synergy

Annual GHG Inventory

32 LAKES COFFEE ROASTERS

June 1st, 2024 – May 31st, 2025

32 LAKES
COFFEE ROASTERS

What is a GHG Inventory?

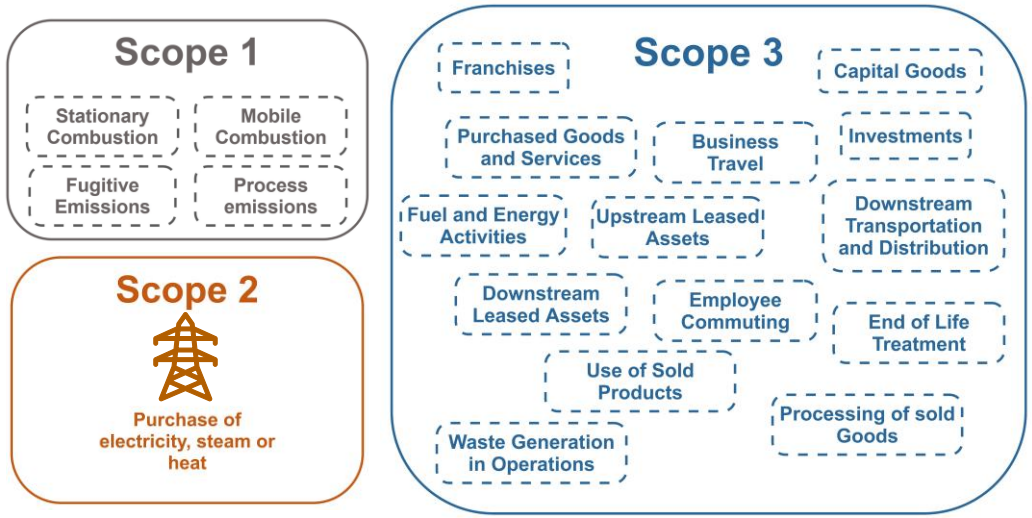
The purpose of a greenhouse gas (GHG) inventory report is to measure 32 Lakes' impact on climate change by measuring GHG emissions produced in company operations. Frequent measurement is essential for identifying key areas where emissions increase or decrease over time, making it possible to develop targeted strategies to curb those emissions. This GHG emissions report details the emissions generated by 32 Lakes throughout the reporting period. Preparing the report involves four key steps:

- **Scoping:** Determining the relevant emission sources that must be measured.
- **Data Collection:** Gathering all the necessary activity data.
- **Calculation and Report Writing:** Converting the activity data into GHG emission figures and compiling the final report.
- **Review:** Discussing the report and validating all assumptions.

Project Steps

Scoping | Data Collection | Calculate & Report | Review

GHG Protocol Scope Examples



In this report emissions are categorized into three scopes, Scope 1, 2, and 3, to reflect 32 Lakes' level of control.

- **Scope 1** covers direct GHG emissions from sources a 32 Lakes owns or controls, such as fuel combustion in its vehicles.
- **Scope 2** covers indirect GHG emissions from purchased electricity or steam.
- **Scope 3** includes all other indirect emissions resulting from 32 Lakes' operations but not from company-owned assets, such as employee commuting or business travel.

While 32 Lakes has the most direct control over Scope 1 emissions and the least over Scope 3, it can still have significant influence over Scope 3 emissions by, for example, lobbying key suppliers to reduce their emissions intensity.

