Carbon Footprint Report for:

ZJV (NZ) Ltd (Ziptrek Ecotours)

Period: 2019-2020 Financial Year

Unverified Inventory

6th October 2020

ekos.co.nz. I ekos@ekos.co.nz

CONTENTS

Figures

Tables

1 Summary

This carbon footprint inventory was prepared for Ziptrek Ecotours for the 2019 calendar year.

Organisation background	Name: Ziptrek Ecotours Contact person: Kenny Wynter Email: salesnz@ziptrek.com Area of Business: Tourism FTEs: 17 Ziptrek Ecotours offers guided Zipline tours.
Report period	Financial Year 2019-2020
Organisational Boundary	This measurement covers the following sites: 45 Camp Street (lower), Queenstown 45 Camp Street (upper), Queenstown Ziptrek Course, Bob's PeakQueenstown
Reporting Boundary	Business Operations Scope 1, 2 and 3 emissions resulting from: • Fuels (stationary) • Company vehicles • Purchased energy • Electricity line losses • Non-company vehicles • Waste to Landfill • Inward freight • Business travel
Omissions	• NA
Emissions	Total emissions = 29.06 tCO2e, Excluding radiative forcing.
Offsets	Total offsets = 17.48 tCO2e, Excluding radiative forcing, pre-offset flights and carbonZero certified electricity.

Ziptrek Ecotours has elected to offset 100% of these emissions with Verified Emission Reduction Units (VERs) and New Zealand Carbon Units (NZUs) provided by Ekos. Through this measurement and offsetting, Ziptrek Ecotours has qualified for Zero Carbon Business Operations Certification for the 2020 financial year and has been issued certificate number 400000422.

2 Background

This report is the first annual greenhouse gas (GHG) emissions inventory, prepared for Ziptrek Ecotours. The report forms the measurement step for any subsequent claims regarding emissions for Ziptrek Ecotours. It was prepared in accordance with the requirements of ISO 14064-1 (2006) and covers the period of April 1st, 2019 until March 31st, 2020.

2.1 COMMUNICATION AND DISEMINATION

This inventory was prepared as a management tool for Ziptrek Ecotours, to assist it in managing its response to climate change and its reduction of greenhouse gas emissions. As well as to be a communication tool that demonstrates to its stakeholders that it has identified its emissions profile and is taking the issues of climate change seriously including offsetting unavoidable emissions.

The users of this report will include but are not limited to the staff, manager, the board of Ziptrek Ecotours, its shareholders and members. The summary of this inventory will be made available to all stakeholders on request. A copy of the summary report will also be available from Ekos' website.

2.2 REPORTING PERIOD AND BASE YEAR

This inventory is for the reporting period April 1st 2019 until the 31st March 2020 which is the 2019 financial year. The 2020 financial year will be the base year for Ziptrek Ecotours, in subsequent inventories, comparisons will be made in relation to this base year.

2.3 DATA INCLUDED

Data included in this inventory is all Ziptrek Ecotours business operations covering Scope 1, 2 and 3 emissions which result from its use of:

- Fuels (stationary)
- Company vehicles
- Purchased energy
- Electricity line losses
- Non-company vehicles
- Waste to Landfill
- Inward freight
- Business travel

2.4 VERIFICATION AND COMPLIANCE WITH STANDARD

This inventory has been prepared in compliance with the International Standards Organisation's standard for calculating and reporting greenhouse gas emissions 14064-1 (2006). It should be noted that this is an unverified inventory however and no verification audit has been conducted of the findings.

3 Organisational Boundary

The organisational boundary identifies which facilities or subsidiaries of Ziptrek Ecotours are included and which are excluded from the carbon inventory. Emissions of all different part of the organisation will be consolidated to establish the organisation total emissions. Consolidation will be done using one of the following methods:

- **Control;** all emissions that the organisation has *financial* or *operational* control are included in the footprint, or the;
- **Equity share;** the organisation only includes the emissions for the portion of the facilities and businesses the organisation owns.

For Ziptrek Ecotours inventory, the **operational control** method has been used as its consolidation method. This means that all emissions over which Ziptrek Ecotours has operational control have been included in the inventory.

Included within Ziptrek Ecotours organisational boundary, therefore, are all emission sources that occur within Ziptrek Ecotours facilities at 45 Camp Street (lower), 45 Camp Street (upper), and Ziptrek Course, Bob's Peak.

4 Reporting Boundary

The reporting boundary identifies which emissions sources are included in the carbon inventory and which are excluded. ISO 14064-1 (2006) categorises emissions as follows:

- Scope 1 emissions are those resulting directly from the organisation's operations including stationary energy sources and vehicles owned by the company.
- Scope 2 emissions are indirectly created by the company through the importation of electricity, heat or steam generated elsewhere.
- Scope 3 emissions are from indirect sources such as business travel and waste production that the organisation cause to be emitted by others due to their purchase of goods and services.

In compliance with the international standard, Ziptrek Ecotours Scope 1 and 2 emissions have all accounted for in this inventory. With regard to Scope 3 emissions, the international standards recommend that these be included if:

- They are believed to be large relative to the organisation's Scope 1 and 2 emissions.
- They contribute to the organisation's GHG risk exposure.
- They are deemed critical by key stakeholders (e.g. customers).
- There are potential GHG reductions for these emissions that can be undertaken or influenced by the company.

