Greenhouse Gas Protocol (Dual Reporting) Report for Canadore College

Assessment Period: April 2022 - March 2023

Produced on Jan. 29, 2024 by *Ecometrica Sustainability*

Assessment Details

Consolidation Approach

Operational Control

Organisational Boundaries

Operations of Canadore College

Included

- Canadore College
- College Drive
- Commerce Court
- Aviation
- West Parry Sound

Operational Boundary

- Air travel
- Bus and coach
- Cars
- Composted waste
- Electricity
- Employee owned cars
- Hired cars
- Homeworkers
- Hotel night stays
- Landfilled waste
- Natural gas
- Off-road vehicles and equipment
- Recycled waste
- Trucks
- Vans
- Water supply

Quality Assurance Assessor

- Julian Burger - julian.burger@ecometrica.com

Table of Contents

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.

Scope 2 accounts for GHG emissions from the generation of purchased electricity, heat and steam generated off-site. As the subject of this assessment operates in markets which offer contractual instruments with product or supplier-specific data, scope 2 emissions are reported using both the location-based method and the market-based method. The location-based method applies average emission factors that correspond to the grid where consumption occurs, whereas the market-based method applies emission factors that correspond to energy purchased (or not purchased) through contractual instruments. Contractual instruments include energy attribute certificates, direct energy contracts, and supplier specific emission rates. The subject of this assessment has ensured that any contractual instruments used in the market-based method have met the Scope 2 Quality Criteria, as defined in the Guidance. Where contractual instruments do not meet the Quality Criteria, or where contractual instruments were not purchased, market-based scope 2 emissions have been calculated using residual mix emission factors. Where residual mix emission factors are not available, market-based scope 2 emissions have been calculated using default location grid-average emission factors, per the Protocol hierarchy. This may result in double counting between electricity consumers, as an adjusted emission factor taking into account voluntary purchases of electricity with specific attributes was not available.

Scope 3 includes all other indirect emissions such as waste disposal, business travel and staff commuting. Reporting of these activities is optional under the WBCSD/WRI GHG Protocol, but as they can contribute a significant portion of overall emissions Ecometrica recommends they are reported where applicable.

A GHG assessment is an essential tool in the process of monitoring and reducing an organisation's climate change impact as it allows reduction targets to be set and action plans formulated. GHG assessment results can also allow organisations to be transparent about their climate change impacts through reporting of GHG emissions to customers, shareholders, employees and other stakeholders. Regular assessments allow clients to track their progress in achieving reductions over time and provide evidence to support green claims in external marketing initiatives such as product labelling or CSR reporting. Ecometrica GHG assessments are designed to be transparent, consistent and repeatable over time.

---

[1] Carbon dioxide equivalent or CO_2e is a term for describing different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO_2e signifies the amount of CO_2 which would have the equivalent global warming impact.

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_2e/year	%
Actual	2,242	93.2
Estimated	164	6.81
Total	2,406	100

Market-based

Accuracy Overview	tCO_2e/year	%
Actual	2,242	93.2
Estimated	164	6.81
Total	2,406	100

Table 2. Data Quality and Availability

Source of emissions	Data quality
Premises	
Composted waste	Estimated
Electricity	Actual
Fuel oil	Actual
Landfilled waste	Mixed
Natural gas	Actual
Other fuel(s)	Actual
Recycled waste	Mixed
Refrigerant gas loss and other fugitive emissions	Actual
Water supply	Mixed
Company owned vehicles	
Cars	Mixed
Off-road vehicles and equipment	Mixed
Trucks	Mixed
Vans	Mixed
Homeworkers	

Homeworkers	Mixed
Business Travel - Employees	
Air travel	Mixed
Bus and coach	Mixed
Employee owned cars	Mixed
Hired cars	Mixed
Hotel night stays	Mixed
Rail (train, tram, light rail, underground)	Actual
Taxi	Actual
Business Travel - Students	
Air travel	Actual
Bus and coach	Mixed
Employee owned cars	Mixed
Hired cars	Actual
Hotel night stays	Mixed
Rail (train, tram, light rail, underground)	Actual
Taxi	Actual

