

Assessment Details

Consolidation Approach

Operational Control

Organisational Boundaries

Operations of Dawson College

Included

- Dawson College
- Dawson College

Operational Boundary

- Electricity
- Landfilled waste
- Natural gas
- Off-road vehicles and equipment
- Other fuel(s)
- Recycled waste

Quality Assurance Assessor

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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)




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 this assessment with the key assumptions used stated below.

Data Quality Overview



Location-based Accuracy Overview			
	tCO ₂ e/year	%	
Actual	728	99.7	
Estimated	2.48	0.34	
Total	730	100	



Market-based Accuracy Overview			
	tCO ₂ e/year	%	
Actual	728	99.7	
Estimated	2.48	0.34	
Total	730	100	

Table 2. Data Quality and Availability

Source of emissions	Data quality
Premises	
Composted waste	Unknown
Electricity	Actual
Landfilled waste	Actual
Natural gas	Actual
Off-road vehicles and equipment	Estimated
Other fuel(s)	Estimated
Recycled waste	Actual
Refrigerant gas loss and other fugitive emissions	N/A

Key Assumptions

Quality review has not been performed by Ecometrica.

Assessment Summary for Dawson College

Gross Overall Emissions (location-based): 730 tCO₂e


Gross Overall Emissions (market-based): 730 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
10,406 Number of students	0.0702 tCO ₂ e per student (Location-Based)
78,949 Floor area (square metres)	0.00925 tCO ₂ e per square metre (Location-Based)
742 Full Time Equivalent Employees	0.984 tCO ₂ e per Full Time Equivalent Employee (Location-Based)
10,406 Number of students	0.0702 tCO ₂ e per student (Market-Based)
78,949 Floor area (square metres)	0.00925 tCO ₂ e per square metre (Market-Based)
742 Full Time Equivalent Employees	0.984 tCO ₂ e per Full Time Equivalent Employee (Market-Based)

Summary by Activity (Location-Based, tCO₂e)



By Activity	tCO ₂ e/year	%
Premises	730	100
Total	730	100

Summary by Activity (Market-Based, tCO₂e)



By Activity	tCO ₂ e/year	%
Premises	730	100
Total	730	100

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



Scope	tCO ₂ e/year	%
Scope 1	447	61.2
Scope 2	37	5.07
Scope 3	246	33.7
Total	730	100

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



Scope	tCO ₂ e/year	%
Scope 1	447	61.2
Scope 2	37	5.07
Scope 3	246	33.7
Total	730	100

Summary by Greenhouse Gas

Greenhouse Gas	GWP	tGHG/year (Location-Based)	tCO ₂ e/year (Location-Based)	tGHG/year (Market-Based)	tCO ₂ e/year (Market-Based)
CO ₂	1	481	481	481	481
CH ₄	28	8.81	247	8.81	247
N ₂ O	265	0.01	2.66	0.01	2.66
CO ₂ e	1	0	0	0	0
		Total	730		730

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

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	444	0.00903	0.00857	447	61.2%
Premises Total	444	0.00903	0.00857	447	61.2%
Natural gas	442	0.0087	0.00823	444	60.8%
Off-road vehicles and equipment	0.183	2.16e-4	4e-6	0.19	0.0261%
Other fuel(s)	2.2	1.1e-4	3.31e-4	2.29	0.314%
Scope 2 Total	36.5	0.00438	0.00146	37	5.07%
Premises Total	36.5	0.00438	0.00146	37	5.07%
Electricity	36.5	0.00438	0.00146	37	5.07%
Scope 3 Total	0	8.8	0	246	33.7%
Premises Total	0	8.8	0	246	33.7%
Landfilled waste	0	8.8	0	246	33.7%
Recycled waste	0	0	0	0	0%
Total	481	8.81	0.01	730	100%

Market-Based methodology

Source of Emissions	tCO ₂ /yr	tCH ₄ /yr	tN ₂ O/yr	Total Emissions (tCO ₂ e/yr)	%
Scope 1 Total	444	0.00903	0.00857	447	61.2%
Premises Total	444	0.00903	0.00857	447	61.2%
Natural gas	442	0.0087	0.00823	444	60.8%
Off-road vehicles and equipment	0.183	2.16e-4	4e-6	0.19	0.0261%
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Electricity	36.5	0.00438	0.00146	37	5.07%
Scope 3 Total	0	8.8	0	246	33.7%
Premises Total	0	8.8	0	246	33.7%
Landfilled waste	0	8.8	0	246	33.7%
Recycled waste	0	0	0	0	0%
Total	481	8.81	0.01	730	100%

Summary by Company Unit

Location-Based methodology

Assessment	July 2010 - June 2011		July 2011 - June 2012	
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	789	1.06	730	0.984
Dawson College	789	-	730	-

Market-Based methodology

Assessment	July 2010 - June 2011		July 2011 - June 2012	
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	789	1.06	730	0.984
Dawson College	789	-	730	-

Annual Activity Data

Source of Emissions	Value	Unit
Premises		
Electricity		
Electricity consumption	14,616,177	kWh
Landfilled waste		
Waste, landfilled, MSW	162	tonne
Natural gas		
Natural gas consumption (gross CV)	235,259	m3
Off-road vehicles and equipment		
Small utility mobile equipment and off-road vehicles, gasoline	80	l
Other fuel(s)		
Diesel	827	l
Recycled waste		
Waste, recycled	83.7	tonne

References

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

EC (2013). National Inventory Report. Greenhouse Gas Sources and Sinks in Canada: 1990 - 2011. Environment Canada.; EC (2014). National Inventory Report. Greenhouse Gas Sources and Sinks in Canada: 1990 - 2012. Environment Canada.

EC (2017). National Inventory Report. Greenhouse Gas Sources and Sinks in Canada: 1990 - 2015. Environment Canada.

IPCC (2006). Revised IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual. Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge.