

2022 Annual Sustainability Report



32 LAKES
COFFEE ROASTERS

32 Lakes Coffee Roasters

June 1, 2021 to May 31, 2022

| | |
|--------------|--|
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| Completed | 15/3/2023 |

synergy 

Executive Summary

32 Lakes is located in the territories of the TLA'AMIN Nation in the qathlet Regional District of BC. The company is composed of one roasting facility, one company vehicle and a building they own but leased to a café. This marks their third year of measuring, reporting and offsetting their emissions. In 2022 32 Lakes emissions came to 12.7 tCO₂e, with natural gas as the top emission source and fuel use being the second highest emissions source accounting for 46% and 37% of the carbon footprint respectively. Activity at 32 Lakes is growing, with a 44% increase in batches of beans roasted and additional retailers in 2022. This increased activity has resulted in an 36% increase in emissions from 2021. Despite this increase in emissions, 32 Lakes is very attentive to their environmental impact and continues to have a small carbon footprint.

32 Lakes has included emissions from the space they lease to the café. As landlords, 32 Lakes is voluntarily taking ownership over the electricity and natural gas usage as part of their scope 1 and 2 emissions.

Inventory Information

| | | | |
|------------------------|---|--------------------|--|
| Company Name | 32 Lakes Coffee Roasters | | |
| Contact Information | Margot Jantz | margot@32lakes.com | |
| Company Description | Roastery (leased), Café building (owned, but leased to the café business), 1 company vehicle | | |
| Reporting Period | June 1, 2021 to May 31, 2022 | | |
| Inventory Boundary | Scope 1 (Direct Emissions) - Natural Gas (Roastery and Café building), Gasoline. | | |
| | Scope 2 (Indirect Emissions from Purchased Electricity) - Purchased Electricity (Roastery and Café building) | | |
| | Scope 3 (Indirect Emissions from Other Sources) - Waste, Stationery, Company Travel, Shipping. | | |
| 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 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

Total
tCO₂e

12.7

Offset
Cost

\$364

These
emissions
are
equivalent
to:



3.4

Cars per Year



40.1

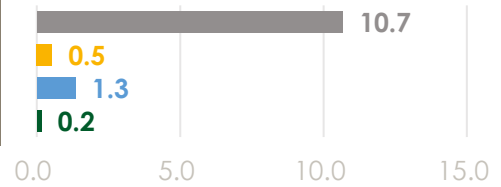
Barrels of Oil

Reduction
Target

32 Lakes commits to
**reduce emissions 28% by
2024**, compared to their
2020 baseline.

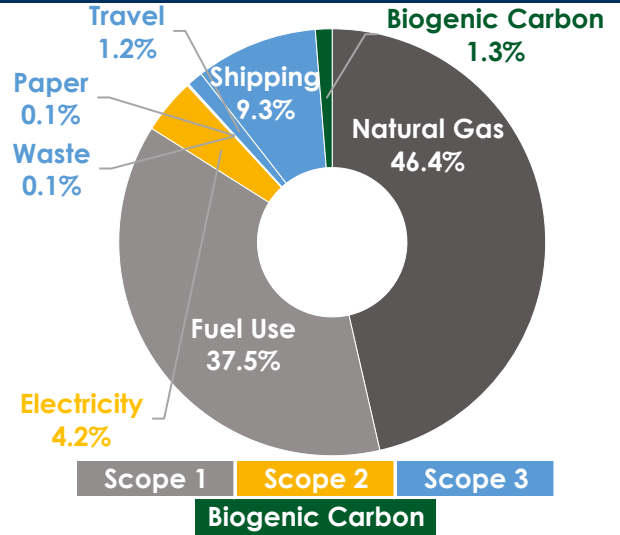
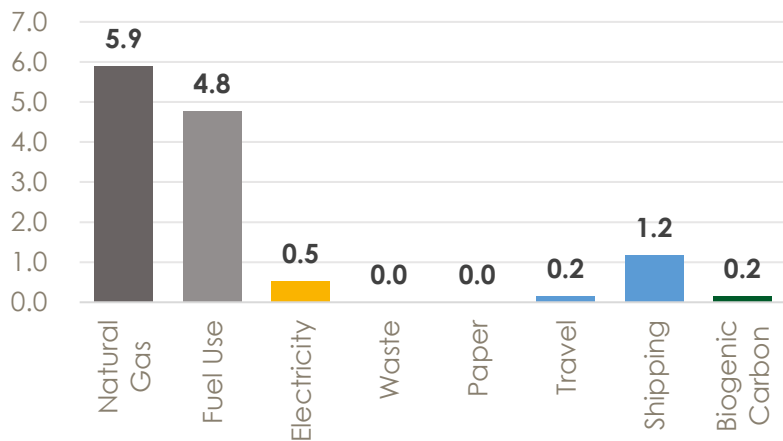
Carbon Footprint by Scope

