



# NWT CARBON TAX REPORT

2021-2022

*OCTOBER*

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



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## MESSAGE FROM THE MINISTER OF FINANCE

It is my pleasure to release the annual carbon tax report detailing the Northwest Territories carbon pricing results for the fiscal year ended March 31, 2022.

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 carbon tax is intended to encourage carbon conservation and substitution to reduce greenhouse gas emissions. However, carbon tax revenue is returned to economy through the Cost of Living Offset to residents and several carbon tax rebates in recognition that economically viable and reliable options to replace carbon fuels are limited in the Northwest Territories. The Cost of Living Offset and carbon tax rebates serve to minimise the effect of the carbon tax on the cost of living or creating 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 MINISTRE DES FINANCES

J'ai le plaisir de publier le rapport annuel sur la taxe sur le carbone, qui présente les résultats de la tarification du carbone aux Territoires du Nord-Ouest pour l'exercice financier se terminant le 31 mars 2022.

La taxe sur le carbone a été introduite aux Territoires du Nord-Ouest le 1<sup>er</sup> 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.

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. Toutefois, étant donné que les options viables et éprouvées pour remplacer les combustibles carbonés sont limitées aux Territoires du Nord-Ouest, les recettes de la taxe sur le carbone sont remises en circulation dans l'économie ténosé grâce au programme de compensation du coût de la vie et à plusieurs programmes de remboursement de la taxe sur le carbone. Cette compensation et ces remboursements servent à minimiser les conséquences de la taxe sur le carbone 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 la lutte contre les 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, numerous 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 energy 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 and residents to provide reliable, affordable alternatives to carbon-intensive fuels for communities and businesses.

## DESCRIPTION OF THE CARBON TAX AND REBATES:

The Northwest Territories carbon tax became effective September 1, 2019 at the rate of \$20/tonne of greenhouse gas emissions for the various fuel types (Table 1). Carbon tax is added to the retail price at the point of purchase. Administration of the carbon tax is done through the fuel tax system and fuel tax collectors collect carbon tax and remit the revenue to the GNWT in the same way as fuel taxes.

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. This exemption would not apply to those whose *Indian Act* tax exemptions no longer exist under self-government agreements;
- 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.

*Carbon tax is added to the retail price at the point of purchase. Administration of the carbon tax is done through the fuel tax system and fuel tax collectors collect carbon tax and remit the revenue to the GNWT in the same way as fuel taxes.*

**Table 1: Carbon tax rates and effective dates**

Fuel Type	Carbon Tax Rate Effective Dates			
	Sept 1, 2019	July 1, 2020	July 1, 2021	July 1, 2022
Gasoline	4.7 ¢/litre	7.0 ¢/litre	9.4 ¢/litre	11.7 ¢/litre
Diesel	5.5 ¢/litre	8.2 ¢/litre	10.9 ¢/litre	13.7 ¢/litre
Aviation Gas	Exempt	Exempt	Exempt	Exempt
Aviation Jet Fuel	Exempt	Exempt	Exempt	Exempt
Propane	3.1 ¢/litre	4.6 ¢/litre	6.2 ¢/litre	7.7 ¢/litre
Naphtha	5.1 ¢/litre	7.7 ¢/litre	10.2 ¢/litre	12.8 ¢/litre
Butane	3.5 ¢/litre	5.3 ¢/litre	7.1 ¢/litre	8.9 ¢/litre
Natural Gas	3.8 ¢/m <sup>3</sup>	5.8 ¢/m <sup>3</sup>	7.7 ¢/m <sup>3</sup>	9.6 ¢/m <sup>3</sup>

The following describes the carbon tax offset expenditures that were put in place to offset the carbon tax burden on taxpayers. Except for the Cost of Living Offset (*Income tax Regulations*), all 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 regulations, as determined by the Minister of Finance. There are currently only four designated large emitters: Ekati diamond mine, Diavik diamond mine, Gahcho Kué diamond mine and Imperial Oil Resources located at Norman Wells. The large emitters offset 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: nominal accounts are maintained for each large emitter that record 12 per cent of all carbon tax paid during the fiscal year and large emitters can apply for grants against these accounts to fund greenhouse gas emission reducing investments. Government assistance is based on an applicant’s nominal account balance.
  - The guidelines for the large emitter emissions reductions grant are posted on the Department of Finance<sup>1</sup> website. According to the guidelines approved projects must reduce greenhouse gas emissions by 5 per cent relative to the base level.
- 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.