Key Assumptions

General

- All emissions were calculated using the Ecometrica Sustainability platform, a software which automatically selects the most geographically and temporally appropriate emission factors and non-standard conversions (e.g. fuel efficiency, heat content) for each emission source. Each of the emission factors and non-standard conversions is associated with a level of uncertainty, assigned by the tool based on its associated level of scientific certainty.
- Ecometrica did not review raw data or internal data collection systems. All data provided is assumed to be accurate and complete.
- It was confirmed that none of the sites included in the 2022-2023 assessment purchased any market-based instruments for Scope 2 energy consumption in 2022-2023. Per the Scope 2 Protocol, residual mix factors are applied in the market-based method where available (i.e. European countries), and location-based factors are defaulted to in the market-based method where residual mix factors are not available.
- The reporting boundary is defined as four sites represented by the three campus buildings in North Bay and one campus building in Perry Sound; Canadore College has chosen to exclude the four Stanford campuses.

Premises

- Electricity consumption, natural gas, water consumption, and landfilled waste for the College Drive campus was estimated by allocating a percentage of the building’s total consumption based on the percentage of the space they occupy.
- Compost was estimated using a summation of compost from their Lomi bins and culinary composting. It was estimated that the Lomi bin had a capacity of 0.75 kg, and that value was multiplied by the number of usages throughout the assessment period. The culinary compost was estimated to be filled twice a week at a value of 2.5 kg per bin in the summer months and 5kg per bin in the winter months.
- Recycled electronics waste was estimated using the weights of each piece of equipment that was recycled.

Company-owned vehicles

- For the College Drive campus, it was estimated that each of their 2 recruitment cars travelled 25,000 km each throughout the assessment period for a total value of 50,000 km. It was estimated that the plug-in hybrid security vehicle travelled a distance of 30,000 km throughout the assessment period. It was estimated that the second security vehicle travelled 15,000 kilometers during the assessment period. It was estimated that the office of the president's vehicle travelled 10,000 kilometers during the assessment period.
- For the College Drive campus, it was estimated that each of their 2 trucks travelled 10,000 km each throughout the assessment period for a total value of 20,000 kilometers. It was estimated that the international passenger vehicle and media van travelled 10,000

kilometers.

- For the College Drive campus, it was estimated that lawn equipment and vehicles used 1170.83 liters of diesel. This estimation was based on the total fuel consumption of the equipment applying a percentage of the usage from Canadore.

Homeworking

- Ecometrica uses an in-house developed home worker model to estimate homeworker emissions that are geographically and temporally specific. The model includes three distinct energy demands – home office equipment, space heating, and space cooling. The assumed energy use of home office equipment is constant across all countries whereas the energy required for heating and cooling the home varies significantly and is based on country-specific data.
- The model applies country specific grid electricity factors to the assumed energy consumption of home office equipment in order to calculate resultant greenhouse gas emissions. Additionally, country specific (or climatic average) residential heating and cooling data is deduced and is thus subject to location- and fuel-specific emission factors in order to calculate the emissions from additional heating and cooling from increased occupancy of homes during homeworking. Added together these calculation outputs provide the emissions of CO2, CH4 and N2O ‘per working day’ in order to allow application against a known number of days worked from home for employees in each country/region.
- Homeworker day estimates were calculated using the total number of days in the year (subtracting holidays) multiplied by the number of employees, multiplied by the ratio of days worked from home.
- Canadore College chose to include the homeworking of students. Total homeworking days for students were divided by the number of periods taken by students and multiplied by 2 to represent the number of semesters.

Business travel

- All business travel trips for both staff and students were summed up by Canadore College and separated into their relevant mode of transportation. Distances were estimated by Canadore College based on the start and end points of the trip.

