

Greenhouse Gas Protocol (Dual Reporting) Report for Dawson College

Assessment Period: July 2018 - June 2019

Produced on Jan. 13, 2020 by *Our Impacts* on behalf of Ecometrica

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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 CO₂e¹. The seven Kyoto gases are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), nitrogen trifluoride (NF₃), sulphur hexafluoride (SF₆) 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 ₂ O)	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.

Taxi	Actual
Commuting	
Bicycle	Estimated
Bus and coach	Estimated
Cars	Estimated
Motorcycle	Estimated
On foot	Estimated
Rail (train, tram, light rail, underground)	Estimated
Third Party Vehicle Use	
Leased trucks	Actual
Leased vans	Actual

Key Assumptions

Operational Scope

- For carpooling, it was assumed that two students were traveling per car.
- It was assumed that active transport was equally divided between bicycle and on foot.

Business Travel

- Dawson College decided to include for 2018-2019 part of their scope 3 business travel emissions. Due to lack of actual data, the answers for rail, bus and coach and employee owned cars were unavailable. Dawson College intends to improve data collection in future assessments.
- Hotel night stays have not been included in this assessment.
- Actual data for air travel, taxi and whole buses used for student trips was available. This same data was not available for staff trips.

Third-Party Vehicle Use

- Data was available from actual invoices for rented vehicles.

Assessment Summary for Dawson College

Gross Overall Emissions (location-based): 2,627 tCO₂e


Gross Overall Emissions (market-based): 2,627 tCO₂e

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 CO₂e per full time equivalent. This has been calculated, along with other relevant metrics, in the table below:


Data	KPI
78,949 Floor area (square metres)	0.0333 tCO ₂ e per square metre (Location-Based)
10,363 Number of students	0.253 tCO ₂ e per student (Location-Based)
787 Full Time Equivalent Employees	3.34 tCO ₂ e per Full Time Equivalent Employee (Location-Based)
78,949 Floor area (square metres)	0.0333 tCO ₂ e per square metre (Market-Based)
10,363 Number of students	0.253 tCO ₂ e per student (Market-Based)
787 Full Time Equivalent Employees	3.34 tCO ₂ e per Full Time Equivalent Employee (Market-Based)

Summary by Activity (Location-Based, tCO₂e)



By Activity	tCO ₂ e/year	%
Premises	504	19.2
Business Travel	120	4.55
Commuting	2,003	76.3
Third Party Vehicle Use	0.447	0.017
Total	2,627	100

Summary by Activity (Market-Based, tCO₂e)



By Activity	tCO ₂ e/year	%
Premises	504	19.2
Business Travel	120	4.55
Commuting	2,003	76.3
Third Party Vehicle Use	0.447	0.017
Total	2,627	100

Summary by WBCSD/WRI Scope (Location-Based, tCO₂e)



Scope	tCO ₂ e/year	%
Scope 1	336	12.8
Scope 2	16.8	0.639
Scope 3	2,273	86.6
Total	2,627	100

Summary by WBCSD/WRI Scope (Market-Based, tCO₂e)