Selected Scope 3 emissions have been included in this inventory. Ekos' 2006 quality system requires the inclusion of significant Scope 3 emissions from the following activities: T&D losses; non-company vehicles; waste; accommodation; flights; freight.

Inclusions

Figure 1 below identifies the emission sources that have been included within this inventory.

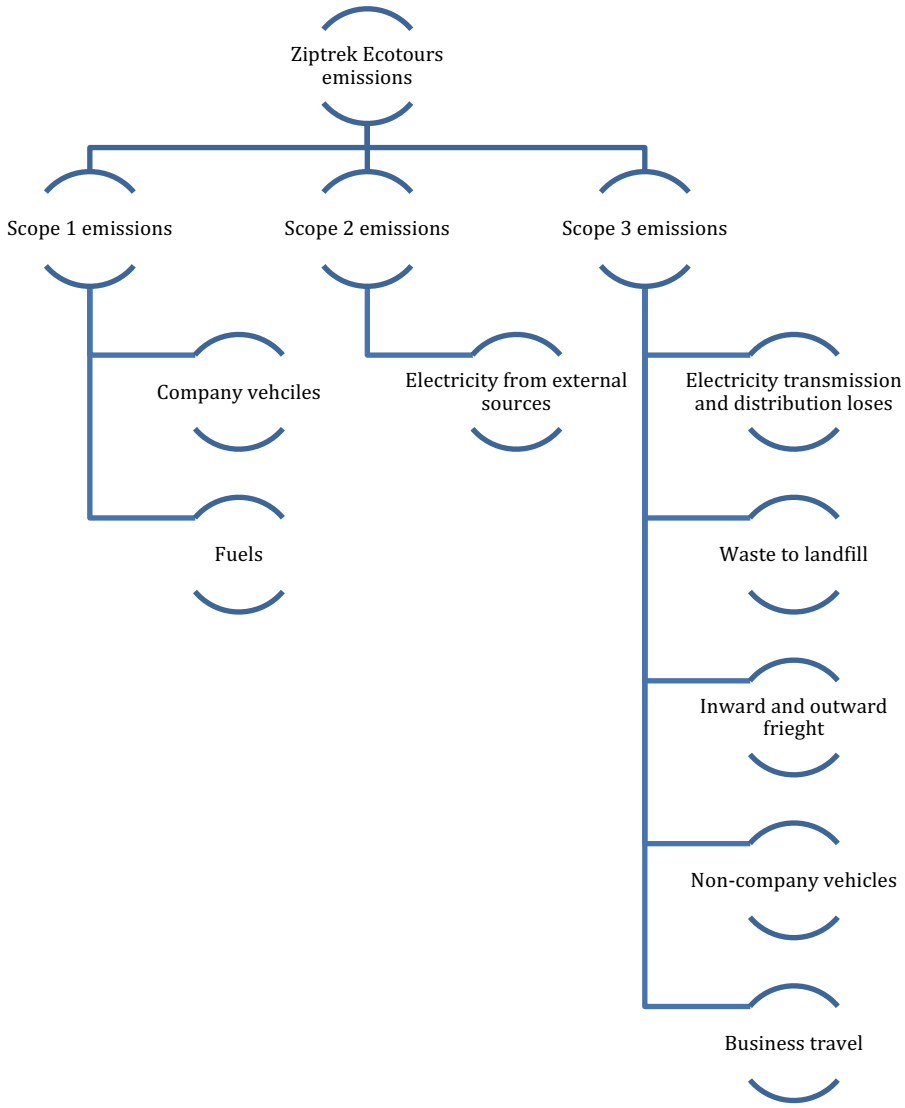

FIGURE 1: EMISSIONS SOURCES FOR ZIPTREK ECOTOURS

Exclusions

No exclusions were carried out.

5 Greenhouse gas Inventory

5.1 METHODOLOGY

This GHG inventory was prepared incompliance with the international standards for calculating greenhouse gas emissions from the World Resources Institute's *"Greenhouse gas protocol, a corporate accounting and reporting standard"* (GHG protocol) and *"ISO 14064-1 (2006) Specification with guidance at the organisation level for quantification and reporting of GHG emissions and removals"* (ISO 14064-1). In measuring this inventory, the five principles of ISO 14064-1 2006 were strictly adhered to.

The methodology used in measuring your organisational footprint is shown in Figure 2 below:

