

Carbon Inventory Report:

Sharesies Group Ltd



Period: 1<sup>st</sup> January 2020 – 31<sup>st</sup> December 2020

Unverified Inventory



Date: 29th July 2021

ekos.co.nz | ekos@ekos.co.nz

## Contents

1 Su	ummary	3
2 B	ackground	3
2.1	Communication and dissemination	4
2.2	Reporting period and base year	4
2.3	Verification and Compliance with Standard	4
3 O	rganisational boundary	4
4 R	eporting boundary	4
5 G	reenhouse Gas (GHG) Inventory	6
5.1	Methodology	6
5.2	Data Collection	7
5.3 5. 5.	Sharesies Group Ltd GHG Profile	8 8 8 8
5.4	Emissions breakdown by activity	10
5.5	Uncertainty and Data Quality	12
6 O	ffsets and Certification	13
7 Ei	mission Reduction Recommendations	14
8 G	lossary	16
Арре	ndix 1: Emission Factors	17

# 1 Summary

This carbon inventory was prepared for Sharesies Group Ltd for the 2020 calendar year period.

Organisation background	Name: Sharesies Group Ltd Contact person: Demi Heath Contact email: <u>demi@sharesies.co.nz</u> Area of business: Financial Services and Technology Full Time Equivalents (FTEs): 89 Sharesies' purpose is to financially empower the next generation by giving someone with \$5 the same investment opportunities as someone with \$5m. They improve access to investing by making the minimum investment 1c, removing jargon, and making investing fun.
Report period	1 <sup>st</sup> January 2020 – 31 <sup>st</sup> December 2020
Organisational boundary	This measurement covers the following sites:
Reporting boundary	Business operations direct and indirect emissions resulting from:
Omissions	<ul> <li>Direct (scope 1) <ul> <li>Fuels (stationary)</li> </ul> </li> <li>Indirect (scope 2) <ul> <li>Electricity from External Providers</li> </ul> </li> <li>Indirect (scope 3) <ul> <li>Purchased Goods and Services</li> <li>Capital Expenditure</li> <li>Fuel and Energy Related Emissions</li> <li>Waste and Wastewater</li> <li>Business Travel</li> <li>Staff Commuting (working from home)</li> </ul> </li> <li>Inward Freight <ul> <li>Staff Commuting (travel to and from work)</li> <li>Use of Sold Goods</li> <li>Capital Expenditure (construction/office fit out)</li> <li>Business Travel (Rental Cars)</li> </ul> </li> </ul>
Emissions	Total emissions: 505.26 tCO2e (including Radiative Forcing, excluding Inward Freight, Staff Commuting (travel to and from
Offsets	work), Capital Expenditure (construction/office fitout) and Use of Sold Products). Total offsets: 500.02 tCO <sub>2</sub> e (including Radiative Forcing and excluding Previously Offset Emissions).

Sharesies Group Ltd has elected to offset 100% of these emissions with Verified Emission Reduction Units (VERs) Sourced from the Pacific Islands, Indigenous Forest VCUs (Verified Carbon Standard Units) sourced from the Pacific Islands, Verified Emission Reduction Units (VERs) Sourced from Aotearoa New Zealand and New Zealand Carbon Units (NZUs) provided by Ekos. Through this measurement and offsetting, Sharesies Group Ltd has qualified for Zero Carbon Business Operations Certification for the 2020 calendar year period and has been issued certificate number 40000469.

## 2 Background

This report is the first annual greenhouse gas (GHG) emissions inventory, prepared for Sharesies Group Ltd. It was prepared in accordance with the requirements of ISO 14064-1 (2018) and covers the period 1<sup>st</sup> January 2020 – 31<sup>st</sup> December 2020.

## 2.1 Communication and dissemination

This inventory was prepared as a management tool for Sharesies Group Ltd to:

- Assist it in managing its response to climate change and its reduction of GHG emissions.
- Be a communication tool that demonstrates to stakeholders that Sharesies Group Ltd has identified its emissions profile, is aware of the significant issues related to climate change and is taking action to mitigate these issues, including offsetting unavoidable emissions.

The users of this report will include, but are not limited to, the staff, manager and Board of Sharesies Group Ltd, 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 2020 calendar year reporting period. The base year period is the 2020 calendar year for Sharesies Group Ltd. In subsequent inventories, comparisons will be made to this base year.

## 2.3 Verification and Compliance with Standard

This inventory has been prepared in compliance with the International Standards Organisation's process for calculating and reporting GHG emissions 14064-1 (2018). This measurement was externally confirmed by Catalyst Ltd as meeting the ISO 14064-1 standard for measurement. However, it should be noted that this measurement is an unverified inventory and that no verification audit has been conducted of the findings.

# 3 Organisational boundary

The organisational boundary identifies which facilities or subsidiaries of Sharesies Group Ltd are included or excluded from the carbon inventory. Emissions from all aspects of the organisation are consolidated to determine the total volume. Consolidation is done using one of these methods:

- Control, whereby all emissions over which the organisation has either *financial* or *operational* control are included in the inventory
- Equity share, whereby the organisation only includes emissions for the portion of the facilities and business that the organisation owns.