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



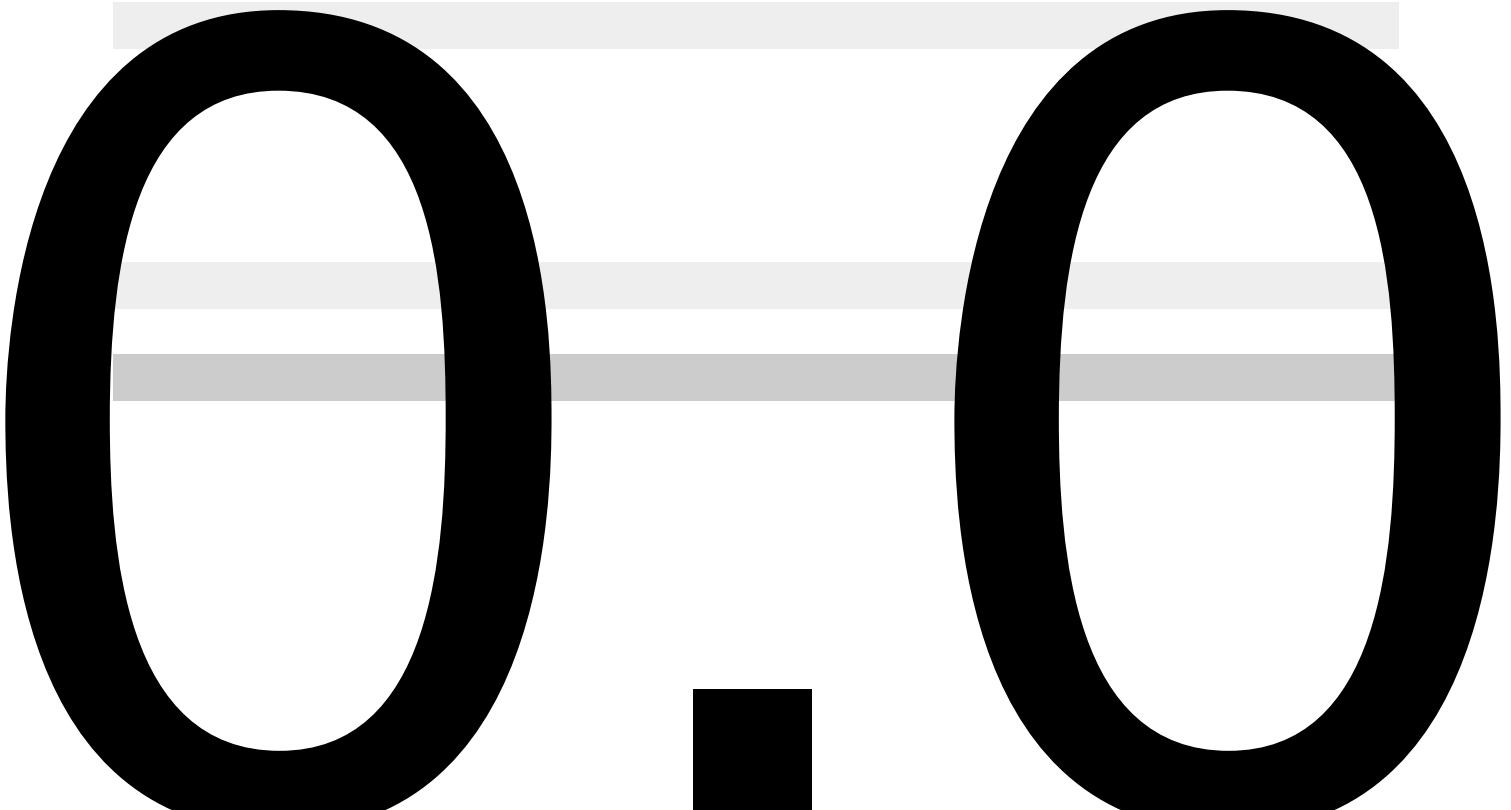
Emission Factor Type	Energy		Market-Based Emissions	
	MWh	%	tCO ₂ e	%
Client-supplied market-based instrument	0	0	0	0
Residual mix factors	0	0	0	0
Default location-based factors	13,694	100	16.8	100
Total	13,694	100	16.8	100

Detailed Results

Detailed Summary by WBCSD/WRI Scope

Location-Based methodology

Source of Emissions	tCO ₂ /yr	tCH ₄ /yr	tN ₂ O/yr	Total Emissions (tCO ₂ e/yr)	%
Scope 1 Total	335	0.00683	0.00654	336	12.8%
Premises Total	335	0.00683	0.00654	336	12.8%
Natural gas	332	0.00651	0.00616	334	12.7%
Off-road vehicles and equipment	0.0577	1.96e-4	9.62e-7	0.0634	0.00241%
Other fuel(s)	2.57	1.28e-4	3.84e-4	2.68	0.102%
Scope 2 Total	16.4	0	0.00137	16.8	