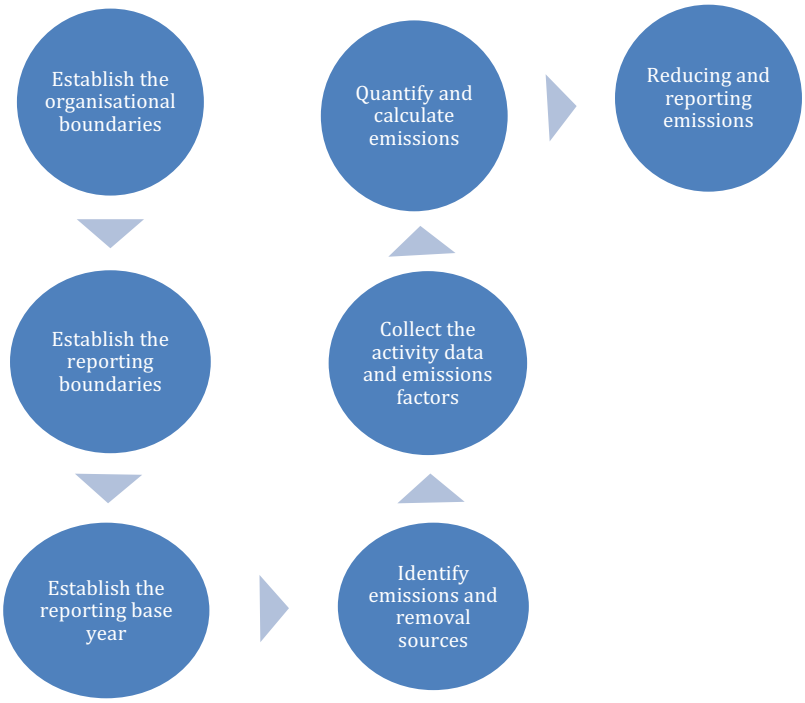

FIGURE 2: ISO 14064-1 METHODOLOGY FOR MEASURING A CARBON FOOTPRINT INVENTORY

5.2 DATA COLLECTION

Data was collected by Ziptrek Ecotours staff with guidance where required from Ekos. Table 1 below, provides an overview of where data was collected for each emissions source. All emissions were calculated using an Ekos developed calculator. The calculation method that has been used for quantifying Ziptrek Ecotours greenhouse gas emissions inventory was the emissions source activity data multiplied by the emissions factor as shown in the formula below:

$$\text{Tonnes } CO_2e = \sum \text{ghg activity x EF}$$

Where $\sum$ GHG activity = the sum of greenhouse gas activity, multiplied by EF which = the emissions factor for the greenhouse gas activity. For example, 3000 kilowatt hours (KWH) of electricity (the greenhouse gas activity) is multiplied by 0.000097 (the emissions factor, tonne of CO_2e per kwh of electricity) = 0.293 tonnes of CO_2e.

Activity data for Ziptrek Ecotours was obtained from a range of sources, these sources are fully outlined in Table 1 below.

Greenhouse gas emissions factors were generally sourced from New Zealand's Ministry for the Environment. Where emissions factors were not available from this source, other reliable sources such as international government agencies or published research were used. A full list of the emissions factors used is shown Appendix 1.

TABLE 1: DETAILS OF DATA SOURCES FOR ZIPTREK ECOTOURS EMISSIONS

Emissions Source	Unit	Data Source
Fuels	Kg/L	Invoices
Electricity	Kwh	Invoices provided by Powershop and Ecotricity
Electricity line loses and natural gas line losses	Kwh	
Waste to Landfill	Kg	Data from waste contractor
Inward Freight	Tonne Km	Supplier invoices and websites

Company Vehicles	L	Z Business report
Non-company cars Taxis Rental cars	 $ Kms	 Receipts Google maps
Flights	Pax*kms	Email booking confirmations
Accommodation	Rooms*nights	Email booking confirmations

5.3 ZIPTREK ECOTOURS GREENHOUSE GAS PROFILE

Total emissions for Ziptrek Ecotours for the 12-month period from the 1st of April 2019 until the 31st of March 2020 were 29.06 tonnes of CO_2e (excluding radiative forcing).

5.3.1 Emissions by Scope

As shown in Figure 3 and Table 2 the majority of Ziptrek Ecotours emissions are scope 3 at 52%, with scope 1 emissions comprising 39% and scope 2 emissions at 9%. The majority of Ziptrek Ecotours emissions came from its scope 1 company vehicle emissions.

