2022 Greenhouse Gas Emissions Inventory

The Victoria Conference Centre

January 1 to December 31, 2022

Completed By	Christian Muñoz Mejia & Chloe Shore
Email	Christian@synergyenterprises.ca
Completed	16/5/2023

synergy

Executive Summary

The Victoria Conference Centre (VCC) is a 56,295 square foot landmark building offering flexible meeting space in the heart of Victoria, BC. The VCC is committed to eco-friendly best practices and operates at the platinum level of BOMA BEST Building Environmental Standards. A kitchen, shared with an adjacent hotel, services the needs of a wide range of conferences and events throughout the year.

This report measures the carbon footprint associated with the VCC's operations in 2022, which marks the 13th year that the VCC has measured and reported its greenhouse gas emissions. In 2012, more accurate reporting was available for water and electricity, and serves as the baseline for comparisons. In 2020, the VCC committed to offset all Scope 1, 2 and 3 emissions with the 2019 inventory. 2022 marks the fourth year that the VCC has operated as a carbon neutral facility.

Historical emissions for 2009 - 2021 have been adjusted to reflect the improved methodology for measuring waste emissions. This has led to a re-statement of historical waste emissions due to a >5% change from the improved methodology. The purpose of this re-statement is to make footprints comparable year to year.

Total emissions in 2022 were 52.6 tCO_2e, an increase of 41% over 2021 as Covid-19 restrictions lessened. The highest emissions source was waste (37.1 tCO_2e), followed by electricity (9.4 tCO_2e). Since the 2012 baseline, total emissions have decreased by 55%.

The VCC has joined the Greater Victoria 2030 District and are committed to reducing energy consumption and greenhouse gas emissions per delegate day by 50% of 2012 levels by 2030. In 2022, the VCC met and exceeded this target, reducing energy consumption by 50% and emissions per delegate day by 51% compared to the 2012 baseline.

Inventory Information

Company Name	The Victoria Conference Centre		
Contact Information	Nathan Gauld	ngauld@victoriaconference.com	250.415.0560
Company Description	Conference Centre, 720 Douglas Street - including shared Kitchen		
Reporting Period	January 1 to December 31, 2022		
Inventory Boundary	**Scope 1 (Direct Emissions)** - Natural Gas, Diesel (back-up generator), Propane		
	Scope 2 (Indirect Emissions from Purchased Electricity) - Purchased Electricity (BC Hydro)		
	Scope 3 (Indirect Emissions from Other Sources) - Water, Waste, Stationery, Paper Products		
Scope 2 Approach	Location Based Emissions Calculation		
Consolidation Approach	Operational Control: Accounting for 100% of emissions from operations over which the company has operational control.		
Primary Measurement	Carbon Dioxide Equivalent (CO_2e)		
Reporting Guidelines	Aligned with those defined in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (The GHG Protocol, www.ghgprotocol.org)* . Emissions factors reviewed & approved by Ostrom.		

Summary of Results

Total tCO_2e	52.6

0.60
$kgCO_2e$ / Delegate Day

Emissions per Delegate Day Reduction	-50.8%
	Over 2012 Baseline

Carbon Footprint Summary

The Victoria Conference Centre

2022 GHG Inventory

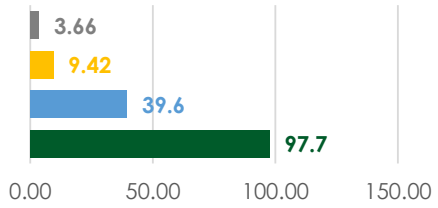
synergy

Total tCO_2e	150.3	Net tCO_2e to be offset	52.6	Offset Cost	$1,590

This report measures the carbon footprint of the Victoria Conference Centre's (VCC) operations in 2022. Excluding biogenic emissions which originate from natural sources already part of the carbon cycle, net emissions to be offset by the VCC total 52.6 tCO_2e.

