

2023 Greenhouse Gas Emissions Inventory



The Victoria Conference Centre

January 1 to December 31, 2023

Completed By	Christian Muñoz Mejia & Cameron Thompson
Email	christian@synergyenterprises.ca
Completed	20/6/2024

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 2023, which marks the 14th 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. 2023 marks the fifth year that the VCC has operated as a carbon neutral facility.

The inventory boundary has changed for the 2023 footprint in order to capture Scope 3 indirect emissions from well-to-tank (WTT), transportation and distribution (T&D) losses, and capital goods. Total emissions in 2023 were 249 tCO₂e. Excluding biogenic emissions, which originate from natural sources already part of the carbon cycle, net emissions to be offset by the VCC total 147 tCO₂e. Overall, net emissions increased by 94.4 tCO₂e over 2022. The highest emissions source was waste generation (79.3 tCO₂e), followed by capital goods (40.5 tCO₂e), and electricity (16.6 tCO₂e).

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 2023, the VCC's total emissions per delegate day saw an increase of 43% compared to the 2012 baseline.

Inventory Information

Company Name	The Victoria Conference Centre		
Contact Information	Nathan Gauld	ngauld@victoriacentre.com	250-415-0560
Company Description	The Victoria Conference Centre hosts a variety of events, and includes a shared kitchen - 720 Douglas Street.		
Reporting Period	January 1 to December 31, 2023		
Inventory Boundary	Scope 1 (Direct Emissions) - Natural Gas and Diesel (back-up generator)		
	Scope 2 (Indirect Emissions from Purchased Electricity) - Purchased Electricity (BC Hydro)		
	Scope 3 (Indirect Emissions from Other Sources) - Water, Waste, Stationery, Paper Products, Well to Tank, T&D Losses, Capital Goods		
	No Major Scope 3 Exclusions		
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	Greenhouse gas emissions measured in 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 Ostrom.		

Summary of Results

Net tCO₂e **147**

Equivalent to:



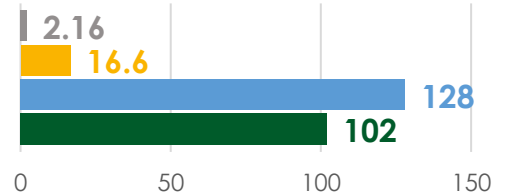
1.75

kgCO₂e / Delegate Day

Offset Cost **\$4,410**

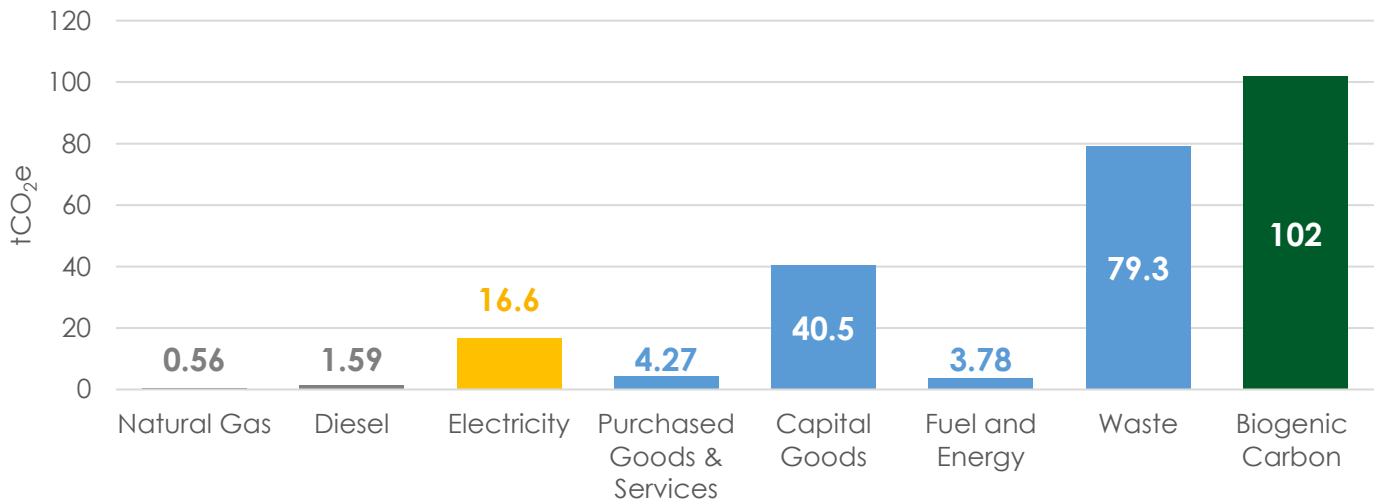
Carbon Footprint by Scope

	tCO ₂ e	
Scope 1 (Direct)	2.16	0.9% of total footprint
Scope 2 (Indirect)	16.6	6.7% of total footprint
Scope 3 (Indirect)	128	51% of total footprint
Biogenic Carbon	102	41% of total footprint
TOTAL EMISSIONS	249	Scope 1, 2, 3, & biogenic
NET EMISSIONS	147	Scope 1, 2, & 3