| | tCO ₂ e | |
|------------------------|--------------------|------------------------|
| Scope 1 (Direct) | 10.7 | 84.0% of annual total. |
| Scope 2 (Indirect) | 0.5 | 4.2% of annual total. |
| Scope 3 (Indirect) | 1.3 | 10.6% of annual total. |
| Biogenic Carbon | 0.2 | 1.3% of annual total. |
| TOTAL EMISSIONS | 12.7 | |



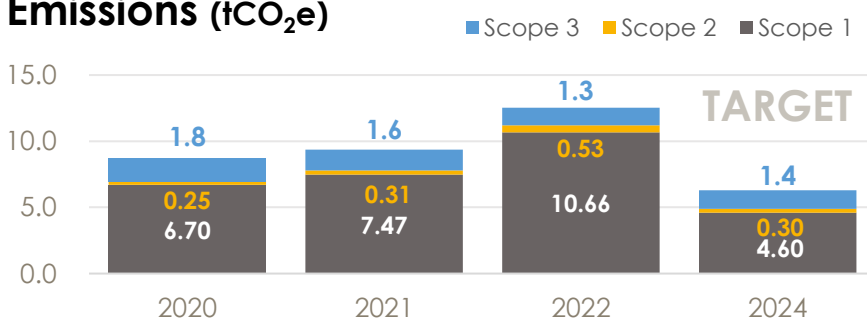
Carbon Footprint By Activity

Emissions by Activity (tCO₂e)



Carbon Footprint Year Over Year

Emissions (tCO₂e)



| | Combined tCO ₂ e | Change since Baseline | |
|-------------|-----------------------------|-----------------------|---------|
| | | tCO ₂ e | Percent |
| 2020 | 8.7 | | |
| 2021 | 9.4 | -0.6 | 7% |
| 2022 | 12.7 | -4.0 | 45% |
| 2024 | | | |
| 2024 | 6.3 | 2.44 | -28% |

Industry Benchmarks

32 Lakes Coffee Roasters

12.7

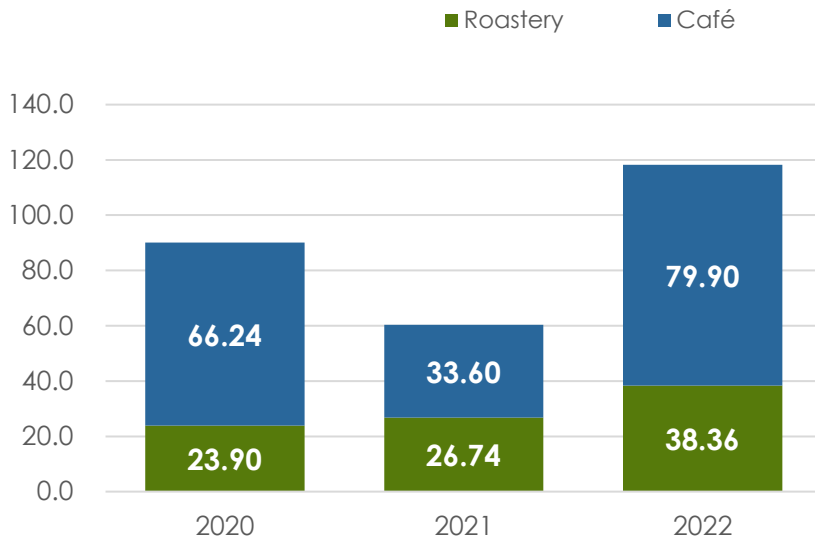
Industry Average*

35

*Industry Average from the Victoria Business Energy & Emissions Profile: Food Services with 6-25 staff

Natural Gas

Natural Gas (GJ)



Analysis

Natural Gas is used to power the roaster at 32 Lakes, and is used by the café for baking. This is the second largest emissions source accounting for 46% of the total footprint.