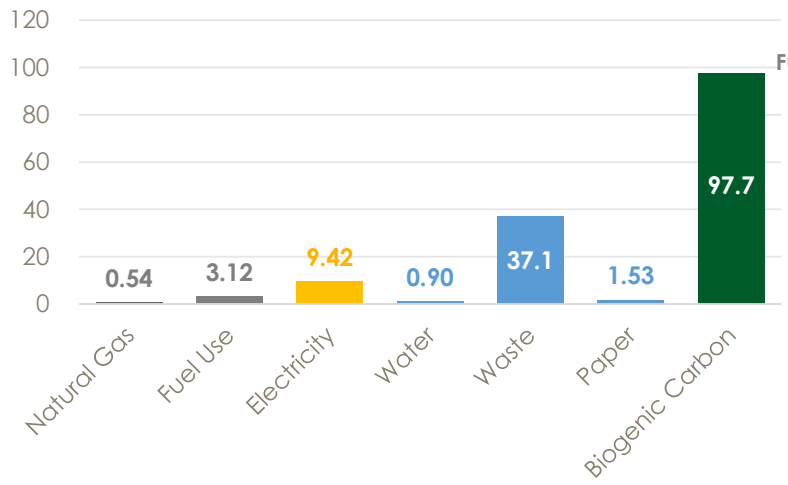
Carbon Footprint by Scope

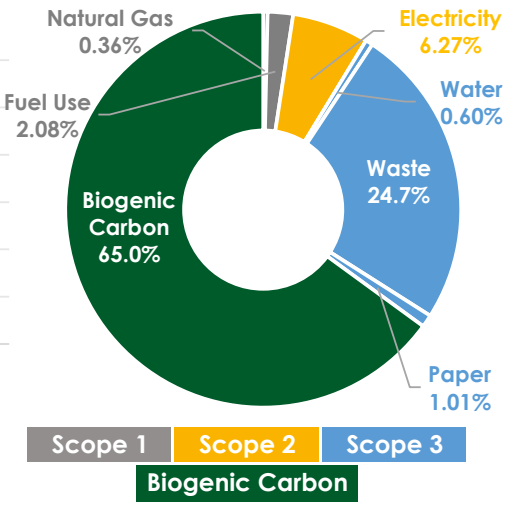
	tCO_2e	
Scope 1 (Direct)	**3.66**	2.4% of annual total.
Scope 2 (Indirect)	**9.42**	6.3% of annual total.
Scope 3 (Indirect)	**39.6**	26.3% of annual total.
Biogenic Carbon	**97.7**	65.0% of annual total.
TOTAL EMISSIONS	**150.3**	Scope 1, 2, 3, & biogenic
NET EMISSIONS	**52.6**	Scope 1, 2, & 3



Carbon Footprint By Activity

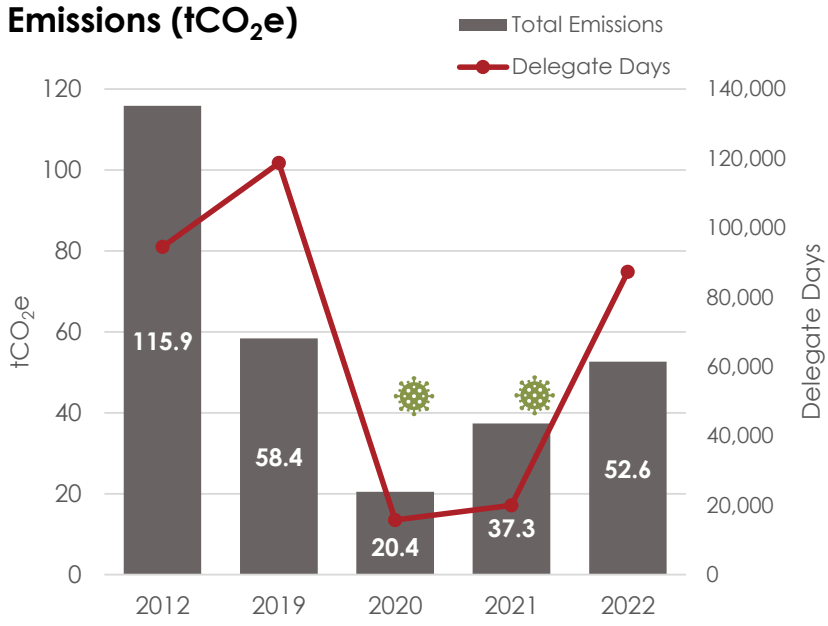
Emissions by Activity (tCO_2e)





Carbon Footprint Year Over Year

Emissions (tCO_2e)



	Net Emissions (tCO_2e)	Change since Baseline	
		$kgCO_2e/DD$	Percent
2009	**134.6**	1.08	
2010	**129.8**	1.25	
2011	**107.4**	0.74	
2012	**115.9**	1.23	
2013	**84.6**	0.82	-33.3%
2014	**103.1**	1.05	-14.0%
2015	**89.1**	0.92	-24.8%
2016	**85.8**	0.80	-34.5%
2017	**83.5**	0.77	-37.4%
2018	**65.9**	0.54	-55.7%
2019	**58.4**	0.49	-59.9%
2020	**20.4**	1.30	5.9%
2021	**37.3**	1.86	52.1%
2022	**52.6**	0.60	-50.8%
TARGET	**57.9**	0.61	-50.0%

Note: Historical emissions for 2009 - 2021 have been adjusted to reflect the improved methodology for measuring waste emissions. The purpose of this re-statement is to make footprints comparable year to year.

