

TD 201-19(2) TABLED ON OCTOBER 27, 2020

NWT Carbon Tax Report

2019-2020

Government of
Northwest Territories





Message from the Minister of Finance

It is my pleasure to release the first annual carbon tax report detailing the results of the Northwest Territories carbon pricing results for the seven months from September 1, 2019 to March 31, 2020.

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 is a key component of the GNWT's *Climate Change Strategic Framework*.

A handwritten signature in blue ink, appearing to read 'Caroline Wawzonek'.

Caroline Wawzonek
Minister of Finance

Contents

- 1. Introduction.....1**
 - Description of the Carbon Tax and Rebates:..... 1
- 2. Fiscal Year Results4**
- 3. Measuring Movement towards a Less Carbon Intensive Economy7**
 - Measuring Changes in Carbon Intensity in Households 8
 - NWT Household Carbon Emission History..... 8
 - Measuring Carbon Intensity in the Business Sector 9
 - NWT Business Sector Carbon Emission History 9
- APPENDIX.....11**

1. Introduction

The September 1, 2019 implementation of Northwest Territories carbon pricing fulfills 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 price on carbon in the territory that would increase over time to \$50 per tonne of greenhouse gas emissions by 2022-23.

The Northwest Territories carbon pricing plan was devised through discussions with the 18th Legislative Assembly and numerous stakeholders. The GNWT worked with the federal government on the implications of carbon pricing in the Northwest Territories, held a public engagement from July to September 2017 that resulted in 382 respondents to an online survey and communication with 104 stakeholder groups, and met with mining sector representatives on several occasions to discuss the GNWT's approach to its carbon pricing commitment.

The GNWT's *Pan-Canadian Framework* carbon pricing commitment was met by implementing a carbon tax on various carbon-based fuels but that exempts aviation fuel.

The GNWT's carbon pricing approach is intended to encourage carbon conservation and substitution to reduce greenhouse gas emissions while minimizing the effect on the local cost of living or on creating additional barriers to economic development. The GNWT has made priority investments in alternative energy options for territorial residents and businesses and expects to continue making alternative energy investments while working closely with the federal and other NWT governments and NWT 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 \$20/tonne of greenhouse gas (GHG) emissions for the various types of fuel (see table). The rates will increase annually until 2022, when carbon pricing will reach \$50/tonne. The carbon tax does not apply to aviation fuel.

The Northwest Territories carbon tax uses the administrative structure already in place for territorial fuel taxes. Carbon tax is added to the price at the point of purchase of the fuel in the same way fuel taxes are applied. The fuel tax collectors also collect carbon taxes and remit the revenue to the GNWT in the same way as fuel taxes.

The 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 a reserve in the NWT. This exemption would not apply to those whose *Indian Act* tax exemption cease to 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.

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 ³	5.8¢/m ³	7.7¢/m ³	9.6¢/m ³

The following describes the carbon tax offset expenditures that were put in place to offset the carbon tax burden on taxpayers. With the exception of the Cost of Living Offset, 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 over 17 years; and
 - An amount paid to families with children under the age of 18 years.
- **Large Emitters Offset** - large emitters are prescribed in regulations, which means that the Minister of Finance determines if they are a large emitter. Currently there are 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 GHG 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 GHG 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](https://www.fin.gov.nt.ca/en/services/carbon-tax)¹ 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.

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

2. Fiscal Year Results

Table 2 shows 2019-20 carbon pricing results for the seven-month period September 1, 2019 to March 31, 2020. Large emitter trust account balances at fiscal year-end are shown in Table 4 and Table 5 shows 2019-20 carbon emissions by source.

To date, none of the large emitters have applied for funding out of their large emitter individual accounts.

The Cost of Living Offset is not directly tied to the amount of carbon tax collected but is included in the summary of expenditures related to the carbon tax. For 2019-20, the total Cost of Living Offset amounts per individual was \$104 per adult and \$120 per child, and were distributed in equal payments on October 31, 2019 and April 30, 2020. Starting July 2020, the Cost of Living Offset payments will increase to \$156 per year for an individual and \$180 per year for a child and provided quarterly.