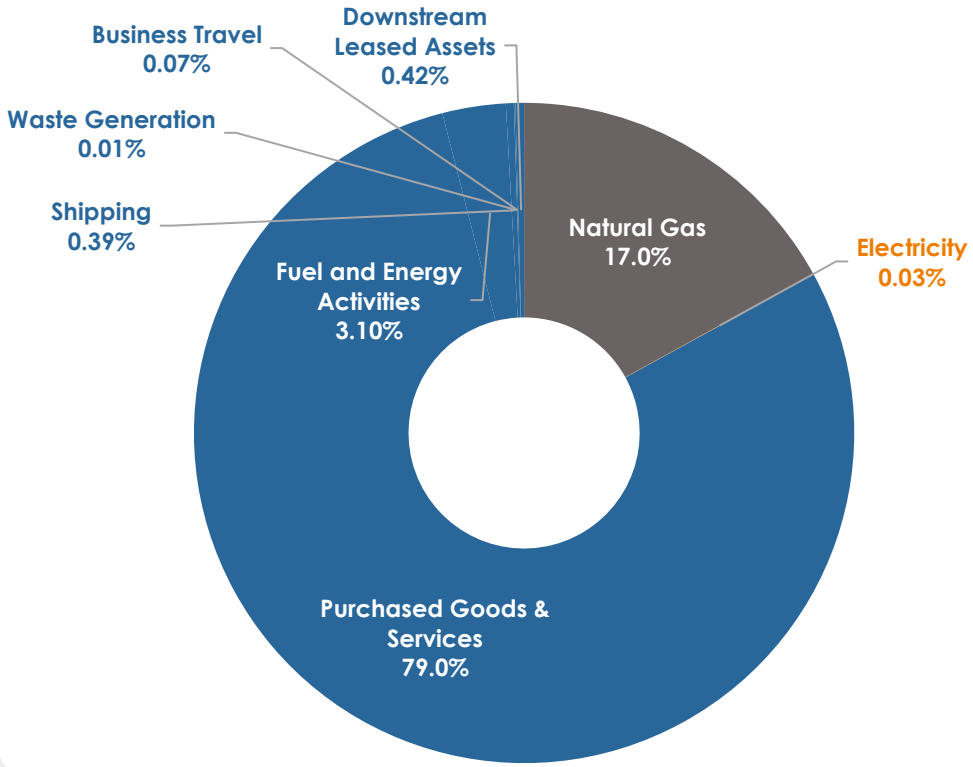
2025 GHG Inventory Results

Executive Summary

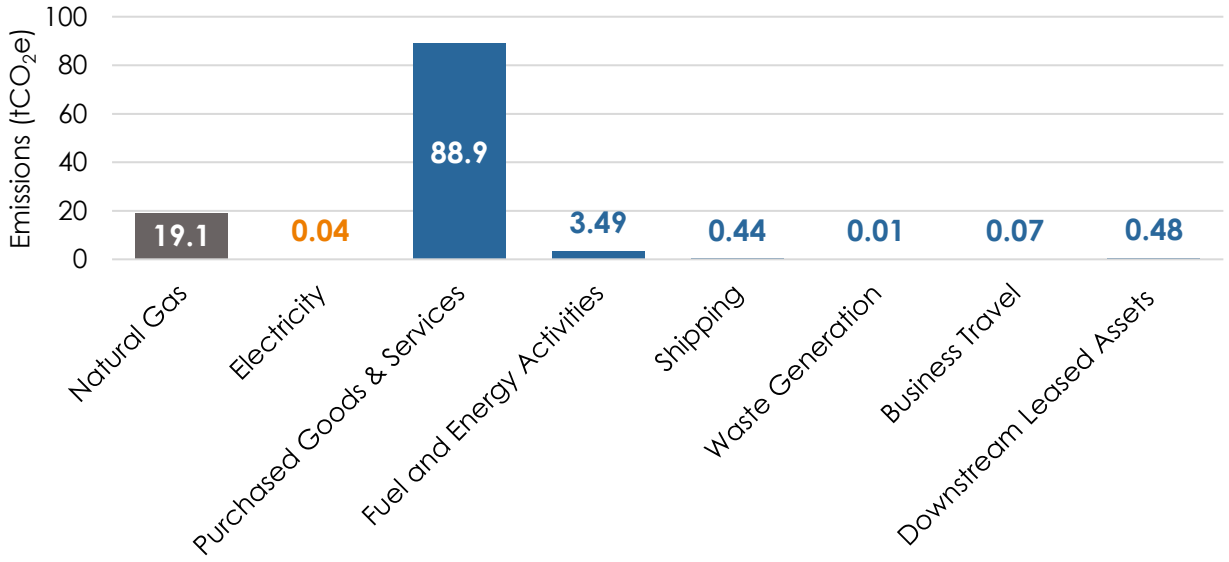
Scope 1: **17%** | Scope 3: **82.97%**

Scope 2: **0.032%** | Biogenic: **N/A**

32 Lakes Coffee Roasters is located in the territories of the Tla'amin Nation in the qathet Regional District of BC. The company is composed of one roasting facility, one company vehicle and are the lessors of a separate building. This report marks the sixth year of measuring and reporting 32 Lakes' emissions, and the second full year of operating in the new facility.



Emissions by Activity



Total emissions for 32 Lakes came to 113 tCO_2e in 2025, with 19.7 tCO_2e produced from operations specific-emissions sources (including natural gas, electricity, shipping, waste, and travel). The emission source with the most notable reduction is purchased goods and services, with a 11.4% decrease from the previous year.

