e	Emissions in kilotonnes			
			Sep 1 2019 to Mar 31 2020	Apr 1 2020 to Mar 31 2021	Apr 1 2021 to Mar 31 2022	Apr 1 2022 to Mar 31 2023
Gasoline (litres)	45,666,575	2.511680 kg/l	75	113	114	115
Aviation gas (litres)	1,558,186	2.488540 kg/l	2	4	4	4
Aviation gas turbo jet (litres)	50,786,474	2.488540 kg/l	46	87	107	126
Motive & non-motive diesel (litres)	240,488,103	2.708936 kg/l	361	522	633	651
Natural gas (m^3)	463,052	1.912355 kg/m^3	1.0	1.0	0.8	0.9
Natural gas heating (m^3)	2,768,758	1.912355 kg/m^3	1.0	1.0	1.9	5.3
Railway diesel (litres)	98,127	2.708936 kg/l	0	0	0.3	0.3
Diesel for heating (litres)	71,898,648	2.708936 kg/l	156	216	193	195
Propane (litres)	1,561,999	10.547859 kg/l	1	3	3	2
Propane for heating (litres)	21,536,972	1.547859 kg/l	32	41	36	33
Naphtha (litres)	9,965	2.254503 kg/l	0	0	0	0
TOTAL			**676**	**988**	**1,095**	**1,133**

No conclusions can be derived from Table 6 about the effectiveness of the carbon tax in lowering greenhouse gas emissions because correlation is not the same as causation. An increasing carbon tax rate is expected to provide an incentive to reduce carbon-based fuel consumption; however, in the short term its effects will be difficult to discern from other factors. For example, in 2019-2020 and 2020-21 the economic disruption caused by the COVID-19 pandemic and the temporary closing of one diamond mine caused fuel consumption to decrease and makes the 2021-22 and 2022-23 consumption increases appear more significant than they otherwise would be.

Figure 1: NWT fuel consumption 2013 to 2022 calendar year



Measuring Changes in Carbon Intensity in Households

Carbon intensity of the household sector is measured in terms of household greenhouse gas emissions per person. Reductions in household carbon intensity following the implementation of the carbon tax will be compared in a ratio to a baseline of the average carbon intensity between 2009 and 2019. A ratio less than one will indicate improvement because the annual carbon intensity is below the medium-term average; a ratio greater than one will indicate deterioration as the annual carbon intensity would be above the medium-term average. Since Statistics Canada data for carbon emissions is published with a two-year delay, it will be several years before an analysis on the carbon tax's effect on Northwest Territories carbon fuel use is feasible. Analysing the immediate effects of the carbon tax on greenhouse gas emissions would also be complicated because household behaviour changed with public health restrictions during the COVID pandemic in 2020 and 2021.

Northwest Territories Household Carbon Emission History

Table 7 shows the annual emissions attributed to households, the annual Northwest Territories population as of July 1st of the year from Statistics Canada data, and the derived emissions per capita. Population has increased slightly while carbon emissions appear to be trending lower and as a result, per capita carbon emissions declined from 2009 to 2019.

Over the 2009 to 2019 period, the average Northwest Territories household greenhouse gas emissions of 3,671 kilograms per person was 74 kilograms per person lower than the Canadian average household greenhouse gas emissions. The average Northwest Territories household greenhouse gas emissions are lower than the Canadian average despite colder and more heating days because shelters are smaller (less square footage to heat) and better insulated and the average Northwest Territories resident drives less than the Canadian average.

Table 7: Carbon Intensity, NWT households

	Household CO_2e emissions kilotonnes	**Population** number of people	**Carbon intensity** tonnes per person
2009	193	43,156	4.5
2010	164	43,285	3.8
2011	185	43,504	4.3
2012	157	43,648	3.6
2013	152	43,805	3.5
2014	177	43,884	4.0
2015	179	44,237	4.0
2016	156	44,649	3.5
2017	133	44,891	3.0
2018	141	44,981	3.1
2019	144	45,070	3.2
2020	130	45,346	2.9
Average	**159**	**44,205**	**3.6**

Sources: Statistics Canada Tables 38-10-0097-01 and 17-10-0005-01

Measuring Carbon Intensity in Industry

In this report industry is defined as all economic agents except households. The carbon intensity of industry is measured as emissions per dollar of output. Emissions are measured in kilotonnes and industrial output is measured in chained (2012) million dollars to remove the effect of inflation.

To evaluate the success of carbon pricing, reductions in the carbon intensity of industry are measured as the ratio of carbon intensity each year to the carbon intensity of the 2009 to 2019 average. A ratio less than one will indicate improvement because the annual carbon intensity is below the medium-term average; a ratio greater than one will indicate deterioration because the annual carbon intensity is above the medium-term average.