Both the cafe and roastery increased natural gas consumption since 2021. For the roastery, 2022 saw a 44% increase in natural gas consumption and emissions. This is due to a 43% increase in the volume of beans roasted. As the business sells more beans, the use of the roaster and natural gas consumption increases at the same pace.

tCO₂e **5.9**

% of Total **46%**

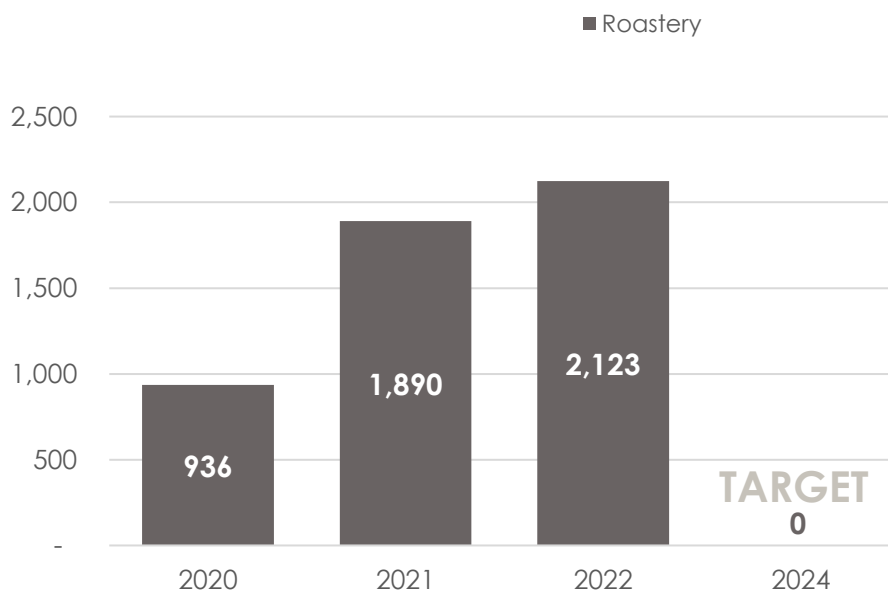
Change since FY 2021 **96%**



Houses **1.3**

Gasoline

Gasoline (L)



Analysis

Gasoline consumption has increased by 7% since 2021.

Gasoline is used in the company vehicle for travel and distribution of beans. The increase in gasoline is likely due to more driving required for distribution to new suppliers in 2022.

A new EV was purchased in May 2022, replacing the gasoline-powered company vehicle. Therefore this emission source is expected to reduce to zero in future years.

tCO₂e **4.8**

% of Total **38%**

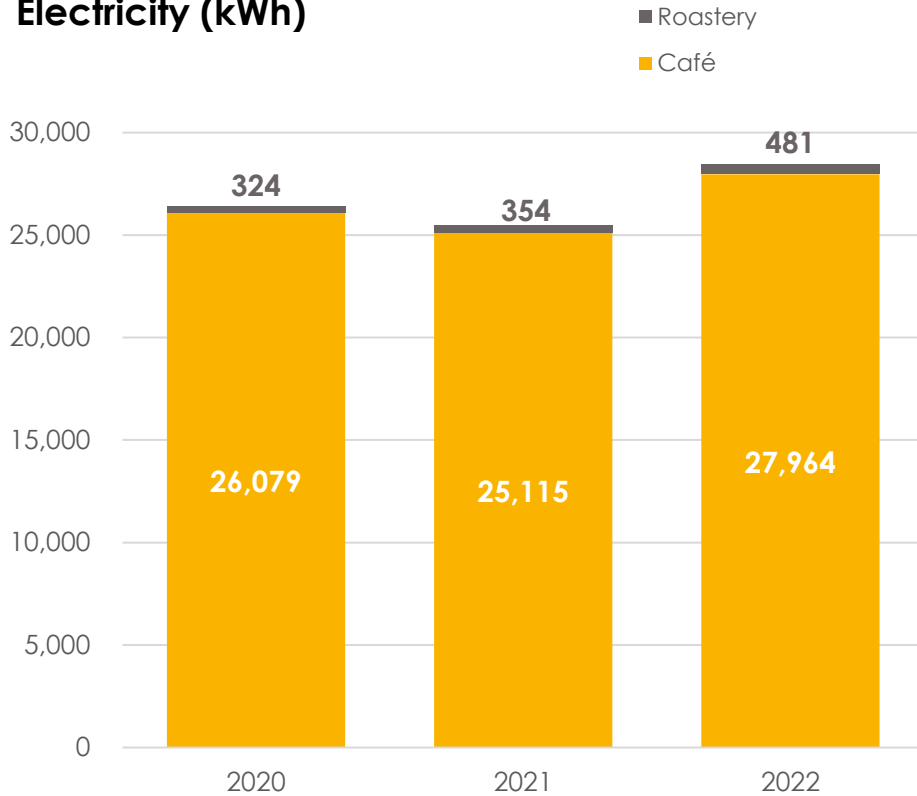
Change since FY 2021 **12%**



Cars / Year **1.3**

Electricity

Electricity (kWh)



Analysis

Electricity is primarily used at the café, with a small amount being used for lighting and equipment at the roastery.

Electricity consumption at the café and roastery combined has increased 11%. The emissions have increased by 69% from 2021. Higher emissions is due to increased consumption and a 55% increase in the electricity emissions factor since 2020, increasing the tCO₂e per kWh. The emissions factor reflects the electricity generation mix feeding BC's grid.

tCO₂e **0.5**

% of Total **4%**

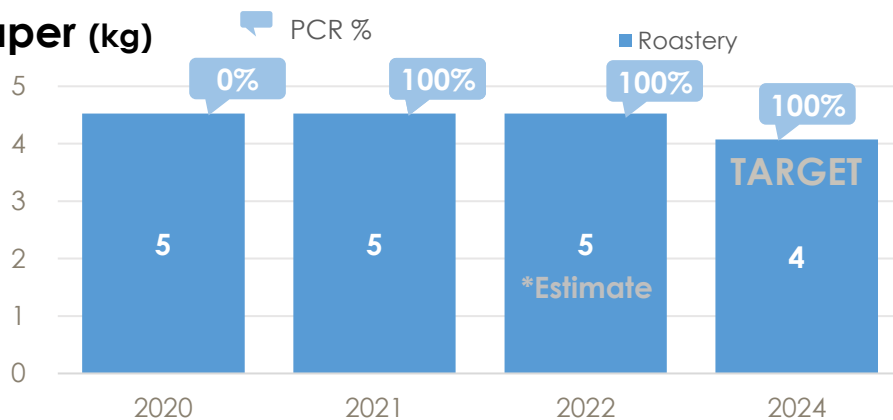
Change since FY 2021 **12%**



Houses **3**

Paper

Paper (kg)



Analysis

Paper is 32 Lakes smallest emissions source. They have been using 100% post consumer recycled content paper since 2021 and continue to keep paper consumption minimal. Well done!

Note: Paper consumption was estimated to be consistent with 2021 due to lack of data in 2022.

tCO₂e **0.01**

% of Total **0.1%**



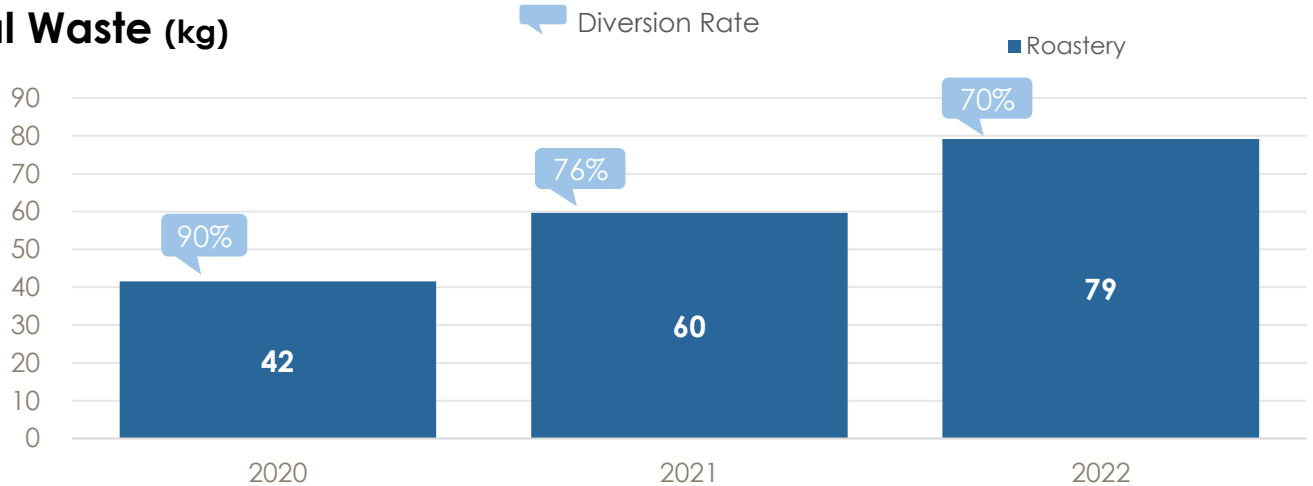
Trees / Year **0**



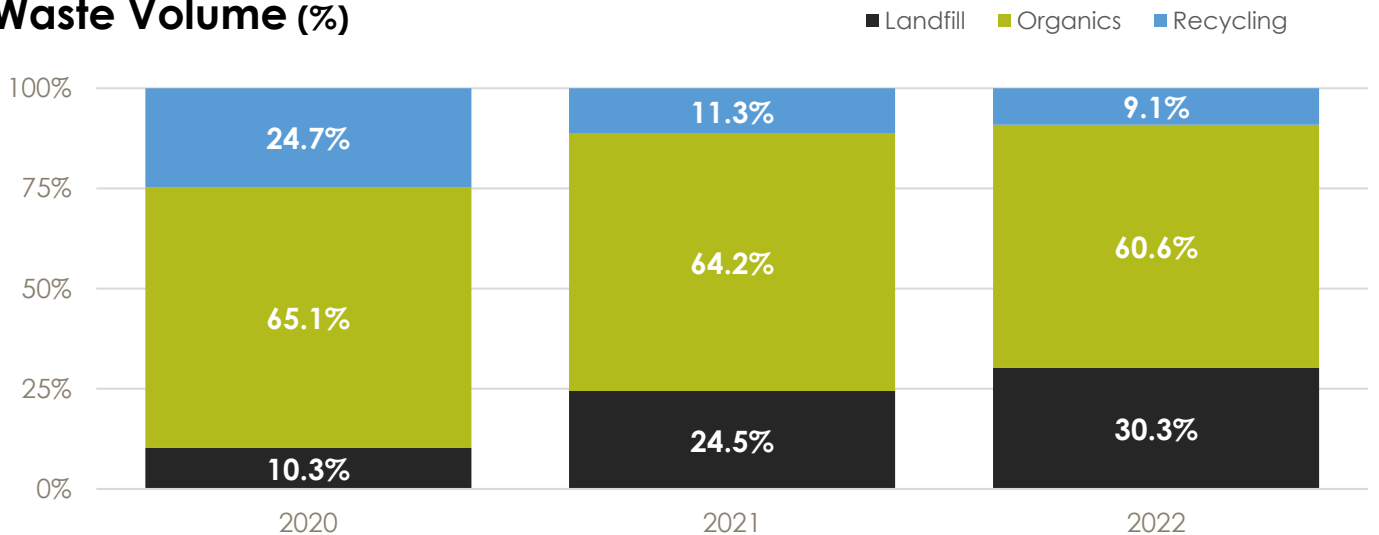
Avg. PCR% **100%**

Waste

Total Waste (kg)



Waste Volume (%)



Analysis

32 Lakes generated 79 kg of waste in 2022, accounting for 0.1% of their carbon footprint. The volume of waste has increased by 32% and the diversion rate has decreased 6% in 2022 from 2021. There was a 9kg increase in landfill waste, a 10kg increase in compost and a 0.4kg increase in recycling. The compost is largely made up of chaff from the roasting process and is composted locally in home gardens. The main source for landfill waste is sticker backs from the labelling of coffee bags, which is expected to increase with the growth of the business.

32 Lakes is motivated to further reduce waste production through their sold products and is interested in finding low waste alternatives for coffee bean packaging. We suggest investigating the feasibility of unique solutions to packaging such as paper based cartons and reusable containers for wholesale customers.

tCO₂e **0.01**

% of Total **0.1%**

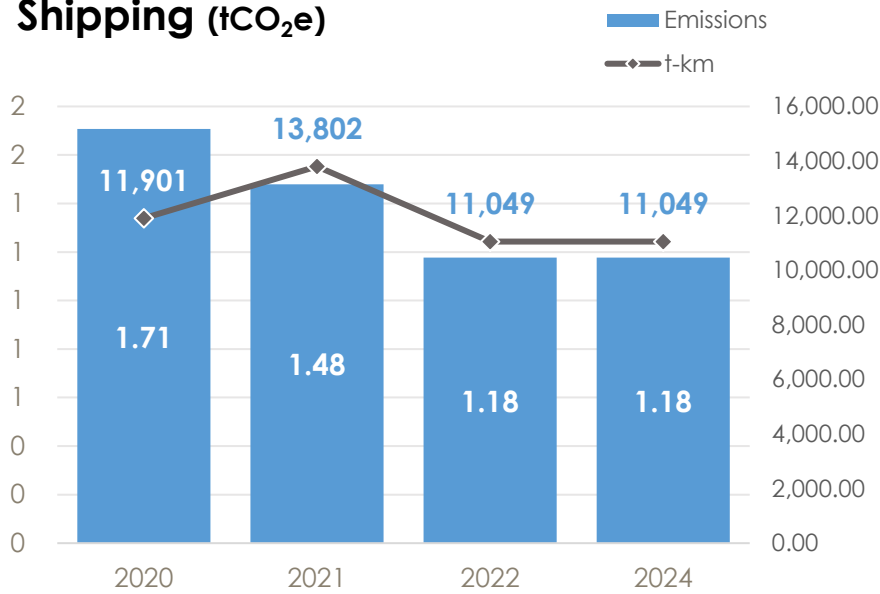
kg / Day **0.22**



Diversion Rate **70%**

Shipping

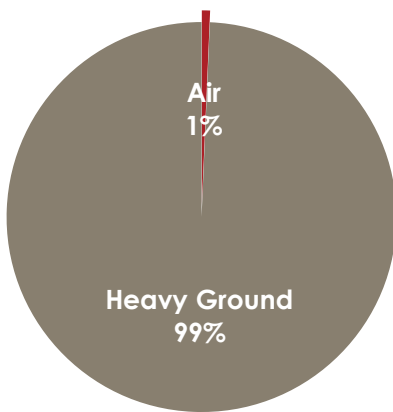
Shipping (tCO₂e)



Analysis

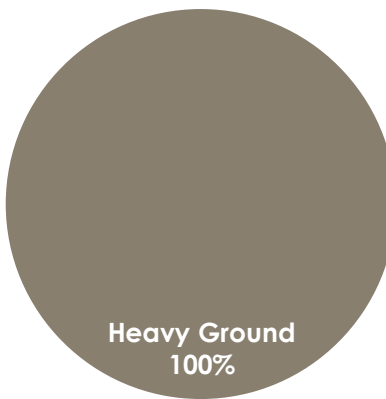
In 2022 there was a 20% decrease in shipping emissions. This is due to a 21% decrease in kg of green beans being shipped from California to the storage space in the lower mainland compared to 2021. Instead, a higher proportion of green beans were purchased from distributors located in the lower mainland in comparison to previous years. This led to a shorter shipping distance overall, reducing the carbon impact of green bean shipping.

Shipping by Tonne-Kilometers (%)



Previous year (2021)

| | |
|----------------------------------|-------|
| Average kgCO ₂ e/t-km | 0.107 |
| Low-Emissions Shipping % | 99% |



Current year (2022)

| | |
|----------------------------------|-------|
| Average kgCO ₂ e/t-km | 0.107 |
| Low-Emissions Shipping % | 100% |

Analysis (Breakdown)

32 Lakes' shipping activity includes transporting green beans from suppliers to their facilities and shipping products directly to customers through e-commerce.

As e-commerce grows for the business, 32 Lakes should continue to favour ground shipment over air to minimize carbon emissions. This could be coupled with educational information on the website about the carbon impact of shipping products. For local shipping, consider working with a zero-emissions delivery service like GeaZone, that uses EV vehicles or bike couriers where possible. These actions can keep shipping emissions low as the business continues to grow.

tCO₂e

1.2

% of Total

9.3%

Change since FY 2021

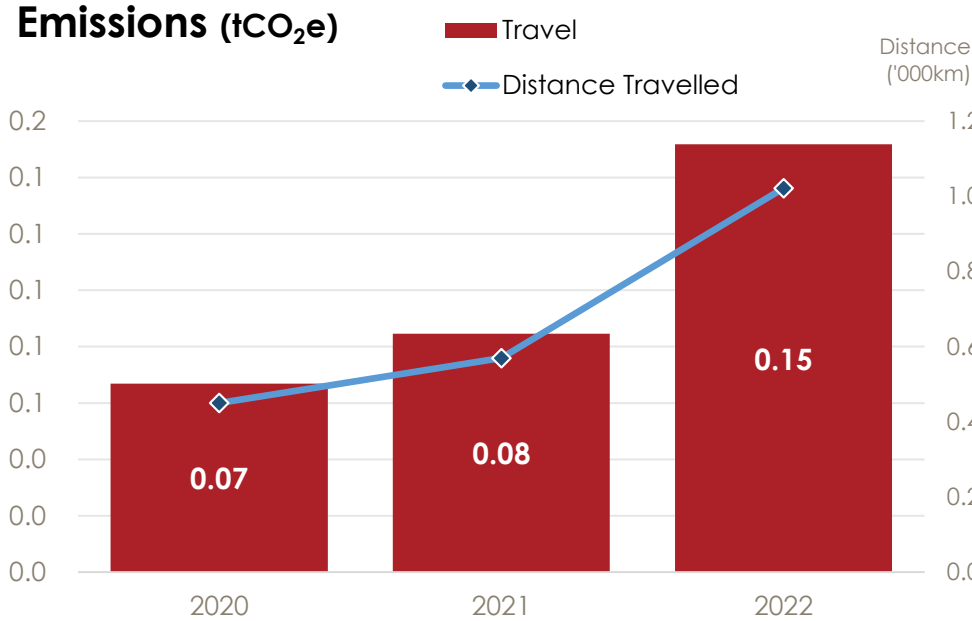
-20%

kgCO₂e / t-km

0.107

Travel

Emissions (tCO₂e)



Analysis

The majority of business travel emissions are captured in scope 1 in fuel use from the company vehicle. The travel emissions calculated in scope 3 are from ferry trips. This travel accounted for 1.2% of the total footprint.