113

Total tCO_2e

12%

% decrease from previous year

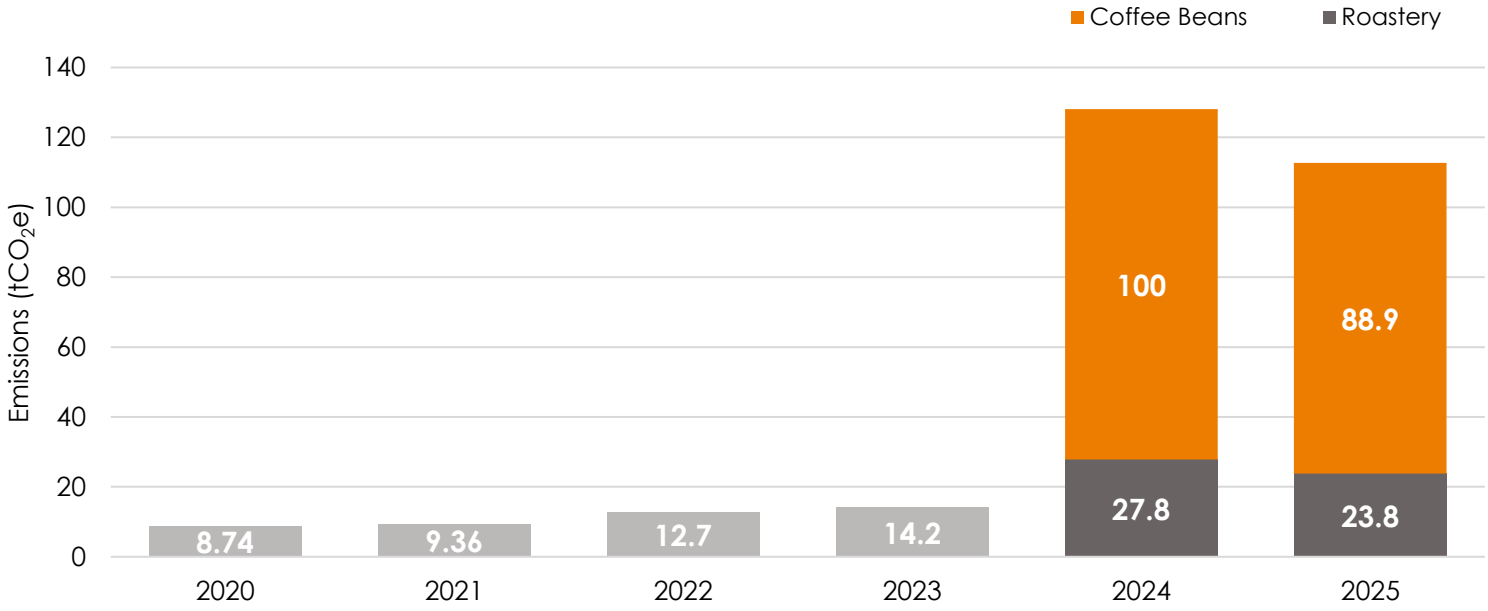
20,879

Lbs of Coffee Beans Purchased

Year Over Year Analysis

2025 marks the second year that coffee beans are included in the inventory, which represents the largest change to year-over-year comparisons for 32 Lakes' footprint. 2025 also marks the second year that 32 Lakes has operated in its new facility, resulting in an increase in natural gas emissions to power day-to-day operations. Overall, emissions have decreased from 2024 by 12%, marking substantial reductions in the footprint of 32 Lakes due to a decrease in the purchase of green coffee beans. All emissions outside of coffee beans (shown as "roastery" in the graph below) also saw a decrease by 14.3%, which contributes to a lower footprint.

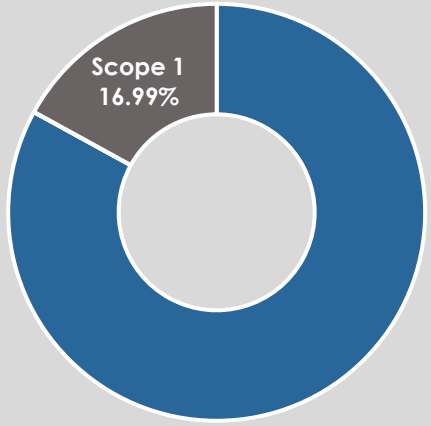
Annual Emissions



- Old Facility -

Coffee beans emissions leads the way in reducing overall emissions, followed by reductions in downstream leased assets (89.2%) and business travel (72.4%).

In 2025, 20,879 lbs of green coffee beans were purchased, with 32 Lakes' total emissions equivalent to 5.39 kgCO2e/ lb of beans. This is a decrease in emissions compared to 2024, which was 5.44 kgCO2e/ lb purchased.