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<sup>1</sup><https://www.fin.gov.nt.ca/en/services/carbon-tax>

# INTRODUCTION

*La mise en œuvre, le 1<sup>er</sup> septembre 2019, de la tarification du carbone aux Territoires du Nord-Ouest 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 1<sup>er</sup> juillet 2022.

Le plan de tarification du carbone des TNO a été conçu à la suite de discussions avec la 18<sup>e</sup> Assemblée législative, le gouvernement fédéral et de nombreux intervenants. Ces discussions sur les implications de la tarification du carbone aux Territoires du Nord-Ouest 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 reconnaissant les obstacles à la réduction de la consommation d'énergie carbonée 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 fait des investissements prioritaires dans les sources d'énergie de remplacement pour ses résidents et entreprises, et prévoit continuer ces investissements tout en travaillant étroitement avec le gouvernement fédéral, les autres administrations publiques des TNO et les Tenois pour remplacer les combustibles riches en carbone par des solutions de rechange fiables et abordables.

## DESCRIPTION DE LA TAXE SUR LE CARBONE ET DES REMBOURSEMENTS

La taxe sur le carbone des TNO est entrée en vigueur le 1<sup>er</sup> septembre 2019 à 20 \$ par tonne d'émissions de gaz à effet de serre (GES) pour les différents types de combustibles (voir tableau 1). On l'ajoute directement au prix du combustible dans les lieux de vente de combustible et on l'administre par l'entremise du système de taxe sur le carburant. On prélève ensuite la taxe sur le carbone et on la remet au GTNO de la même manière que les taxes sur le carburant.

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

- Premières Nations et leurs bandes selon la définition de la *Loi sur les Indiens*, lorsqu'ils achètent ou prennent livraison de carburants dans une réserve des TNO. (Cette exonération ne s'applique pas à ceux dont l'exonération fiscale prévue par la *Loi sur les Indiens* cesse d'exister en vertu des accords d'autonomie gouvernementale.);
- 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 tarification et dates d'entrée en vigueur**

Type de carburant	Taux de tarification et dates d'entrée en vigueur			
	1 <sup>er</sup> sept. 2019	1 <sup>er</sup> juillet 2020	1 <sup>er</sup> juillet 2021	1 <sup>er</sup> juillet 2022
Essence	4,7 ¢/litre	7 ¢/litre	9,4 ¢/litre	11,7 ¢/litre
Diésel	5,5 ¢/litre	8,2 ¢/litre	10,9 ¢/litre	13,7 ¢/litre
Carburant d'avion	Exemption	Exemption	Exemption	Exemption
Carburacteur	Exemption	Exemption	Exemption	Exemption
Propane	3,1 ¢/litre	4,6 ¢/litre	6,2 ¢/litre	7,7 ¢/litre
Naphta	5,1 ¢/litre	7,7 ¢/litre	10,2 ¢/litre	12,8 ¢/litre
Butane	3,5 ¢/litre	5,3 ¢/litre	7,1 ¢/litre	8,9 ¢/litre
Gaz naturel	3,8 ¢/m <sup>3</sup>	5,8 ¢/m <sup>3</sup>	7,7 ¢/m <sup>3</sup>	9,6 ¢/m <sup>3</sup>

Voici une description des dépenses de compensation de la taxe sur le carbone pour compenser le fardeau de cette taxe sur les contribuables. À l'exception de la compensation du coût de la vie (Règlement de l'impôt sur le revenu), toutes les dépenses liées à la compensation de la taxe sur le carbone sont définies 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 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 payé pour le carburant utilisé pour produire l'électricité distribué à leurs clients.
- **Compensation pour le coût de la vie** – une compensation trimestrielle non imposable 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 aux grands émetteurs** – elle est prescrite par le Règlement, tel que le détermine le ministre des Finances. Les TNO comptent actuellement quatre grands émetteurs : la mine de diamant Ekati, la mine de diamant Diavik, la mine de diamant Gahcho Kué et Imperial Oil Resources (située à Norman Wells). Cette compensation compte deux éléments :
  - Remboursement mensuel de 72 % de la taxe sur le carbone payée durant le mois;
  - Subventions pour réduction des émissions de GES destinées aux grands émetteurs : des comptes de résultats sont tenus pour chaque grand émetteur qui enregistre 12 % de toute la taxe sur le carbone payée pendant l'exercice financier; de plus, les grands émetteurs peuvent demander des subventions sur ces comptes pour financer des investissements de réduction des émissions de GES. L'aide gouvernementale est basée sur le solde du compte de résultats du demandeur.
  - Vous trouverez les lignes directrices sur les subventions pour réduction des émissions de GES destinées aux grands émetteurs sur le site Web du ministère des Finances<sup>1</sup>. 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.