Northwest Territories Industrial Carbon Emission History

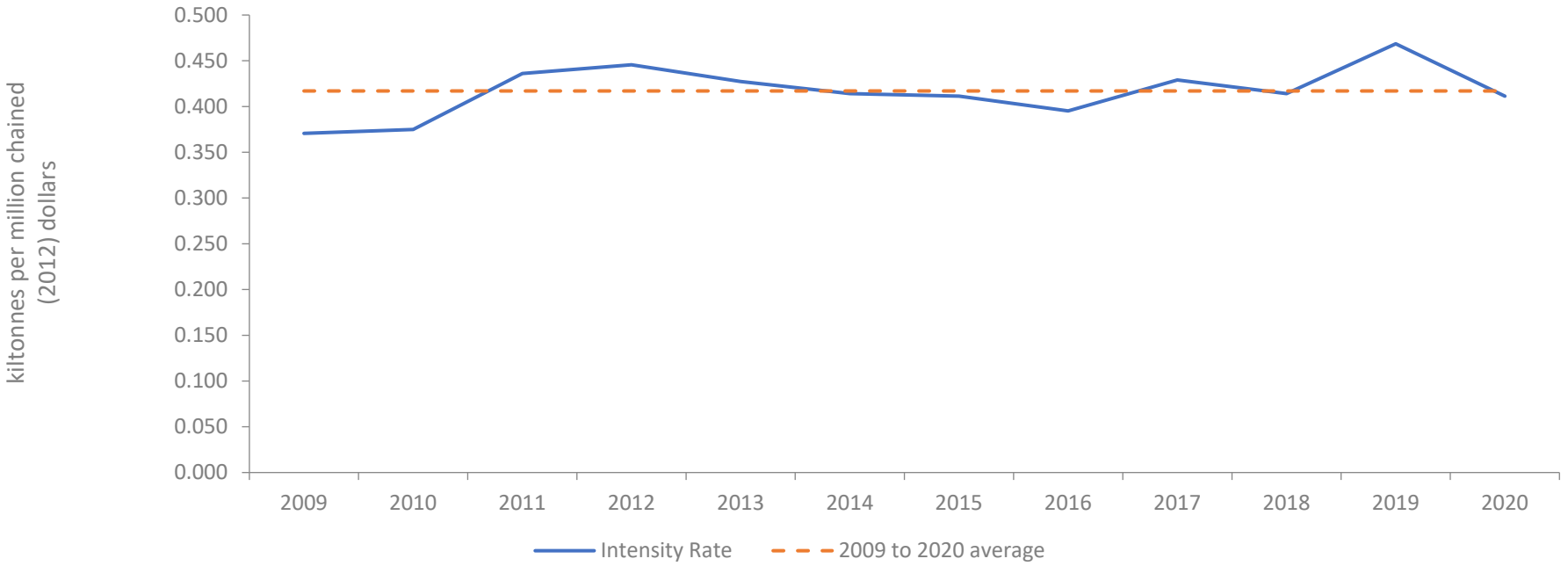
Table 8 shows the carbon intensity of Northwest Territories industry averaged 0.417 kilotonnes per million dollars GDP over the 2009 to 2019 period.

Table 8: Carbon intensity, NWT Industry

	All industry emissions kilotonnes	**GDP, basic prices** millions chained (2012) dollars	**Carbon intensity** kilotonnes per million chained (2012) dollars
2009	1,698	4,581	0.371
2010	1,765	4,707	0.375
2011	1,864	4,274	0.436
2012	1,894	4,250	0.446
2013	1,866	4,367	0.427
2014	1,894	4,575	0.414
2015	1,901	4,621	0.411
2016	1,806	4,570	0.395
2017	2,032	4,736	0.429
2018	1,988	4,801	0.414
2019	2,156	4,601	0.469
2020	1,700	4,133	0.411
Average	**1,880**	**4,518**	**0.417**

Source: Statistics Canada Tables 38-10-0097-01 and 36-10-0402-01

Figure 2: Carbon Intensity, NWT Industry



Source: Statistics Canada Tables 38-10-0097-01 and 36-10-0402-01

Table 9 shows annual Northwest Territories carbon intensity by industry. Direct industry comparisons are difficult because the values of goods and services being produced or transported differ significantly. For example, the water transportation industry ships many staple goods that while of critical importance for remote communities are of low dollar value, while air transport moves higher value goods, which can generate a much higher value added per kilotonne of emissions.

Table 9 shows annual Northwest Territories carbon intensity by industry. Direct industry comparisons are difficult because the values of goods and services being produced or transported differ significantly. For example, the water transportation industry ships many staple goods that while of critical importance for remote communities are of low dollar value, while air transport moves higher value goods, which can generate a much higher value added per kilotonne of emissions.

Table 9: Carbon Intensities, NWT Selected Industries

	Carbon emissions per million dollars value added (kilotonnes)												
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	12-year average
Total, All Industries	0.371	0.375	0.436	0.446	0.427	0.414	0.411	0.395	0.429	0.414	0.469	0.411	0.371
Non-metallic mineral mining & quarrying (BS21230)	0.398	0.398	0.514	0.647	0.636	0.520	0.528	0.384	0.256	0.283	0.506	0.523	0.466
Electric power generation, transmission & distribution (BS22110)	1.128	1.009	1.092	1.123	1.102	1.419	2.066	1.131	0.935	0.999	0.957	1.090	1.171
Air Transportation (BS48100)	3.827	3.655	3.153	3.183	3.248	2.900	2.817	2.774	2.559	2.415	2.486	2.312	2.944
Water Transportation (BS48300)	3.553	3.781	4.948	5.521	5.385	5.421	6.483	7.864	3.077	3.143	2.154	2.245	4.465
Other provincial & territorial government services (GS91200)	0.268	0.278	0.469	0.315	0.496	0.470	0.408	0.455	0.675	0.556	0.482	0.375	0.437

Source: Statistics Canada Tables 38-10-0097-01 and 36-10-0402-01

Appendix

The following table provides estimated Northwest Territories greenhouse gas emissions based on calendar year fuel tax data. Fuel volumes by calendar year are not available in this format before 2010.