Scope 1: Direct Emissions

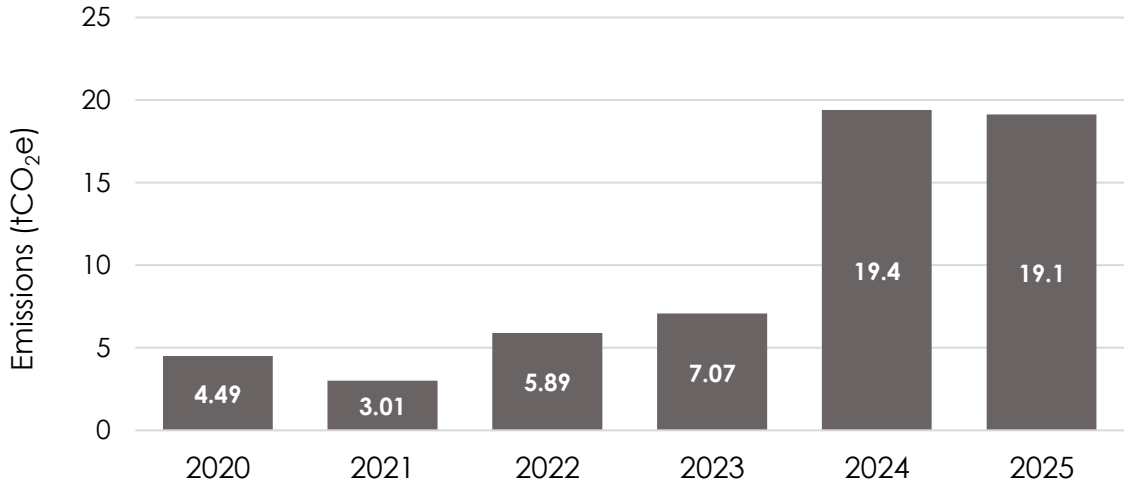
Scope 1 includes direct emissions from combustion, process and fugitive emissions owned or controlled by the company. This includes emission sources such as natural gas, company vehicles, and refrigerants.

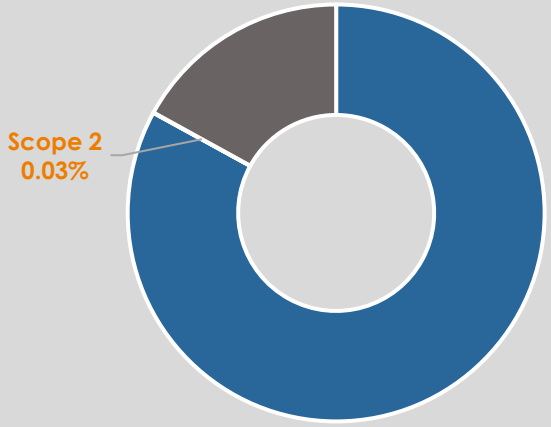
Scope 1: Natural Gas

19.1	17%	Equivalent to 0.92
Total tCO_2e	% of Total	$kgCO_2e$/lb beans purchased

Natural gas consumption slightly decreased in 2025 by 1.44% compared to 2024. This is the second year that natural gas has been used to power equipment that roasts the coffee beans, as well as the use of the afterburner, which is used to reduce smoke and scent while roasting coffee beans. Natural gas is 32 Lakes' only fuel source since they switched to an electric vehicle, eliminating all gasoline usage.

Annual Natural Gas Emissions





Scope 2: Indirect Emissions

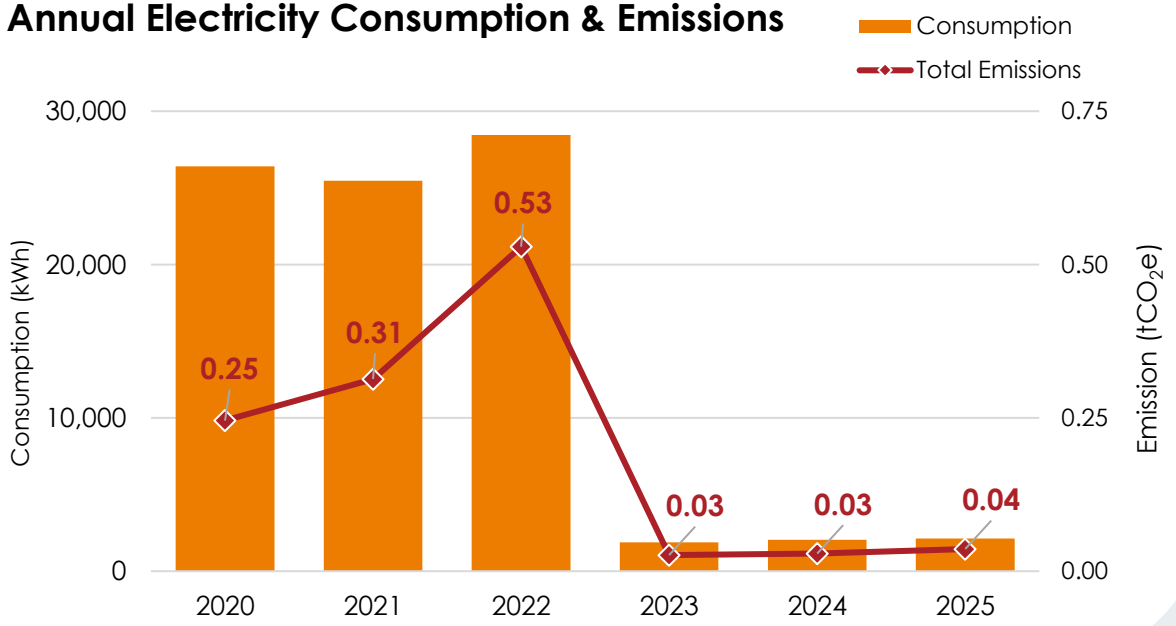
Scope 2 includes indirect emissions from the generation of purchased electricity, steam, or heat at sources not owned or controlled by the reporting company.

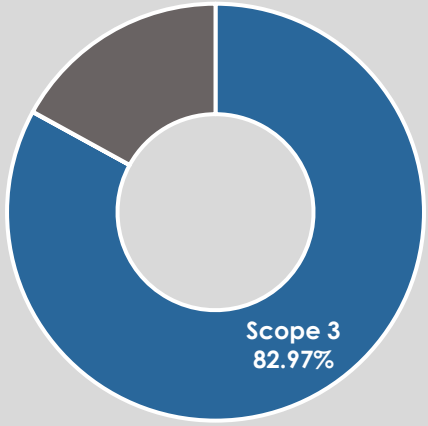
Scope 2: Electricity

0.04	0.03%
Total tCO_2e	**% of Total**

Electricity consumption is a small portion of 32 lakes' footprint, with emissions totaling to 0.04 tCO_2e. The 2025 electricity consumption is consistent with the previous two years[1]. The kWh consumed (2,127) is a slight increase from 2024, at 3.53% more from 2024.

Annual Electricity Consumption & Emissions





Scope 3: Indirect Emissions

Scope 3 includes all remaining indirect emissions generated through business operations. This includes emission sources such as business travel, commuting, and purchased goods & services.

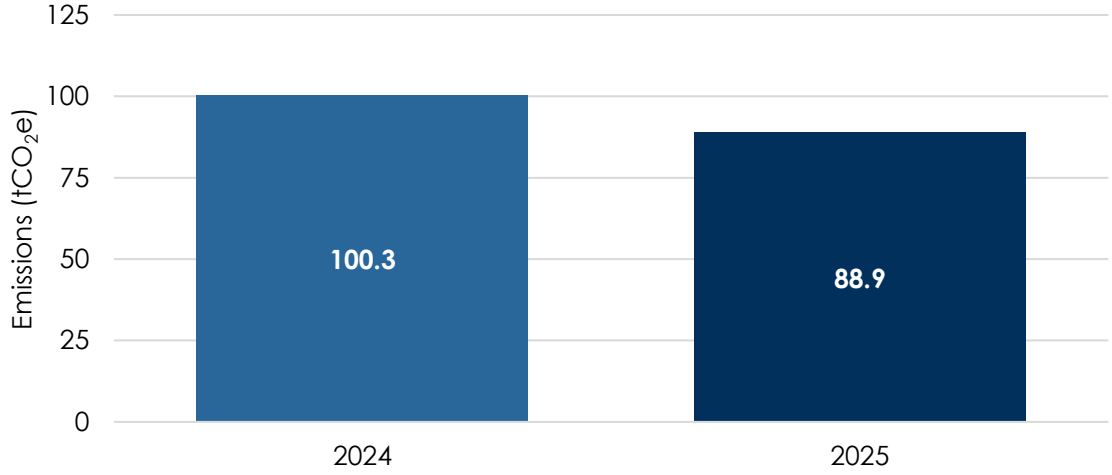
Scope 3: Purchased Goods & Services

88.9
Total tCO_2e

79.0%
% of Total

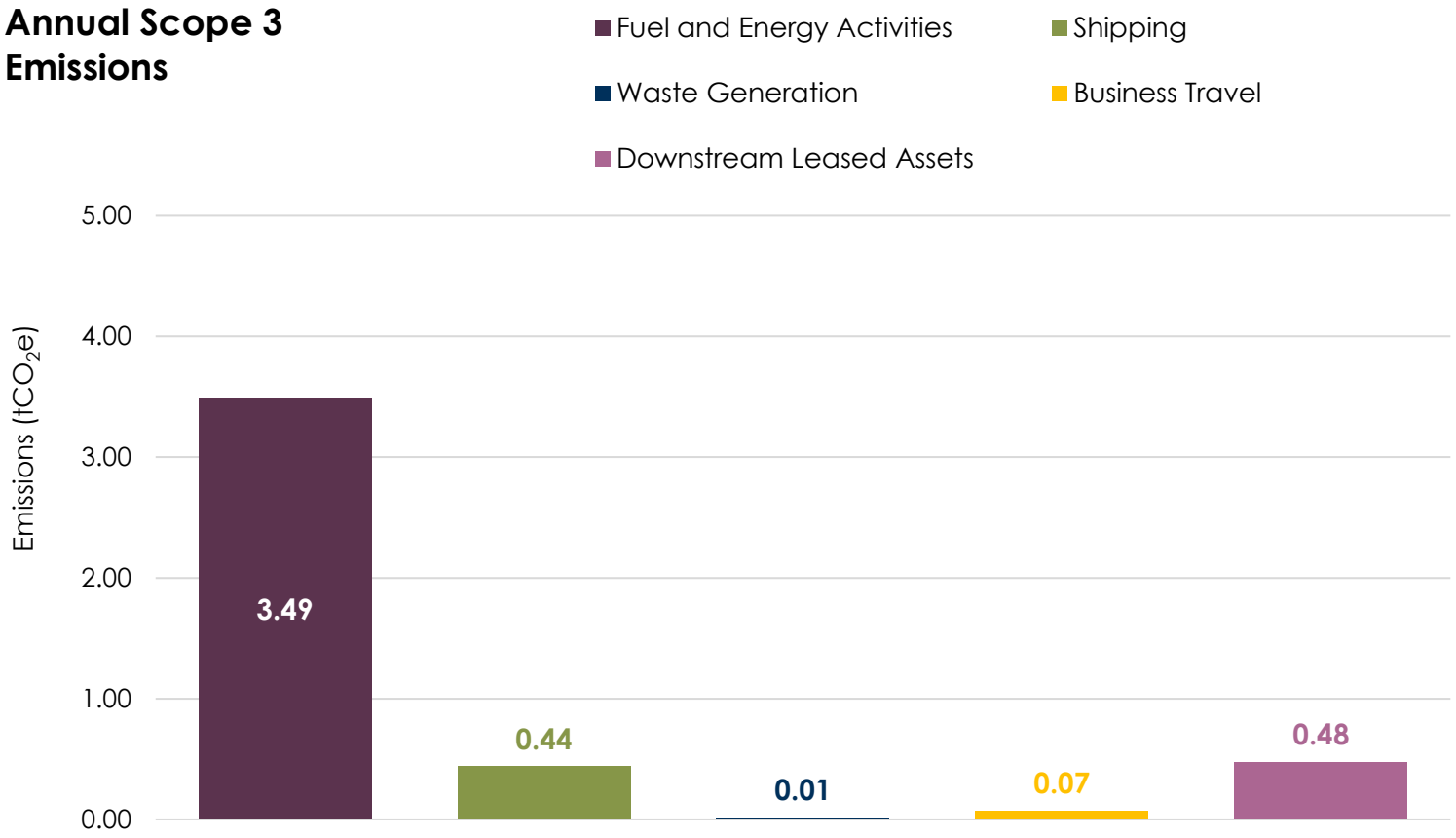
The 2025 inventory is the second year that includes coffee bean procurement for 32 Lakes' operations. This inclusion is critical, as coffee for retail and brewing represents 79.0% of the total footprint. Coffee emissions are particularly high due to the emissions associated with growing, processing, packaging and ultimately transporting coffee beans, as the calculation used to evaluate emissions from coffee beans considers the whole lifecycle of the product. Emissions decreased by 11.4% in 2025, coinciding with approximating 3,000 lbs. less purchased.

Annual Emissions from Coffee Bean Purchasing



Scope 3: Other Categories

Annual Scope 3 Emissions



4.48
Total tCO_2e

3.1%
% of Total

The inclusion of purchased coffee beans resulted in a significant increase in scope 3 emissions, resulting in total emissions no longer being comparable to previous years. However, travel, waste, downstream shipping, and downstream leased assets emissions remain comparable with 2024 results.