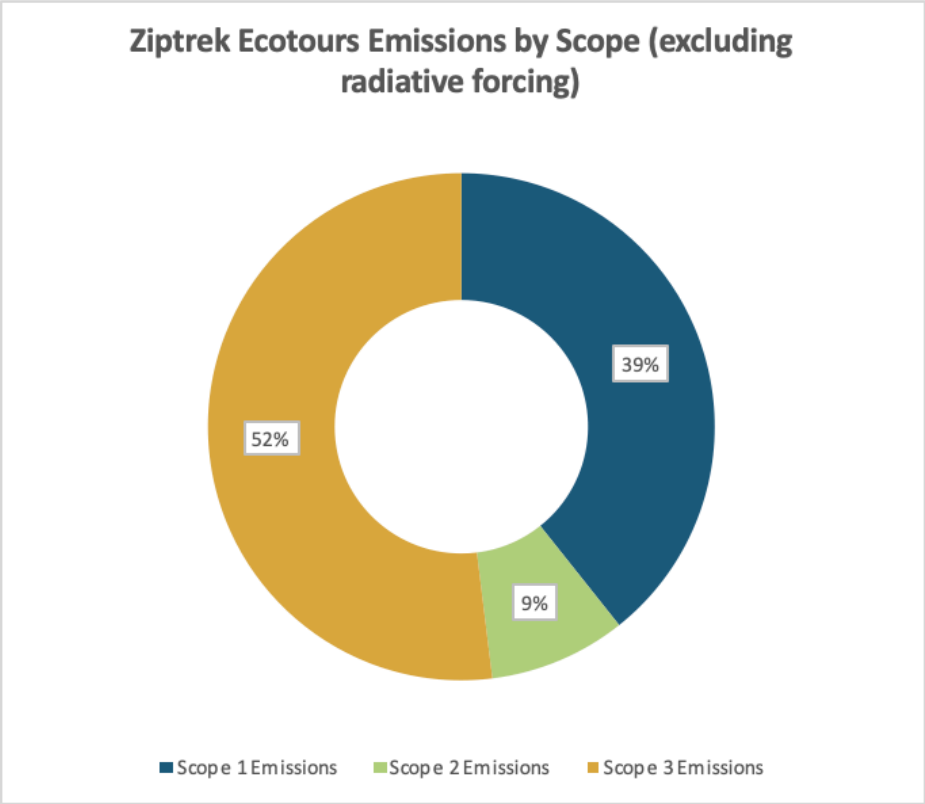

FIGURE 3: ZIPTREK ECOTOURS EMISSIONS BY SCOPE (EXCLUDING RADIATIVE FORCING)

TABLE 2: ZIPTREK ECOTOURS EMISSIONS BY SCOPE (EXCLUDING RADIATIVE FORCING)

Scope 1 Emissions	**11.42**	39%
Scope 2 Emissions	**2.54**	9%
Scope 3 Emissions	**15.10**	52%
Total	**29.06**	

Table 3 shows Ziptrek Ecotours scope 1 emissions by activity.

TABLE 3: ZIPTREK ECOTOURS SCOPE 1 EMISSIONS BY ACTIVITY (EXCLUDING RADIATIVE FORCING)

	Activity	tCO2e	% of footprint
Scope 1	Fuels	0.68	6%
	Air Con/Refrigerants	0.00	0%
	Company Vehicles	10.74	94%
Total		**11.42**	

TABLE 4: ZIPTREK ECOTOURS SCOPE 2 EMISSIONS BY ACTIVITY (EXCLUDING RADIAITVE FORCING)

	Activity	tCO2e	% of footprint
Scope 2	Electricity	**2.54**	100%

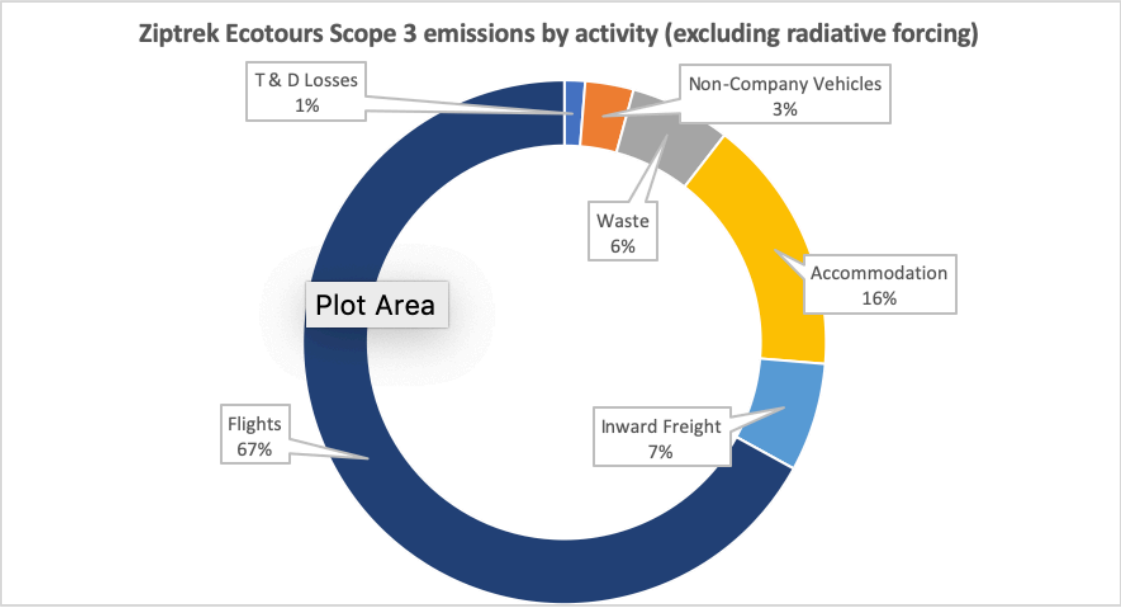

Figure 4 and Table 5 show Ziptrek Ecotours scope 3 emissions by activity, the majority of which is from flights (67%), followed by accommodation at 16%, Inward freight at 7%, waste at 6%, Non-company vehicles at 3% and transmission and distribution losses 1% of scope 3 emissions.