Table 10: Northwest Territories Fuel Volumes by Type Calendar Year 2010 to 2022 (thousands of litres)

Year	Gasoline	Aviation[9]	Motive Diesel	Railway Diesel	Non-Motive Diesel	Diesel Heating	Propane Heating[10]
2010	49,178	51,591	87,749	115	110,122	94,966	..
2011	47,894	55,329	103,790	108	123,245	96,803	..
2012	49,019	59,128	107,143	600	135,476	97,090	..
2013	49,744	51,705	114,469	278	145,606	103,791	22,765
2014	47,251	50,180	126,130	189	148,568	84,895	20,506
2015	47,714	53,166	137,178	301	160,201	78,948	19,603
2016	52,888	51,245	144,628	154	121,925	77,591	18,045
2017	53,766	59,951	181,001	144	114,478	75,933	14,980
2018	49,734	59,812	165,864	115	122,598	88,191	15,670
2019	54,006	59,335	146,408	73	111,650	86,945	21,030
2020	46,365	41,000	104,138	120	102,261	89,144	28,769
2021	47,997	43,364	119,800	108	107,460	83,813	28,204
2022	47,785	55,508	124,947	105	112,539	89,494	28,099

Source: Northwest Territories Department of Finance

[9] Total of aviation gasoline and aviation turbo jet gasoline
[10] ".." indicates that data are not available.

Table 11: Estimated Northwest Territories Greenhouse Gas Emissions by Fuel Type Calendar Year 2010 to 2022 Greenhouse Gas Emissions (kilotonnes)

	Gasoline	Aviation[11]	Motive Diesel	Railway Diesel	Non-Motive Diesel	Diesel Heating	Propane Heating[12]	Total
2010	124	128	238	0.3	298	257	..	1,045
2011	120	138	281	0.3	334	262	..	1,136
2012	123	147	290	1.6	367	263	..	1,192
2013	125	129	310	0.8	394	281	35	1,275
2014	119	125	342	0.5	402	230	32	1,250
2015	120	132	372	0.8	434	214	30	1,303
2016	133	128	392	0.4	330	210	28	1,221
2017	135	149	490	0.4	310	206	23	1,314
2018	125	149	449	0.3	332	239	24	1,319
2019	136	148	397	0.2	302	236	33	1,251
2020	116	102	282	0.3	277	241	45	1,064
2021	121	108	325	0.3	291	227	44	1,115
2022	115	127	330	0.3	297	190	34	1,093

Source: Northwest Territories Department of Finance

[11] Total of aviation gasoline and aviation turbo jet gasoline.
[12] ".." indicates that data are not available.

Government of
Northwest Territories

If you would like this information in another official language, call us.
English

Si vous voulez ces informations dans une autre langue officielle, contactez-nous.
French

Kīspin ki nitawihtīn ē nīhīyawihk ōma ācimōwin, tipwāsinān.
Cree

Tłı̨chǫ yatı k'ę̀ę̀. Dı wegodı newǫ dè, gots'o gonede.
Tłı̨chǫ

ʔerıhtł'ís Dëne Sųłıné yatı t'a huts'elkër xa beyáyatı theʔą ʔat'e, nuwe ts'ën yółtı.
Chipewyan

Edı gondı dehgáh got'ı̨e zhatıé k'ę́ę́ edatł'éh enahddhę nıde naxets'ę́ edahłí.
South Slavey

K'áhshó got'ı̨ne xǝdǝ k'é hederı ʔedı̨htl'é yerınıwę nídé dúle.
North Slavey

Jii gwandak izhii ginjìk vat'atr'ijąhch'uu zhit yinohthan jì', diits'àt ginohkhìi.
Gwich'in

Uvanittuaq ilitchurisukupku Inuvialuktun, ququaqluta.
Inuvialuktun

ᑖᒃᑯᐊ ᑎᑎᕐᑲᐃᑦ ᐱᔪᒪᒍᕕᒋᑦ ᐃᓄᒃᑎᑐᓕᕐᓯᒪᓗᑎᒃ, ᐅᕙᑦᑎᓐᓄᑦ ᐅᖃᓚᔪᓐᓇᖅᑐᑎᑦ.
Inuktitut

Hapkua titiqqat pijumagupkit Inuinnaqtun, uvaptinnut hivajarlutit.
Inuinnaqtun

Aboriginal Languages Secretariat: 867-767-9346 ext. 71037   Francophone Affairs Secretariat: 867-767-9343