Assessment Summary for Canadore College

Gross Overall Emissions (location-based): 2,406 tCO_2e

Gross Overall Emissions (market-based): 2,406 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
4,459 Number of students	0.54 tCO_2e per student (Location-Based)
682,445 Floor area (square feet)	0.00353 tCO_2e per square foot (Location-Based)
4,459 Number of students	0.54 tCO_2e per student (Market-Based)
682,445 Floor area (square feet)	0.00353 tCO_2e per square foot (Market-Based)

Summary by Activity (Location-Based, tCO_2e)

By Activity	tCO_2e/year	%
Premises	1,543	64.2
Homeworkers	773	32.1
Company owned vehicles	43.6	1.81
Business Travel - Employees	43	1.79
Business Travel - Students	3.06	0.127
Total	2,406	100

Summary by Activity (Market-Based, tCO_2e)

By Activity	tCO_2e/year	%
Premises	1,543	64.2
Homeworkers	773	32.1
Company owned vehicles	43.6	1.81
Business Travel - Employees	43	1.79
Business Travel - Students	3.06	0.127
Total	2,406	100

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

By Activity	tCO_2e/year	%
Scope 1	1,368	56.9
Scope 2	142	5.91
Scope 3	895	37.2
Total	2,406	100

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

By Activity	tCO_2e/year	%
Scope 1	1,368	56.9
Scope 2	142	5.91
Scope 3	895	37.2
Total	2,406	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	2,326	2,326	2,326	2,326
CH_4	28	0.199	5.57	0.199	5.57
N_2O	265	0.0467	12.4	0.0467	12.4
Biogenic CH_4	27	7e-4	0.0189	7e-4	0.0189
CO_2e	1	61.5	61.5	61.5	61.5
		Total	2,406		2,406

Summary of Scope 2 Market-Based Method for Canadore 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	5,461	100	142	100
Total	5,461	100	142	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	**1,361**	**0.0272**	**0.0259**	**1,368**	**56.9%**
Company owned vehicles Total	39.7	0.00173	0.00181	40.2	1.67%
Cars	16.2	7.78e-4	4.91e-5	16.2	0.674%
Off-road vehicles and equipment	3.76	3.14e-4	3.05e-4	3.85	0.16%
Trucks	16.7	4.93e-4	0.00145	17.1	0.712%
Vans	3.03	1.46e-4	9.18e-6	3.03	0.126%
Premises Total	1,321	0.0254	0.0241	1,328	55.2%
Natural gas	1,321	0.0254	0.0241	1,328	55.2%
Scope 2 Total	**140**	**0.0328**	**0.0055**	**142**	**5.91%**
Company owned vehicles Total	3.37	4.48e-5	3.89e-5	3.38	0.141%
Cars	3.37	4.48e-5	3.89e-5	3.38	0.141%
Premises Total	137	0.0328	0.00546	139	5.77%
Electricity	137	0.0328	0.00546	139	5.77%
Scope 3 Total	**826**	**0.139**	**0.0153**	**895**	**37.2%**
Business Travel - Employees Total	42.8	0.00158	5.11e-4	43	1.79%
Air travel	8.67	5.42e-5	2.75e-4	8.75	0.364%
Bus and coach	0.0126	3.92e-6	2.14e-7	0.0127	5.3e-4%
Employee owned cars	12.4	5.98e-4	3.77e-5	12.5	0.518%
Hired cars	13.7	6.58e-4	4.15e-5	13.7	0.57%
Hotel night stays	7.99	2.69e-4	1.57e-4	8.04	0.334%
Business Travel - Students Total	3.04	1.15e-4	5.53e-5	3.06	0.127%
Bus and coach	0.0784	9.2e-6	3.94e-6	0.0797	0.00331%
Employee owned cars	0.414	1.99e-5	1.26e-6	0.415	0.0173%
Hotel night stays	2.55	8.6e-5	5.01e-5	2.57	0.107%
Company owned vehicles Total	0.0154	3.7e-6	6.17e-7	0.0157	6.52e-4%
Cars: Electricity - transmission & distribution losses (MCR)	0.0154	3.7e-6	6.17e-7	0.0157	6.52e-4%
Homeworkers Total	768	0.0174	0.0143	773	32.1%
Homeworkers	768	0.0174	0.0143	773	32.1%
Premises Total	11.5	0.12	5.03e-4	76.5	3.18%
Composted waste	0	0	4.2e-5	0.0346	0.00144%
Electricity: Electricity - transmission & distribution losses	11.5	0.00277	4.61e-4	11.7	0.487%
Landfilled waste	0	0.117	0	49.7	2.07%
Recycled waste	0	0	0	0.611	0.0254%

Water supply	0	0	0	14.4	0.599%
Total	**2,326**	**0.199**	**0.0467**	**2,406**	**100%**

