

Annual Sustainability Report



Gustavson
School of Business
University of Victoria

Gustavson School of Business

2018

Completed By	Kayli Anderson & Christian Muñoz Mejia
Email	kayli@synergventerprises.ca
Date	25/7/2019

synergy 

Executive Summary

The Gustavson School of Business is an internationally accredited business school at the University of Victoria. The school occupies classrooms, meeting rooms and office space in the Business and Economics and David Strong buildings (occupying an average of 58% of the total floor area). 2018 marks the tenth year that Gustavson has measured and reported its greenhouse gas emissions, with previous reports (2009 - 2014) completed by EcoCentric and ColdStream Consulting.

As in previous years, all Scope 1 and 2 emissions (natural gas and electricity) and Scope 3 emissions (stationary paper) are offset by the University of Victoria. In 2017, Gustavson made the decision to go carbon neutral and purchased offsets for employee commuting and employee and student travel emissions, making them among the first carbon neutral educational institutions in the world. Gustavson also introduced a Carbon Neutrality Plus committee comprised of faculty, staff, and student representatives to provide information and long-term leadership, shortlist carbon offset projects, and integrate carbon neutrality education moving forward.

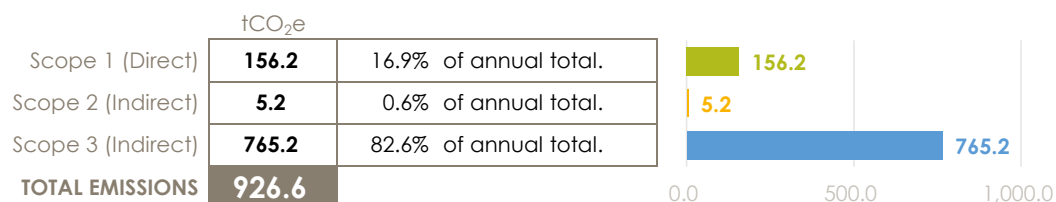
In 2018, Gustavson's total carbon footprint came to 926.6 tCO₂e, a decrease of 6% over 2017 and 30% lower than the 2010 baseline. Gustavson's per capita emissions decreased over 2017, at 0.6 tCO₂e per person. The school's largest source of emissions continues to be student and employee travel which makes up 74% of the total carbon footprint. Travel emissions in 2018 decreased by 5% due to fewer undergraduate exchange term flights.

Emissions to be offset by the Gustavson School of Business (excluding emissions already offset by UVic) come to 761.1 tCO₂e.

Company Information

Company Name	CSSI on behalf of Gustavson School of Business		
Contact Information	Carlos Berti	cssi@uvic.ca	250-853-3721
	Basma Majerbi	majerbi@uvic.ca	250-472-4281
Company Description	Office space, meeting rooms, and classrooms in two UVic buildings		
Reporting Period	January 1st, 2018 - December 31st, 2018		
Baseline Year	2010 (Due to incomplete data/ scope changes in 2009)		
Inventory Boundary	Scope 1 (Direct Emissions)		
	- Natural Gas		
	Scope 2 (Indirect Emissions from Purchased Electricity)		
	- Purchased Electricity (BC Hydro)		
	Scope 3 (Indirect Emissions from Other Sources)		
	- Stationery, Waste, Student & Employee Travel, Employee Commuting		
Consolidation Approach	Operational Control: Accounting for 100% of emissions from operations over which the company has operational control.		
Primary Measurement	Carbon Dioxide Equivalent (CO ₂ e)		
Reporting Guidelines	Aligned with those defined in <i>The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (The GHG Protocol, www.ghgprotocol.org)</i> . Emissions factors reviewed & approved by Offsetters.		