Emission Reduction Targets

Over 2012 baseline

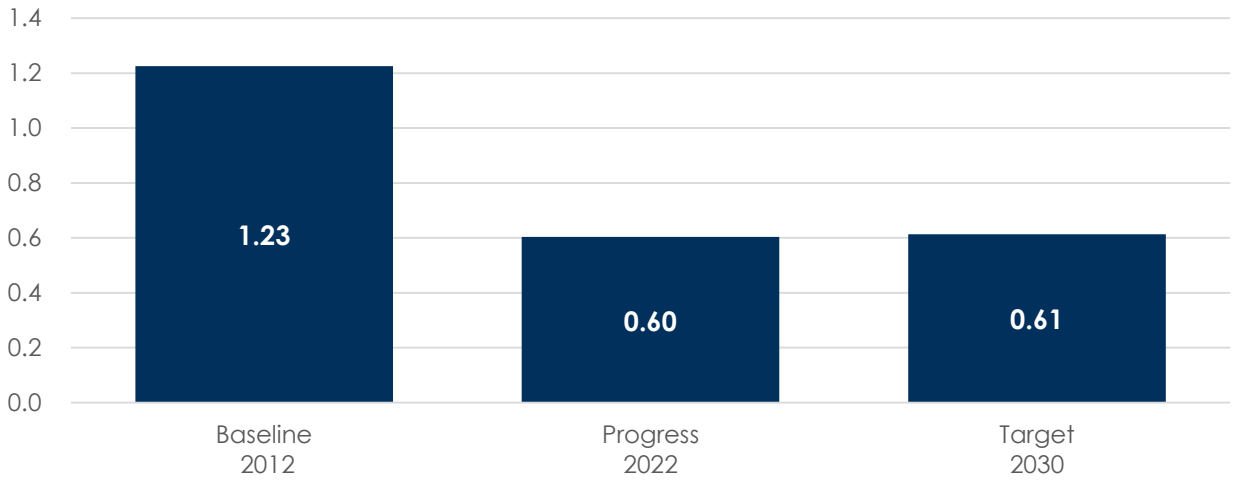
Reduction Target	50% by 2030

% Reduced	51% 2022

VCC has committed to reducing greenhouse gas emissions per delegate day by 50% by 2030 based on 2012 levels. They have exceeded this goal, reducing emissions by 51% over the 2012 baseline.

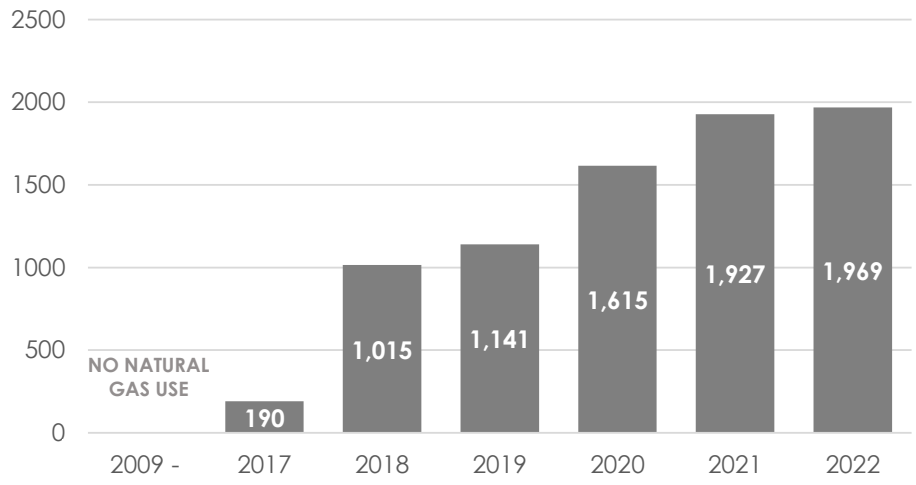
Overall Progress

Emissions ($kgCO_2e/DD$)



Natural Gas

Natural Gas (GJ)



