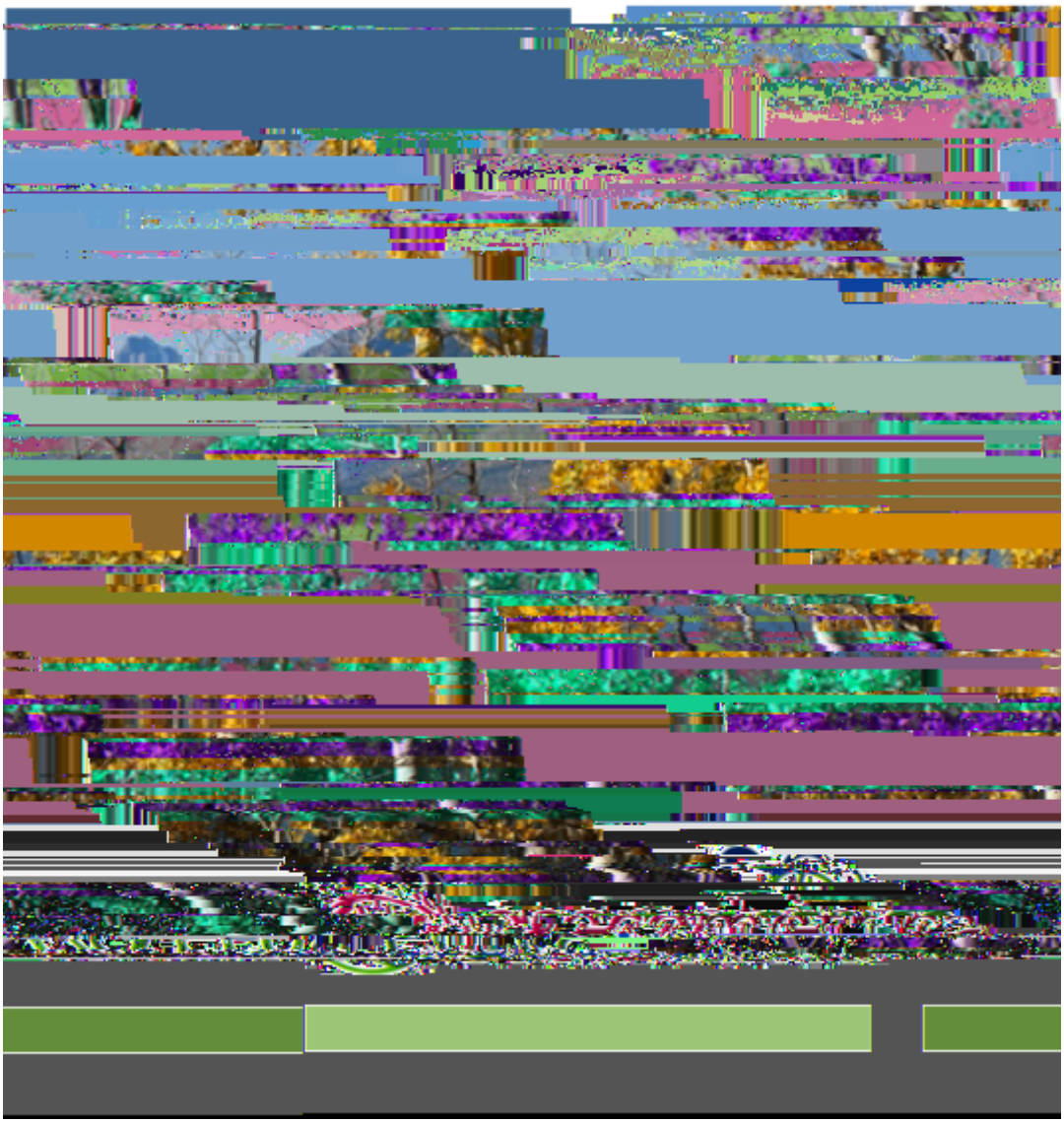

Greenhouse Gas Protocol (Dual Reporting) Report for Dawson College

Assessment Period: July 2017 - June 2018

Produced on July 8, 2019 by *Our Impacts* on behalf of Ecometrica

Assessment Details

Introduction

A greenhouse gas (GHG) emissions assessment quantifies the total greenhouse gases produced directly and indirectly from a business or organisation's activities. Also known as a carbon footprint, it is an essential tool, providing your business with a basis for understanding and managing its climate change impacts.