Carbon Footprint By Activity

Emissions by Activity



Carbon Footprint Summary

The Victoria Conference Centre

Total tCO₂e **249**

Net tCO₂e to be offset **147**

Offset Cost **\$4,410**

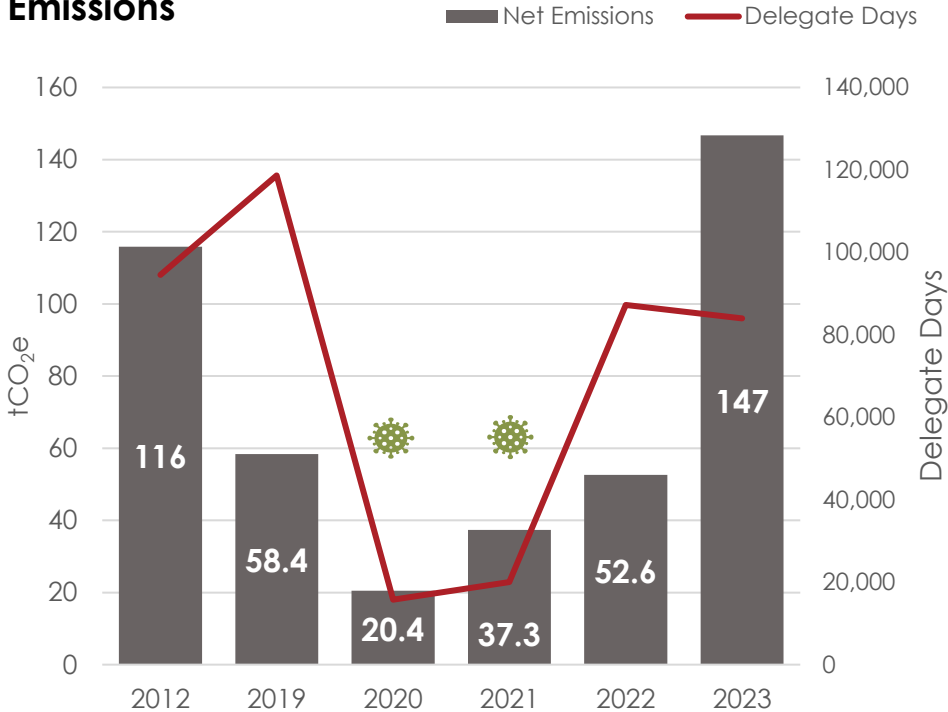
2023 GHG Inventory



This report measures the carbon footprint of the Victoria Conference Centre's (VCC) operations in 2023. Excluding biogenic emissions, which originate from natural sources already part of the carbon cycle, net emissions to be offset by the VCC total 147 tCO₂e.

Carbon Footprint Year Over Year

Emissions



	Net Emissions		Change since Baseline	
	tCO ₂ e	kgCO ₂ e/DD	kgCO ₂ e/DD	Percent
2009	135	1.08		
2010	130	1.25		
2011	107	0.74		
2012	116	1.23		
2013	84.6	0.82		-33%
2014	103	1.05		-14%
2015	89.1	0.92		-25%
2016	85.8	0.80		-34%
2017	83.5	0.77		-37%
2018	65.9	0.54		-56%
2019	58.4	0.49		-60%
2020	20.4	1.30		6%
2021	37.3	1.86		52%
2022	52.6	0.60		-51%
2023	147	1.75		43%
TARGET	N/A	0.61		-50%