Analysis

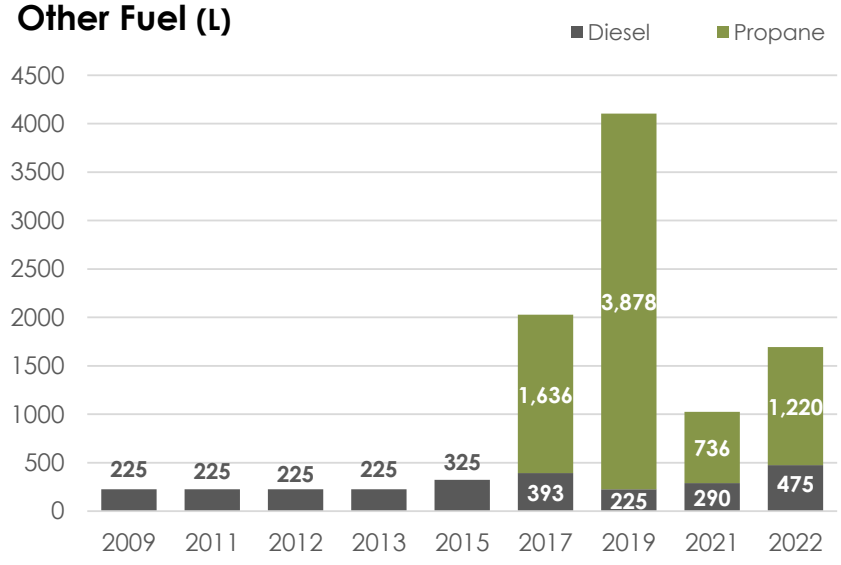
In 2017, the VCC installed a natural gas boiler fueled by renewable natural gas (RNG). By purchasing RNG, natural gas emissions avoided in 2022 resulted in 99 tCO_2e.

The VCC consumed 1,969 GJ of natural gas in 2022, an increase of 2% over 2021. This increase is likely due to more operations and events as Covid-19 restrictions lessened.

tCO_2e	0.5	% of Total	0.4%	GJ/ft^2	0.03	22.3 Houses

Other Fuel

Other Fuel (L)



Analysis

The VCC has a back-up diesel generator that is tested an average of nine times per year. Use of the generator is tracked in a logbook. In 2022, the generator was run for 19 hours, burning 475 L of diesel.

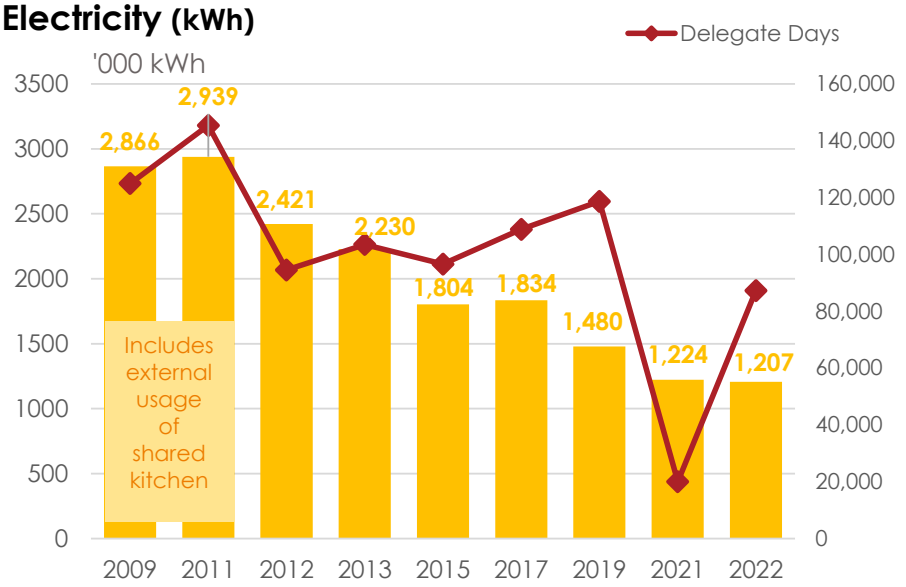
Propane is only used in the lower pavilion. In 2022, the VCC used 1,220 L of propane, an increase of 66% over 2021.

Use of both fuels totaled 3.1 tCO_2e, which accounts for 2.1% of the total footprint.

tCO_2e	3.1	% of Total	2.1%	Litres/ Month	141	0.9 Cars / Year

Electricity

Electricity (kWh)



Analysis

In 2022, total electricity consumption decreased by 1.3% (16,085 kWh) over 2021. Emissions from electricity use total 9.4 tCO_2e, which accounts for 6.3% of the total footprint.