Scope 1 Total	335	0.00683	0.00654	336	12.8%
Premises Total	335	0.00683	0.00654	336	12.8%
Natural gas	332	0.00651	0.00616	334	12.7%
Off-road vehicles and equipment	0.0577	1.96e-4	9.62e-7	0.0634	0.00241%
Other fuel(s)	2.57	1.28e-4	3.84e-4	2.68	0.102%
Scope 2 Total	16.4	0	0.00137	16.8	0.639%
Premises Total	16.4	0	0.00137	16.8	0.639%
Electricity	16.4	0	0.00137	16.8	0.639%
Scope 3 Total	739	5.23	0.0167	2,273	86.6%
Business Travel Total	118	0.00195	0.00463	120	4.55%
Air travel	81.2	4.13e-4	0.00257	81.9	3.12%
Buses, whole vehicle	36.4	0.00149	0.00205	37	1.41%
Hired cars	0.592	3.59e-5	5.65e-6	0.595	0.0226%
Taxi	0.0767	4.65e-6	7.31e-7	0.077	0.00293%
Commuting Total	619	0.0378	0.00591	2,003	76.3%
Bicycle	0	0	0	0	0%
Bus and coach	0	0	0	1,380	52.6%
Cars	618	0.0375	0.0059	621	23.6%
Motorcycle	0.906	3.02e-4	1.61e-5	0.919	0.035%
On foot	0	0	0	0	0%
Rail (train, tram, light rail, underground)	0	0	0	0.973	0.037%
Premises Total	1.24	5.19	0.00612	150	5.72%
Composted waste	0	0	0.00602	3.76	0.143%
Electricity: Electricity - transmission & distribution losses	1.24	0	1.04e-4	1.27	0.0483%
Landfilled waste	0	5.19	0	145	5.53%
Recycled waste	0	0	0	0	0%
Third Party Vehicle Use Total	0.445	2.7e-5	4.24e-6	0.447	0.017%
Leased vans	0.445	2.7e-5	4.24e-6	0.447	0.017%
Total	1,090	5.24	0.0246	2,627	100%

Summary by Company Unit

Location-Based methodology

Assessment	July 2017 - June 2018		July 2018 - June 2019	
Company Unit	Total Emissions (tCO ₂ e)	Emissions per FTE (tCO ₂ e/FTE)	Total Emissions (tCO ₂ e)	Emissions per FTE (tCO ₂ e/FTE)
Dawson College	2,687	3.38	2,627	3.34
Dawson College	2,687	-	2,627	-

Market-Based methodology

Assessment	July 2017 - June 2018		July 2018 - June 2019	
Company Unit	Total Emissions (tCO₂e)	Emissions per FTE (tCO₂e/FTE)	Total Emissions (tCO₂e)	Emissions per FTE (tCO₂e/FTE)
Dawson College	2,687	3.38	2,627	3.34
Dawson College	2,687	-	2,627	-

Annual Activity Data

Source of Emissions	Value	Unit
Business Travel		
Air travel		
Long-haul, economy	964,732	pass.km
Medium-haul, economy	67,678	pass.km
Buses, whole vehicle		
Diesel Bus	42,381	km
Hired cars		
Average gasoline cars	3,074	km
Taxi		
Average taxi	398	km
Commuting		
Bicycle		
Bicycle	1,533,383	km
Bus and coach		
Local bus	1,380,330	kg
Cars		
Average gasoline cars	3,209,212	km
Motorcycle		
Motorbike	7,272	km
On foot		
On foot	1,533,383	km
Rail (train, tram, light rail, underground)		
Commuter rail	973	kg
Premises		
Composted waste		
Composted waste (wet weight basis)	20,054	kg
Electricity		
Electricity consumption	13,694,069	kWh
Landfilled waste		
Waste, landfilled, MSW	148	tonne
Natural gas		
Natural gas consumption (gross CV)	175,890	m3
Off-road vehicles and equipment		
Small utility mobile equipment and off-road vehicles, gasoline	25	l
Other fuel(s)		
Diesel	959	l
Recycled waste		
Waste, recycled	60.3	tonne
Refrigerant gas loss and other fugitive emissions		

Third Party Vehicle Use

Leased trucks

Heavy-duty truck, ethanol	0	km
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Leased vans

Gasoline light duty truck, passenger transportation	1,709	km
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