Market-Based methodology

Source of Emissions	tCO_2/yr	tCH_4/yr	tN_2O/yr	Total Emissions (tCO_2e/yr)	%
Scope 1 Total	**1,361**	**0.0272**	**0.0259**	**1,368**	**56.9%**
Company owned vehicles Total	39.7	0.00173	0.00181	40.2	1.67%
Cars	16.2	7.78e-4	4.91e-5	16.2	0.674%
Off-road vehicles and equipment	3.76	3.14e-4	3.05e-4	3.85	0.16%
Trucks	16.7	4.93e-4	0.00145	17.1	0.712%
Vans	3.03	1.46e-4	9.18e-6	3.03	0.126%
Premises Total	1,321	0.0254	0.0241	1,328	55.2%
Natural gas	1,321	0.0254	0.0241	1,328	55.2%
Scope 2 Total	**140**	**0.0328**	**0.0055**	**142**	**5.91%**
Company owned vehicles Total	3.37	4.48e-5	3.89e-5	3.38	0.141%
Cars	3.37	4.48e-5	3.89e-5	3.38	0.141%
Premises Total	137	0.0328	0.00546	139	5.77%
Electricity	137	0.0328	0.00546	139	5.77%
Scope 3 Total	**826**	**0.139**	**0.0153**	**895**	**37.2%**
Business Travel - Employees Total	42.8	0.00158	5.11e-4	43	1.79%
Air travel	8.67	5.42e-5	2.75e-4	8.75	0.364%
Bus and coach	0.0126	3.92e-6	2.14e-7	0.0127	5.3e-4%
Employee owned cars	12.4	5.98e-4	3.77e-5	12.5	0.518%
Hired cars	13.7	6.58e-4	4.15e-5	13.7	0.57%
Hotel night stays	7.99	2.69e-4	1.57e-4	8.04	0.334%
Business Travel - Students Total	3.04	1.15e-4	5.53e-5	3.06	0.127%
Bus and coach	0.0784	9.2e-6	3.94e-6	0.0797	0.00331%
Employee owned cars	0.414	1.99e-5	1.26e-6	0.415	0.0173%
Hotel night stays	2.55	8.6e-5	5.01e-5	2.57	0.107%
Company owned vehicles Total	0.0154	3.7e-6	6.17e-7	0.0157	6.52e-4%
Cars: Electricity - transmission & distribution losses (MCR)	0.0154	3.7e-6	6.17e-7	0.0157	6.52e-4%
Homeworkers Total	768	0.0174	0.0143	773	32.1%
Homeworkers	768	0.0174	0.0143	773	32.1%
Premises Total	11.5	0.12	5.03e-4	76.5	3.18%
Composted waste	0	0	4.2e-5	0.0346	0.00144%
Electricity: Electricity - transmission & distribution losses	11.5	0.00277	4.61e-4	11.7	0.487%
Landfilled waste	0	0.117	0	49.7	2.07%
Recycled waste	0	0	0	0.611	0.0254%

Water supply		0	0	0	14.4	0.599%
	Total	**2,326**	**0.199**	**0.0467**	**2,406**	**100%**

Summary by Company Unit

Location-Based methodology

Assessment	April 2021 - March 2022	April 2022 - March 2023
Company Unit	**Total Emissions (tCO_2e)**	**Total Emissions (tCO_2e)**
Canadore College	4,312	2,406
College Drive	2,791	1,105
Commerce Court	1,035	1,036
Aviation	398	214
West Parry Sound	87.5	50.2

Market-Based methodology

Assessment	April 2021 - March 2022	April 2022 - March 2023
Company Unit	**Total Emissions (tCO_2e)**	**Total Emissions (tCO_2e)**
Canadore College	4,312	2,406
College Drive	2,791	1,105
Commerce Court	1,035	1,036
Aviation	398	214
West Parry Sound	87.5	50.2