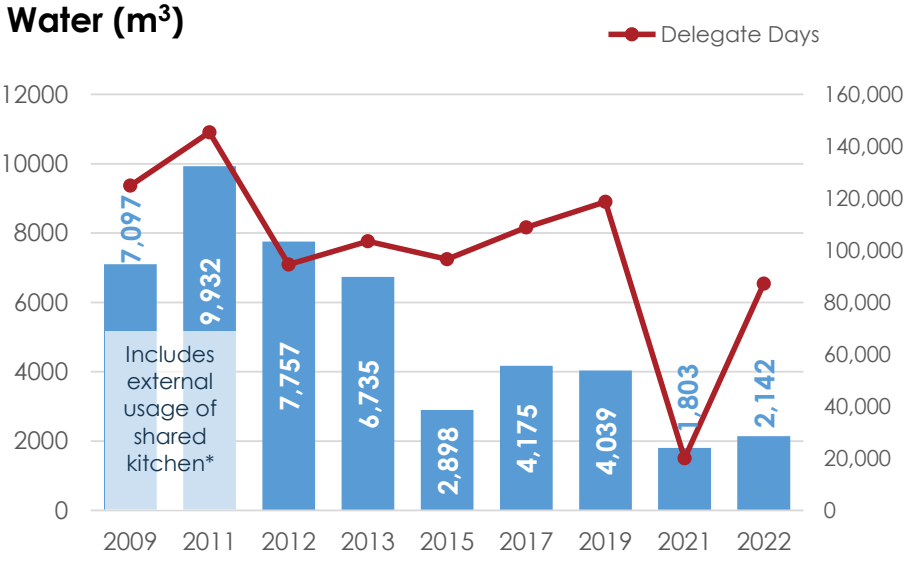
The VCC has recently installed four electric vehicle charging stations in their parking lot. By using these charging stations in 2022, 18,403 litres of fuel use were averted, which is equivalent to 19.8 tCO_2e.

Note: The emissions factor for BC's electricity has decreased 61% since 2021. Changes to the emissions factor are updated to be most accurate to the type of electricity generation mix feeding BC's grid.

tCO_2e	9.4	% of Total	6.3%	kWh / Delegate Day	13.8	108 Houses

Water

Water (m^3)



Analysis

Water use increased from 1,803 m^3 (1,803,000 L) to 2,142 m^3 (2,142,000 L), a 19% increase over 2021.

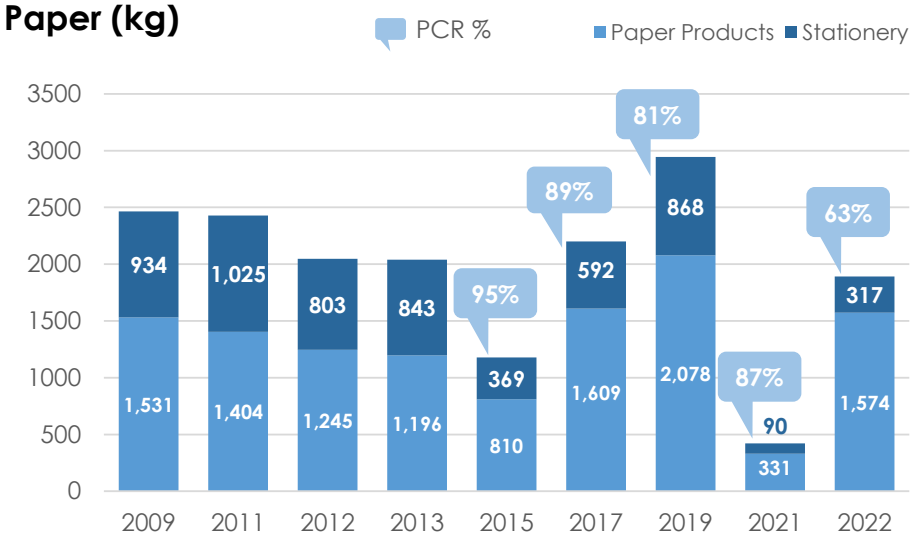
Water use per delegate day was 90.1 litres in 2021 and 24.5 litres in 2022. This represents a 73% decrease in litres per delegate day. In comparison to pre-Covid 2019 levels of 34 litres per delegate day, water use per delegate day in 2022 is lower.