54% more trips were made in 2022 leading to a 79% increase in emissions. Ferries are a low-emissions method of transport and a great way to travel around the BC coast and Vancouver Island.

tCO₂e **0.2**

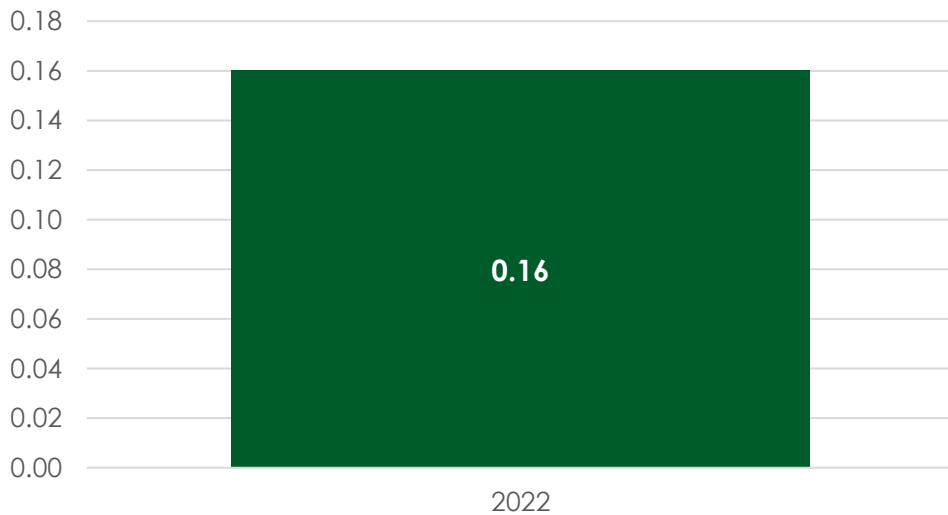
% of Total **1.2%**

kgCO₂e / km **0.149**

 **0.04**
Cars / Year

Biogenic CO₂

Biogenic Emissions (tCO₂)



Analysis

Biogenic emissions come from 32 Lakes consumption of gasoline. In Canada, gasoline has a minimum of 5% ethanol content, which is a biofuel.

Biofuels have biogenic emissions which refers to emissions that come from natural sources that already existed in the carbon cycle and are being re-emitted through the combustion of biofuel.

Bio-tCO₂ **0.2**

% of Total **1.3%**

 **0.005**
Houses

 **0.04**
Cars / Year

Carbon Reduction Strategy

2022 is the third consecutive year that 32 Lakes has measured and reported their carbon emissions. Business activities measured for 2022 include natural gas, fuel, electricity, paper, waste generation, business travel, and shipping. The total emissions came to 12.7 tCO₂e.

The largest emissions source is natural gas at 5.9 tCO₂e, accounting for 46% of emissions. Consumption of natural gas is directly linked to the volume of beans roasted. While the business continues to grow, 32 Lakes can mitigate this emissions source from growing by switching to an electric roaster, such as the Bellwether.

Fuel use is the second highest emissions source, at 4.8 tCO₂e or 38% of the total carbon footprint. 32 Lakes has already taken action to reduce this emissions source by replacing their gasoline vehicle with an EV in May 2022.

The emissions profile of 32 Lakes is expected to change significantly in future years because the roastery is moving to a new location for FY 2023. The larger facility will likely lead to an increase in energy consumption for heating and equipment, especially with more beans being roasted.

Achievements

- Third year measuring, reporting and offsetting company emissions.
- Purchased an EV for company use
- Reduced shipping emissions by moving away from air shipping.
- less than 1 tCO₂e emitted from waste operations
- 100% PCR stationary purchased

Moving Forward

- Consider switching to an electric bean roaster. See the Bellwether Coffee electric roaster as an example.
- Look into alternative packaging solutions for coffee beans made from paper based products to avoid issues with compostable packaging regulations.
- When acquiring new equipment for the roastery look for energy efficient models certified by EnergyStar.

Information on Inventory Uncertainty

* Electricity and natural gas consumption at the roastery were estimated based on appliance and lighting load as the leased space is not separately metered.

Emissions References

1. 2020 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions
<https://www2.gov.bc.ca/assets/gov/environment/climate-change/cng/methodology/2018-psomethodology>.

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 |
|--------------------|--|
| CFL | Compact Fluorescent Light |
| GHG | Greenhouse Gas (emissions): Atmospheric gasses 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: a combined term capturing the emissions from various GHGs. |
| t-km | Tonne-kilometer: A unit of measurement used in shipping |

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