Annual Activity Data

Source of Emissions	Value	Unit
Business Travel - Employees		
Air travel		
Long-haul, economy	94,296	pass.km
Short-haul	3,300	pass.km
Bus and coach		
Average bus	363	pass.km
Employee owned cars		
Average gasoline cars	57,663	km
Hired cars		
Average gasoline cars	63,427	km
Hotel night stays		
Hotel night stays	607	night
Business Travel - Students		
Bus and coach		
Average bus	781	pass.km
Coach	1,920	pass.km
Employee owned cars		
Average gasoline cars	1,920	km
Hotel night stays		
Hotel night stays	194	night
Company owned vehicles		
Cars		
Average battery electric car (company owned)	30,000	km
Average gasoline cars	75,000	km
Off-road vehicles and equipment		
Lawn and garden equipment, LPG	400	l
Lawn and garden equipment, diesel	1,171	l
Trucks		
Gasoline medium and heavy duty truck	20,000	km
Vans		
Gasoline light duty truck, passenger transportation	10,000	km
Homeworkers		
Homeworkers		
Canadian homeworker	236,524	Homeworker Day
Premises		
Composted waste		
Composted waste (dry weight basis)	70	kg
Composted waste, food and drink waste	514	kg
Electricity		

Electricity consumption	5,461,048	kWh
Landfilled waste		
Landfilled waste	96.8	tonne
Waste, landfilled, MSW	3,250	kg
Natural gas		
Natural gas consumption (gross CV)	687,726	m3
Recycled waste		
Waste, recycled	10,960	kg
Waste, recycled	39,132	lb
Water supply		
Water supply	92,418	m3

Key Observations

General

- For the 2022-2023 assessment period, no valid market-based instruments have been applied to the Scope 2 energy consumption, moreover the location included in the scope of this assessment, Canada, has no valid electricity residual mix factor available. Therefore, the location-based factor has been applied to electricity consumption to derive a result in line with the Scope 2 market-based methodology.

Location based methodology

- Overall emissions have decreased by 1906 tonnes of CO2e, or 44.202%, from 4,312 tonnes of CO2e during the 2021-2022 assessment period to 2,406 tonnes of CO2e during the 2022-2023 assessment period. This decrease in emissions is mainly due to a decrease in homeworking emissions.
- Natural gas consumption accounts for the largest portion of emissions with 1,328 tonnes of CO2e, or 55.2% of the total emissions.
- Homeworkers account for the second largest portion of emissions with 773 tonnes of CO2e, or 32.1% of the total emissions.

Market based methodology

- Overall emissions have decreased by 1906 tonnes of CO2e, or 44.202%, from 4,312 tonnes of CO2e during the 2021-2022 assessment period to 2,406 tonnes of CO2e during the 2022-2023 assessment period. This decrease in emissions is mainly due to a decrease in homeworking emissions.
- Natural gas consumption accounts for the largest portion of emissions with 1,328 tonnes of CO2e, or 55.2% of the total emissions.
- Homeworkers account for the second largest portion of emissions with 773 tonnes of CO2e, or 32.1% of the total emissions.

Primary and Secondary Data

- To provide the most accurate estimate of your organization's GHG emissions, primary (actual) data should be used where available.
- For this assessment period, actual data accounted for 93.2 % of emissions, while estimated data accounted for 6.81 % of emissions.
- The following Scope 1 sources used estimated data: Company-owned vehicles
- Future improvements to data quality involve the collection of actual data of the above-listed sources.

References

BEIS (2023). UK Government conversion factors for greenhouse gas reporting. Department for Business, Energy and Industrial Strategy, London.; BEIS (2022). UK Government conversion factors for greenhouse gas reporting. Department for Business, Energy and Industrial Strategy, London.

CIBSE (2012). Energy Efficiency in Buildings, Guide F. The Chartered Institution of Building Services Engineers.

CIBSE (2012). Energy efficiency in buildings. Guide F. The Chartered Institution of Building Services Engineers.

Department for Business, Energy and Industrial Strategy (2022). 2022 Government GHG Conversion Factors for Company Reporting.; Department for Business, Energy and Industrial Strategy (2023). 2023 Government GHG Conversion Factors for Company Reporting.

EC (2023). National Inventory Report, 1990-2021: Greenhouse Gas Sources and Sinks in Canada. Environment Canada.

EC (2023). National Inventory Report. Greenhouse Gas Sources and Sinks in Canada: 1990 - 2021. Environment Canada. Online: https://data-donnees.ec.gc.ca/data/substances/monitor/canada-s-official-greenhouse-gas-inventory/

EC (2023). National Inventory Report. Greenhouse Gas Sources and Sinks in Canada: 1990 - 2021. Environment Canada. Online: https://unfccc.int/documents/627833.