Emission Reduction Target

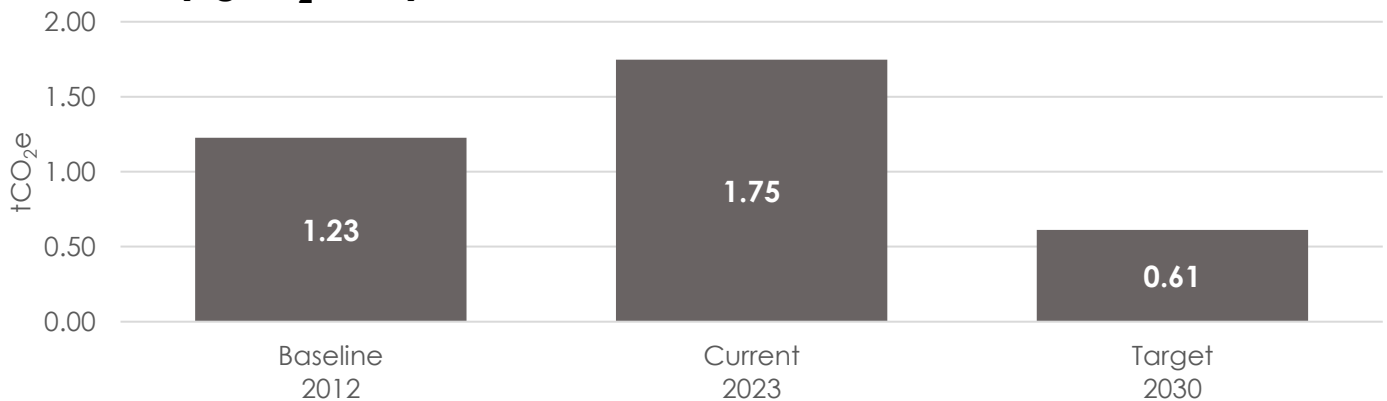
Over 2012 baseline



VCC has committed to reducing greenhouse gas emissions per delegate day by 50% by 2030 based on 2012 levels.

Overall Progress

Emissions (kgCO₂e/DD)

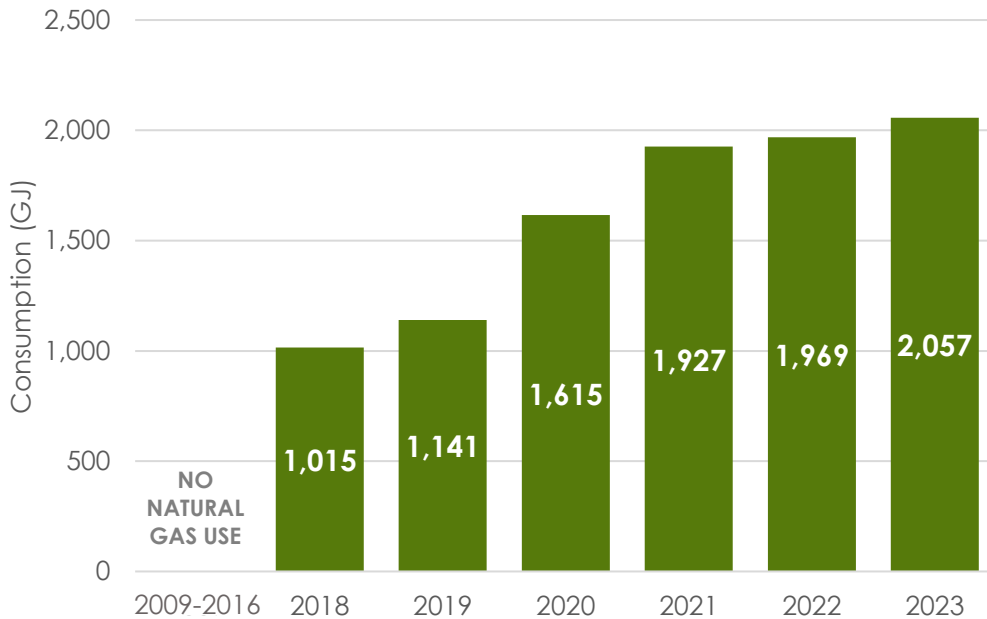


Notes on Targets

The VCC has focused their efforts on phasing out the use of propane, procuring renewable natural gas, and implementing energy and water conservation initiatives. To continue lowering emissions, it is recommended that the VCC prioritizes energy conservation measures to reduce electricity and natural gas use, and promotes its Green Events Guide in collaboration with event planners and the Empress Hotel to further reduce waste.

Natural Gas

Natural Gas Consumption



Analysis

In 2017, the VCC installed a natural gas boiler fueled by renewable natural gas (RNG). By purchasing RNG, natural gas emissions averted in 2023 totaled to 104 tCO₂e.

The VCC consumed 2,057 GJ of natural gas in 2023, an increase of 4.5% over 2022. This increase is likely due to growing capacity and operations as events are less restricted post-pandemic.