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1 <https://www.fin.gov.nt.ca/fr/services/taxe-sur-le-carbone>

## 2. FISCAL YEAR RESULTS

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

None of the large emitters had applied for funding from their large emitter individual accounts as of March 31, 2022.

The COLO is not directly tied to the amount of carbon tax collected but is included in the summary of expenditures related to the carbon tax. The annual COLO benefit amount is paid on an individual basis 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; and
- 2021-22- \$208 for an adult and \$240 a child paid quarterly July 1, 2021 to June 30, 2022.

Table 2 shows the fuel volumes and gross carbon tax revenues since the carbon tax was introduced on September 1, 2019. The 2021-22 carbon tax revenues were \$36.8 million, \$300,000 higher than the \$36.5 million 2021-22 revised estimate in the 2022-23 Budget.

**Table 2: Carbon tax revenues and volumes: 2019-20 (September 1 to March 31), 2020-21 and 2021-22 (April 1 to March 31)**

Volumes (thousands)	2019-20	2020-21	2021-22
Gasoline (litres)	29,917	44,982	45,586
Aviation Gasoline (litres)	723	1,427	1,571
Aviation Gasoline Turbo Jet (litres)	18,586	34,987	43,159
Diesel (litres)	133,292	191,150	233,764
Natural Gas (m <sup>3</sup> )	283	596	409
Natural Gas Heating (m <sup>3</sup> )	442	592	1,010

Volumes (thousands)	2019-20	2020-21	2021-22
Railway Diesel (litres)	63	114	119
Diesel for Heating (litres)	57,624	79,831	71,414
Propane (litres)	906	2,226	1,942
Propane for Heating (litres)	20,811	26,207	23,249
Naphtha (litres)	-	11	8

Volumes (thousands)	2019-20	2020-21	2021-22
<b>Mine Volumes (thousands)</b>			
Diesel (litres)	99,089	216,485	167,141
Diesel for Heating (litres)	18,832	26,919	25,749
<b>Gross carbon tax revenues (thousands of dollars)</b>			
Gasoline	1,406	2,890	4,012
Aviation Gas	-	-	-
Aviation Gas Turbo Jet	-	-	-
Diesel	7,331	14,495	23,902
Natural Gas	11	32	30
Natural Gas for Heating	17	31	73
Rail	4	9	12
Diesel for Heating	3,169	6,007	7,302
Propane	28	94	113
Propane for Heating	645	1,107	1,348
Naphtha	-	0.9	0.8
<b>Gross Carbon Tax Revenues</b>	<b>12,611</b>	<b>24,666</b>	<b>36,793</b>

Volumes (thousands)	2019-20	2020-21	2021-22
<b>Carbon Tax Offsets (thousands of dollars)</b>			
Carbon Tax Rebate for Heating Fuel (non-large emitters)	2,364	5,929	7,940
Large Emitter 72% Rebate of Total Carbon Tax Paid	4,670	8,577	14,248
Carbon Tax Rebate for Fuel Used in Electrical Generation for Distribution	583	1,379	1,808
<b>Total Carbon Tax Offsets</b>	<b>7,617</b>	<b>15,885</b>	<b>23,996</b>
<b>Net Carbon Tax Revenue as Reported in Public Accounts<sup>2</sup></b>	<b>4,994</b>	<b>8,781</b>	<b>12,797</b>
<b>Other Carbon Tax Revenue Recycling</b>			
COLO	4,116	6,511	8,668
<b>Total Carbon Tax Revenue Recycling</b>	<b>11,733</b>	<b>22,396</b>	<b>32,664</b>
<b>Net Carbon Tax Revenue</b>	<b>\$878</b>	<b>\$2,238</b>	<b>\$4,129</b>