EPA (2023). GHG Emission Factors Hub. Center for Corporate Climate Leadership. April 2023. https://www.epa.gov/climateleadership/ghg-emission-factors-hub. Accessed April 2023.; EPA (2022). GHG Emission Factors Hub. Center for Corporate Climate Leadership. April 2022. https://www.epa.gov/climateleadership/ghg-emission-factors-hub. Accessed May 2022.

FHWA (2022). US Federal Highway Administration. Highway Statistics 2021. Washington DC 20590. Online: https://www.fhwa.dot.gov/policyinformation/statistics/2021/. Accessed June 2023.

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

IPCC (2019). Revised IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual. Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge. (No refinement from 2006)

Natural Resources Canada (2023). Residential End-Use Model https://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/menus/trends/comprehensive/trends_res_ca.cfm

Statistics Canada (2022). Report on Energy Supply and Demand in Canada (57-003-X). 2019 Revision. Online: https://www150.statcan.gc.ca/n1/en/pub/57-003-x/57-003-x2022001-eng.pdf?st=KCDwFc8X

Statistics Canada (2022). Report on Energy Supply and Demand in Canada (57-003-x2022001). 2019 Revised. Online: https://www150.statcan.gc.ca/n1/en/catalogue/57-003-X. Released May 2, 2022.

United Nations (2023). UN Statistics Division - 2020 Energy Balance Visualizations. https://unstats.un.org/unsd/energystats/dataPortal/

Assessment Summary for College Drive

Gross Overall Emissions (location-based): 1,105 tCO_2e

Gross Overall Emissions (market-based): 1,105 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
1,899 Number of students	0.582 tCO_2e per student (Location-Based)
400,963 Floor area (square feet)	0.00276 tCO_2e per square foot (Location-Based)
1,899 Number of students	0.582 tCO_2e per student (Market-Based)
400,963 Floor area (square feet)	0.00276 tCO_2e per square foot (Market-Based)

Summary by Activity (Location-Based, tCO_2e)

By Activity	tCO_2e/year	%
Premises	965	87.3
Homeworkers	54.8	4.96
Company owned vehicles	43	3.89
Business Travel - Employees	39.5	3.58
Business Travel - Students	3.06	0.277
Total	1,105	100

Summary by Activity (Market-Based, tCO_2e)

By Activity	tCO_2e/year	%
Premises	965	87.3
Homeworkers	54.8	4.96
Company owned vehicles	43	3.89
Business Travel - Employees	39.5	3.58
Business Travel - Students	3.06	0.277
Total	1,105	100

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

By Activity	tCO_2e/year	%
Scope 1	887	80.3
Scope 2	89.5	8.1
Scope 3	129	11.6
Total	1,105	100

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

By Activity	tCO_2e/year	%
Scope 1	887	80.3
Scope 2	89.5	8.1
Scope 3	129	11.6
Total	1,105	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	1,074	1,074	1,074	1,074
CH_4	28	0.0428	1.2	0.0428	1.2
N_2O	265	0.0224	5.94	0.0224	5.94
Biogenic CH_4	27	7e-4	0.0189	7e-4	0.0189
CO_2e	1	24	24	24	24
		Total	1,105		1,105

Summary of Scope 2 Market-Based Method for College Drive

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	3,387	100	89.5	100
Total	3,387	100	89.5	100

Assessment Summary for Commerce Court

Gross Overall Emissions (location-based): 1,036 tCO_2e

Gross Overall Emissions (market-based): 1,036 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
178,500 Floor area (square feet)	0.0058 tCO_2e per square foot (Location-Based)
2,311 Number of students	0.448 tCO_2e per student (Location-Based)
178,500 Floor area (square feet)	0.0058 tCO_2e per square foot (Market-Based)
2,311 Number of students	0.448 tCO_2e per student (Market-Based)

Summary by Activity (Location-Based, tCO_2e)

By Activity	tCO_2e/year	%
Homeworkers	714	68.9
Premises	319	30.8
Business Travel - Employees	2.86	0.276
Company owned vehicles	0.31	0.0299
Total	1,036	100