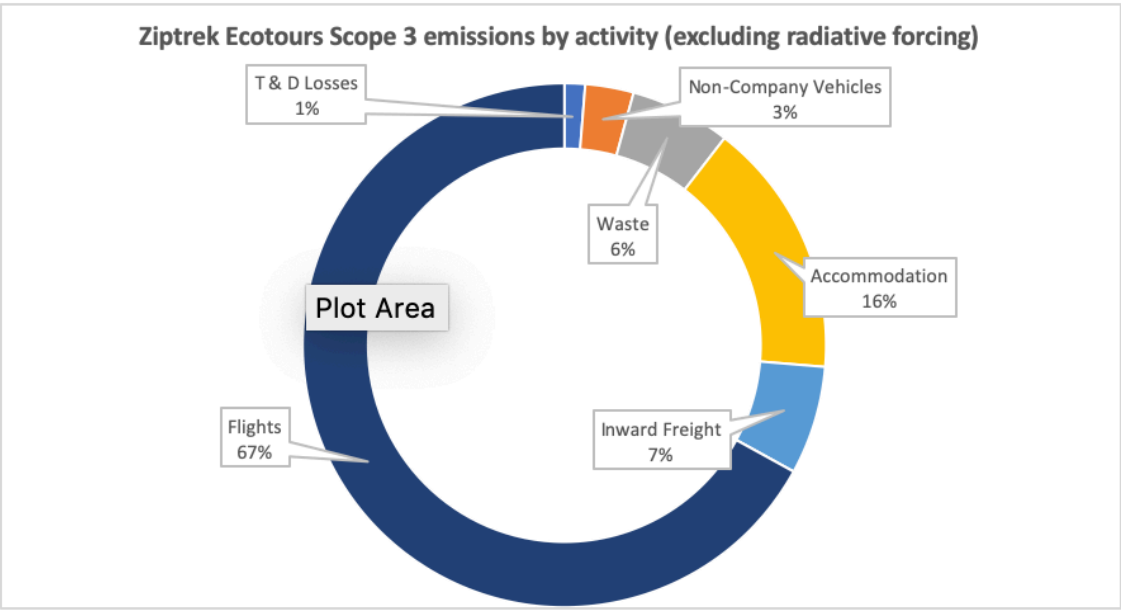

FIGURE 4: ZIPTREK ECOTOURS SCOPE 3 EMISSIONS BY ACTIVITY (%)

TABLE 5: ZIPTREK ECOTOURS SCOPE 3 EMISSIONS BY ACTIVITY

	Activity	tCO2e	% of footprint
Scope 3	T & D Losses	0.19	1%
	Non-Company Vehicles	0.45	3%
	Waste	0.94	6%
	Accommodation	2.39	16%
	Inward Freight	1.01	7%
	Outward Freight	0.00	0%
	Flights	10.11	67%
Total		**15.10**	

5.3.2 Emissions by Activity

Figure 5 and Table 6 show Ziptrek Ecotours greenhouse emissions by activity, with the majority of emissions from company vehicles (37%) and flights (35%).

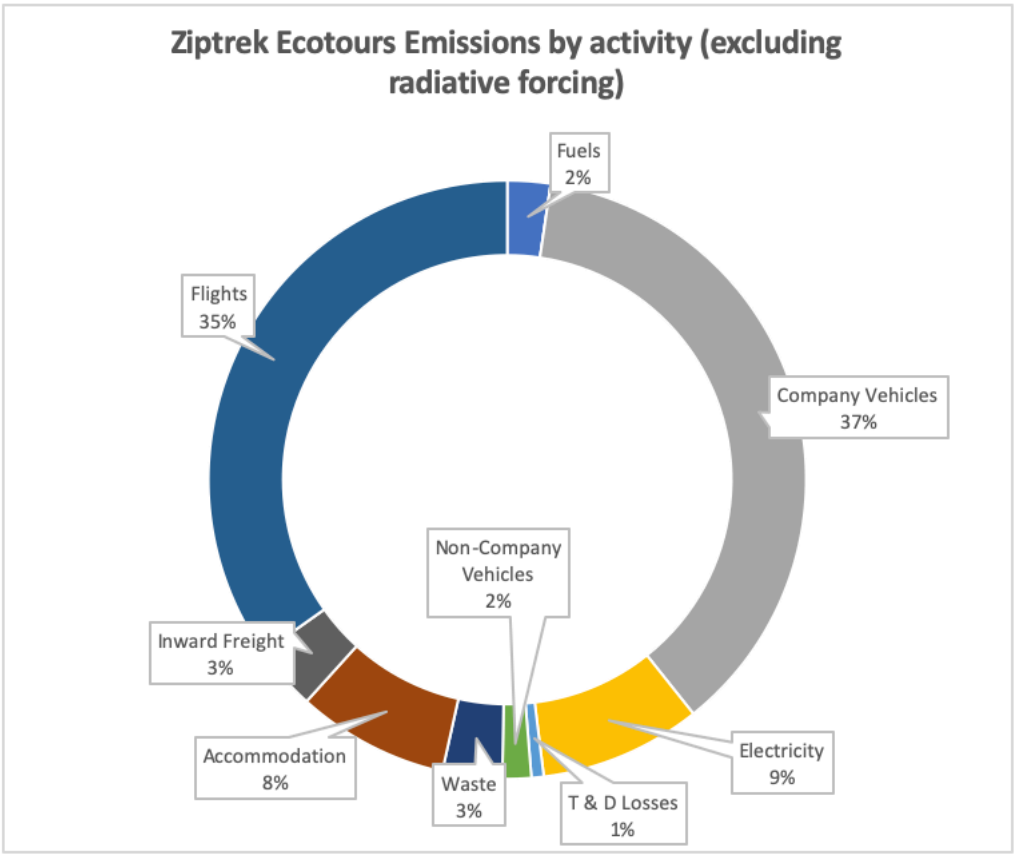

FIGURE 5: ZIPTREK ECOTOURS, EMISSIONS BY ACTIVITY (%)

TABLE 6: ZIPTREK ECOTOURS, EMISSIONS BY ACTIVITY

	Activity	tCO2e	% of footprint
Scope 1	Fuels	0.68	2%
	Air Con/Refrigerants	0.00	0%
	Company Vehicles	10.74	37%
Scope 2	Electricity	2.54	9%
Scope 3	T & D Losses	0.19	1%
	Non-Company Vehicles	0.45	2%
	Waste	0.94	3%
	Accommodation	2.39	8%
	Inward Freight	1.01	3%
	Outward Freight	0.00	0%
	Flights	10.11	35%
Total		**29.06**	
FTEs		17	
Footprint per FTE		**1.71**	

TABLE 7: SCOPE 1 EMISSIONS BY GAS TYPE

Source		Tonnes of Carbon Dioxide Equivalent	Tonnes of Carbon Dioxide	Tonnes of Methane	Tonnes of Nitrous Oxide	Tonnes of Hydroflouro carbons
Stationary Fuels	Diesel	0.10	0.10	0.00	0.00	
	Petrol	0.15	0.15	0.00	0.00	
	LPG	0.43	0.43	0.00	0.00	
Company vehicles	Petrol	2.83	2.71	0.03	0.09	
	Diesel	7.19	7.77	0.01	0.12	
Total		**10.7**	**11.16**	**0.04**	**0.21**	

5.4 UNCERTAINTY AND DATA QUALITY

To ensure that a comprehensive footprint measurement is completed, it is appropriate to estimate activities should accurate data not be available. Such estimates must be based on scientifically derived estimation to ensure accuracy. In the case of the Ziptrek Ecotours footprint, there is one area of uncertainty which is as follows:

- Inward Freight:
  the supplier invoices did not have weights, or an exact freight path included. Consequently, Ziptrek Ecotours had to carry out an informed estimate of the weights for freight items for the year and Ekos had to make informed assumptions regarding the freight path.

To increase the quality of the carbon inventory over time, Ziptrek Ecotours should plan to improve their data collection processes for inward freight. These improvements should start during the current calendar year (2020).

It should also be noted that the ISO standard for carbon footprint measurement has been revised, with a new standard being released in 2018. This Ziptrek Ecotours inventory is based on the requirements of ISO 14064-1 2006, however, the next inventory will need to be completed to the requirements of the next standard, ISO 14064-1 2018, further advise can be obtained from the staff at Ekos as needed.

6 Offsets and Certification

To qualify for Zero Carbon Business Operations Certification with Ekos an organisation must measure its business operations footprint and offset 100% of Scope 1, Scope 2, and Scope 3 emissions. To qualify for Climate Positive Business Operations Certification with Ekos an organisation must measure its business operations footprint and offset 120% of its Scope 1, Scope 2, and Scope 3 emissions.

Ziptrek Ecotours has measured all required activity emissions, totalling 29.06 tonnes of CO_2e (excluding radiative forcing).

Ziptrek Ecotours has offset 17.48 tonnes of CO_2e (100% of its emissions, excluding radiative forcing, previously offset flights and carbonZero certified electricity). As such, Ziptrek Ecotours has qualified for Zero Carbon Business Operations Certification for the 2020 financial year period.

The offsets Ziptrek Ecotours selected are New Zealand Carbon Units (NZUs) produced in the Kānuka Hill Native Regeneration Project in Golden Bay, New Zealand, and these offsets are retired on the New Zealand Carbon Registry and offsets are sourced from Verified Emission Reduction Units (VERs) produced in the Rarakau Rainforest Carbon Project in Southland, New Zealand, and these offsets are retired on the Markit Environmental Registry.

7 Emission Reduction Recommendations

The next step in the process of carbon management is to implement emissions reduction projects based on your organisation's emissions hotspots. Emissions hotspots are those activities that are emitting the highest level of greenhouse gases and thus reducing these emissions will have the biggest impact on Ziptrek Ecotours total footprint.

The emissions profile hotspot for Ziptrek Ecotours is its scope 1 company vehicle emissions. This is followed by its scope 3 flight emissions and scope 2 electricity emissions.

Ziptrek Ecotours emissions hotspots are as follows:

- Company Vehicle emissions (37%)
- Flights (35%)
- Electricity (9%)

To Reduce Scope 1 company vehicle emissions Ekos recommends:

In the short term regular servicing of the company vehicles in order to ensure optimum fuel efficiency.

Transitioning to hybrid or electric models where/when appropriate models become available in the long term.

To reduce scope 2 purchased energy emissions Ekos recommends:

Improving energy efficiency. There are various providers who can help with this. One of these service providers is Ecogeek will advise you on the most effective changes you can make to reduce your energy and electricity use.

Focussing on staff behaviour change surrounding electricity use at work will also have a positive impact. Education should be focussed on the turning off of lights when a room is not in use and the shutting down of devices at the end of the day (saving ~10% of energy use). Whilst such behaviour change will result in small reductions overall, every aspect of reduction counts when setting lofty reduction goals. These reduction efforts also come at a low cost and help to build a low-carbon work-place culture.

To reduce scope 3 emissions Ekos recommends:

Reducing the number of flights taken has been identified as another emissions reduction opportunity. This can be achieved through increasing the use of video conferencing platforms such as Zoom.

Reducing non company vehicle emissions could be achieved by investing in a low-carbon work culture by providing staff with low emission methods of transport to carry out work errands (that do not require a vehicle) is another emissions reduction opportunity. These alternative methods of transport could include electric scooters and electric bikes as well as push bikes. If these alternative modes of transport are provided and used by staff, this will reduce the amount of petrol and diesel used annually in company cars and could have a range of co-benefits such as employment satisfaction and health benefits.

8 Emissions comparison year on year

TABLE 8: ZIPTREK ADVENTURES EMISSIONS BY ACTIVITY & SCOPE YEAR ON YEAR (EXCLUDING RADIATIVE FORCING)

		tCo2e	tCo2e	%
	Activity	2018/2019 financial year	2019/2020 financial year	Change
Scope 1	Fuels	0.67	0.68	1%
	Aircon/Refrigerants	0.00	0.00	N/A
	Company Vehicles	15.32	10.74	-30%
Scope 2	Electricity	1.97	2.54	29%
Scope 3	T & D Losses	0.15	0.19	28%
	Non-Company Vehicles	0.60	0.45	-25%
	Accommodation	2.97	0.94	-68%
	Waste	0.08	2.39	2887%
	Inward Freight	0.00	1.01	N/A
	Outward Freight	0.00	0.00	N/A
	Flights	20.80	10.11	-51%
Total		**42.56**	**29.06**	-32%
FTEs		**12**	**17**	42%
Footprint per FTE		**3.55**	**1.71**	-52%

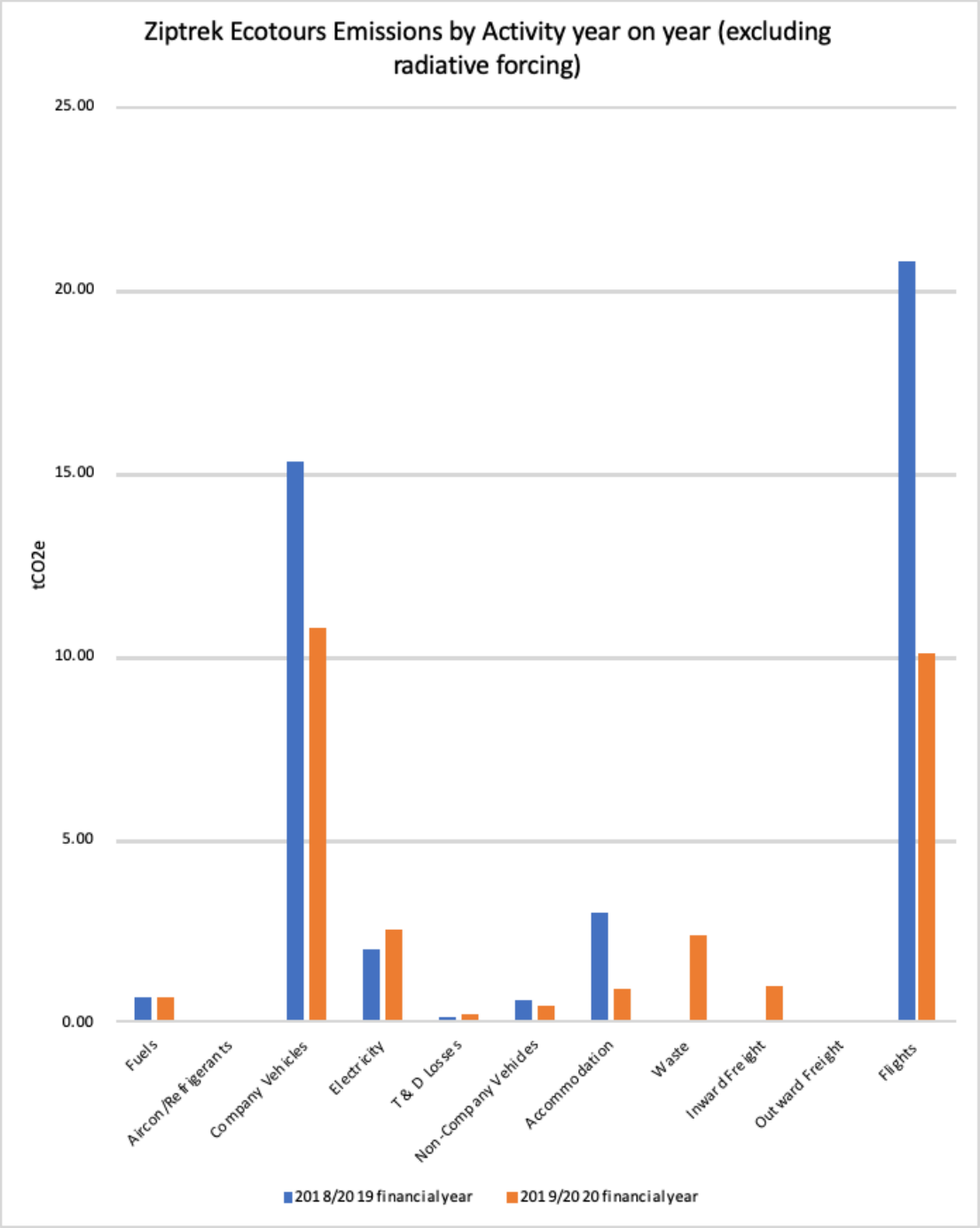

FIGURE 6: ZIPTREK ECOTOURS EMISSIONS BY ACTIVITY YEAR ON YEAR (EXCLUDING RADIATIVE FORCING)