At the end of 2019-20, there was \$878,100 remaining in net revenues to spend on other GHG-reducing priorities.

Table 2: 2019-20 Carbon tax revenues and offsets

Total volumes (thousands)	
Gasoline (litres)	29,917
Aviation gas (litres)	723
Aviation gas turbo jet (litres)	18,586
Diesel (litres)	133,292
Natural gas (cubic metres)	283
Natural gas heating (cubic metres)	442
Railway diesel (litres)	63
Diesel for heating (litres)	57,624
Propane (litres)	906
Propane for heating (litres)	20,811
Mine volumes (thousands)	
Diesel (litres)	99,089
Diesel for heating (litres)	18,832

Carbon tax rates

Gasoline (¢/litre)	4.7
Aviation gas (¢/litre)	-
Aviation gas turbo jet (¢/litre)	-
Diesel (¢/litre)	5.5
Natural gas (¢/cubic metre)	3.8
Natural gas for heating (¢/cubic metre)	3.8
Rail (¢/litre)	5.5
Diesel for heating (¢/litre)	5.5
Propane (¢/litre)	3.1
Propane for heating (¢/litre)	3.1

Gross carbon tax revenues (thousands of dollars)

Gasoline	1,406.1
Aviation gas	-
Aviation gas turbo jet	-
Diesel	7,331.0
Natural gas	10.8
Natural gas for heating	16.8
Rail	3.5
Diesel for heating	3,169.3
Propane	28.1
Propane for heating	645.1
Gross carbon tax revenues	12,610.7

Carbon tax offsets (thousands of dollars)

Carbon tax rebate for heating fuel (non-large emitters)	2,363.5
Large emitter 72% rebate of total carbon tax paid	4,669.7
Carbon tax rebate for fuel used in electrical generation for distribution	583.1
Cost of Living Offset	4,116.4
	11,732.6
Large Emitter Grants	-
Net carbon tax revenue	\$878.1

Table 3 presents the breakdown of carbon tax revenues and expenditures. The large emitter grant accounts are included in the table as an expenditure, even though none of the large emitters have drawn down funds from their accounts for GHG-reducing investments. The GNWT spends more on carbon tax related expenditures than it generates in carbon tax revenues because the Cost of Living Offset does not link directly to carbon tax revenues.

Table 3: Carbon Tax Revenues and Expenditures (millions of dollars)

Revenue from NWT Carbon Tax		Expenditures on Rebates & Benefits	
Residents, small business and governments			
Diesel Fuel, Propane & Natural Gas for Heating	\$2.8	100% Heating Rebate	\$2.4
Non-Motive Diesel for Community Electricity Production	\$0.14	Annual Rebate to Electricity Producers	\$0.6
Motive Diesel	\$1.7	Cost of Living Offset (COLO) Benefit	\$4.1
Gasoline	\$1.4		
Large Emitters			
Facility Fuel Use	\$6.5	Large Emitter Rebate	\$4.7
		Large Emitter Grant Accounts	\$0.3
Other Items			
Railway Diesel & Non-Heating Propane and Natural Gas	\$0.04	NWT Carbon Tax & Benefit Administration	\$0.7
TOTAL	\$12.6		\$12.8

Table 4: Large emitter grant account balances at March 31, 2020¹

De Beers Canada Inc.	\$201,168
Diavik Diamond Mines (2012) Inc. ²	\$336,862
Dominion Diamond Ekati Corporation	\$129,728
Total	\$667,758

1. Imperial Oil Resources NWT Limited is also prescribed as a large emitter but did not qualify for the grant balance in 2019-20.
2. Recorded as a receivable.

3. Measuring Movement towards a Less Carbon Intensive Economy

The carbon emission data to measure the effect of the NWT carbon tax on reducing carbon emissions will not be available for many years. Since fuel usage changes annually related to factors like weather, economic activity and new technology, to draw conclusions about the direct contribution of carbon pricing will require years of data.