Table 2 suggests that there was \$4.1 million in 2021-22 carbon tax revenue remaining that can be used to make notional greenhouse gas emission-reducing investments after recycling carbon tax revenue through rebates and COLO into the Northwest Territories economy to mitigate the effect of the carbon tax on the cost of living and doing business. However, this \$4.1 million does not include the large emitter accounts or administration costs. The remaining carbon tax revenue is considered general revenue to be allocated based on GNWT priorities. Since one of the GNWT's priorities is to reduce greenhouse gas emissions, residual carbon tax revenue contributes to emissions reduction.

Table 3 compares the carbon tax revenues from different sources and the amount of 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 funds from their accounts for greenhouse gas emission-reducing investments. Excluding administration, the 2021-22 carbon offsets were \$4.1 million higher than the 2021-22 budget amount of \$30.7 million because carbon tax rebates are linked to carbon tax revenues, which were also higher than projected. Notionally the GNWT had \$1.5 million above carbon tax recycling amounts to invest in greenhouse gas emission-reducing projects in 2021-22.

<sup>2</sup>For Public Accounts reporting any 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 accounting purposes.

**Table 3a: 2021-22 Carbon Tax Revenues and Expenditures (millions of dollars)**

NWT Carbon Tax Revenues		Rebate & Benefit Expenditures <sup>3</sup>	
<b>Residents, Small Business, and Governments</b>			
Diesel Fuel, Propane & Natural Gas for Heating	\$8.0	100% Heating Rebate	\$7.9
Community Government Heating	\$0.3	Annual Rebate to Electricity Producers	\$1.8
Motive Diesel	\$4.6	COLO Benefit	\$8.7
Gasoline	\$4.0		
<b>Large Emitters</b>			
Facility Fuel Use	\$19.7	Large Emitter Rebate	\$14.2
		Large Emitter Grant Accounts	\$2.1
<b>Other Items</b>			
Railway Diesel & Non-Heating Propane and Natural Gas	\$0.2	NWT Carbon Tax and Benefit Administration	\$0.4
<b>TOTAL</b>	<b>\$36.8</b>		<b>\$35.2</b>

<sup>3</sup>Table 3 COLO administration expenses, large emitter grant accounts and carbon tax rebates shown in budget documents as expenses are not reported as expenses in the Public Accounts and, therefore, Table 3 will not match 2021-2022 Public Accounts reporting.

**Table 3b: 2020-21 Carbon Tax Revenues and Expenditures (millions of dollars)**

Carbon Tax Revenue		Rebate & Benefit Expenditures	
<b>Residents, Small Business, And Governments</b>			
Diesel Fuel, Propane & Natural Gas for Heating	\$5.8	100% Heating Rebate	\$5.9
Community Government Heating	\$0.14	Rebate to Electricity Producers	\$1.4
Motive Diesel	\$3.8	COLO Benefit	\$6.5
Gasoline	\$2.9		
<b>Large Emitters</b>			
Facility Fuel Use	\$11.9	Large Emitter Rebate	\$8.6
		Large Emitter Grant Accounts	\$1.7
<b>Other Items</b>			
Railway Diesel & Non-Heating Propane and Natural Gas	\$0.1	NWT Carbon Tax & Benefit Administration	\$0.3
<b>TOTAL</b>	<b>\$24.7</b>		<b>\$24.4</b>

**Table 3c: 2019-20 Carbon Tax Revenues and Expenditures (millions of dollars)<sup>4</sup>**

NWT Carbon Tax Revenues		Rebate & Benefit Expenditures	
<b>Residents, Small Business, And Governments</b>			
Diesel Fuel, Propane & Natural Gas for Heating	\$2.8	100% Heating Rebate	\$2.4
Community Government Heating	\$0.14	Annual Rebate to Electricity Producers	\$0.6
Motive Diesel	\$1.7	COLO Benefit	\$4.1
Gasoline	\$1.4		
<b>Large Emitters</b>			
Facility Fuel Use	\$6.5	Large Emitter Rebate	\$4.7
		Large Emitter Grant Accounts	\$0.7
<b>Other Items</b>			
Railway Diesel & Non-Heating Propane and Natural Gas	\$0.04	NWT Carbon Tax & Benefit Administration	\$0.3
<b>TOTAL</b>	<b>\$12.6</b>		<b>\$12.8</b>

Individual accounts are maintained for the large emitters for 12 per cent of all carbon tax paid during the fiscal year. These funds can be used for greenhouse gas emission reducing investments by each large emitter. Table 4 shows the accumulated amount in each account at the end of each fiscal year.