Table 5 and figure 6 show scope 1 company vehicle emissions have reduced by 30%, scope 3 accommodation emissions have reduced by 68% and scope 3 flight emissions have reduced by 51% during the 2020 financial year when compared with the 2019 financial year emissions. table 5 and figure 6 show that there was an increase in scope 2 purchased electricity emissions of 29%, and an increase of 2887% in scope 3 waste emissions. This significant increase in waste emissions is likely down to the availability of more accurate waste data in the 2020 financial year than was the case in the 2019 financial year.

overall, Ziptrek Ecotours has achieved a reduction of 32% when comparing the 2020 financial year measurement with the 2019 financial year measurement. Congratulations on this great achievement and keep up the targeted reductions!

9 Glossary

De minimis

Certain activities may contribute such a small portion of the total CO_2e emissions that they make up less than 1 per cent. These may be excluded from the footprint measurement, provided that the total of excluded emissions does not exceed the materiality threshold 5 per cent: meaning the total of all emission sources excluded as *de minimis* must not exceed 5 per cent of the total footprint.

Greenhouse gas (GHG)
Gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. These include: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6).

The GHG scopes referred to are:

- Scope 1 - direct emissions from sources owned or controlled by you (e.g. diesel generator, coal heating, own vehicle fleet, agriculture)
- Scope 2 - indirect emissions generated by purchased energy (e.g. electricity, gas)
- Scope 3 - indirect emissions that are a consequence of the operations of an organisation or individual, but are not directly owned or controlled by the organisation or individual (e.g. flights, freight, non-company vehicles, waste, accommodation, electricity line losses).

Radiative forcing (RF) - Radiative forcing helps organisations account for the wider climate effects of aviation, including water vapour and indirect GHGs. This is an area of active research, aiming to express the relationship between emissions and the climate warming effects of aviation, which is yet to be agreed. For this reason, Ekos makes accounting for RF optional for our clients.

A multiplier of 1.9 is used to account for Radiative forcing in accordance with the Ministry for Environment *Measuring Emissions: A Guide for Organisations 2019*.

Appendix 1: Emission Factors

Ekos uses emission factors provided by the New Zealand Ministry for the Environment (MfE) *Measuring Emissions: A Guide for Organisations 2019*. Where emission sources are not covered by the MFE emission factors, Department for Environment and Rural Affairs (DEFRA) UK Government conversion Factors for Greenhouse Gas Reporting 2018. A full list of the emission factors used in this report are shown in Table 9 below.

TABLE 9: EMISSION FACTOR SOURCES FOR CARBON INVENTORY

Emission source	Emission Factor	Notes
Electricity		
Electricity	0.000098 tCO2e/kWh	
Electricity Transmission and Distribution	0.0000007 tCO2e/kWh	
Air conditioning and Refrigeration		
Air conditioning	Appropriate EF	
Refrigeration	Appropriate EF	
Fuels		
Natural Gas Transmission and Distribution	0.006342 tCO2e/GJ 0.000023/kWh	
LPG Commercial	0.00303 tCO2e/kg	Commercial
Diesel	0.0027 tCO2e/L	Stationary Commercial
Petrol	0.002452 tCO2e/L	Stationary Commercial
Company Vehicles		
Diesel	0.00269tC02e/L	Transport
Petrol	0.00245tC02e/L	Transport
Non-Company Vehicles		
Taxi	0.000075 tCO2e/$ 0.000224 tCO2e/km	
Rental Car	0.00021 tCO2e/km	
Waste to Landfill		
Office Waste (without gas recovery)	0.00024 tCO2e/L	Conversion from kgs to L divides by 7.6923
Flights		
NZ Domestic	0.000130 tCO2e/km	If Radiative Forcing is included a multiplier of 1.9 is applied, as recommended by MFE.
NZ International <3,700km Economy	0.000084 tCO2e/km	
NZ International >3,700km Economy	0.000086 tCO2e/km	
Freight		
Air Freight Domestic Short-haul <3700kms	0.002705 tCO2e/tonne. km 0.001056 tCO2e/ tonne. km	If Radiative Forcing is included a multiplier of 1.9 is applied, as recommended by MFE.

Long-haul >3700kms	0.000770 tCO2e/tonne. km	
Road Freight Van Truck Ferry	 0.00070 tCO2e/ tonne. km 0.00014 tCO2e/ tonne. km 0.000017 tCO2e / tonne. km	Assumption of truck to van ratio determined by client
Accommodation		
Hotel stays	0.01230tCO2e/room per night 0.02560tCO2e/room per night 0.06510tCO2e/room per night 0.04840tCO2e/room per night	In New Zealand United States of America Australia Singapore