



# Annual GHG Inventory Ziptrek Ecotours

January 1<sup>st</sup>, 2024 – December 31<sup>st</sup>, 2024



# What is a GHG Inventory?

The purpose of a greenhouse gas (GHG) inventory report is to measure Ziptrek Ecotours' 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 Ziptrek Ecotours 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.

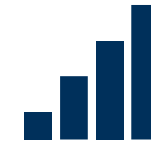
## Project Steps



Scoping



Data Collection

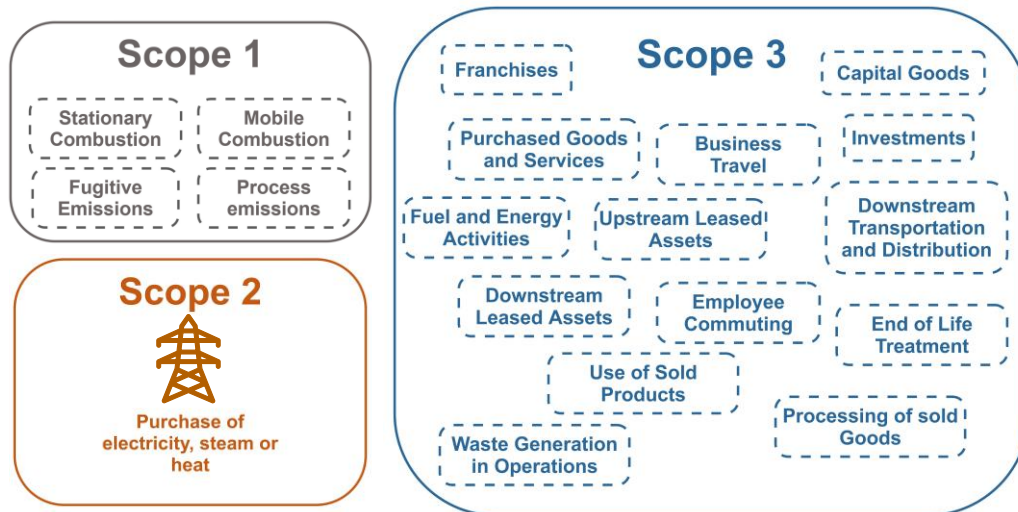


Calculate & Report



Review

## GHG Protocol Scope Examples



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

- **Scope 1** covers direct GHG emissions from sources Ziptrek Ecotours 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 Ziptrek Ecotours' operations but not from company-owned assets, such as employee commuting or business travel.

While Ziptrek Ecotours 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.

An aerial photograph of a beach with waves crashing onto the shore. The water is a mix of light and dark blue, with white foam from the waves. The sand is a light tan color. The text "2024 GHG Inventory Results" is overlaid in the center in a dark blue font.

# 2024 GHG Inventory Results

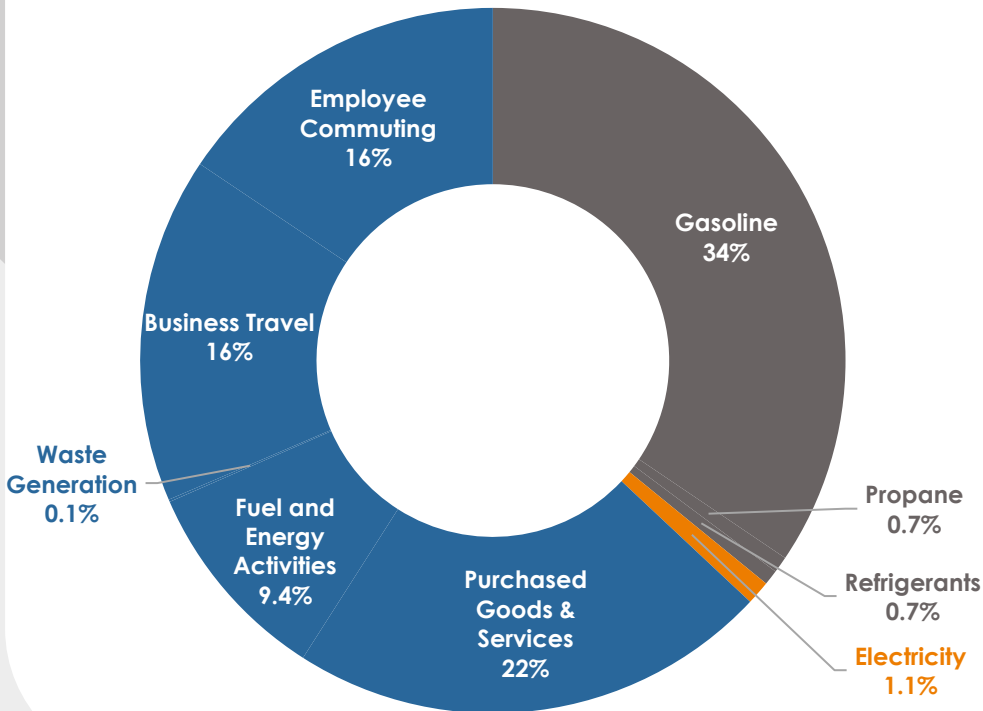
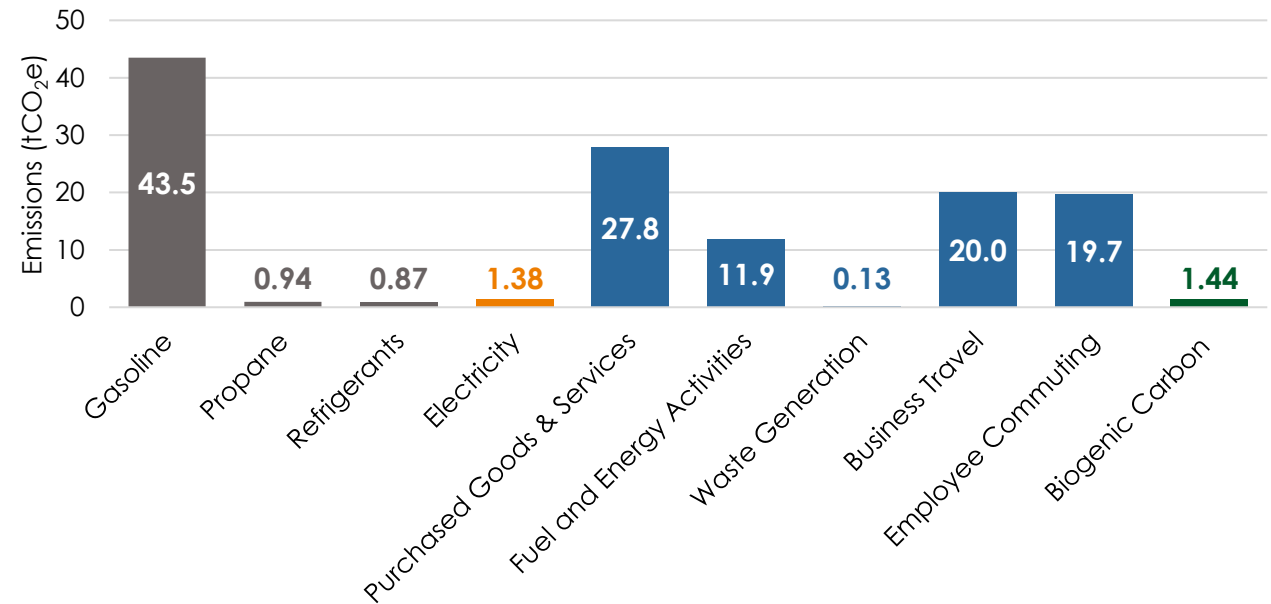
# Executive Summary

Scope 1: **36%**      Scope 3: **63%**  
 Scope 2: **1.1%**      Biogenic

Ziptrek Ecotours is a tourism operator based in Whistler, BC, which comprises of several locations including two offices, and other auxiliary locations throughout the Whistler village. This is the first year that Ziptrek Ecotours has measured and reported its carbon footprint.

As this is the first year of measurement, 2024 will serve as the base year for future inventories. This means the emissions captured in this scope will be collected in future years to provide year-over-year comparability of Ziptrek Ecotours' sustainability pathway.

## Emissions by Activity



The top emission source for Ziptrek Ecotours is gasoline consumption from vehicles used on site, representing 34% of the total footprint. The next highest emissions source is purchased goods and services (22%), which include maintenance purchases for equipment and IT purchases. Thirdly, business travel represents 16%, including flights, accommodations, and other forms of transportation for the Ziptrek Ecotours' team.

**126**  
 Total tCO<sub>2</sub>e

# Science-Based Reduction Target

## SBTi Aligned Targets – Example Only:

Scope 1 & 2

**42%**  
By 2035

Over 2024 Base Year

Scope 3

**25%**  
By 2035

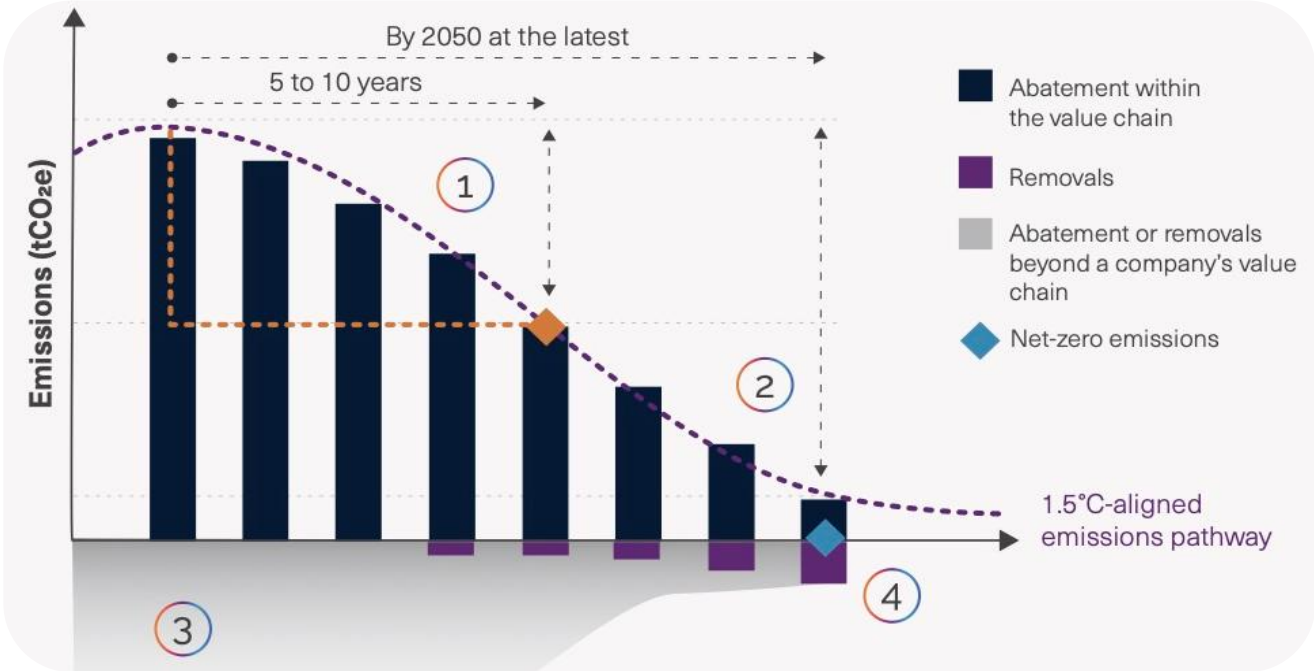
Over 2024 Base Year

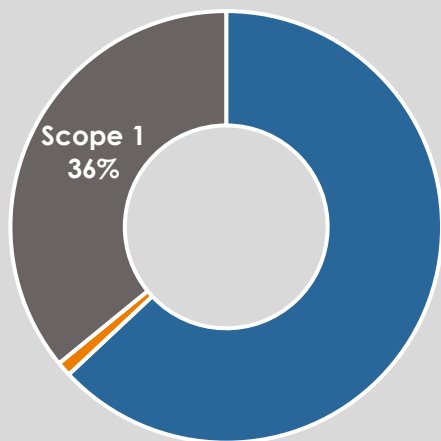
The International Panel on Climate Change (IPCC) urges all public and private corporations to set carbon reduction targets that align with the level of decarbonization necessary to limit global temperature increase to 1.5°C compared to pre-industrial levels. The [SBTi Corporate Net-Zero Standard](#) is a target setting framework for organizations of all sizes, to set targets that align with the IPCC's climate science.

### Synergy Recommendation

Synergy strongly recommends all businesses set a carbon reduction target (SBTi aligned or custom), to focus future climate action efforts, communicate your intentions with your team and stakeholders, and be able to measure progress over time.

If Ziptrek Ecotours is interested in setting a formal reduction target, Synergy can support with additional analysis and creating a custom target. Targets must be a formal commitment, adopted by company leadership and publicly communicated.





## 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: Gasoline

**43.5**

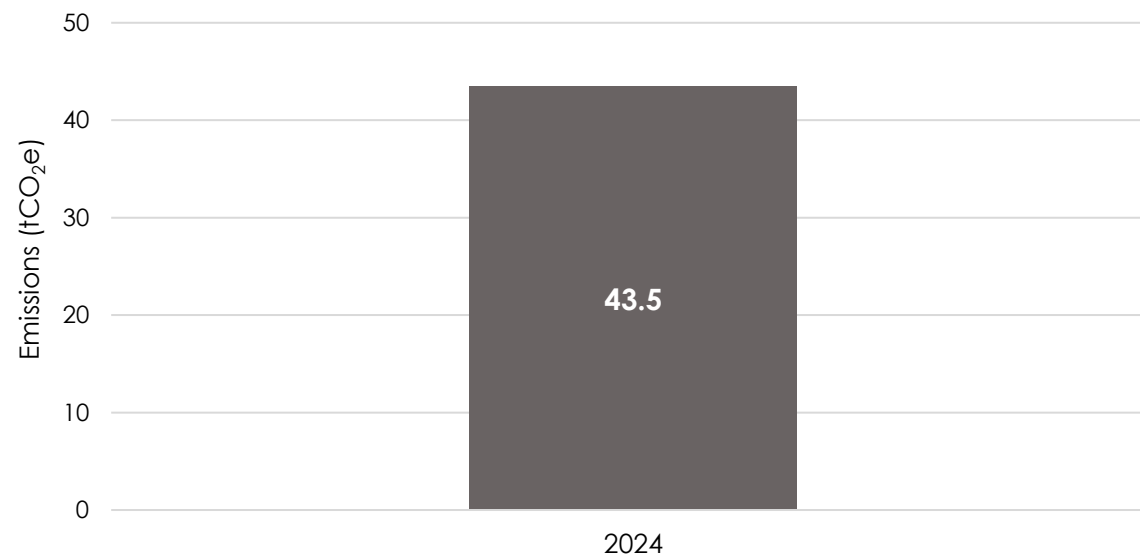
Total tCO<sub>2</sub>e

**34%**

% of Total

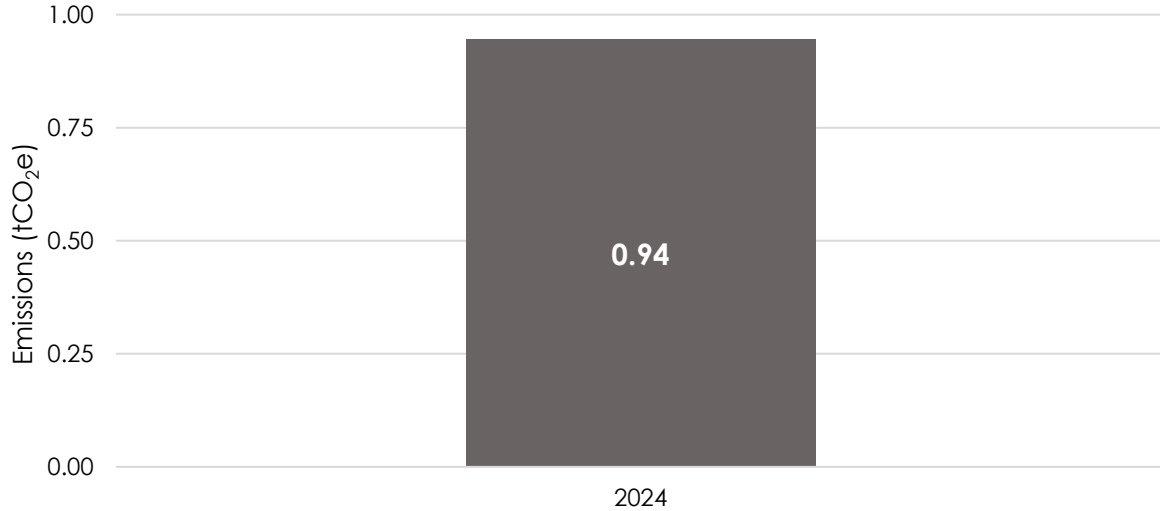
In 2024, gasoline consumption represented the largest emission source for Ziptrek Ecotours. The total emissions for gasoline came to 43.5 tCO<sub>2</sub>e, consuming approximately 18,200 total litres for the vehicles used in its operations.

### Annual Gasoline Emissions



# Scope 1: Propane

## Annual Propane Emissions



In 2024, propane use represented less than 1% of the total footprint for Ziptrek Ecotours. The total emissions for propane came to 0.94 tCO<sub>2</sub>e, consuming approximately 680 total lbs.

Propane is almost exclusively used for heating the A-frame building.

**0.94**  
Total tCO<sub>2</sub>e

**0.7%**  
% of Total

# Scope 1: Refrigerants

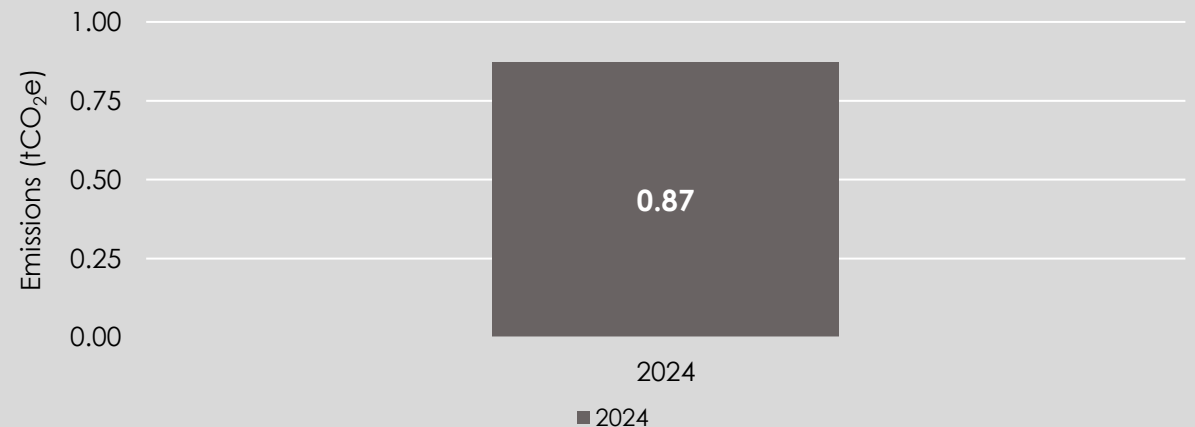
**0.87**  
Total tCO<sub>2</sub>e

**0.7%**  
% of Total

Refrigerants are included in the inventory for Ziptrek Ecotours, which calculates any refrigerant leaks from equipment, such as air handling units, that are used for cooling.

Refrigerants account for less than 1% of the inventory in the first year of measurement.

## Annual Refrigerant Emissions



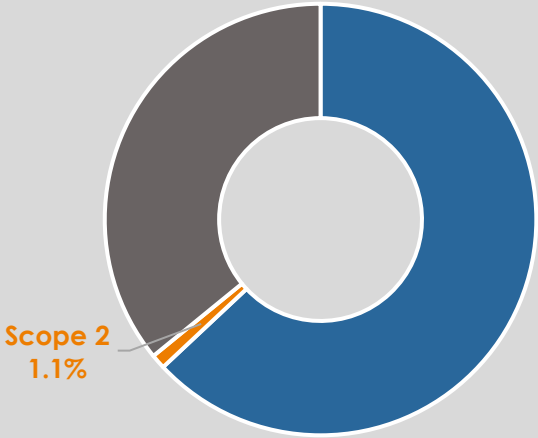
# Scope 2: Electricity

1.38

Total tCO<sub>2</sub>e

1.1%

% of Total



In 2024, electricity emissions came to 1.38 tCO<sub>2</sub>e in the first year of measurement, with the admin office accounting for 75% of electricity emissions.

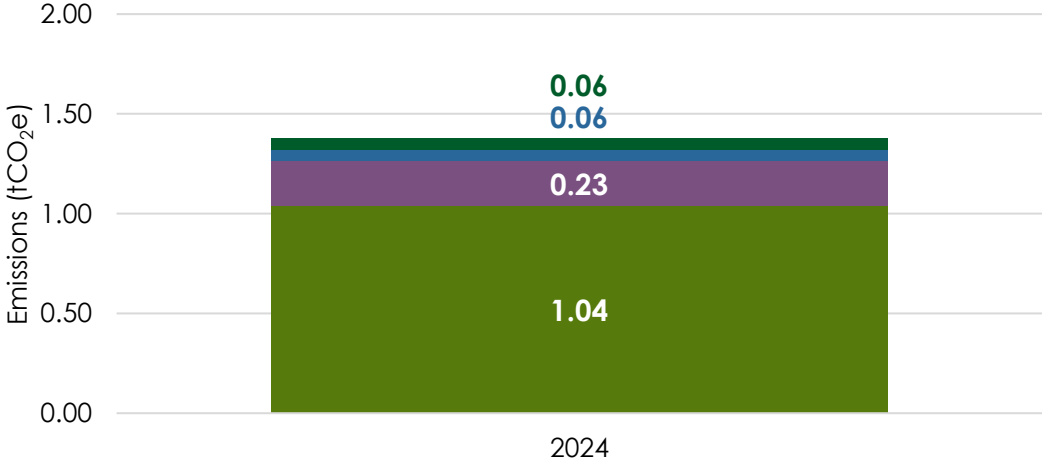
The Zipline Course location is a cabin that is primarily battery powered through solar energy produced on site, which does not contribute to the footprint.

# 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.

## Electricity Emissions by Location

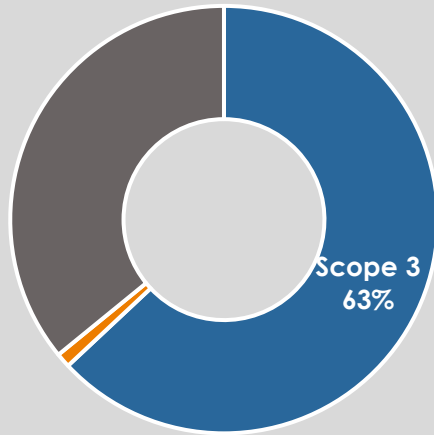
- Admin Office
- Container on Gondola Pad
- Booking Office
- Outfitting & Guide Area



# Scope 3: Purchased Goods & Services

**27.8**  
Total tCO<sub>2</sub>e

**22%**  
% of Total

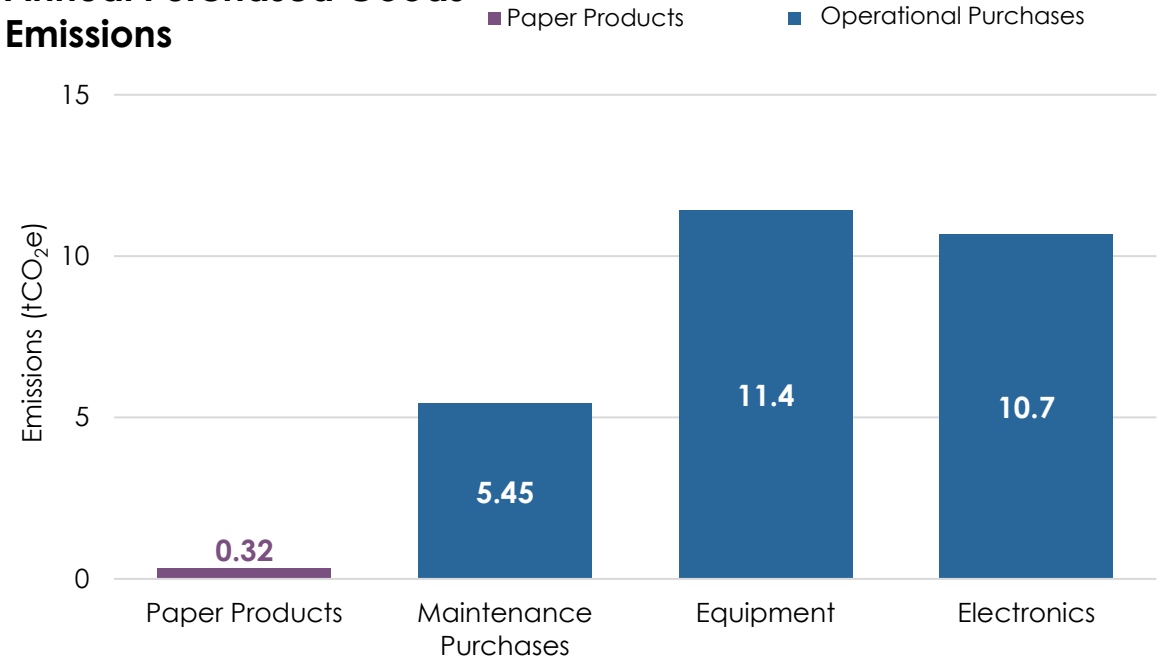


## Scope 3: Indirect Emissions

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

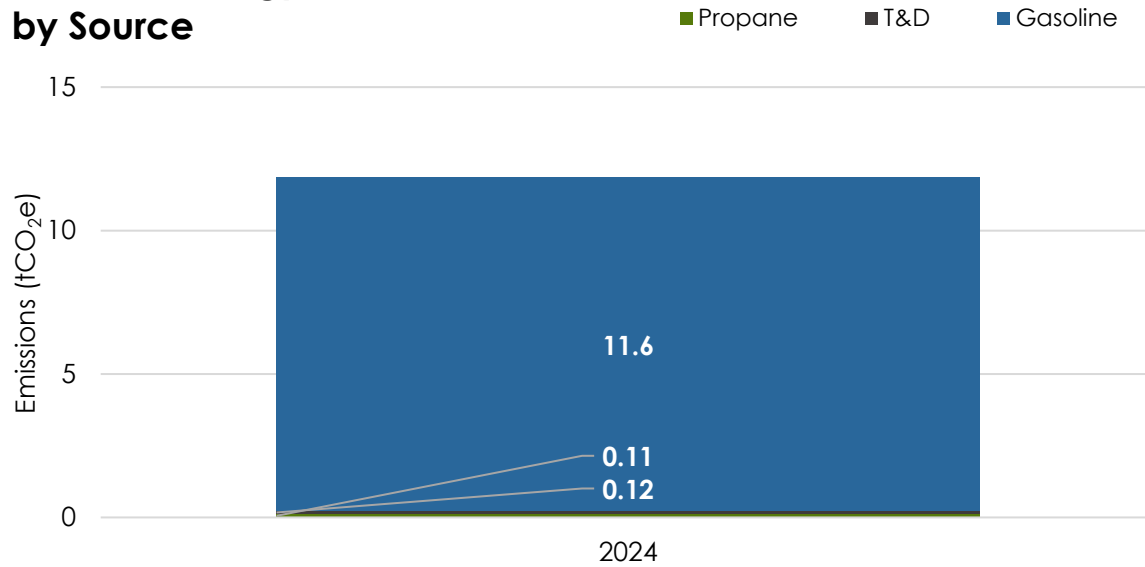
In 2024, purchased goods and services account for 22% of the total footprint. Purchased goods and services includes paper products and operational purchases. Within operational purchases, equipment accounts for 41% of emissions, followed by electronic purchases and maintenance purchases.

### Annual Purchased Goods Emissions



# Scope 3: Fuel & Energy Activities

## Fuel and Energy Emissions by Source



Fuel and energy activities includes the upstream emissions impact from the consumption of fuel and electricity. Well-to-Tank (WTT) is a term used to define the emissions from extraction, processing and transportation of fuel. Whereas transmission and distribution (T&D) losses refer to the electricity loss as a result of the transport of electricity to the consumer. All fuel and energy activity emissions are proportional to the consumption of fuels and electricity

**11.9**  
Total tCO<sub>2</sub>e

**9.4%**  
% of Total

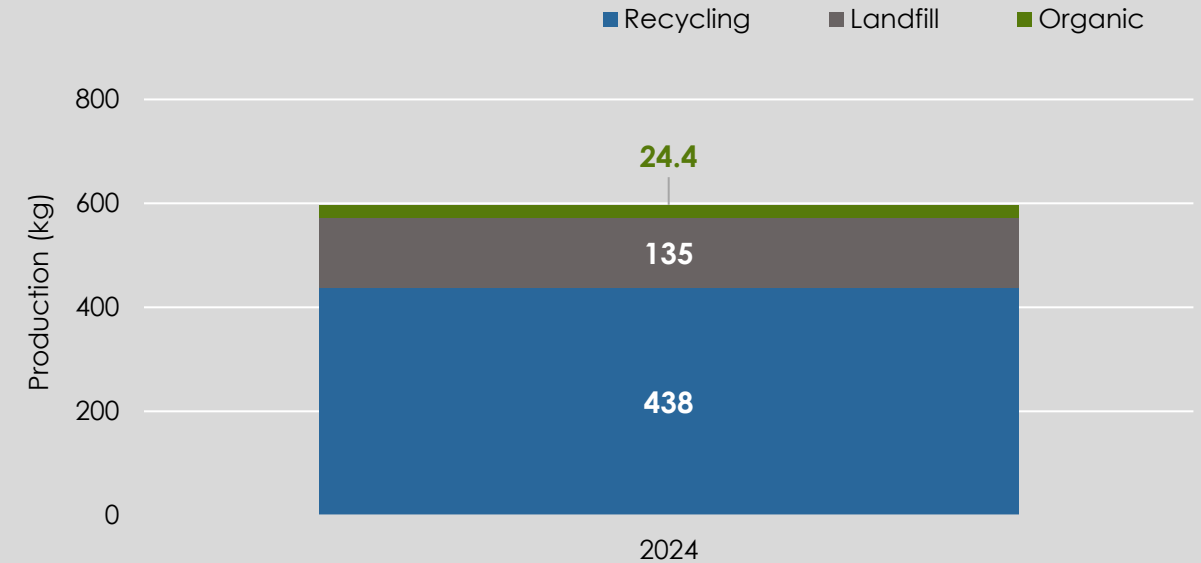
# Scope 3: Waste Generation

**0.13**  
Total tCO<sub>2</sub>e

**0.1%**  
% of Total

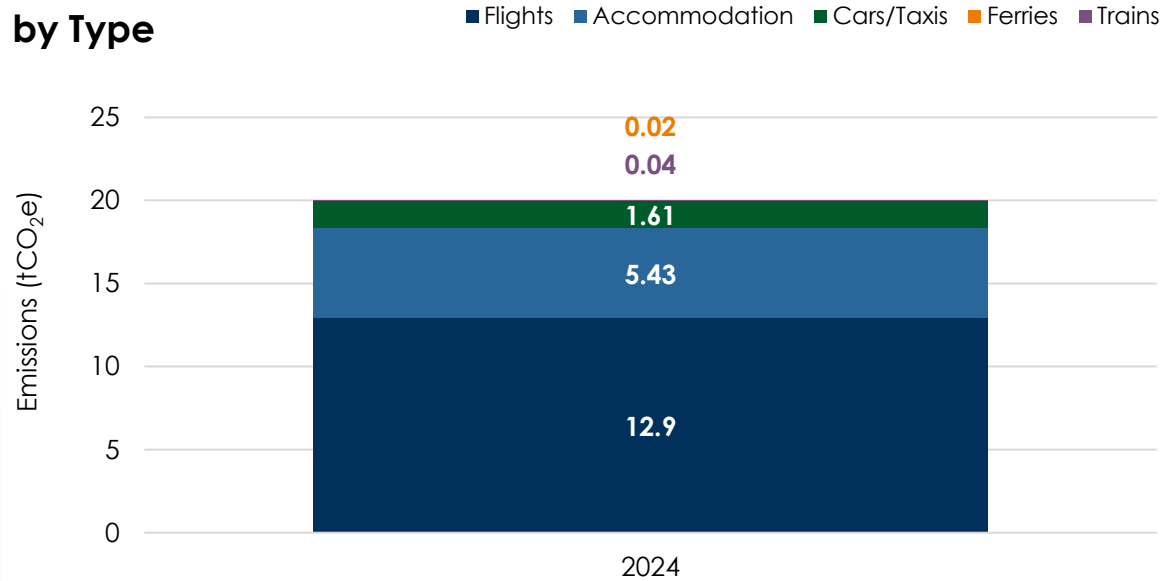
In 2024, overall waste generation came to less than 1% of the total footprint, with a diversion rate of 77% in the first year of measurement. Recycling accounted for the largest portion of waste at 73% of kilograms produced, followed by landfill at 23%.

## Annual Waste Production



## Scope 3: Business Travel

### Annual Travel Emissions by Type



Business travel accounted for 16% of the total footprint in the first year of measurement. Ziptrek Ecotours had several employees attend the Grey Cup within the reporting period, which resulted in more travel activity than an average year would produce. Flights contributed the largest amount to travel emissions (65%), followed by accommodations (27%), and car and taxi emissions (8.0%).

**20.0**  
Total tCO<sub>2</sub>e

**16%**  
% of Total

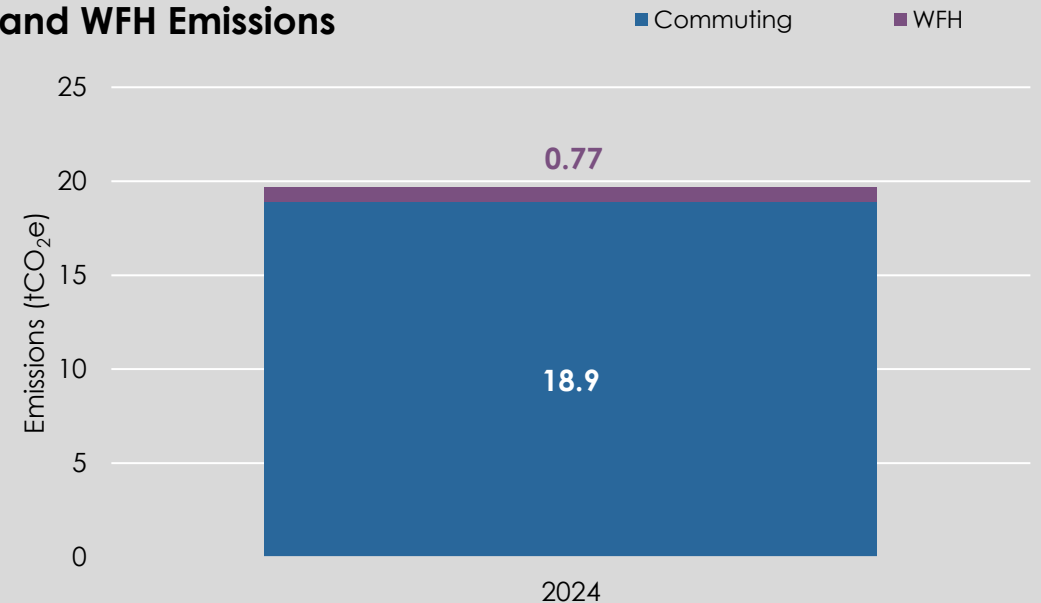
## Scope 3: Employee Commuting

**19.7**  
Total tCO<sub>2</sub>e

**16%**  
% of Total

Ziptrek Ecotours has 36 full-time employees (FTEs), of which 25 responded to a staff commuting survey, resulting in an 69% response rate. Staff commuting contributes to 16% of the total footprint. Work from home emissions accounted for less than 1 tCO<sub>2</sub>e, with only three employees indicating the work remotely throughout the year. The most common form of transportation was public transit.

### Annual Commuting and WFH Emissions

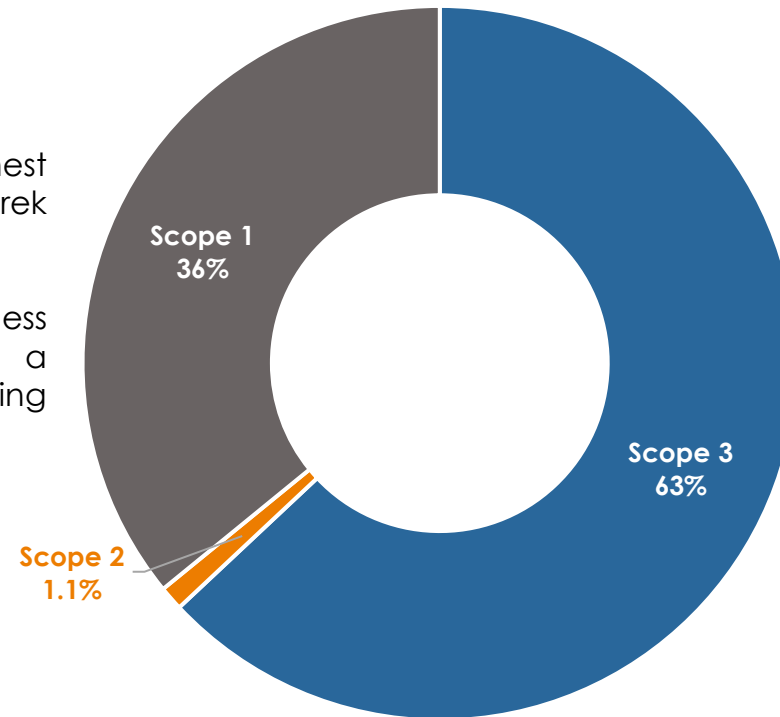


# Conclusion

Total emissions came to 126 tCO<sub>2</sub>e in 2024. The highest emissions sources were gasoline, purchased goods and services, and business travel. These emission sources make up over 71% of the total footprint. To continue on the path of decarbonization with the new comprehensive scope, it is recommended Ziptrek Ecotours work to collect fuel use data in litres for each entry, which will improve the accuracy in calculating scope 1 emissions. 2024 will serve as the base year for future inventories, enabling year-over-year comparability for how Ziptrek Ecotours' decarbonization actions will affect their emissions.

## Key Takeaways:

- Fuel consumption is the highest emissions source within Ziptrek Ecotours' operations
- Waste generation totaled less than 1 tCO<sub>2</sub>e, highlighting a strong commitment to diverting waste



## Priority Areas for Decarbonization:

- Ziptrek Ecotours tracking each fuel refill by litres will ensure emissions calculations are as accurate as possible
- Prioritizing sustainable travel practices (carpool, public transit, electric vehicles) will reduce travel emissions

An aerial photograph of a sandy beach with waves crashing onto the shore. The water is a mix of light and dark tones, with white foam from the waves. The sand is a light beige color. The word "Appendices" is overlaid in a dark blue font on the left side of the image.

# Appendices

# Inventory Information

**Company Name:** Ziptrek Ecotours  
**Contact:** Simon Moffat, smoffat@ziptrek.com

**Company Description:** Tourism operator based in Whistler, BC, with two offices, and three auxiliary locations

**Reporting Period:** January 1 2024 to December 31 2024

**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<sub>2</sub>e)

**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](http://www.ghgprotocol.org)).

35%

Scope 1	tCO <sub>2</sub> e	% of total
Gasoline	43.5	34%
Propane	0.94	0.7%
Refrigerants	0.87	0.7%
<b>TOTAL:</b>	<b>45.3</b>	<b>35%</b>

1.1%

Scope 2	tCO <sub>2</sub> e	% of total
Purchased Electricity (BC Hydro)	1.38	1.1%
<b>TOTAL:</b>	<b>1.38</b>	<b>1.1%</b>

63%

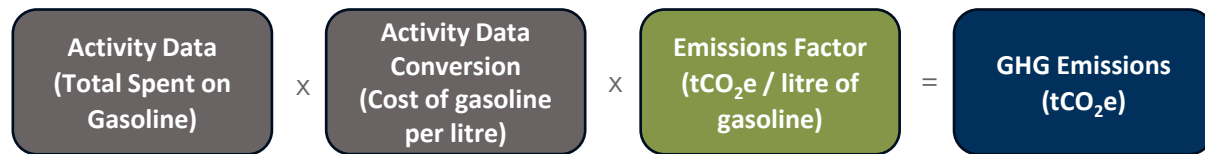
Scope 3	tCO <sub>2</sub> e	% of total
Purchased Goods & Services (Paper, Operational Purchases)	27.8	22%
Fuel and Energy Activities (WTT and T&D)	11.9	9.4%
Waste (Landfill, recycling, compost)	0.13	0.1%
Travel (flights, accommodation)	20.0	16%
Employee Commuting	19.7	16%
<b>TOTAL:</b>	<b>79.6</b>	<b>63%</b>

# Measurement Methodology

This report was put together as a collaborative effort by Synergy Enterprises and Ziptrek Ecotours. Synergy Enterprises is responsible for managing the project, conducting a thorough scoping assessment of Ziptrek Ecotours' 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. Ziptrek Ecotours 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<sub>2</sub>e), which represents the amount of carbon dioxide (CO<sub>2</sub>) 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<sub>2</sub> GHGs, such as methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), into a CO<sub>2</sub> 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 Ziptrek Ecotours, 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.



**Ziptrek Ecotours 2024  
Emissions by Gas:**

**125.1**  
Total tCO<sub>2</sub>

**1.37**  
Total N<sub>2</sub>O

**0.19**  
Total CH<sub>4</sub>

## Greenhouse gas global warming potentials (GWP)

Scientific Name	Molecular Formula	Global Warming Potential
Carbon Dioxide	CO <sub>2</sub>	1
Methane	CH <sub>4</sub>	27.9
Nitrous Oxide	N <sub>2</sub> O	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<sub>2</sub>e emissions. All EFs are sourced from reputable, up-to-date publications. If an EF is not in CO<sub>2</sub>e, it is converted using Global Warming Potentials. A unit conversion may also be necessary to ensure the activity data and EF units are consistent.

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
Gasoline	6.25	34%	Low
Propane	6	0.7%	Low
Refrigerants	6.85	0.7%	Low
Electricity	6.9	1.1%	Low
Paper	8.2	0.1%	Low
Purchase Data	6.25	22%	Low
Fuel & Energy Activities	N/A	9.4%	Low
Waste Generation in Operations	6	0.1%	Low
Business Travel	6.2	16%	Low
Employee Commuting	6.2	16%	Low

# Emission Factor References & Glossary

## 1. 2022 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\\_for\\_archive.pdf](https://www2.gov.bc.ca/assets/gov/environment/climate-change/cng/methodology/2021-best-practices-methodology_for_archive.pdf)

## 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/En81-4-2021-2-eng.pdf)

[https://publications.gc.ca/collections/collection\\_2023/eccc/En81-4-2021-3-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](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 <sub>2</sub> ), Methane (CH <sub>4</sub> ), Nitrous Oxide (N <sub>2</sub> O), etc.
GJ	Gigajoule: Unit of natural gas equal to 26.137 m <sup>3</sup> 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 <sub>2</sub> 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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