**Table 4: Large emitter grant account balances<sup>5</sup>**

	At Mar 31, 2020	At Mar 31, 2021	At Mar 31, 2022
De Beers Canada Inc. (Gahcho Kué Diamond Mine)	\$201,168	\$595,511	\$1,144,626
Diavik Diamond Mines (2012) Inc. (Diavik Diamond Mine)	\$336,862	\$1,006,075	\$1,879,931
Arctic Canadian Diamond Mine (Ekati Diamond Mine)	\$129,728	\$446,644	\$1,146,260
<b>TOTAL</b>	<b>\$667,758</b>	<b>\$2,048,229</b>	<b>\$4,170,817</b>

<sup>4</sup>The NWT carbon tax was introduced September 1, 2019.

<sup>5</sup>Imperial Oil Resources NWT Limited is also prescribed as a large emitter but did not qualify for grant balances in 2019-20, 2020-21, and 2021-22.

### 3. MEASURING MOVEMENT TOWARDS A LESS CARBON INTENSIVE ECONOMY

Measuring the effect of the Northwest Territories carbon tax on reducing carbon emissions is complicated by a number of variables affecting carbon fuel consumption. Isolating the effect of the carbon tax would be difficult with only three years of data collected since introduction of the carbon tax. Other factors like changing retail fuel prices, weather and economic activity can influence fuel consumption and these effects cannot be separated from the carbon tax effects without many years of data. This data will come from GNWT carbon tax data and Statistics Canada.

Table 5 estimates annual fiscal year (April to March) NWT carbon tax emissions since the introduction of the carbon tax on September 1, 2019.

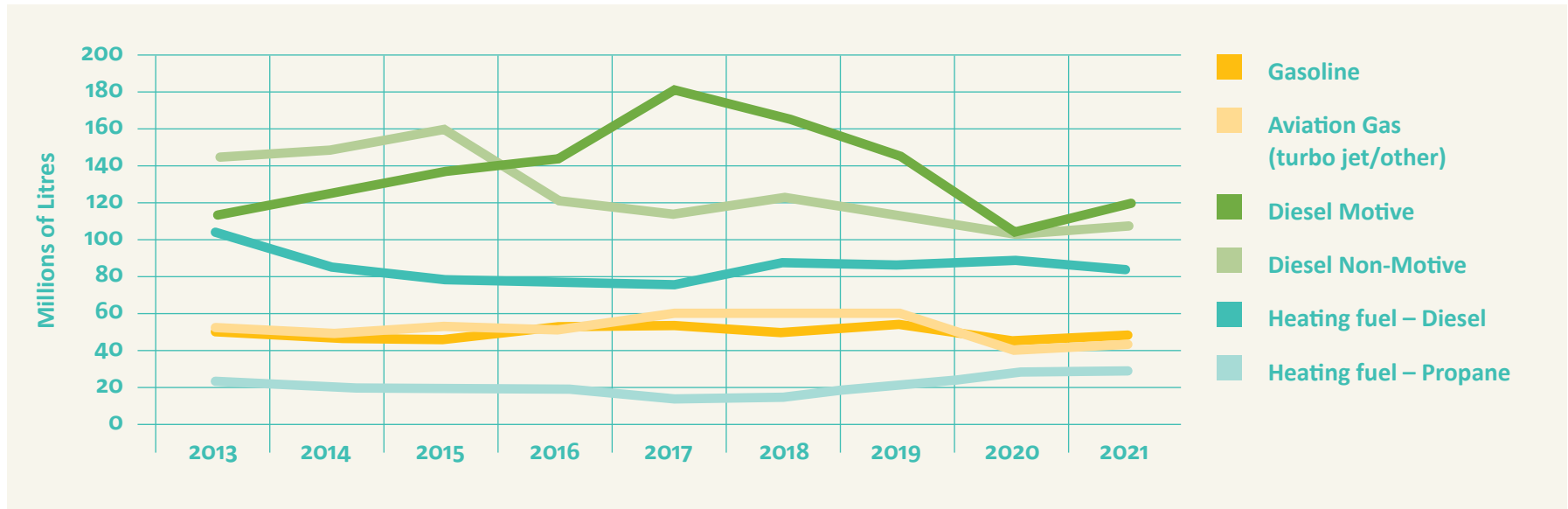
**Table 5: Estimated NWT greenhouse gas emissions from carbon tax data**