** Note: In 2012, the Victoria Conference Centre started accurately measuring their portion of the shared kitchen's water usage. 2012 is considered the new baseline for water.*

tCO_2e	0.9	% of Total	0.6%	L / Delegate Day	24.5	9,756 Baths (50gal)

Paper

Paper (kg)



Analysis

In 2022, the total paper purchased increased by 91% (1,469 kg) over 2021. Emissions from paper use total 1.5 tCO_2e, which accounts for 1.0% of the total footprint.

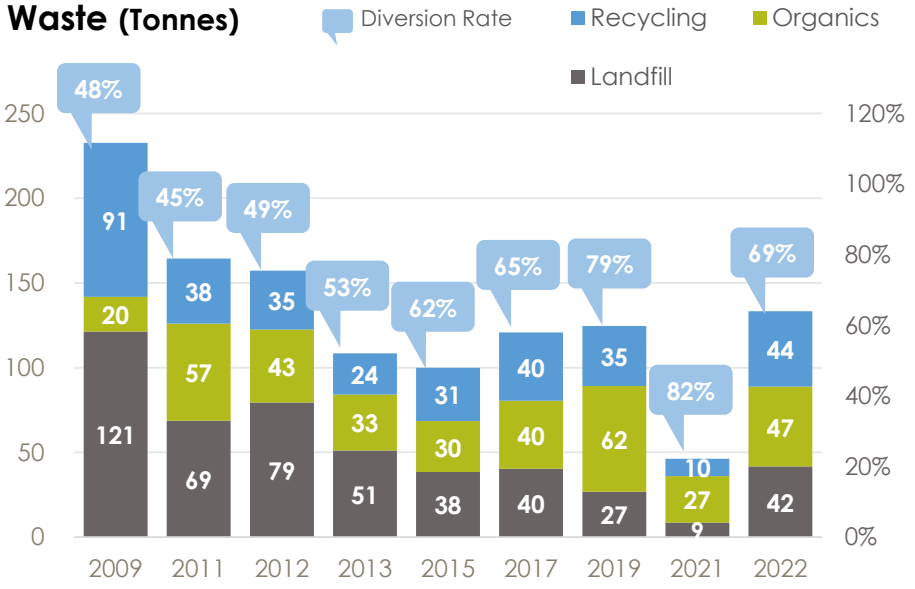
The average post-consumer recycled (PCR) content of paper used decreased to 63%. By ensuring that all paper products purchased are tree-free or 100% PCR, VCC could save an additional 8.3 trees.

** Note: Improved factors have been applied to calculate the emissions from paper. These improved factors may cause a decrease in emissions per kg of paper used.*

tCO_2e	1.5
% of Total	1.0%
Treeless Content	62.6%
8.3 Trees / Year	

Waste

Waste (Tonnes)



Analysis

In 2022, the total waste generated at the VCC was 133 tonnes, an increase of 188% over 2021. Emissions from waste total 37.1 tCO_2e, which accounts for 25% of the total footprint.

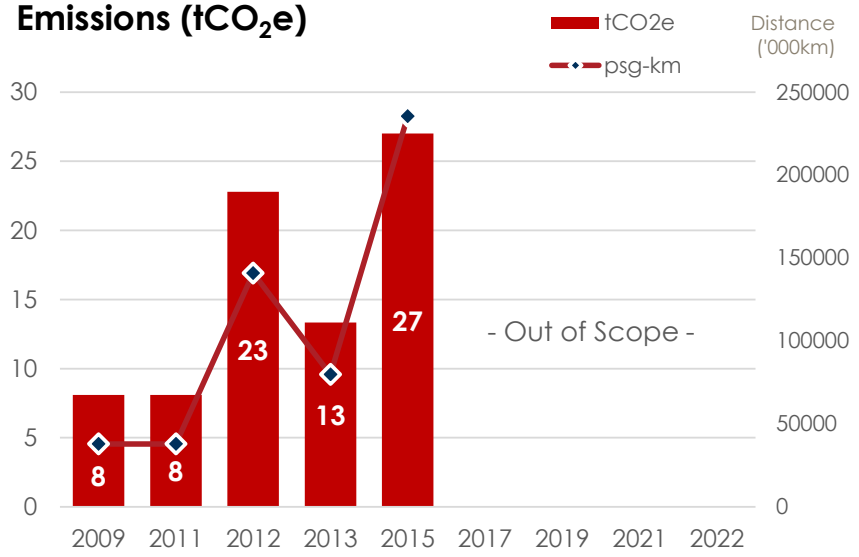
The VCC has switched over to water bottle filling stations. Since installation during the pandemic, the VCC has avoided the use of 62,316 plastic bottles.