Table 5 provides the carbon emissions as determined by the carbon tax data for 2019-20.

Table 5: Estimating 2019-20 NWT greenhouse gas emissions from carbon tax data

	September 1, 2019 to March 31, 2020		
	Fuel volume	CO ₂ e	Greenhouse gas emissions (kilotonnes)
Gasoline (litres)	29,917,217	2.511680 kg/l	75
Aviation gas (litres)	722,737	2.488540 kg/l	2
Aviation gas turbo jet (litres)	18,585,744	2.488540 kg/l	46
Diesel (litres)	133,291,513	2.708936 kg/l	361
Natural gas (cubic metres)	282,925	1.912355 kg/m ³	1
Natural gas heating (cubic metres)	441,940	1.912355 kg/m ³	1
Railway diesel (litres)	63,302	2.708936 kg/l	0
Diesel for heating (litres)	57,623,894	2.708936 kg/l	156
Propane (litres)	906,212	1.547859 kg/l	1
Propane for heating (litres)	20,810,852	1.547859 kg/l	32
			676

The appendix provides greenhouse gas emissions based on fuel tax data. Since heating fuel is not taxed under the NWT fuel tax regime, the heating fuel emissions are unavailable for historical fuel data.

Carbon pricing is not expected to significantly reduce greenhouse gas emissions in the NWT over the short to medium term because the incentive to limit fuel use already exists due to high energy costs. The easiest and least costly changes that could be made to reduce consumption of carbon-based fuels may already have been pursued. As the carbon tax rate increases over time, further reductions will be increasingly difficult without considerable technological improvements that allow economically viable reductions in fuel use.

Measuring Changes in Carbon Intensity in Households

Measuring the success of carbon pricing to reduce household GHG emissions will first require an indication that household emissions are decreasing.

The carbon intensity of the household sector is measured as household carbon emissions per person. Reductions in household carbon intensity will be measured by taking the ratio of the carbon intensity in a given year to the carbon intensity of the 2009 to 2017 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.

NWT 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. Both population and carbon emissions have slight upward trends but population increased faster than carbon emissions. Therefore, because population grew faster than carbon emissions, per capita carbon emissions declined from 2009 to 2017.

Table 6: NWT households average per capita carbon emissions, 2009 to 2017

	CO ₂ e emissions <i>(kilotonnes)</i>	Population <i>(persons)</i>	Carbon intensity <i>(kilograms per person)</i>
2009	184	43,156	4,264
2010	151	43,285	3,489
2011	180	43,504	4,138
2012	155	43,648	3,551
2013	144	43,805	3,287
2014	180	43,884	4,102
2015	180	44,237	4,069
2016	152	44,649	3,404
2017	122	44,908	2,717
Average	161	43,897	3,669

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

Over the 2009 to 2017 period, the Canadian average household carbon emissions of 4,066 kilograms per person was 398 kilograms per person higher than average NWT household carbon emissions of 3,669 kilograms per person.

Measuring Carbon Intensity in the Business Sector

The carbon intensity of the business sector is measured as emissions per dollar of output. Emissions are measured in kilotonnes; business output in chained (2012) per million dollars to remove the effect of inflation.

To evaluate the success of carbon pricing, reductions in the carbon intensity of the business sector will be measured as the ratio of carbon intensity in a given year to the carbon intensity of the 2009 to 2017 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.

NWT Business Sector Carbon Emission History

Table 7 shows the carbon intensity of the NWT business sector averaged 0.342 kilotonnes per million dollars GDP over the 2009 to 2017 period.