In 2025, emissions from the remaining scope 3 categories accounted for 3.10% of the total footprint. The largest category is fuel and energy activities, which includes the upstream emissions impact from the consumption of fuel and electricity. All fuel and energy activity emissions are proportional to the consumption of fuels and electricity.

The second highest category, as shown in the graph, is downstream leased assets, which includes electricity use from the café owned by 32 Lakes[2]. This is the first year that natural gas is not measured within this category. Lastly, shipping emissions increased from the previous year, due to increased activity, but only accounts for 0.39% of the inventory.

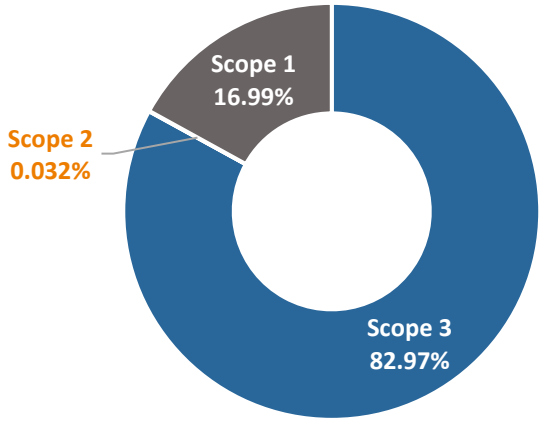
Conclusion

This reports represents 32 Lakes' first full year of operations at the new roasting facility. Previous inventories are included for reference but are not directly comparable due to the new inclusion of coffee bean purchases in 2024, which represents the second year of the new scope. The major decrease in emissions is coffee beans, which decreased by 11.4%. Other reductions include downstream leased assets from the removal of natural gas, and business travel as no flights were taken within the reporting period.

Maintaining its commitment to sustainability, 32 Lakes prioritized low-emission production during the relocation. With the expanded scope and this initial full-year data, 2025 serves as the first year in which emissions can be compared to the new base year, 2024, for future comparisons.

Key Takeaways:

- Coffee beans remain the largest category in the inventory for the second consecutive year
- Emissions from the café space decreased, as natural gas is no longer used



Priority Areas for Decarbonization:

- Continuing to prioritize the electrification of operations where possible will decrease emissions in scope 1 and scope 2
- Continuing to use low-emissions shipping providers, such as Geazone, will enable further reductions in shipping

Appendices

Inventory Information

Company Name: 32 Lakes Coffee Roastery
Contact: Margot Jantz, margot@32lakes.com

Company Description: located in the territories of the Tla'amin Nation in the qathet Regional District of BC, with a roastery and company vehicle.
Reporting Period: June 1, 2024, to May 31, 2025

Scope 2 Approach: Location based Emissions Calculations

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_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)*.

16.99%

Scope 1	tCO_2e	% of total
Natural Gas	19.1	16.99%
TOTAL:	**19.1**	**16.99%**

0.03%

Scope 2	tCO_2e	% of total
Purchased Electricity (BC Hydro)	0.04	0.03%
TOTAL:	**0.04**	**0.03%**

82.97%

Scope 3	tCO_2e	% of total
Purchased Goods & Services (Coffee Beans)	88.9	79.0%
Fuel and Energy Activities (WTT and T&D)	3.49	3.10%
Upstream Shipping	0.44	0.39%
Waste (Landfill, recycling, compost)	0.01	0.01%
Business Travel (ferries)	0.07	0.07%
Downstream Leased Assets	0.48	0.42%
TOTAL:	**93.4**	**82.97%**

Measurement Methodology

This report was put together as a collaborative effort by Synergy Enterprises and 32 Lakes. Synergy Enterprises is responsible for managing the project, conducting a thorough scoping assessment of 32 Lakes's emission sources, supporting data collection by flagging any issues or risks, calculating emissions and producing a GHG inventory report in accordance with the GHG protocol. 32 Lakes is responsible for providing comprehensive understanding of the company's activity and providing accurate data on activity within the reporting period. As a collaboration it is the responsibility of both parties to set the inventory boundaries, scope the GHG inventory and validate the final report.

Greenhouse gas (GHG) emissions are measured in carbon dioxide equivalent (CO_2e), which represents the amount of carbon dioxide (CO_2) that would produce a similar level of global warming as other GHGs. This is calculated using Global Warming Potentials (GWPs) from the Intergovernmental Panel on Climate Change (IPCC) to convert emissions of non-CO_2 GHGs, such as methane (CH_4) and nitrous oxide (N_2O), into a CO_2 equivalent. The inventory uses the latest 100-year GWPs from the IPCC's Sixth Assessment Report.

As recommended by the Protocol, companies should use the most accurate method available to them for reporting emissions. For 32 Lakes, activity data is the most readily available data. As such, emissions factors support the measurement of all GHG emissions calculated in the report. Provided below are example calculations for the fuel emissions from the consumption of gasoline.

Activity Data (Total Spent on Gasoline) x **Activity Data Conversion (Cost of gasoline per litre)** x **Emissions Factor (tCO_2e / litre of gasoline)** = **GHG Emissions (tCO_2e)**

Greenhouse gas global warming potentials (GWP)

Scientific Name	Molecular Formula	Global Warming Potential
Carbon Dioxide	CO_2	1
Methane	CH_4	27.9
Nitrous Oxide	N_2O	273

This inventory uses publicly available emissions factors (EFs) to calculate GHG emissions. EFs convert activity data (e.g., fuel consumption, electricity usage) into a corresponding mass of CO_2e emissions. All EFs are sourced from reputable, up-to-date publications. If an EF is not in CO_2e, it is converted using Global Warming Potentials. A unit conversion may also be necessary to ensure the activity data and EF units are consistent.

32 Lakes' 2025 Emissions by Gas:

113 Total tCO_2

0.09 Total N_2O

0.01 Total CH_4

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.

Data Quality Assessment

Synergy assesses data risk based on three key categories. The data received for each emissions source measured is assessed and systematically allocated a risk category based on how it scores in each of the three variables.

Data Quality: Using the suggested structure from the GHG protocol we assess the quality of data based on technology, timeliness, geography, and reliability. Each of these categories are rated from poor to very good, the combination of these all result in the data quality ranking.

Data Uncertainty: This category measures the percentage of estimated emissions in the emissions category. This metric is reported independently to increase transparency, while other uncertainty factors such as data collection methods, reporting inconsistencies, sampling bias, and seasonal variation are assessed under the Data Quality category.

Percentage of Footprint: The percentage of this emissions category of the entire footprint is represented to show the scale of impact that the data quality ranking has on the emissions as a whole.

Low Risk: Data received is good and does not need to be improved in future years. This data type does not pose a notable risk to the accuracy of the total GHG emissions.

Medium Risk: Data received is adequate, it poses a likelihood of inaccuracy in the final GHG value of this category and could be improved in future years.

High Risk: Data received has flaws and poses a high likelihood of inaccuracy in the total GHG inventory presented. In future years, there should be a focus on improving this data.

Emissions Source	Data Quality	% of Footprint	Risk Level
Natural Gas	6.2	16.99%	Low
Electricity	6.7	0.03%	Low
Purchased Goods & Services	6.6	79.0%	Low
Upstream Transportation and Distribution	6.29	0.39%	Low
Waste Generation in Operations	6.8	0.01%	Low
Travel	6	0.07%	Low
Downstream Leased Assets	6.6	0.42%	Low

Inventory Uncertainty

This section details data gaps and estimates made that could affect the quality of the data and overall footprint. It is important to consider these notes when assessing the total footprint, as low data quality and estimates can change the outcome of the emissions totals. Each footnote is referenced by number in the emissions source it affects.

Footnotes

#	Note
1	Financial data was provided in place of activity data for electricity, leading to an estimate being calculated based on the general service rate energy cost.
2	2024 data was used to calculate electricity data at the café location.

Emission Factor References & Glossary

1. 2024 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions
2024 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions

2. Environment Canada's National Inventory Report (1990-2021); Part 2 & 3.
https://publications.gc.ca/collections/collection_2023/eccc/En81-4-2021-2-eng.pdf
https://publications.gc.ca/collections/collection_2023/eccc/En81-4-2021-3-eng.pdf

3. Department for Environment, Food & Rural Affairs (UK) Carbon Factors 2023
https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023

4. Intergovernmental Panel on Climate Change (Global Warming Potentials)
https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf

5. UK WRAP Emissions Factor Database V1 .2 (2023)
https://www.wrap.ngo/resources/guide/scope-3-ghg-measurement-and-reporting-protocols-food-and-drink

6. Supply Chain GHG Emission Factors for US Commodities and Industries v1.1
https://catalog.data.gov/dataset/supply-chain-ghg-emission-factors-for-us-commodities-and-industries-v1-1

Term	Description
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
WTT	Well to Tank: Upstream emissions from extraction, processing and transport of fuel.
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

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