Inventory Results



Carbon Footprint (Summary)



Gustavson
School of Business
University of Victoria

2018 Carbon Footprint Report



Total emissions: **926.6** tCO₂e

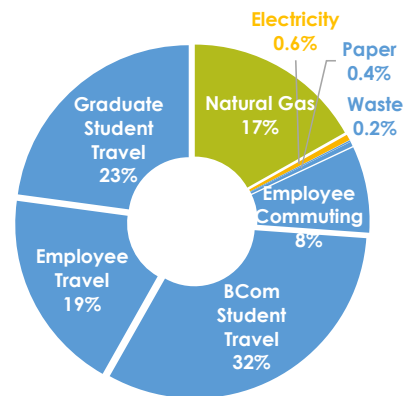
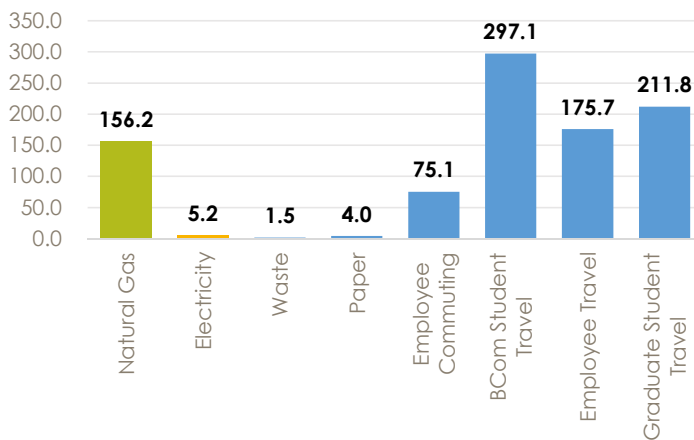
Offset cost: **\$15,223 - \$19,029**

Total emissions for 2018 come to 926.6 tCO₂e, a decrease of 6% over 2017. Since the 2010 baseline year, emissions have been reduced by 30%.

Note: Cost is for Scope 3 emissions (excl. paper) and offset price of \$20-\$25/tonne

Carbon Footprint (By Activity)

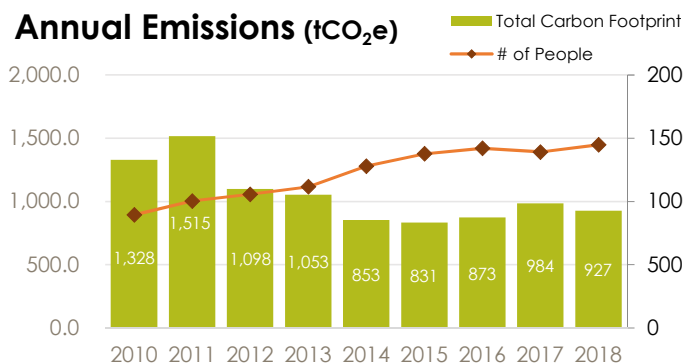
Emissions by Activity (tCO₂e)



Scope 1 Scope 2 Scope 3

Carbon Footprint (Historical)

Annual Emissions (tCO₂e)



Year	tCO ₂ e	Change since Baseline	
	Per Year	tCO ₂ e/person	Percent
2010	1,327.9	1.5	
2011	1,515.4	1.5	14.1%
2012	1,098.0	1.0	-17.3%
2013	1,052.6	0.9	-20.7%
2014	853.4	0.7	-35.7%
2015	831.2	0.6	-37.4%
2016	873.1	0.6	-34.2%
2017	984.4	0.7	-25.9%
2018	926.6	0.6	-30.2%

Note: # of people includes faculty, staff, undergraduate and graduate students (BCom, MBA, MGB and PhD) at the Gustavson School of Business.