tCO₂e **0.56**

% of Total **0.2%**

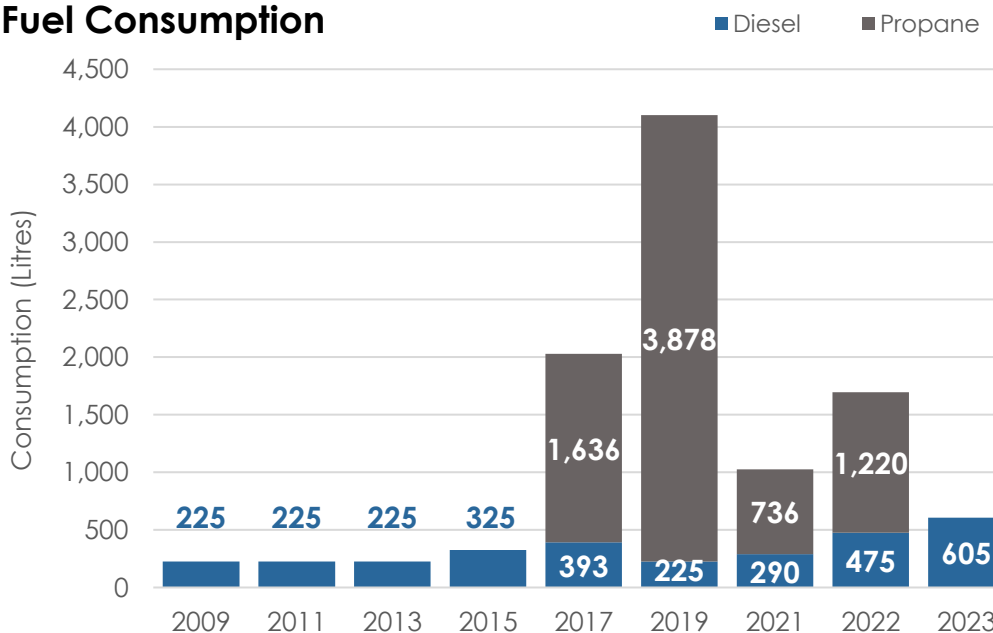
GJ/ft² **0.04**



23.3
Houses

Fuel Use

Fuel Consumption



Analysis

The VCC has a back-up diesel generator that undergoes testing throughout the year. In 2023, the VCC achieved its long-term goal of phasing out propane use from the Lower Pavilion.

Fuel use in 2023 totaled to 1.59 tCO₂e, representing a 49% decrease in fuel emissions and a 180% decrease in fuel consumption compared to the previous year. This is largely due to phasing out propane as an emission source.

tCO₂e **1.59**

% of Total **0.6%**

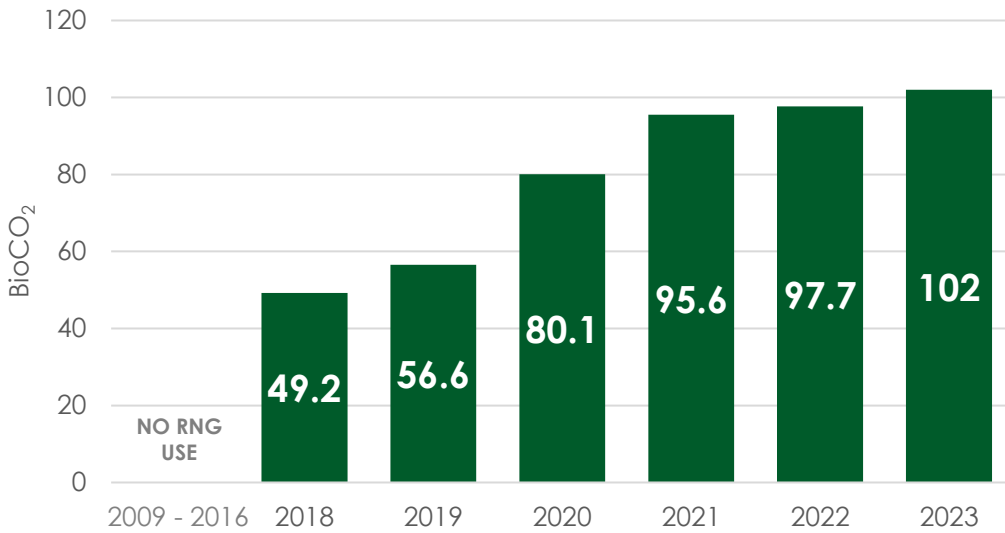
Litres/ Month **50.4**



0.15
Cars / Year

Biogenic CO₂

Biogenic Carbon Emissions



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.