A GHG assessment quantifies all seven Kyoto greenhouse gases where applicable and is measured in units of carbon dioxide equivalence, or CO_2e[1]. The seven Kyoto gases are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), nitrogen trifluoride (NF_3), sulphur hexafluoride (SF_6) and perfluorocarbons (PFCs). The global warming potential (GWP) of each gas is illustrated in the Table 1.

Table 1. GWP of Kyoto Gases (IPCC 2013, without climate-carbon feedback)

Greenhouse Gas	GWP
Carbon dioxide (CO_2)	1
Methane (CH_4)	28
Nitrous oxide (N_2O)	265
Hydrofluorocarbons (HFCs)	1 - 12,400
Perfluorocarbons (PFCs)	1 - 11,100
Nitrogen trifluoride (NF_3)	16,100
Sulphur hexafluoride (SF_6)	23,500

This assessment has been carried out in accordance with the World Business Council for Sustainable Development and World Resources Institute's (WBCSD/WRI) Greenhouse Gas Protocol; a Corporate Accounting and Reporting Standard, including the GHG Protocol Scope 2 Guidance. This protocol is considered current best practice for corporate or organisational greenhouse gas emissions reporting. GHG emissions have been reported by the three WBCSD/WRI Scopes.

Scope 1 includes direct GHG emissions from sources that are owned or controlled by the company such as natural gas combustion and company owned vehicles.

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Data Quality and Availability

In order to provide the most accurate estimate of an organisation's GHG emissions, primary (actual) data should be used where it is available, up to date and geographically relevant. Secondary data in the form of estimates, extrapolations and industry averages may be used when primary data is not available. Table 2 details the quality of data submitted for th ave9hically relevant. Secondary data in the form of estimates, extrapolations and in

- It was assumed that active transport was equally divided between bicycle and on foot.

Business Travel

- Dawson College decided to include for 2017-2018 part of their scope 3 business travel emissions. Due to lack of actual data, the answers for rail, taxi, bus and coach and employee own cars were unavailable. Dawson College intend to improve data collection in future assessments.
- Hotel night stays have not been included in this assessment.
- Actual data for air travel and whole bus was available.

Third-Party Vehicle Use

- Data was available from actual invoices.

Assessment Summary for Dawson College

Gross Overall Emissions (location-based): 2,687 tCO_2e

Gross Overall Emissions (market-based): 2,687 tCO_2e

Key Performance Indicators

Absolute GHG emissions will vary over time and often correspond to the expansion or contraction of an organisation. It is useful therefore to use reporting metrics that take these effects into account and monitor relative GHG emissions intensity. A common emissions intensity metric is tonnes of CO_2e per full time equivalent. This has been calculated, along with other relevant metrics, in the table below:

Data	KPI
10,222 Number of students	0.263 tCO_2e per student (Location-Based)
78,949 Floor area (square metres)	0.034 tCO_2e per square metre (Location-Based)
795 Full Time Equivalent Employees	3.38 tCO_2e per Full Time Equivalent Employee (Location-Based)
10,222 Number of students	0.263 tCO_2e per student (Market-Based)
78,949 Floor area (square metres)	0.034 tCO_2e per square metre (Market-Based)
795 Full Time Equivalent Employees	3.38 tCO_2e per Full Time Equivalent Employee (Market-Based)

Summary by Activity (Location-Based, tCO_2e)

By Activity	tCO_2e/year	%
Premises	619	23
Business Travel	84.1	3.13
Commuting	1,984	73.8
Third Party Vehicle Use	0.571	0.0212
Total	2,687	100

Summary by Activity (Market-Basedce8y by Activity (Market-Basedce8y by Activity (Market-Basedce80136.8738Q Q q 1 0 0 1 56.69291 316.73

Scope	tCO_2e/year	%
Scope 1	339	12.6
Scope 2	15.5	0.576
Scope 3	2,333	86.8
Total	2,687	100

Summary by WBCSD/WRI Scope (Market-Based, tCO_2e)

Scope	tCO_2e/year	%
Scope 1	339	12.6
Scope 2	15.5	0.576
Scope 3	2,333	86.8
Total	2,687	100