	2021-22 Fuel Volume	CO <sub>2</sub> e	September 1, 2019 to March 31, 2020 Emissions (kilotonnes)	April 1, 2020 to March 31, 2021 Emissions (kilotonnes)	April 1, 2021 to March 31, 2022 Emissions (kilotonnes)
Gasoline (litres)	45,585,647	2.511680 kg/l	75	113	114
Aviation Gas (litres)	1,570,962	2.488540 kg/l	2	4	4
Aviation Gas Turbo Jet (litres)	43,158,671	2.488540 kg/l	46	87	107
Diesel (litres)	235,704,544	2.708936 kg/l	361	522	633
Natural Gas (m <sup>3</sup> )	409,440	1.912355 kg/m <sup>3</sup>	1	1	1
Natural Gas Heating (m <sup>3</sup> )	1,010,170	1.912355 kg/m <sup>3</sup>	1	1	2
Railway Diesel (litres)	118,734	2.708936 kg/l	0	0	0
Diesel for Heating (litres)	71,413,983	2.708936 kg/l	156	216	193
Propane (litres)	1,941,933	1.547859 kg/l	1	3	3
Propane for Heating (litres)	23,249,111	1.547859 kg/l	32	41	36
Naphtha (litres)	8,199	2.254503 kg/l	0	0	0
			676	988	1,095

No conclusions can be derived from Table 5 about the effect of the carbon tax on 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 its effects will be difficult to discern from other factors in the short term. For example, 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 increase in 2021-22 to appear more significant than it would be if 2020-21 was a typical year.



Figure 1: NWT fuel consumption 2013 to 2021 calendar year



Source: NWT Finance

## MEASURING CHANGES IN CARBON INTENSITY IN HOUSEHOLDS

Carbon intensity of the household sector is measured in terms of household carbon emissions per person. Reductions in household carbon intensity following the implementation of the carbon tax will be measured by taking the ratio of carbon intensity in a given year to the average carbon intensity for 2009 to 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 is released almost two years after the calendar year, the benchmark household carbon intensity has been established with the average carbon intensity for 2009 to 2019 but it will be years before any analysis is available on whether the NWT carbon tax is having an effect on carbon fuel use. The baseline currently contains just one year (2019) of emissions data with the carbon tax present.

### Northwest Territories Household Carbon Emission History

Table 6 shows the annual emissions attributed to households, the annual NWT 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 Canadian average household carbon emissions of 3,761 kilograms per person, 165 kilograms per person higher than average NWT household carbon emissions.

## 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) 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 in a given year to the carbon intensity of the 2009 to 2019 average. A ratio less than one indicates improvement because the annual carbon intensity is below the average and a ratio greater than one indicates deterioration because the annual carbon intensity is above the average.

### Northwest Territories Industrial Carbon Emission History

Table 7 shows the carbon intensity of Northwest Territories industry averaged 0.360 kilotonnes per million dollars GDP over the 2009 to 2019 period.

**Table 6: Carbon Intensity, NWT households**

	CO <sub>2</sub> e Emissions (kilotonnes)	Population (number of people)	Carbon Intensity (tonnes per person)
2009	185	43,156	4.3
2010	151	43,285	3.5
2011	180	43,504	4.1
2012	155	43,648	3.6
2013	144	43,805	3.3
2014	180	43,884	4.1
2015	180	44,237	4.1
2016	157	44,649	3.5
2017	134	44,891	3.0
2018	147	44,981	3.3
2019	129	45,070	2.9
Average	158	44,101	3.6