Summary by Activity (Market-Based, tCO_2e)

By Activity	tCO_2e/year	%
Homeworkers	714	68.9
Premises	319	30.8
Business Travel - Employees	2.86	0.276
Company owned vehicles	0.31	0.0299
Total	1,036	100

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

By Activity		tCO_2e/year	%
Scope 1		266	25.6
Scope 2		31.7	3.06
Scope 3		739	71.3
	Total	1,036	100

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

By Activity		tCO_2e/year	%
Scope 1		266	25.6
Scope 2		31.7	3.06
Scope 3		739	71.3
	Total	1,036	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	1,011	1,011	1,011	1,011
CH_4	28	0.0294	0.823	0.0294	0.823
N_2O	265	0.0194	5.14	0.0194	5.14
CO_2e	1	19.2	19.2	19.2	19.2
		Total	1,036		1,036

Summary of Scope 2 Market-Based Method for Commerce Court

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	1,246	100	31.7	100
Total	1,246	100	31.7	100

Assessment Summary for Aviation

Gross Overall Emissions (location-based): 214 tCO_2e

Gross Overall Emissions (market-based): 214 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
212 Number of students	1.01 tCO_2e per student (Location-Based)
88,382 Floor area (square feet)	0.00242 tCO_2e per square foot (Location-Based)
212 Number of students	1.01 tCO_2e per student (Market-Based)
88,382 Floor area (square feet)	0.00242 tCO_2e per square foot (Market-Based)

Summary by Activity (Location-Based, tCO_2e)

By Activity	tCO_2e/year	%
Premises	210	97.9
Homeworkers	3.64	1.7
Business Travel - Employees	0.581	0.271
Company owned vehicles	0.31	0.144
Total	214	100

Summary by Activity (Market-Based, tCO_2e)

By Activity	tCO_2e/year	%
Premises	210	97.9
Homeworkers	3.64	1.7
Business Travel - Employees	0.581	0.271
Company owned vehicles	0.31	0.144
Total	214	100

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

By Activity	tCO_2e/year	%
Scope 1	187	87.1
Scope 2	16.7	7.79
Scope 3	10.9	5.09
Total	214	100

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

By Activity	tCO_2e/year	%
Scope 1	187	87.1
Scope 2	16.7	7.79
Scope 3	10.9	5.09
Total	214	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	208	208	208	208
CH_4	28	0.00795	0.223	0.00795	0.223
N_2O	265	0.00421	1.12	0.00421	1.12
CO_2e	1	5.28	5.28	5.28	5.28
		Total	214		214

Summary of Scope 2 Market-Based Method for Aviation

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	656	100	16.7	100
Total	656	100	16.7	100

Assessment Summary for West Parry Sound

Gross Overall Emissions (location-based): 50.2 tCO_2e

Gross Overall Emissions (market-based): 50.2 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
37 Number of students	1.36 tCO_2e per student (Location-Based)
14,600 Floor area (square feet)	0.00344 tCO_2e per square foot (Location-Based)
37 Number of students	1.36 tCO_2e per student (Market-Based)
14,600 Floor area (square feet)	0.00344 tCO_2e per square foot (Market-Based)

Summary by Activity (Location-Based, tCO_2e)

By Activity	tCO_2e/year	%
Premises	49.9	99.3
Homeworkers	0.353	0.703
Total	50.2	100

Summary by Activity (Market-Based, tCO_2e)

By Activity	tCO_2e/year	%
Premises	49.9	99.3
Homeworkers	0.353	0.703
Total	50.2	100

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

By Activity		tCO_2e/year	%
Scope 1		28.8	57.4
Scope 2		4.39	8.73
Scope 3		17	33.9
	Total	50.2	100

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

By Activity		tCO_2e/year	%
Scope 1		28.8	57.4
Scope 2		4.39	8.73
Scope 3		17	33.9
	Total	50.2	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	33.7	33.7	33.7	33.7
CH_4	28	0.119	3.33	0.119	3.33
N_2O	265	7.16e-4	0.19	7.16e-4	0.19
CO_2e	1	13	13	13	13
		Total	50.2		50.2

Summary of Scope 2 Market-Based Method for West Parry Sound

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	173	100	4.39	100
Total	173	100	4.39	100