2,923.1
Barrels of Oil



247.4
Cars per Year



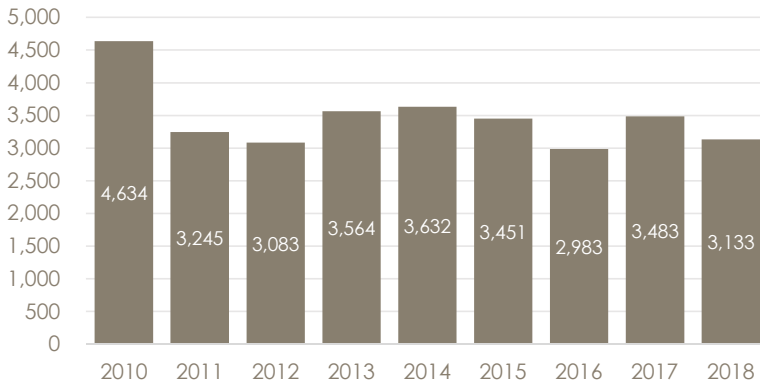
0.6
tCO₂e per person

tCO₂e
(Total)

926.6

Natural Gas

Natural Gas (GJ)



Analysis

Gustavson's buildings are connected to a natural gas heating loop. Consumption is calculated based on floor area of all buildings connected to this loop. Due to overall improvements to the HVAC systems at UVic, natural gas use has decreased by 32% since the 2010 baseline. Gustavson faced a significant reduction in natural gas use of 10% over 2017.

* Emissions from natural gas are offset by the University of Victoria.

GJ/ft² **0.05**

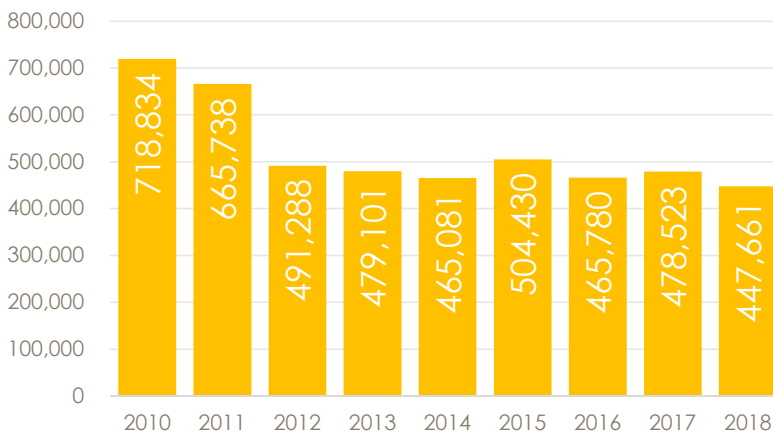
tCO₂e **156.2***

% of Total **16.9%**

 **34.1**
Houses

Electricity

Electricity (kWh)



Analysis

Electricity use has decreased by 38% since the baseline year as a result of lighting upgrades and educational initiatives at UVic.

Gustavson saw a 6% reduction in electricity usage over 2017. This is likely due to combined efforts by faculty, staff and students to reduce electricity use in unoccupied offices and classrooms. Since 2010, electricity emissions have decreased by 72%.

* Emissions from electricity are offset by the University of Victoria.

kWh / ft² **7**

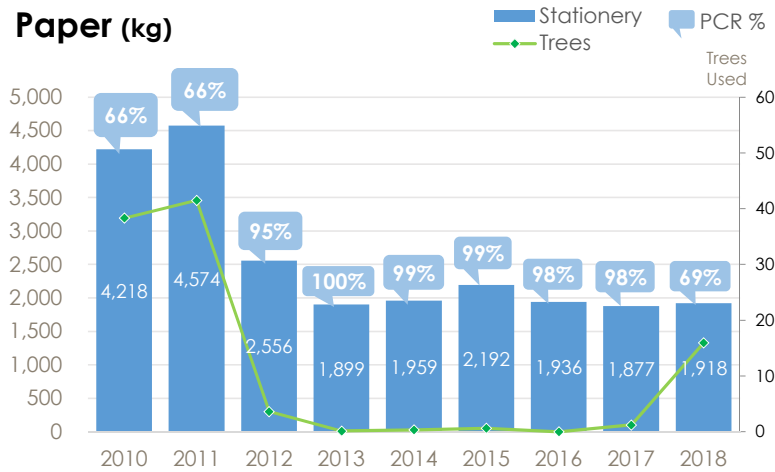
tCO₂e **5.2***

% of Total **0.6%**

 **40.7**
Houses

Paper

Paper (kg)