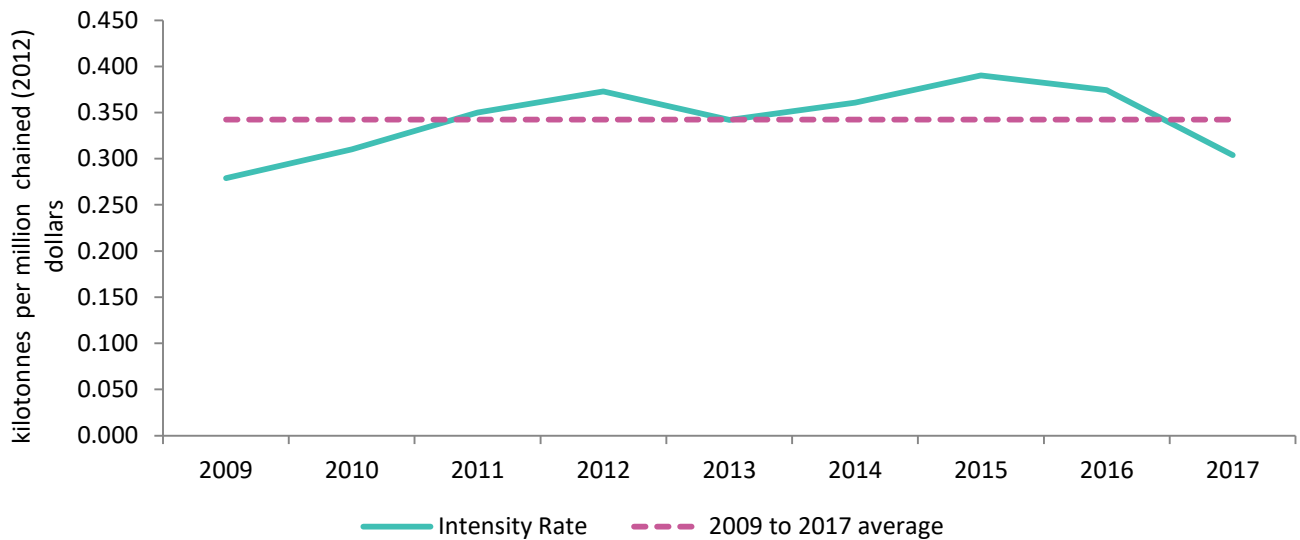
Table 7: Carbon intensity NWT business sector

	All Industry Emissions	GDP, basic prices	Carbon intensity
	(kilotonnes)	(millions chained (2012) dollars)	(kilotonnes per million chained (2012) dollars)
2009	1,277	4,581	0.279
2010	1,460	4,707	0.310
2011	1,496	4,274	0.350
2012	1,584	4,250	0.373
2013	1,493	4,367	0.342
2014	1,650	4,575	0.361
2015	1,803	4,621	0.390
2016	1,710	4,570	0.374
2017	1,411	4,643	0.304
Average	1,543	4,510	0.342

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

Figure 1 shows the carbon intensity of the business sector over time.

Figure 1: Carbon Intensity, NWT Business Sector



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

Table 8 shows annual NWT carbon intensity by industry.

Table 8: NWT carbon emissions intensity by industry

	Carbon emissions (kilotonnes) per million dollars value added									9-year average
	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Total, All Industries	0.279	0.310	0.350	0.373	0.342	0.361	0.390	0.376	0.305	0.343
Non-metallic mineral mining & quarrying (BS21230)	0.398	0.398	0.514	0.647	0.636	0.520	0.528	0.384	0.291	0.480
Electric power generation, transmission & distribution (BS22110)	1.161	1.040	1.109	1.176	1.170	1.504	2.170	1.213	1.070	1.291
Air Transportation (BS48100)	3.827	3.655	3.153	3.193	3.240	2.908	2.834	2.782	2.631	3.136
Water Transportation (BS48300)	0.057	0.919	1.168	1.737	1.000	2.308	5.414	7.318	3.409	2.592
Other provincial & territorial government services (GS91200)	0.145	0.179	0.355	0.235	0.446	0.418	0.403	0.470	0.195	0.316

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

APPENDIX

Estimated Northwest Territories Greenhouse Gas Emissions based on Fuel Tax Data 1999-00 to 2019-20

GHG emissions (kilotonnes)

	Gasoline	Aviation	Diesel*	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
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

*Does not include heating fuel.