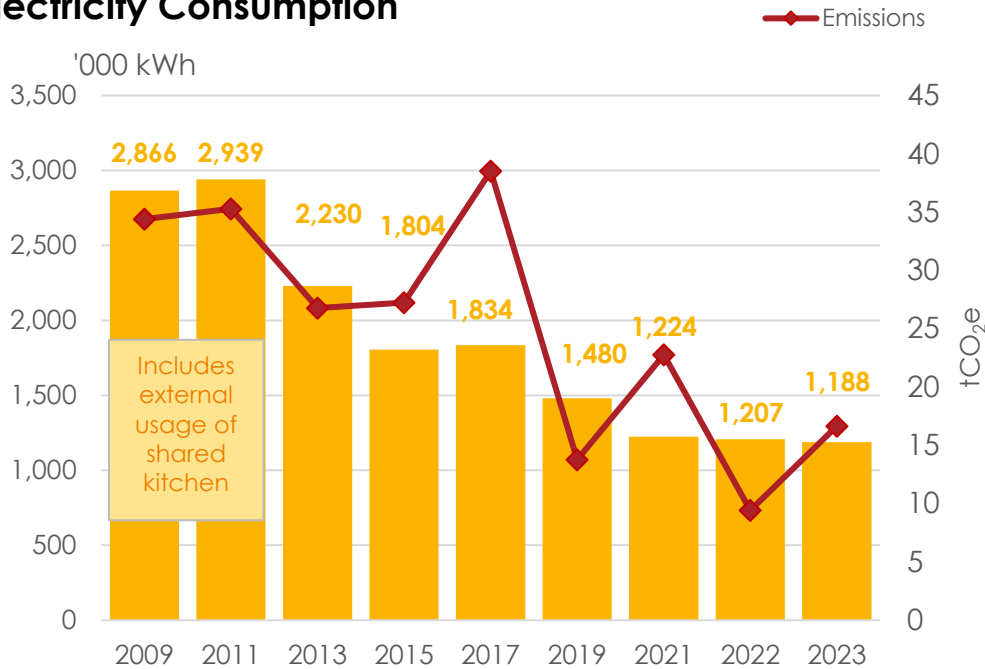
This process reduces the total amount of new carbon into the atmosphere and is a positive step towards reducing carbon emissions.

* Note: 2021 was the first year that biogenic carbon had been included in the VCC's report. BioCO₂ has been added for each year that RNG was purchased at the VCC for a more accurate comparison.

Bio-tCO₂	102	% of Total	41%	GJ /Month	171		9.84 Cars / Year
----------------------------	------------	-------------------	------------	------------------	------------	---	----------------------------

Electricity

Electricity Consumption



Analysis

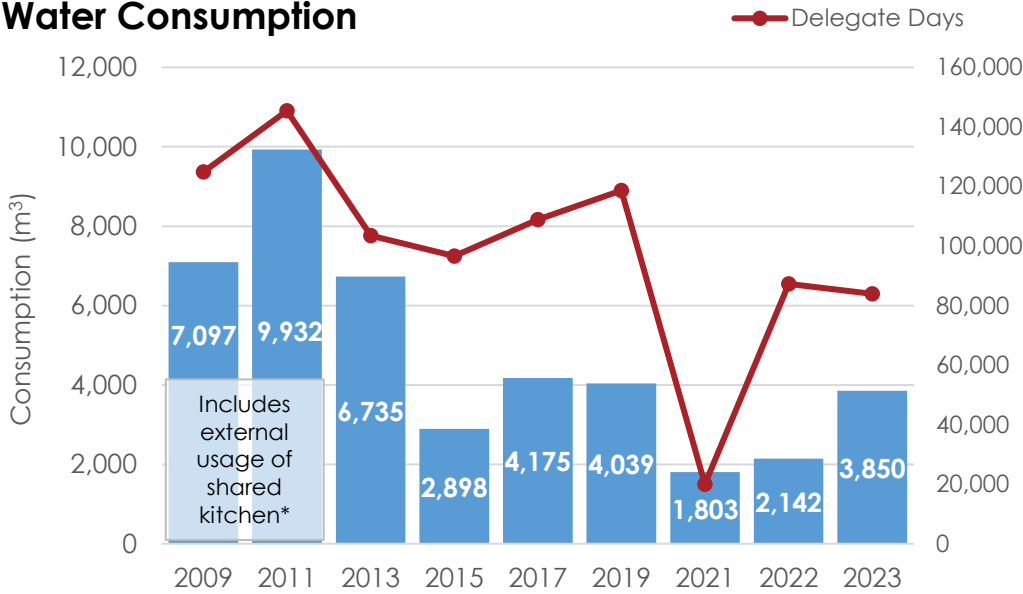
In 2023, total electricity consumption decreased by 1.6% (19,252 kWh) over 2022. Emissions from electricity use total 16.6 tCO₂e, which accounts for 6.7% of the total footprint.