Analysis

Paper use at Gustavson is low-impact, accounting for 0.4% of total emissions at 4.0 tCO₂e. In 2018, the number of trees consumed increased from 1.2 to 16 due to a change by the University to purchase 30% Post Consumer Recycled (PCR) paper instead of 100% PCR. It is recommended that the university switch back to tree free or 100% PCR paper.

* Emissions from stationary paper are offset by the University of Victoria.

Treeless Content

69%

tCO₂e

4.0*

% of Total

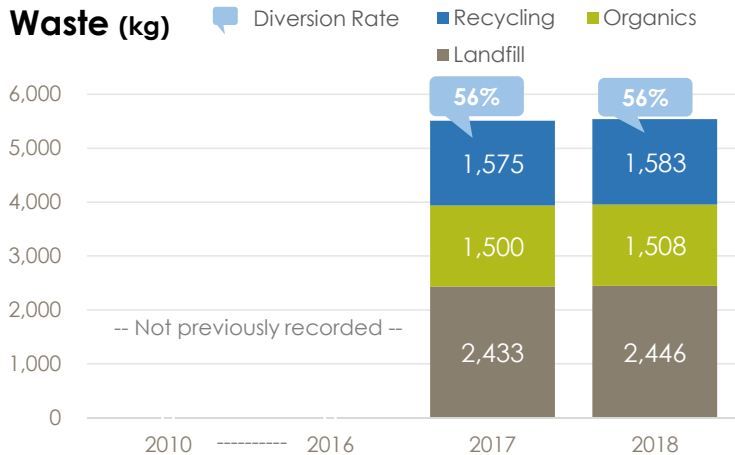
0.4%



16.0
Trees / Year

Waste

Waste (kg)



Analysis

Waste emissions are low-impact, contributing 1.5 tCO₂e to Gustavson's carbon footprint. UVic has measured the waste diversion rate at 56%*. Diversion is expected to improve with additional waste reduction and composting practices on campus. Gustavson should focus on educating faculty, staff and students on ways to minimize waste.

* Note: A 24-hour waste audit was completed for the Business Economic Centre (BEC) in 2018. The data was extrapolated for a full-year waste estimate.

kg / Day

15

tCO₂e

1.5

% of Total

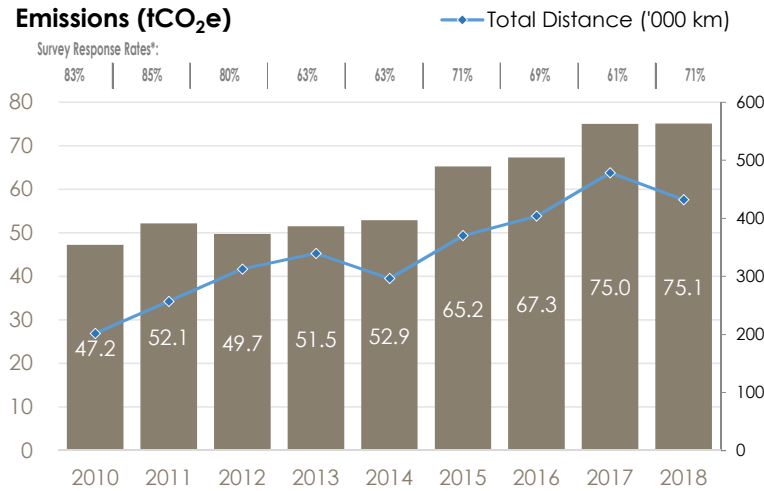
0.2%



55.8%
Diversion Rate

Employee Commuting

Emissions (tCO₂e)