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

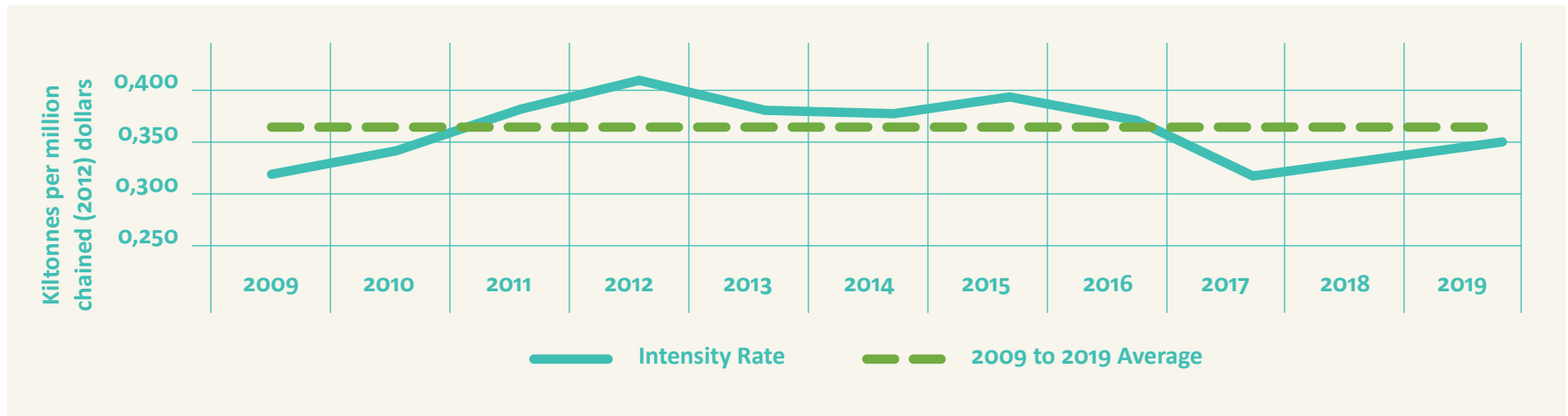
**Table 7: Carbon intensity, NWT Industry**

	All Industry Emissions (kilotonnes)	GDP, Basic Prices (millions chained (2012) dollars)	Carbon Intensity (kilotonnes per million chained (2012) dollars)
2009	1,470	4,581	0.321
2010	1,599	4,707	0.340
2011	1,620	4,274	0.379
2012	1,710	4,250	0.402
2013	1,649	4,367	0.378
2014	1,721	4,575	0.376
2015	1,794	4,621	0.388
2016	1,710	4,570	0.374
2017	1,504	4,737	0.318
2018	1,594	4,801	0.332
2019	1,588	4,509	0.352
Average	1,637	4,545	0.360

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

Figure 2 shows the carbon intensity of industry over time.

**Figure 2: Carbon Intensity, NWT Industry**



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

Table 8 shows annual Northwest Territories carbon intensity by industry.

**Table 8: Carbon Intensities, NWT Selected Industries**

	Carbon Emissions per Million Dollars Value Added (kilotonnes)											11-Year Average
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Total, All Industries	0.321	0.340	0.379	0.402	0.378	0.376	0.388	0.374	0.318	0.332	0.352	0.360
Non-Metallic Mineral Mining & Quarrying (Bs21230)	0.398	0.398	0.514	0.647	0.636	0.520	0.528	0.384	0.255	0.282	0.404	0.452
Electric Power Generation, Transmission & Distribution (Bs22110)	1.128	1.009	1.092	1.141	1.119	1.436	2.083	1.164	0.965	1.013	1.174	1.211
Air Transportation (Bs48100)	3.827	3.655	3.153	3.193	3.240	2.908	2.834	2.782	2.559	2.451	2.339	2.995
Water Transportation (Bs48300)	1.719	2.261	2.509	3.089	2.731	3.077	5.345	7.273	1.538	1.714	1.897	3.014
Other Provincial & Territorial Government Services (Gs91200)	0.202	0.226	0.393	0.273	0.496	0.449	0.403	0.470	0.319	0.321	0.247	0.345

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

# 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 for years before 2010.

**Table 1: Estimated Northwest Territories Greenhouse Gas Emissions by Fuel Type 2010 to 2021**

	Greenhouse Gas Emissions (kilotonnes)							Total
	Gasoline	Aviation <sup>6</sup>	Motive Diesel	Railway Diesel	Non-Motive Diesel	Diesel Heating	Propane Heating <sup>7</sup>	
2010	124	128	238	0.3	298	257	..	1,045
2011		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

Source: Department of Finance

<sup>6</sup>Total of aviation gasoline and aviation turbo jet gasoline.