** Note: The emissions factor for waste has increased significantly due to improved methodology for measuring the waste emissions. This has led to a re-statement of historical waste emissions to make footprints comparable year to year.*

tCO_2e	37.1
% of Total	24.7%
Plastic Bottles Avoided	62,316
68.7% Diversion Rate	

Travel

Emissions (tCO_2e)



Analysis

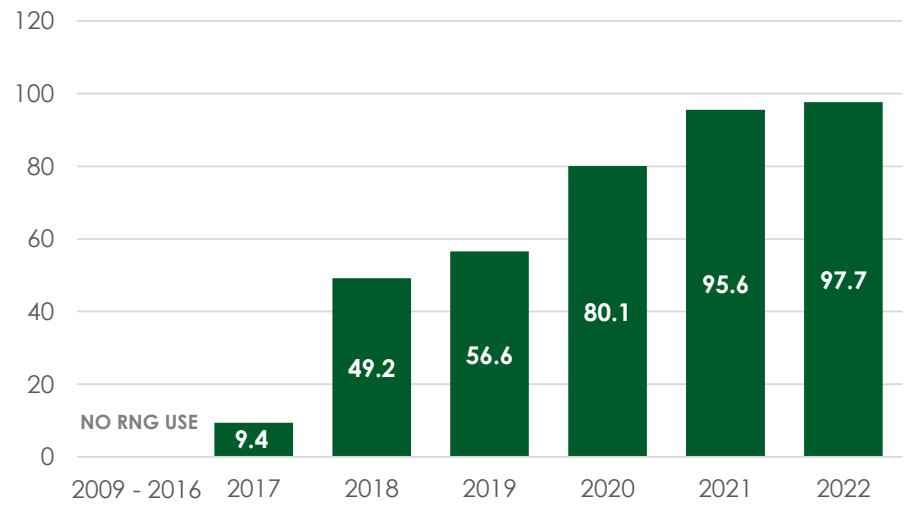
Sales and associated travel for the VCC have been taken over by an outside organization and are no longer under VCC's control. The reporting scope has been updated to reflect this change and will no longer include travel.

Travel emissions have been removed from VCC's historical emissions for accurate comparisons.

Note: All emissions from flights are now the responsibility of Destination Greater Victoria (DGV). DGV has also committed to carbon neutrality.

Biogenic CO_2

Biogenic Carbon ($tBioCO_2$)



Analysis

The VCC emits biogenic emissions by using renewable natural gas (RNG). These emissions come from natural sources that already existed in the carbon cycle and are being re-emitted through the combustion of biofuel.

This process reduces the total amount of new carbon into the atmosphere and is a positive step towards reducing carbon emissions.

Note: 2021 was the first year that biogenic carbon had been included in the VCC's report. $BioCO_2$ has been added for each year that RNG was purchased at the VCC for a more accurate comparison.

Bio-tCO_2	97.7	% of Total	65%	GJ /Month	164	27.8 Cars / Year

VCC Highlights - 2021 vs 2022

Carbon Footprint Increase:

41%

15 tCO_2e

7 more cars on the road for one year

2022 Emissions per Delegate Day:

0.60 $kgCO_2e$

Decreased by 68%

51% reduction since the 2012 baseline

Electricity Use Decrease:

1%

16,085 kWh

Equivalent to 1.4 Canadian households

2022 Diversion Rate:

69%

Decreased by 13%

91 tonnes of waste diverted from landfill

Water per Delegate Day Decrease:

73%

25L per Delegate Day, down from 90L

Natural Gas Emissions Averted:

99 tCO_2e

By opting for Renewable Natural Gas

Plastic Bottles Avoided:

62,316

Since installing water bottle refill stations

Fuel Emissions Averted:

19.8 tCO_2e

By installing EV chargers

VCC Reduction Summary

Year	Reduction in tCO_2e	Total Emissions % reduction	Electricity % reduction	Water % reduction	Landfill % reduction	$kgCO_2e$/ Del. Day
2009	--	--	--	--	--	1.08
2010	4.9	4%	2%	-13%	4%	1.25
2011	22.4	17%	-5%	-24%	41%	0.74
- 2012 -	**-8.5**	**-8%**	**18%**	**22%**	**-16%**	**1.23**
2013	31.3	27%	8%	13%	36%	0.82
2014	-18.5	-22%	11%	48%	6%	1.05
2015	14.1	14%	10%	17%	20%	0.92
2016	3.3	4%	-2%	-19%	-2%	0.80
2017	2.2	3%	0.1%	-21%	-2%	0.77
2018	17.6	21%	27%	0.2%	7%	0.54
2019	7.5	11%	-10%	3%	29%	0.49
2020	37.9	65%	38%	65%	87%	1.30
2021	-16.9	-83%	-33%	-28%	-140%	1.86
2022	-15.3	-41%	1%	-19%	-389%	0.60
Total Reduction Since Baseline (2012)	**63.2**	**55%**	**50%**	**72%**	**47%**	**51%**

Carbon Reduction Strategy

The Victoria Conference Centre (VCC) has committed to reducing energy consumption and greenhouse gas emissions per delegate day by 50% of 2012 levels by 2030. In 2022, the VCC met and exceeded this target, reducing energy consumption by 50% and emissions per delegate day by 51% compared to the 2012 baseline.

The VCC has achieved this through various initiatives such as adding waste streams and providing education around sorting waste, changing HVAC operations from constant to variable systems for real-time energy management, lighting upgrades, and installing a natural gas boiler fueled by RNG. As operations increase, it is recommended that the VCC prioritize energy conservation and waste management measures to address its two largest sources of emissions: waste and electricity.

Achievements

- Carbon Neutral facility since 2019
- 55% reduction in carbon emissions since 2012
- 50% reduction in energy consumption since 2012
- 51% reduction in emissions per delegate day since 2012
- 72% reduction in water consumption since 2012
- Averted 99 tCO_2e by purchasing RNG
- Averted 20 tCO_2e by installing two EV chargers

Moving Forward

- Ensure all paper products are at least 88% - 100% PCR
- Convert facility to be 100% LED
- Prioritize energy conservation measures to reduce electricity and natural gas use
- Recertify for BOMA BEST Platinum
- Achieve Biosphere Certification
- Educate staff on the purpose of the initiatives taken by the VCC

Data Collection & Methodologies

Emission Source	Data Type	Data Quality	Notes
Natural Gas	Account Summary	Very Good	
Fuel Use	Email + Usage Report	Good	
Electricity	Account Summary	Very Good	
Water	Account Summary	Very Good	
Waste	Account Summary	Very Good	
Paper	Account Summary	Very Good	

Information on Inventory Uncertainty

* The VCC shares some responsibility for the Empress Hotel's waste pickups. In 2022, shared waste was calculated using a 31% responsibility of generated shared waste for each operating day.

Emissions References

1. 2021 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions
https://www2.gov.bc.ca/assets/gov/environment/climate-change/cng/methodology/2021-best-practices-methodology.pdf

2. Environment Canada's National Inventory Report (1990-2019); Part 2 & 3.

https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/inventory.html

3. Department for Environment, Food & Rural Affairs (UK) Carbon Factors 2021
https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-

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 Ostrom Climate Solutions (https://ostromclimate.com/) on an annual basis.

Policy for Base Year Recalculation:
Base year emissions, and other previous emissions, shall be retroactively recalculated if a change in organizational 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
DD	**Delegate Day:** A delegate is defined as a person selected or requested to attend a convention, conference or meeting from another destination. Each day the delegate spends at the Victoria Conference Centre constitutes a Delegate Day.
Carbon Neutral	Companies are carbon neutral when they remove GHG emissions equivalent to all their scope 1, 2 and material (>5%) scope 3 emissions, usually by purchasing carbon offsets.
Biogenic	Carbon emissions generated from sources naturally occurring in the carbon cycle (i.e. organic matter), rather than the result of fossil fuel combustion.
Emissions Factor	The volume of emissions created by an emissions producing activity (i.e. fuel combustion), calculated based on the amount of the activity (volume, distance, etc.).
GHG	**Greenhouse Gas (emissions):** Atmospheric gasses contributing to the greenhouse effect, including Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_2O), etc.
GJ	**Gigajoule**: Unit of natural gas equal to 26.137 m^3 or 0.947 MMBtu
kWh	**Kilowatt-Hour**: Common unit for measuring electrical consumption
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
tCO_2e	**Tonnes of Carbon Dioxide Equivalent**: a combined term capturing the emissions from various GHGs.
t-km	**Tonne-kilometer**: A unit of measurement used in shipping

Completed By	Christian Muñoz Mejia & Chloe Shore
Email	Christian@synergyenterprises.ca
Completed	16/5/2023

synergy