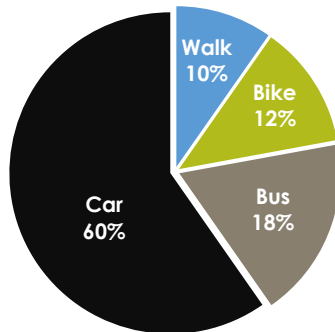


Analysis

Staff commuting is the fifth highest contributor to Gustavson's emissions. In 2018, 75.1 tCO₂e were emitted, consistent with 2017 emissions. Although Gustavson has worked towards more sustainable commuting methods, there has been a growing trend in the number of trips taken by car. As a result, commuting emissions have increased by 59% since the baseline year.

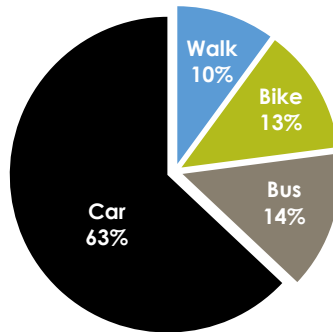
* Employee commuting data has been extrapolated each year to account for missing surveys.

Commuting Percentages by Method per Week



Previous (2017)

Average kgCO ₂ e/km	0.16
Low-Emission Commuting %	40%



Current (2018)

Average kgCO ₂ e/km	0.17
Low-Emission Commuting %	37%

Analysis (Breakdown)

Since 2010, there has been a trend towards more sustainable commuting methods such as walking, biking and public transit. This year, 37% of commutes were made by low-emission methods, up from 27% in 2010.

The most commonly cited reasons for driving often were 'excessive distance', 'family commitments', 'meetings', and 'lack of transit infrastructure'. Gustavson can encourage employees to make use of the driving alternatives at UVic, and create incentives to encourage employees to bike to work more often.

tCO₂e / FTE **0.6**

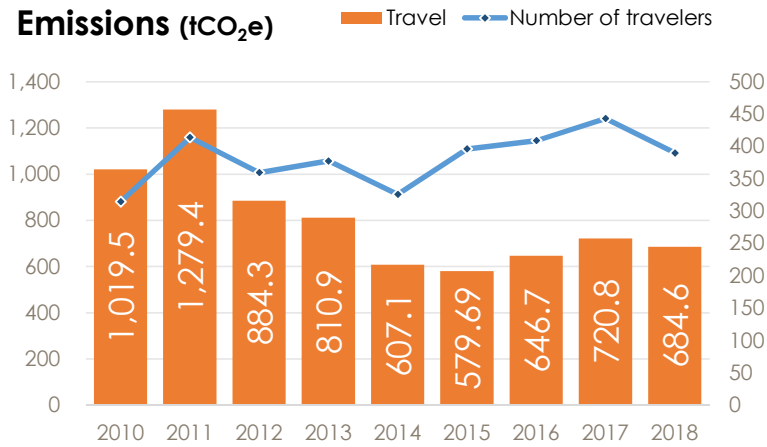
tCO₂e **75.1**

% of Total **8.1%**

 **20.1**
Cars / Year

Travel

Emissions (tCO₂e)