The emissions factor for BC's electricity has increased 57% since 2022, explaining the reduction in total electricity consumption and the increase in emissions.

tCO₂e	16.6	% of Total	6.7%	kWh / Delegate Day	14.1		107 Houses
-------------------------	-------------	-------------------	-------------	---------------------------	-------------	---	----------------------

Purchased Goods and Services

Water Consumption



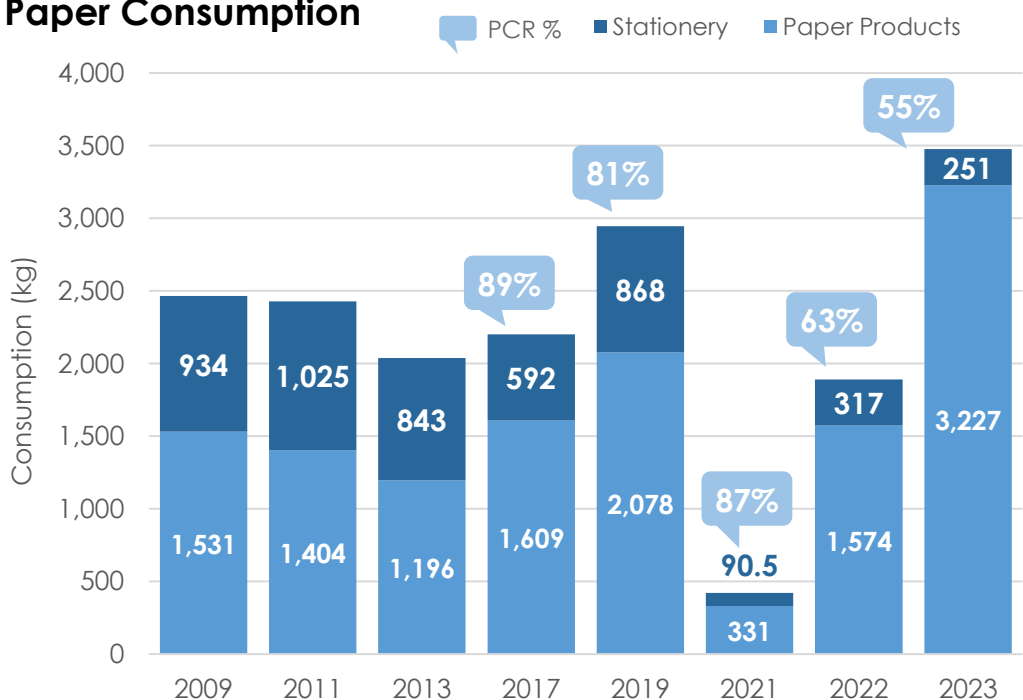
Analysis

Water consumption increased from 2,142 m³ (2,142,000 L) to 3,850 m³ (3,850,000 L), an 80% increase over 2022.

Water use per delegate day was 24.5 litres in 2022, but saw an increase to 45.8 litres in 2023. This represents a 87% increase in litres per delegate day. This increase is likely due to growing capacity and operations as events are less restricted post-pandemic.

* 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.

Paper Consumption



Analysis

In 2023, the total paper purchased increased by 84% (1,587 kg) over 2022. Emissions from paper use total 2.82 tCO₂e, which accounts for 1.1% of the total footprint. In 2023, stationery products saw a 21% decrease in consumption in comparison to 2022.

The average post-consumer recycled (PCR) content of paper used decreased to 55%. By ensuring that all paper products purchased are tree-free or 100% PCR, VCC could save an additional 15.3 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.

tCO₂e **4.27**

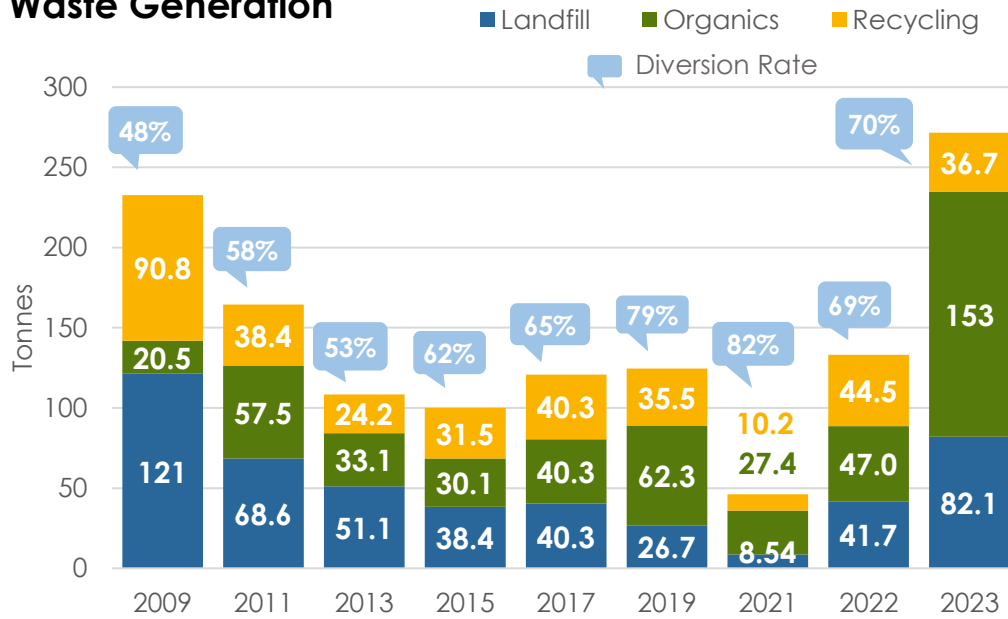
% of Total **1.7%**

Treeless Content **55%**

 **15.3**
Trees / Year

Waste

Waste Generation



Analysis

The total waste generation in 2023 totaled to 272 tonnes, an increase of 104% in comparison to 2022. Emissions from waste generation total to 79.3 tCO₂e, which accounts for 32% of the total footprint and represents the largest emission source in 2023.

The increase in waste volumes is attributed to empress-shared waste, which grew by an average of 90% compared to 2022. The largest increase was observed in compost pickups.

* Note: Empress-shared waste data is collected via Union Environmental, providing a detailed breakdown of each corresponding waste stream.

tCO₂e **79.3**

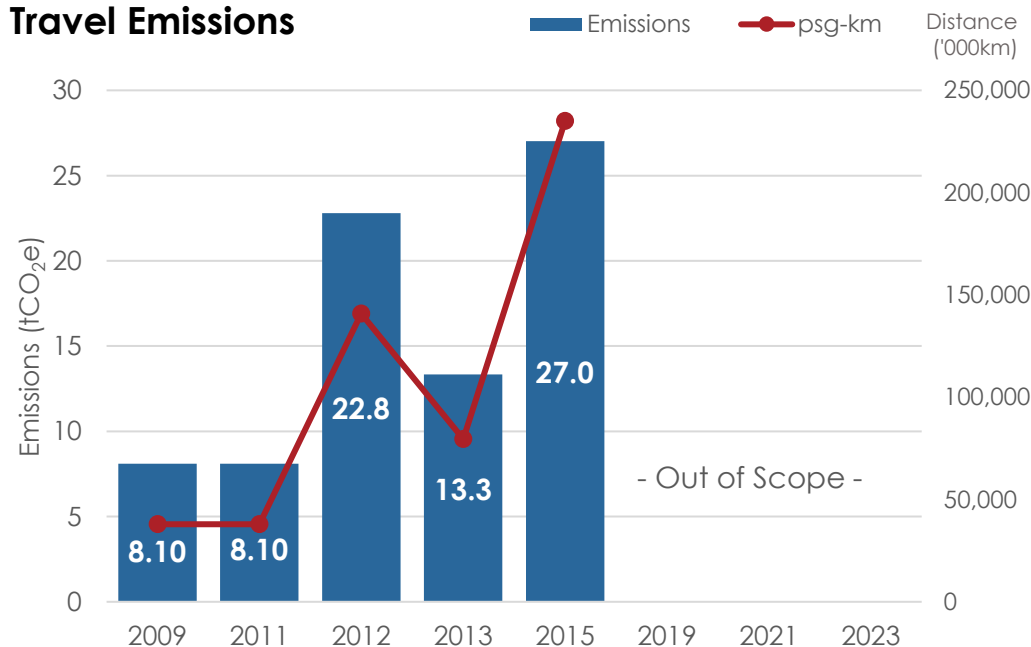
% of Total **32%**

kg / Day **744**

 **70%**
Diversion Rate

Business Travel

Travel Emissions



Analysis

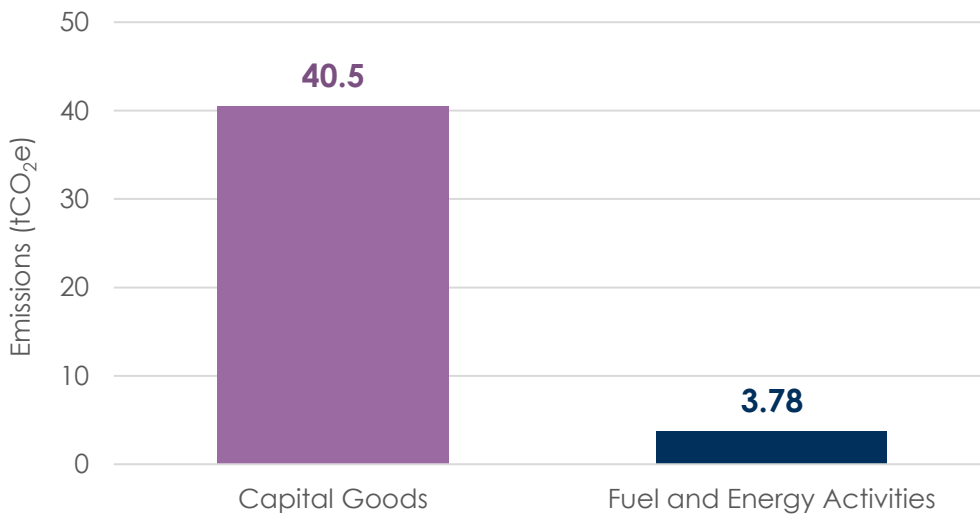
Since 2016, sales and associated travel for the VCC have been taken over by an outside organization, and are no longer under VCC's control. The reporting scope has been updated in the subsequent years to reflect this change and no longer includes travel.

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.

Other Scope 3

Other Scope 3 Emission Sources



Analysis

Capital goods were included in the inventory for the first time in 2023, totaling to 40.5 tCO₂e, and accounting for 16% of the total footprint. Capital goods includes major purchases for upgrades to the conference centre.

Well to Tank and T&D (transportation and distribution) Losses represent the fuel and energy activities, accounting for 2.6% of the total footprint in 2023.

Note: Capital goods were calculated using financial data, representing significant purchases made in 2023.

tCO₂e **44.3**

% of Total **18%**

VCC Highlights - 2022 vs 2023

Carbon Footprint Increase:

179%

94 tCO₂e



27 more cars on the road for one year

2023 Emissions per Delegate Day:

1.75 kgCO₂e

Increased by 191%



27% increase from the 2012 baseline

Electricity Use Decrease:

1%

19,252 kWh



Equivalent to 1.7 Canadian households

2023 Diversion Rate:

70%

Increased by 1.4%



190 tonnes of waste diverted from landfill

Water per Delegate Day Increase:

87%

46L per Delegate Day



Natural Gas Emissions Averted:

104 tCO₂e

By opting for Renewable Natural Gas



Plastic Bottles Avoided:

49,700

Through the use of water bottle refill stations



Fuel Emissions Averted:

19.1 tCO₂e

Through the use of EV chargers



VCC Reduction Summary

Year	Reduction in tCO ₂ e	Total Emissions % reduction	Electricity % reduction	Water % reduction	Landfill % reduction	kgCO ₂ e/ 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
2023	-94.1	-179%	2%	-80%	-97%	1.75
Total Reduction Since Baseline (2012)	-30.9	-27%	51%	50%	-3%	-43%

Conclusion

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 2023, the VCC saw an increase of 43% in comparison to the baseline year (2012), mainly due to increased emissions from waste generation and capturing emissions from capital goods.

The VCC has achieved 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
- Obtained Biosphere Certification, only the 2nd conference centre in North America
- Phased out propane use in favor of RNG in 2023
- Averted 104 tCO₂e by purchasing RNG
- Diverted 49,700 plastic bottles through water bottle refill stations

Moving Forward

- Prioritize reducing waste generation in operations, in conjunction with the shared kitchen
- Ensure all paper products are at least 88% - 100% PCR
- 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	Ideal Data Source
Diesel	Estimate	Good	Estimate from summary provided
Electricity	Account Summary	Very Good	Ideal Data Source
Water	Account Summary	Very Good	Ideal Data Source
Paper	Account Summary	Very Good	Ideal Data Source
Waste	Account Summary	Very Good	Union Environmental report included
Capital Goods	Account Summary	Very Good	Financial data used to measure
Well to Tank	Account Summary	Very Good	Ideal Data Source
T&D Losses	Account Summary	Very Good	Ideal Data Source

Information on Inventory Uncertainty

* The VCC shares some responsibility for the Empress Hotel's waste pickups. In 2023, shared waste was calculated using a 34% responsibility of generated shared waste for each operating day.

Emissions References

1. 2023 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions
https://www2.gov.bc.ca/assets/gov/environment/climate-change/cng/methodology/2023_pso_methodology_for_quantifying_greenhouse_gas_emissions.pdf

2. Environment Canada's National Inventory Report (1990-2021); 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 2023

<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 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
kWh	Kilowatt-Hour: Common unit for measuring electrical consumption
tCO ₂ e	Tonnes of Carbon Dioxide Equivalent: A combined term capturing the emissions from various GHGs.
T&D Losses	Transportation & Distribution Losses: The estimated share of electricity that is lost during the transmission from the power generation site to the consumer.
WTT	Well to Tank: The lifecycle impact of fuel generation, including extraction, processing, transportation and distribution.

Completed By	Christian Muñoz Mejía & Cameron Thompson
Email	christian@synergyenterprises.ca
Completed	20/6/2024

