

Global Container Terminals

Greenhouse Gas Emissions Report for the 2023 Calendar Year

January 1, 2023 to December 31, 2023

Contents

1. **Global Container Terminals 2023 calendar year carbon footprint**
2. **Analysis**
3. **Emissions reduction plan**
4. **Methodology**

BMO Radicle's Climate Smart program at a glance

900+

Climate Smart certified businesses to date (trained or in training)

24,326,000+

Total emissions measured by Climate Smart to date, in tCO₂e

Climate Smart Certification is an award-winning training program that helps small and medium businesses in every industry create greenhouse gas (GHG) inventories, then devise emissions reduction plans to take action and make change.

Key Terms

Baseline GHG Emissions Inventory: A comprehensive, quantified list of an organization's greenhouse gas emissions and sources for the initial reporting year (base year). The baseline GHG inventory is the level of greenhouse gas emissions against which future GHG inventories are compared.

Biologically sequestered carbon: Long-term carbon stored in biomass, such as forests, soils and peatland. Carbon is "locked" into organic matter through biological processes. This carbon can be released through e.g., burning of biomass as fuel or change in land use.

Carbon Dioxide Equivalent (tCO₂e): The universal unit for comparing the emissions from various greenhouse gases. The carbon dioxide equivalent for a gas is derived by multiplying the mass of the gas by the associated global warming potential (GWP). For example, the GWP for methane is 21. This means that emissions of one metric tonne of methane are equivalent to the emissions of 21 metric tonnes of carbon dioxide.

Carbon Offset: A project or activity that results in a given amount of greenhouse gases being avoided or reduced in one place, that is used to 'balance out' another's total GHG emissions. Emission reductions that are real, additional (beyond business as usual), measurable, permanent, and verified can generate offset credits. Credits are tradable certificates.

Emission Factor: A factor that converts activity data to GHG emission values, e.g., lbs of carbon dioxide emitted per barrel of fossil fuel consumed.

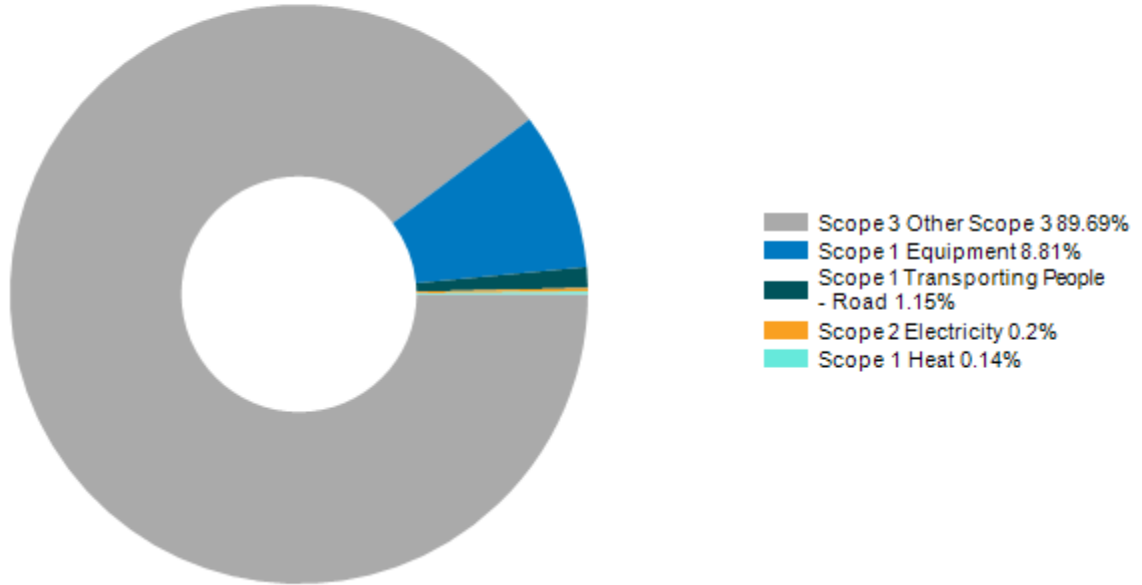
Renewable energy certificates (RECs): RECs are tradable energy certificates representing proof that 1 megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource (e.g., solar or wind) and was fed into the electricity grid.

Global Container Terminals 2023 Calendar Year Carbon Footprint

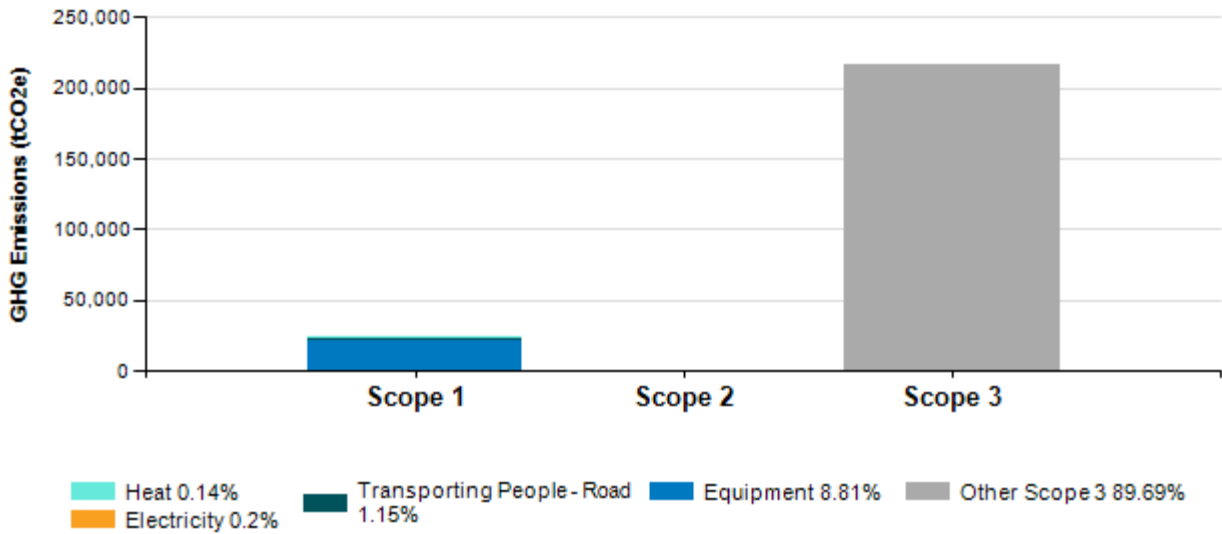
This report details the greenhouse gas emissions footprint for Global Container Terminals (GCT) during the 2023 Calendar Year, including the breakdown of emissions by source activity and GCT’s plan to reduce their emissions going forwards. This report and inventory were compiled in compliance with the [Greenhouse Gas Protocol Corporate Accounting and Reporting Standard](#), Revised Edition.

Total emissions for the 2023 calendar year

Total emissions: 241,461.66 tCO2e

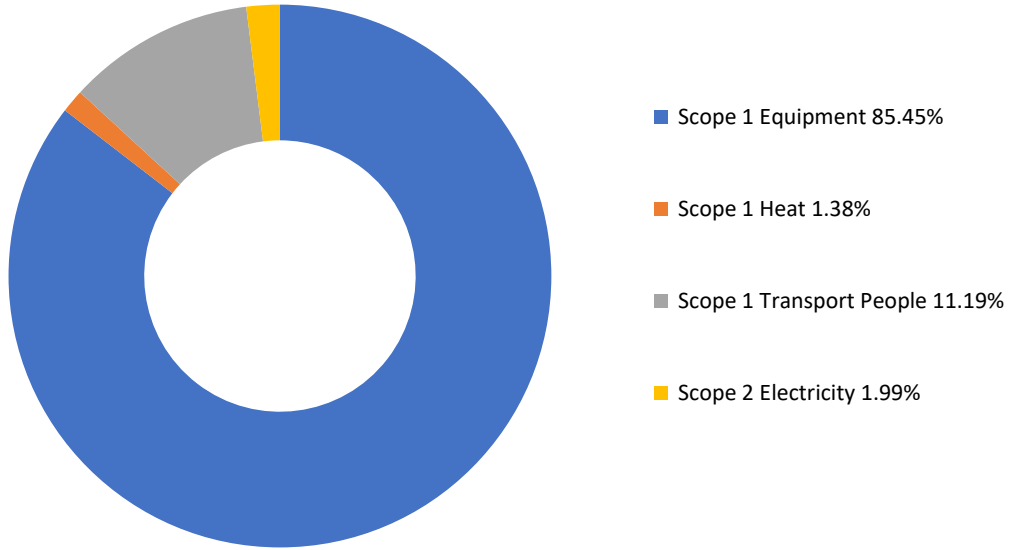


Total Emissions by Scope

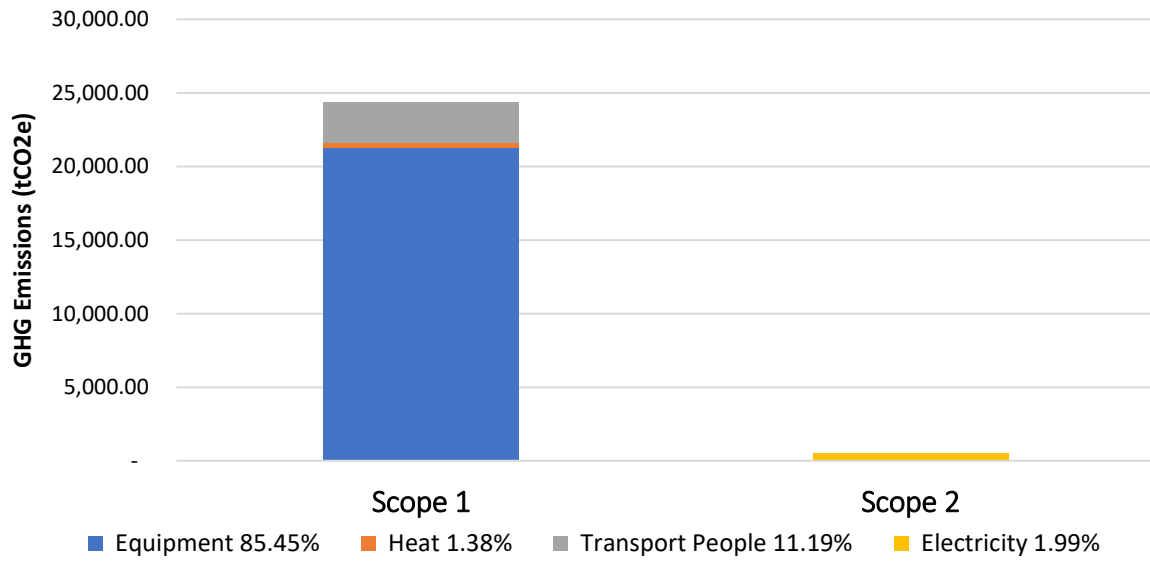


Scope 1 and 2 emissions for the 2023 calendar year

Scope 1 and 2 emissions: 24,895.86 tCO₂e



Scope 1 and 2 emissions breakdown



Analysis

GCT measured its 10th greenhouse gas inventory with Climate Smart for the 2023 calendar year (Jan 01, 2023 to Dec 31, 2023) and recorded emissions of 241,461.67 tonnes of carbon dioxide equivalent (tCO₂e). Overall, its Scope 1 and Scope 2 emissions decreased by 27% (9,067.45 tCO₂e). As for Scope 3 emissions, they have been measured for the first time (except for Waste). GCT completed the Climate Smart program for 2023.

The following sections present the breakdown of GCT's emissions for their 2023 calendar year by scope, as well as details of any emissions of tCO₂ from combustion of biologically sequestered carbon and purchased offsets and renewable energy certificates (RECs).

Scope 1

Scope 1 emissions totaled 24,401.13 tCO₂e in GCT's 2023 calendar year, **down by 27% since their baseline year. The majority of the decrease occurred in Equipment.**

Activity Type	2014 (tCO ₂ e)	2023 (tCO ₂ e)	Absolute Change (tCO ₂ e)	% Change	Justifications & Additional Notes
Scope 1					
Equipment	29,328.13	21,273.46	-8,054.67	-27%	Ongoing electrification and replacement of equipment with higher efficiency models. Reduction in line with the overall 20% reduction in volume. ¹
Heat	489.43	343.04	-146.39	-30%	Due to more accurate data in 2023 versus 2014, and changes in locations measured (e.g., closure of Franklin location) ² .
Transporting People - Road	3,477.90	2,784.63	-693.27	-20%	Reduction in line with the overall 20% reduction in volume ³ .
Grand Total	33,295.46	24,401.13	-8,894.33	-27%	

Scope 2 – Location-Based Emissions

Scope 2 emissions totaled 494.74 tCO₂e in GCT's 2023 calendar year, **down by 26% since their baseline year.**

Activity Type	2014 (tCO ₂ e)	2023 (tCO ₂ e)	Absolute Change (tCO ₂ e)	% Change	Justifications & Additional Notes
Scope 2					
Electricity	667.86	494.74	-173.12	-26%	GCT used a specific location-based emission factor ⁴ . In previous inventories, the Climate Smart's emission factor was used.
Grand Total	667.86	494.74	-173.12	-26%	

¹ The emission factor used by Climate Smart is: National Inventory Report 1990-2019 (May 2022), Table A6.1-14: Use "Diesel vehicles" < "Light duty diesel trucks (LDDTs)" < "Advanced control"

² The emission factor used by Climate Smart is for stationary combustion from Natural Gas.

³ The emission factor used by Climate Smart is for vehicles using propane and gasoline.

⁴ Government of Canada (May 2024). Table 5.1, "Electricity consumption intensity values (g CO₂e/kWh electricity consumed) for 2023 and 2024".

Scope 2 – Market-Based Emission Factors

The 2015 [GHG Protocol Scope 2 guidance](#) requires companies to report their Scope 2 emissions in two ways: **location-based** (reflecting grid emission factors), and **market-based** (using supplier specific emissions factors and/or those from contractual instruments such as renewable energy certificates - RECs). Note that location-based values are shown on the emissions summary charts presented in this report.

Province/State	Electricity Provider	kWh	Provincial/State Emissions (tCO ₂ e)	Utility Supplier Emissions (tCO ₂ e)
BC	BC Hydro	40,612,922.10	494.74	494.74*
Grand Total			494.74	494.74

*The same emission factor as location-based method was used due to the unavailability of supplier-specific emissions.

Scope 3

The following Scope 3 emissions were measured with an external tool developed by IFM and supported by McKinsey. The emissions are regrouped under Scope 3 > Other in the Climate Smart software:

Activity Type	2014 (tCO ₂ e)	2023 (tCO ₂ e)	Absolute Change (tCO ₂ e)	% Change	Justifications & Additional Notes
Scope 3					
Purchased goods and services	-	9.32	0	0%	Includes water consumption and electricity consumption for on-site EV chargers.
Capital goods	-	46,111.88	0	0%	Includes maintenance and upgrade projects and is based on the total spend on projects during the 2023 reporting year-to-date.
Fuel and energy related activities	-	6,308.08	0	0%	Includes the upstream emissions from purchased energy reported in scope 1 and 2.
Upstream transportation and distribution	-	1,598.27	0	0%	Includes the transportation of raw materials for maintenance projects and is based on the total spend on civil works maintenance projects where raw materials (asphalt) is purchased during the 2023 reporting year-to-date (i.e., paving, berth repair projects.)
Waste generated in operations	-	189.66	0	0%	Includes the waste disposal emissions from waste generated across all sites during the 2023 reporting year-to-date.
Business Travel	-	7.68	0	0%	Includes the emissions from flights taken by employees during the 2023 reporting year-to-date.
Employee commuting	-	1,154.68	0	0%	Includes the emissions from employee commuting during the reporting year.

Downstream transportation and distribution	-	151,906.75	0	0%	Includes the emissions from transportation of containers to and from GCT terminals by rail and road and is estimated using the number of full and empty containers and their respective average weights from terminals during the 2023 reporting year-to-date.
Use of sold products	-	9,279.51	0	0%	Includes the emissions from the hotelling and manoeuvring of container vessels at GCT terminals during the 2023 reporting year-to-date.
Grand Total	-	216,565.80	0	0%	

Release of Sequestered Carbon

Direct tCO₂ emissions arising from the combustion of biologically sequestered carbon, such as from burning biomass or biofuels, are reported separately from the scopes. For GCT's 2023 calendar year inventory, there was no reported release of sequestered carbon.

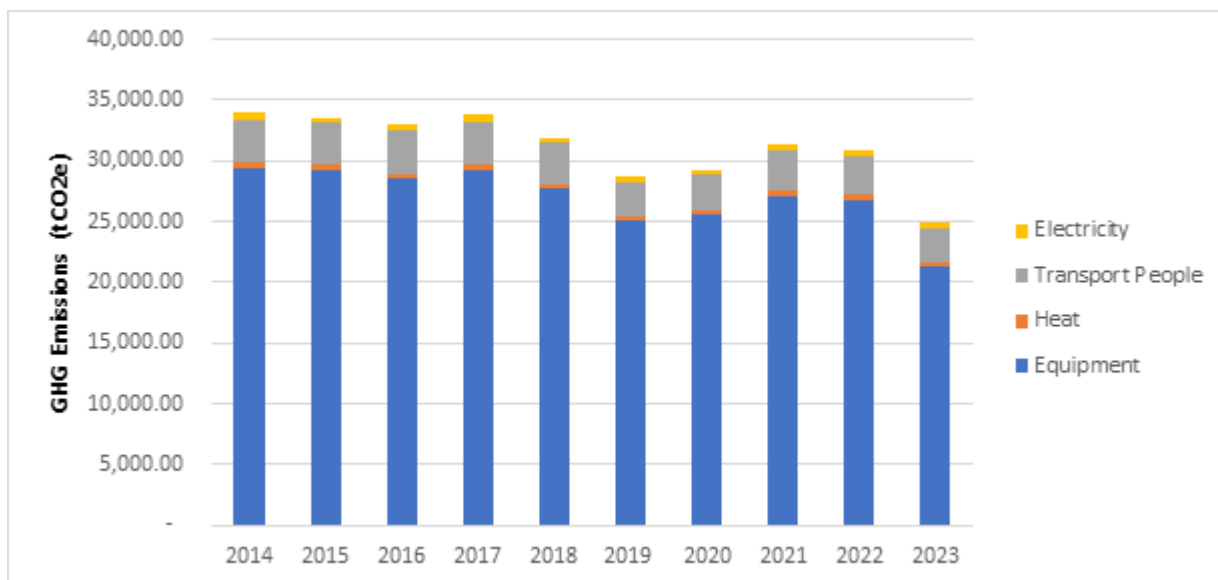
Offsets

GCT did not purchase offsets in the 2023 calendar year.

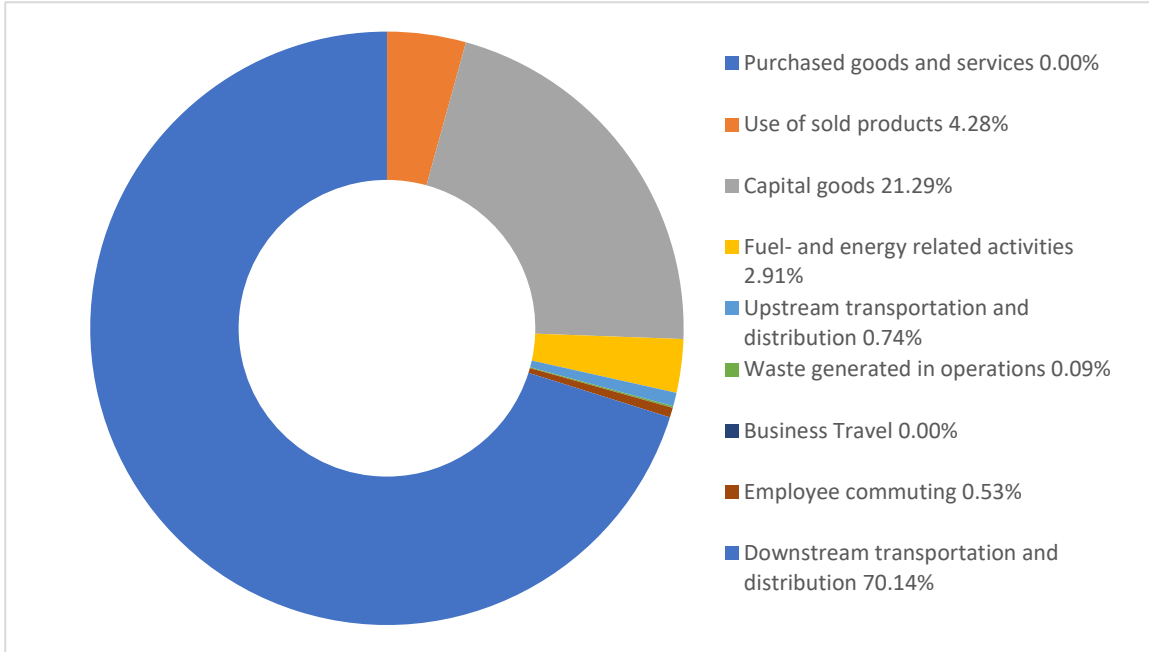
Year-Over-Year Results

Total Emissions from Baseline to CY2023

Scope 1 and 2 Emissions

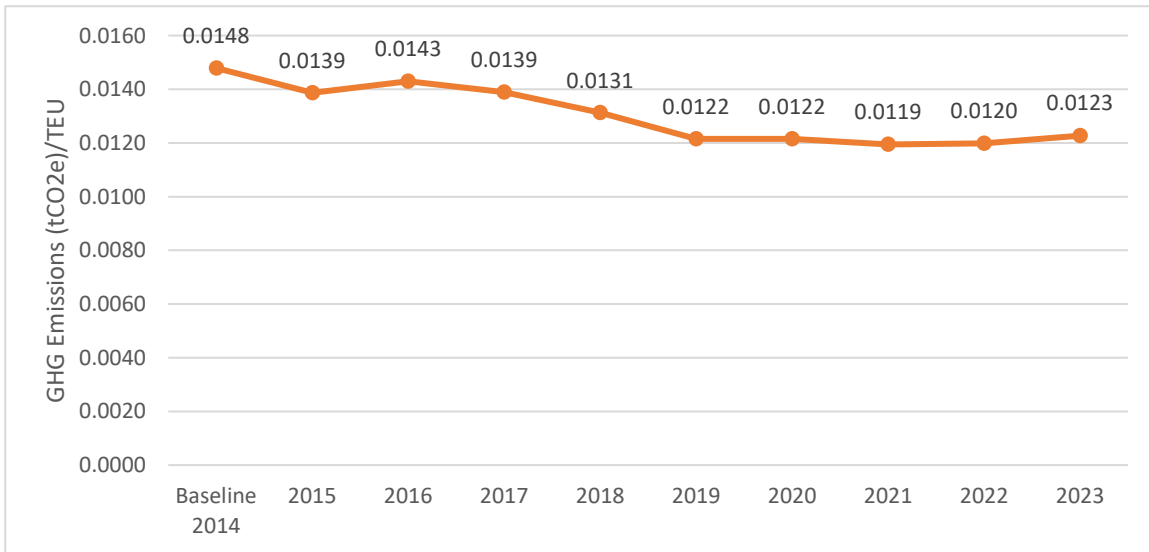


Scope 3 Emissions



Emissions Intensity from Baseline to CY2023

Scope 1 and 2



Progress against targets

GCT has set three emissions reduction targets as part of the company's 10-year *Fuel Efficiency and Emissions Reduction Plan*. The 2023 inventory is the fourth year of measurement against these targets. The results are presented below.

Goal 1: To reduce absolute Scope 1 and 2 emissions by 45% by 2030

Figure 1. GCT's absolute Scope 1 and 2 emissions reduction target projections

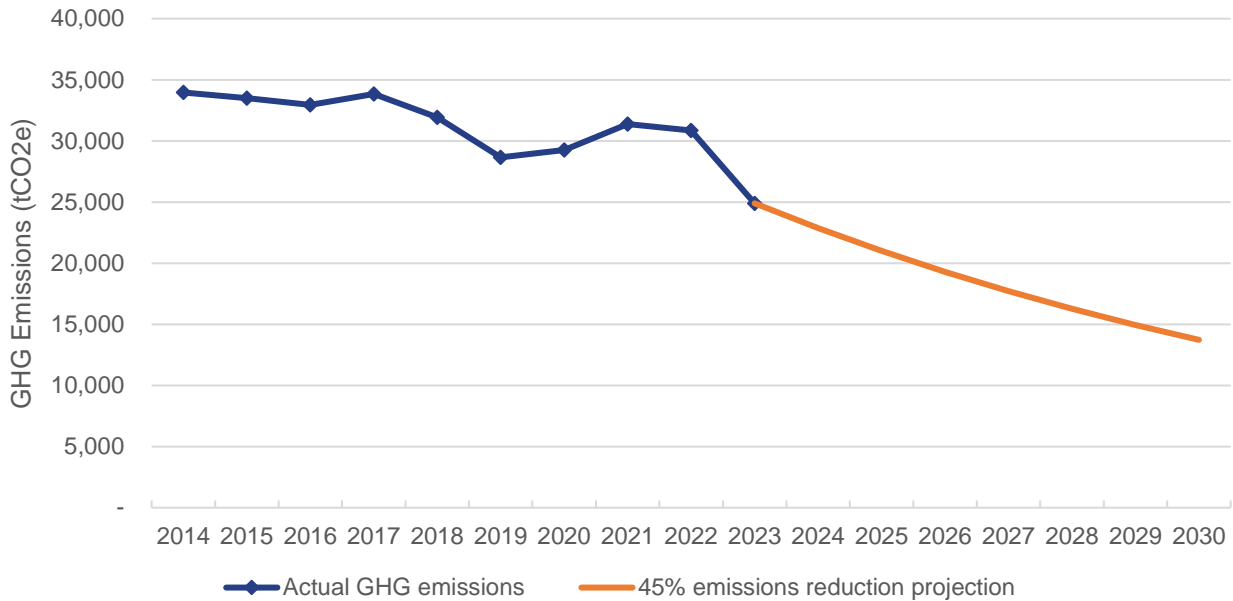


Figure 1 shows GCT's actual annual GHG inventories compared to the target projected emissions. GCT's reported Scope 1 and 2 emissions in 2023 were 24,895.87 tCO₂e.

Goal 2: To achieve an average annual reduction in emissions by 3.33% per TEU (Scope 1 and 2)

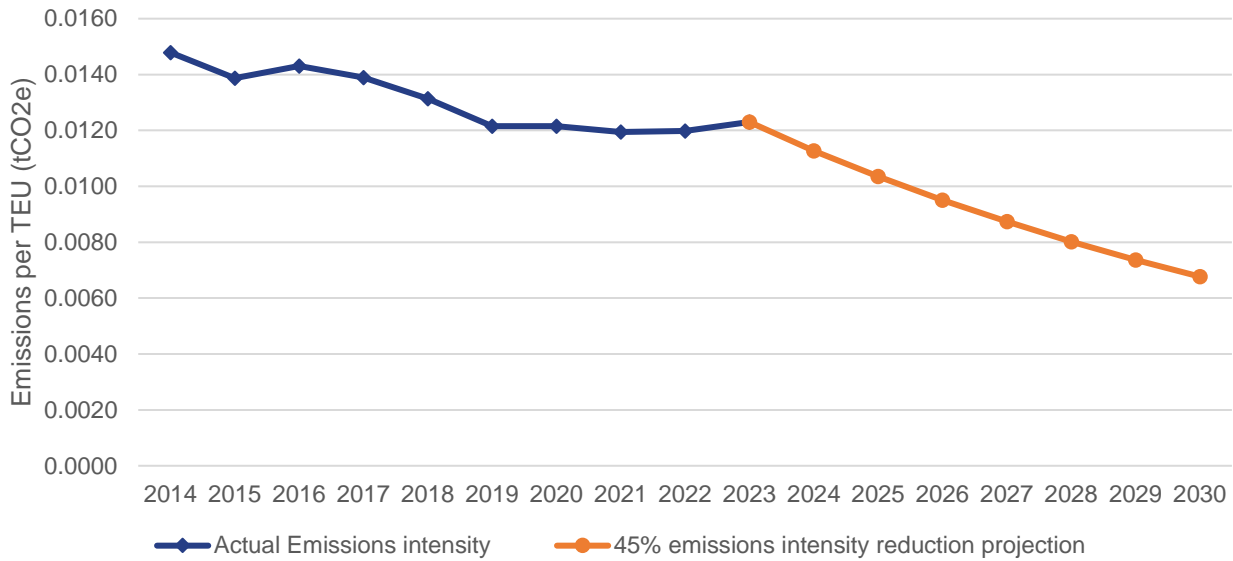
Table 1. GCT's emissions intensity per TEU progress

Inventory year	Projected emissions intensity (tCO ₂ e/TEU)	Actual emissions intensity (tCO ₂ e/TEU)	Target annual change in emissions intensity	Actual annual change in emissions intensity
2022	0.0110	0.0120	-3.33%	0.33%
2023	0.0107	0.0123	-3.33%	2.44%

Table 1 shows GCT's actual emissions intensity per TEU in 2023 compared to the target emissions intensity of 3.33% decrease annually. GCT's emissions intensity increased by 2.44% between 2022 and 2023 and did not meet the annual intensity reduction target.

GCT Canada reported a decrease of 19% in its Scope 1 and 2 emissions between 2022 and 2023. There was also a decrease in the volume of TEUs by 21%, which has contributed to the emissions intensity per TEU to increase.

Figure 2. GCT's emissions intensity per TEU projections



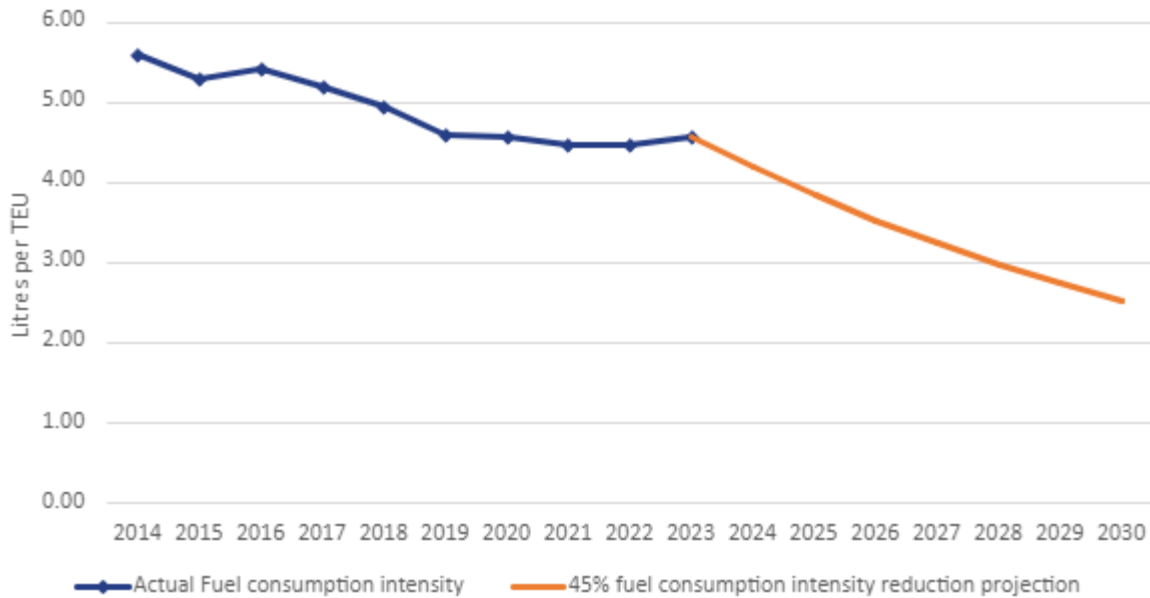
Goal 3: To achieve an average annual reduction in fuel consumed by 3.323% per TEU

Table 2. GCT's fuel intensity per TEU progress

Inventory year	Projected fuel intensity (litres/TEU)	Actual fuel intensity (litres/TEU)	Target annual change in fuel intensity	Actual annual change in fuel intensity
2022	4.1431	4.4649	-3.32%	0.18%
2023	4.3166	4.5570	-3.32%	2.06%

Table 2 shows GCT's actual fuel consumption intensity per TEU in 2023 compared to the target fuel intensity of 3.32% decrease annually. GCT Canada's fuel consumption intensity per TEU increased in 2023 by 2.06% compared to 2022. GCT reported a decrease in the volume of TEUs by 21% and in total litres of fuel consumed by 20% in 2023 which has contributed to a slight change in fuel intensity per TEU.

Figure 3. GCT fuel intensity per TEU projections



GCT's 2023 Emissions Activity by Location

Location Name	Scope	Activity Type	tCO2e	% of Total Inventory
Broadway Tech	Scope 1	Heat	19.31	0.01%
	Scope 2	Electricity	4.44	0.00%
	Scope 3	Other Scope 3	216,565.80	89.69%
	Location Total		216,589.55	89.70%
GCT Deltaport	Scope 1	Equipment	16,281.32	6.74%
		Transporting People - Road	2,125.36	0.88%
	Scope 2	Electricity	371.97	0.15%
	Location Total		18,778.65	7.78%
GCT Franklin St.	Scope 1	Heat	4.72	0.00%
	Scope 2	Electricity	0.37	0.00%
	Location Total		5.09	0.00%
GCT Vanterm	Scope 1	Equipment	4,992.15	2.07%
		Heat	319.01	0.13%
		Transporting People - Road	659.27	0.27%
	Scope 2	Electricity	117.95	0.05%
	Location Total		6,088.37	2.52%
Grand Total			241,461.67	

GCT's Emission Reduction Plan

See a summary of GCT's reduction plan below. For additional information such as a detailed description or estimated implementation and completion dates, please see the Climate Smart software.

Plan Name: GCT Canada Fuel Efficiency and Emissions Reduction Plan			
	Strategy Name	Estimated Impact	Targeted Activity Type(s)
Implemented	Automatic Start-Stop Vehicle Technology	Medium	Equipment, Transport People
Implemented	Electrify Company Vehicles	High	Equipment, Transport People
Implemented	Employee Involvement in Reduction Planning	Low	
Implemented	Equipment Replacement/ Retrofit/ Retirement	High	Equipment, Transport People
Implemented	EV Charging Stations	High	Transport People
Implemented	Idling Policy	High	Equipment, Transport People
Implemented	Internal Waste Training and Education	Medium	Other
Implemented	Light Bulb Changes	Medium	Electricity
Implemented	Modifying third-party contract language to assist with Scope 3 emissions reporting	Medium	Electricity, Heat, Other, Transport Goods
Implemented	Reduce fuel consumption	Medium	Other
Implemented	Remote Work	Medium	Transport People
Implemented	Renewable Diesel	High	Equipment, Transport People
Implemented	Waste Assessment/Audit	Medium	Other
Implemented	Carbon Credit Generation	High	Equipment, Transport People
Implemented	Cost of Carbon	Medium	Equipment, Transport People
Considering	Biodiesel or Biodiesel Blend	High	Equipment, Transport People
Considering	Hybrid Vehicles	High	Transport Goods, Transport People
Considering	Opacity monitoring and management	Medium	Equipment

Methodology

As a Climate Smart certified business, GCT conducted its GHG emissions inventory according to the [Greenhouse Gas Protocol Corporate Accounting](#) and Reporting Standard, Revised Edition. The GHG Protocol is an internationally recognized standard published by the World Resources Institute and the World Business Council on Sustainable Development.

Organizational Boundaries

GCT used the operational control approach to determine its organizational boundary and included in its inventory all operations and facilities over which it has operational control.

Inventory Boundaries

The GHG Protocol requires the inclusion of Scope 1 and 2 emissions, and suggests including Scope 3 emissions from activities relevant to an organization’s business and goals, and for which reliable data can be obtained. GCT included emissions from the following activities under Scopes 1, 2 and 3:

Scope 1: includes direct GHG emissions from sources that are owned or controlled by the reporting company or organization

Equipment > Equipment you own > Heavy

Heat > Generated

Transporting People > Vehicles you own > Road

Scope 2: includes indirect GHG emissions from purchased electricity and purchased heat

Electricity > Purchased

Scope 3: includes indirect GHG emissions that are consequences of the reporting company’s operations but occur at sources owned by another company

Scope 3 Other (Purchased Goods and Services, Capital Goods, Fuel and energy related activities, Upstream transportation and distribution, Waste generated in operations, Business Travel, Employee Commuting, Downstream transportation and distribution, Use of sold products)

Emission Factors

This inventory was conducted using the emissions factors from the Climate Smart web-based greenhouse gas management tool. The Climate Smart GHG management tool was designed for adherence to the GHG Protocol. Climate Smart’s emission factors come from a variety of sources, such as Environment Canada, the GHG Protocol Initiative, the US Environmental Protection Agency and the Intergovernmental Panel on Climate Change. Climate Smart reviews its emission factors annually to update them based on refined industry methodology and changing electricity grids.

Climate Smart also acknowledges that complete adherence to the Protocol requires the seven major greenhouse gases to be accounted for separately, and is working towards adding this feature at a future date. Further details on Climate Smart’s emission factors, their sources, and methodology for updating them are available upon request to info@climatesmartbusiness.com.

Sources of Data Included

GCT used the following sources of data to estimate their greenhouse gas emissions for the 2023 calendar year.

Activity	Data Source
Equipment > Equipment you own > Heavy	The total litres of fuel used by equipment were entered.
Heat > Generated	The total giga-joules of natural gas used were entered based on utility bills.
Transporting People > Vehicles you own > Road	The total litres of fuel used were entered.
Electricity > Purchased	The total kilowatt-hours of electricity used, based on utility bills, were entered into the Climate Smart software tool.
Scope 3 Other	Spend-based methodology developed by IFM and supported by McKinsey.

Recalculation

Climate Smart recommends a recalculation of baseline emissions if a change occurs that would equate to a change equal to or greater than five percent of company's total annual emissions. Situations triggering recalculation include structural changes (e.g., the acquisition or divestment of business units); changes in calculation methodology or improvements in accuracy of emission factors/activity data; or discovery of significant or cumulative errors.

For GCT's 2023 calendar year inventory, no recalculation was required.

Climate Smart GHG accounting experts ensure high integrity at every stage: setting industry-relevant operations boundaries; ensuring data is complete and accurate; updating the GHG accounting software to include the most current available emission factors; and developing a reduction strategy that targets the highest sources of GHG emissions. Further detail is outlined below.

- Clients conduct a materiality assessment with Climate Smart advisors to ensure their GHG inventory captures their highest sources of operational emissions. This process is informed by the GHG Protocol and specific industry insights.
- During the GHG data collection process, clients are supported by Climate Smart advisors to ensure their data is complete and that there is valid supporting documentation.
- The software provides current emission factors based on internationally recognized agencies and relevant for operating locations, for all Scope categories included in the inventory.
- Once all GHG inventory data has been entered, both the software and Climate Smart advisors review all GHG inventory data for outliers - comparing to both previous year inventory data, as well as industry/business activity averages. In case of a drastic increase or decrease in reported emissions, clients are alerted to confirm accuracy, and to make any required corrections.
- The final GHG reduction plan identifies immediate reduction opportunities, and clients work closely with Climate Smart advisors to determine a detailed implementation timeline.

We encourage consistency and transparency of GHG data inventoried in Climate Smart. By using current and accurate emissions factors, and using a conservative approach during the data review process, we support our clients to accurately report their GHG data with a high degree of confidence, aligned with international standards.

Prepared on: July 23, 2024

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