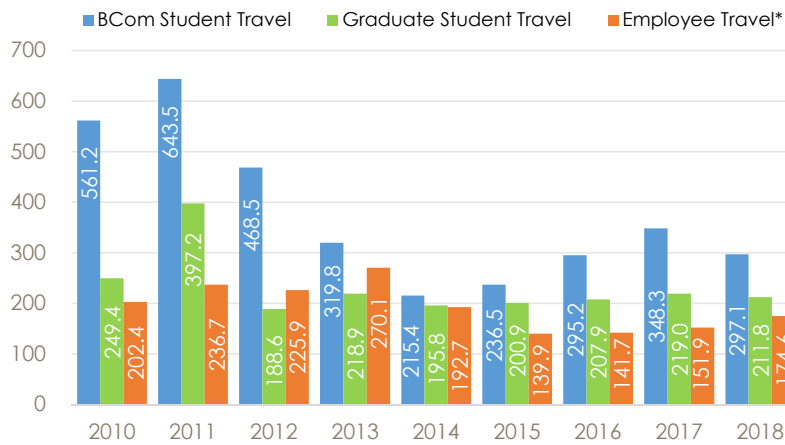
Analysis

Travel has the greatest contribution to Gustavson's carbon footprint at 74% of total emissions. Travel emissions decreased by 5% over 2017, and by 33% since the 2010 baseline.

Since 2010, there has been a 19% increase in the number of Gustavson employees and the number of students travelling as part of the BCom and Graduate programs.

Note: The emissions reduction in 2012 is due to switching from UK emissions factors to factors recommended for BC. All years after 2012 use annually updated BC emissions factors.

Flight Emissions by Dept. (tCO₂e)



Analysis (Breakdown)

Flight emissions from employees increased by 22.7 tCO₂e. This is associated with the increase in number of flights for the year, from 324 in 2017 to 443 in 2018. The greatest change was in BCom student travel, as there were 64 fewer flights than the previous year. Overall emissions in the BCom category decreased by 15%.

Previous (2017)

# of Flights	958
Average Distance per Flight (km)	7,169

Current (2018)

# of Flights	1,022
Average Distance per Flight (km)	6,379

2018 Year	Distance (km)	# of Flights
Employees	1,666,640	443
BCom	2,835,008	328
Graduate	2,018,069	251
Total	6,519,717	1022

* Employee Travel in this chart is for flights only, and does not include emissions from reimbursed mileage (1.11 tCO₂e) which are included in the total travel emissions.

† The average for Employee Travel is based on total number of employees and travel, while the averages for students are based on numbers of students who participate in travel programs and their travel.

tCO₂e / Employee **1.39[†]**

tCO₂e / BCom Student **1.93**

tCO₂e / Graduate Student **1.93**

Total tCO₂e **684.6**
74%

Carbon Reduction Strategy

2018 marks the tenth year that the Gustavson School of Business has measured and reported its greenhouse gas emissions, and the second year as a carbon neutral institution by offsetting its carbon emissions. The school reports on scopes 1, 2 and 3 of carbon emissions related to its operations, including employee commuting and travel by employees and students. Since the baseline year of 2010, total emissions have been reduced by 30%. This has been achieved through lighting upgrades and HVAC system improvements, paper purchasing reductions, educational initiatives, and a shift towards more sustainable commuting methods by employees.

Total emissions in 2018 came to 926.6 tCO₂e, a 6% decrease over 2017. As an international business school, air travel is an essential component of Gustavson's operations, accounting for 74% of its total carbon footprint. Due to fewer BCom students traveling on exchange this year, associated travel emissions decreased by 5%. By implementing employee and student travel policies, the school can potentially reduce travel emissions and encourage more sustainable travel methods in the future.

Gustavson achieved significant reductions in natural gas, electricity, and travel. Continuing with efforts to improve sustainable behaviours in offices and classrooms can further reduce energy consumption and paper use, and improve overall waste diversion. Gustavson will offset 761.2 tCO₂e (excluding emissions already offset by UVic) at a total cost of \$15,223 - \$19,029.

Achievements

- > Achieved carbon neutrality in 2016 by offsetting employee commuting and student and employee travel.
- > Formed the Carbon Neutrality Plus committee, comprising students, faculty and staff representatives. This committee provides information and long-term leadership in shortlisting carbon offset projects and integrating carbon neutrality education with students moving forward.
- > Sponsored the Carbon Offset Pitch Competition in 2018, in which students created carbon offset portfolios that Gustavson could invest in to offset their 2017 Scope 3 carbon emissions.
- > In 2018, the following offset projects were supported by Gustavson:
 - **The Great Bear Forest Carbon Project** to sustain biodiversity and create jobs for Indigenous communities.
 - **The Bundled Solar Power Project in India** to generate power using zero emissions solar-based power and reduce dependence on fossil fuels.
- > Started tracking waste in 2017 to develop more sustainable waste management policies.
- > Due to lighting upgrades and educational initiatives at UVic, electricity use has been reduced by 38% since 2010.
- > Due to HVAC system improvements, natural gas use has been reduced by 32% since 2010.