Summary by Greenhouse Gas

Greenhouse Gas	GWP	tGHG/year (Location-Based)	tCO_2e/year (Location-Based)	tGHG/year (Market-Based)	tCO_2e/year (Market-Based)
CO_2	1	1,038	1,038	1,038	1,038
CH_4	28	9.39	263	9.39	263
N_2O	265	0.0213	5.63	0.0213	5.63
Biogenic CH_4	27	0.0531	1.43	0.0531	1.43
HFC-134a	1300	0.00113	1.47	0.00113	1.47
HFC-404a	3942.8	0.00318	12.5	0.00318	12.5
CO_2e	1	1,366	1,366	1,366	1,366
		Total	2,687		2,687

Summary of Scope 2 Market-Based Method for Dawson College

Energy Consumed and Emissions By Factor Type In Scope 2 Market-Based Method

Scope 2 Market-Based Energy

Scope 2 Market-Based Emissions

Emission Factor Type	Energy		Market-Based Emissions	
	MWh	%	tCO_2e	%
Client-supplied market-based instrument	0	0	0	0
Residual mix factors	0	0	0	0
Default location-based factors	13,734	100	15.5	100
Total	13,734	100	15.5	100

Detailed Results

Detailed Summary by WBCSD/WRI Scope

Location-Based methodology

Source of Emissions	tCO_2/yr	tCH_4/yr	tN_2O/yr	Total Emissions (tCO_2e/yr)	%
Scope 1 Total	**323**	**0.00634**	**0.006**	**339**	**12.6%**
Premises Total	323	0.00634	0.006	339	12.6%
Natural gas	323	0.00634	0.00599	325	12.1%

Natural gas	323	0.00634

Natural gas

Summary by Company Unit

Location-Based methodology

Assessment	July 2016 - June 2017		July 2017 - June 2018	
Company Unit	**Total Emissions (tCO_2e)**	**Emissions per FTE (tCO_2e/FTE)**	**Total Emissions (tCO_2e)**	**Emissions per FTE (tCO_2e/FTE)**
Dawson College	600	0.777	2,687	3.38
Dawson College	600	-	2,687	-

Market-Based methodology

Assessment	July 2016 - June 2017		July 2017 - June 2018	
Company Unit	**Total Emissions (tCO_2e)**	**Emissions per FTE (tCO_2e/FTE)**	**Total Emissions (tCO_2e)**	**Emissions per FTE (tCO_2e/FTE)**
Dawson College	600	0.777	2,687	3.38
Dawson College	600	-	2,687	-

Annual Activity Data

Source of Emissions	Value	Unit
Business Travel		
Air travel		
Long-haul, economy	307,753	pass.km
Buses, whole vehicle		
Diesel Bus	64,926	km
Hired cars		
Average gasoline cars	5,050	km
Commuting		
Bicycle		
Bicycle	1,526,147	km
Bus and coach		
Total CO2e emissions	1,365	tonne
Cars		
Average gasoline cars	3,192,384	km
Motorcycle		
Motorbike	7,346	km
On foot		
On foot	1,526,147	km
Rail (train, tram, light rail, underground)		
Transit rail	962	kg
Premises		
Composted waste		
Composted waste (wet weight basis)	13,268	kg
Electricity		
Electricity consumption	13,733,682	kWh
Landfilled waste		
Waste, landfilled, MSW	173	tonne
Natural gas		
Natural gas consumption (gross CV)	171,235	m3
Off-road vehicles and equipment		
Mobile equipment and off-road vehicles, diesel	25	l
Recycled waste		
Waste, recycled	64.1	tonne
Refrigerant gas loss and other fugitive emissions		
HFC-134a emissions	2.5	lb
R404a emissions	7	lb
Third Party Vehicle Use		
Leased trucks		
Gasoline medium and heavy duty truck	854	km

Leased vans			
	Gasoline light duty truck, passenger transportation	480	km

References

EC (2016). National Inventory Report, 1990-2014: Greenhouse Gas Sources and Sinks in Canada. Environment Canada.

Department for Business, Energy and Industrial Strategy (2018). 2018 Government GHG Conversion Factors for Company Reporting.

EC (2018). National Inventory Report. Greenhouse Gas Sources and Sinks in Canada: 1990 - 2016. Environment Canada.