<sup>7</sup>“..” indicates that data is not available.

The following table provides estimated Northwest Territories greenhouse gas emissions using fiscal year (April to March) fuel tax data. This table is provided to show a longer time series for greenhouse gas emissions but because heating fuel is not taxed under the Northwest Territories fuel tax regime, heating fuel emissions are unavailable in historical fuel tax data by fiscal year.

**Table 2: Estimated Northwest Territories Greenhouse Gas Emissions by Fuel Type 1999-00 to 2020-21**

	Greenhouse Gas Emissions (kilotonnes)				
	Gasoline	Aviation <sup>8</sup>	Diesel <sup>9</sup>	Railway Diesel	Total
1999-00	107.4	90.8	173.0	0.8	372.0
2000-01	93.1	105.3	335.3	1.4	535.1
2001-02	105.1	124.7	455.5	1.4	686.7
2002-03	109.6	101.4	473.4	0.8	685.1
2003-04	111.5	107.5	527.9	2.2	749.0
2004-05	110.8	127.1	596.2	1.4	835.5
2005-06	101.9	122.8	592.7	0.9	818.4
2006-07	108.0	150.3	706.6	2.3	967.2
2007-08	106.2	134.3	626.1	0.5	867.1
2008-09	107.1	131.5	514.9	0.4	753.9
2009-10	104.2	108.7	493.5	0.3	706.6
2010-11	115.3	121.2	517.4	0.3	754.3

	Greenhouse Gas Emissions (kilotonnes)				
	Gasoline	Aviation <sup>7</sup>	Diesel <sup>8</sup>	Railway Diesel	Total
2011-12	114.9	139.9	608.3	0.3	863.4
2012-13	118.4	143.3	637.5	0.5	899.6
2013-14	112.5	121.8	656.2	0.5	891.1
2014-15	120.7	130.0	693.7	0.6	945.0
2015-16	118.8	129.9	725.6	0.8	975.0
2016-17	124.2	127.5	673.6	0.4	925.7
2017-18	115.4	138.9	677.2	0.4	931.9
2018-19	116.4	133.9	688.7	0.3	939.3
2019-20	118.3	124.4	620.1	0.2	863.0
2020-21	112.8	90.6	555.7	0.3	759.4
2021-22	114.5	111.3	638.5	0.3	864.6

Source: Department of Finance

<sup>8</sup>Total of aviation gasoline and aviation turbo jet gasoline.

<sup>9</sup>Not including heating fuel.





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English

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French

Kĩspin ki nitawihtĩn ě nĩhĩyawihk ōma ācimōwin, tipwāsīnān.

Cree

Tłıchq yati k'ĕĕ. Dı wegodi newq dĕ, gots'o gonede.

Tłıchq

ʔerihł'is Dĕne Sųłınĕ yati t'a huts'elkĕr xa beyáyati theᓇ ʔat'e, nuwe ts'ĕn yółti.

Chipewyan

Edı gondı dehgháh got'je zhatiĕ k'ĕĕ edat'ĕh enahddhĕ nide naxets'ĕ edahłı.

South Slavey

K'áhshó got'jne xadā k'ĕ hederı ʔedłhtł'ĕ yerınıwĕ nıdĕ dúle.

North Slavey

Jii gwandak izhii ginjik vat'atr'ijáhch'uu zhit yinothtan ji', diits'at ginohkhii.

Gwich'in

Uvanittuaq ilitchurisukupku Inuvialuktun, ququaqluta.

Inuvialuktun

Ĉ'bdł ɳɳ'ᓃbΔĉ ʌʌLJΔʌʌʌ Ĉ.ᓃᓃɳɳĉ'ᓃᓃʌɳɳᓃ, ɳ'ᓃ'ɳ'ᓃ.ᓃ ɳ'ᓃᓃʌ'ᓃ.ᓃᓃɳɳᓃ.

Inuktitut

Hapkua titiqqat pijumagupkit Inuinnaqtun, uvaptinnut hivajarlutit.

Inuinnaqtun