Moving Forward

- > Increase waste diversion by developing zero waste management policies for employees and students.
 - Encourage students to reuse their mugs and food containers.
- > Implement a school travel policy to reduce travel and encourage low-emissions methods.
 - Improve teleconferencing facilities and provide staff support and training.
 - Reduce the number of guests speakers flown to campus through interactive video conferencing talks.
 - Choose sustainable modes of travel where possible (ex: carpooling, trains and busses).
 - Opt for economy class flight travel when possible.
- > Consider paperless courses and meetings
 - Send meeting materials in advance electronically.
 - Share paper audit results with staff and students. Request their help to go digital.
- > Encourage employees to make use of the commuting incentives at UVic:
 - For full-time, continuing employees, UVic will pay the annual fee for Modo car-sharing. \$35/year membership at Zipcar.
 - Vehicles may be rented from UVic for university business. Rides can also be organized through UVic's rideshare program.

Information on Inventory Uncertainty

* The inventories for years 2010 to 2014 were completed by EcoCentric and ColdStream Consulting, and restated with the methodology and emissions factors of Synergy Enterprises.

* Natural gas use in buildings was estimated using floor area share on the natural gas loop.

Emissions References

1. 2016/17 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions
<http://www2.gov.bc.ca/gov/content/environment/climate-change/policy-legislation-programs/carbon-neutral-government/measure>
2. Environment Canada's National Inventory Report (1990-2015); Part 2 & 3.
http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/can-2017-nir-13apr17.zip
3. Department for Environment, Food & Rural Affairs (UK) Carbon Factors
<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2017>
4. Intergovernmental Panel on Climate Change (Global Warming Potentials)
http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

All emissions factors are reviewed and approved by Offsetters (www.offsetters.ca) on an annual basis.

Policy for Base Year Recalculation:

Base year emissions, and other previous emissions, shall be retroactively recalculated if a change in organisational structure or data quality is expected to exceed a significance threshold of 10% of base year emissions. These changes may arise from structural changes such as mergers, acquisitions, divestments, outsourcing or insourcing, changes in calculation methodology and improvements in accuracy, or discovery of significant errors.

Glossary of Terms

Term	Description
CFL	Compact Fluorescent Light
GHG	Greenhouse Gas (emissions): Atmospheric gases contributing to the greenhouse effect, including Carbon Dioxide (CO ₂), Methane (CH ₄), Nitrous Oxide (N ₂ O), etc.
GJ	Gigajoule: Unit of natural gas equal to 26.137 m ³ or 0.947 MMBtu
HVAC	Heating, Ventilation & Air Conditioning
kWh	Kilowatt-Hour: Common unit for measuring electrical consumption
LED	Light Emitting Diode: A form of highly efficient lighting technology
m ³	Cubic Meter: Unit of measurement equal to 1,000 Litres
PCR%	Post-Consumer Recycled Content (as a percentage)
psg-km	Passenger-Kilometer: Unit separating total emissions between passengers per km
Ream	Standard unit of paper measurement equal to 500 sheets (with 10 reams in one box)
tCO ₂ e	Tonnes of Carbon Dioxide Equivalent: GHGs have different warming potentials, measured collectively as CO ₂ equivalent (hence "e")
t-km	Tonne-kilometer: A unit of measurement used in shipping

Completed By	Kayli Anderson & Christian Muñoz Mejia
Email	kayli@synergventerprises.ca
Date	25/7/2019