For Sharesies Group Ltd's inventory, the consolidation method of operational control has been used to consolidate emissions. This means that all emissions over which Sharesies Group Ltd has operational control of have been included in the inventory.

Included with Sharesies Group Ltd's organisational boundary are therefore all emission sources that occur within the Sharesies Group Ltd operations at Level 6, 111 Customhouse Quay Te Aro, Wellington 6011.

## 4 Reporting boundary

The reporting boundary identifies which emission sources are included in the carbon inventory and which are excluded. ISO 14064-1(2018) categorises emissions as follows:

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

In compliance with the ISO Standard, Sharesies Group Ltd's all relevant direct and indirect emissions are accounted for in this GHG inventory.

The included emission sources are shown in the following diagram:



Figure 1: Emission sources for Sharesies Group Ltd

#### Exclusions

- Inward Freight
- Staff Commuting (travel to and from work)
- Use of Sold Goods
- Capital Expenditure (construction/office fit out)
- Business Travel (Rental Cars)

These activities were excluded due to unavailability of data. Please see Ekos' recommendations to ensure future inclusion of these excluded activities below.

Inward freight:

Request freight reports/data from freight providers that include point of departure, point of arrival and the weight of the item being shipped.

Staff Commuting:

Start recording staff commuting data. A common and largely successful method for starting this data collection is the use of customer surveys. These surveys need to include questions regarding the mode of transport as well as the distance of a return trip to and from work. The outcomes of this survey can then be calculated with contracted days worked to determine a total kms travelled for each employee.

Use of Sold Goods:

It is important to note that the inclusion of this category is potentially a long term goal. The data required here would require Sharesies Group Ltd to complete analysis on the electricity consumption by it's clients when interacting with its software.

#### Capital Expenditure:

It is important to note here that it is difficult for Sharesies Group Ltd to improve the quality of data in regards to the Capital Expenditure category. Sharesies Group Ltd is reliant on the data that the suppliers of future capital items can provide.

Rental Cars:

One option is to only engage suppliers that provide mileage data within their invoicing. Another would be to ensure business fuel cards are used to fill these vehicles with fuel. This would allow a fuel volume based emissions calculation to be completed. A third option would be to implement the use of a mileage log when using Rental Cars.

# 5 Greenhouse Gas (GHG) Inventory

#### 5.1 Methodology

This GHG inventory was prepared in compliance with the international Standards for calculating GHG emissions. These Standards are the World Resource Institute's "Greenhouse gas protocol, a corporate accounting and reporting standard (GHG protocol) and "ISO 14064-1 (2018) Specification with guidance at the organisation level for quantification and reporting of GHG emissions and removals" (ISO 145064-1 (2018)). In measuring this inventory, the five principles of ISO 14064-1 (2018) were strictly applied.

The methodology used in measuring Sharesies Group Ltd's organisational GHG inventory is illustrated in the following diagram:



Figure 2: ISO 14064-1 (2018) methodology for measuring a GHG inventory

## 5.2 Data Collection

Data was collected by Sharesies Group Ltd staff with guidance where required from Ekos. The table below provides an overview of the data collected for each emission source. All emissions were calculated using an Ekos-developed calculator. The calculation method used to quantify Sharesies Group Ltd's GHG emissions inventory was the activity data multiplied by the appropriate emission factor:

Tonnes CO<sub>2</sub>e = Total GHG activity x appropriate emission factor

Activity data for Sharesies Group Ltd was obtained from a range of sources, which are outlined in the table below.

GHG emission factors were generally sourced from New Zealand's Ministry for the Environment. Where appropriate emission factors were not available, other reliable sources such as international government agencies or published research were used. A full list of the emission factors used is provided in Appendix 1.

Table 1: Data sources for Sharesies Group Ltd emissions

Emission Source	Unit	Data Source
Natural Gas	kWh	Landlord
Electricity	KwH	Landlord
Purchased Goods and Services		
• Food and Drink	\$	Financial Records
Potable Water	$M^3$	Landlord
Contracted Service     Providers	kWh	Contracted Service Providers
• IT Services and Data Storage	kWh	Service provider
Capital Expenditure Emissions		
• Furniture and Office Equipment	\$	Financial Records
Waste and Wastewater		
Waste to Landfill	L	Landlord
• Wastewater	M <sup>3</sup>	Water Care Assumption
Business Flights	Pax.kms	Financial Records
Business Accommodation	Room per night	Financial Records

Non-Company Vehicles		Financial Records
• Taxi/Uber	\$	
Public Transport	kms	
Staff Commuting		
Working from home	Employee per day	Internal Records
Leased Assets		
• Electricity	kWh	Calculated in scope 1 and 2
• Natural Gas	kWh	
Fuel and Energy Related Emissions		
• Electricity line losses	kWh	NA
Natural Gas line losses	kWh	NA
Well to Tank Emissions		
Natural Gas	kWh	NA
• Taxi/Uber	kms	NA
Domestic Flights	passenger.km	NA
• Short-Haul International	passenger.km	NA

## 5.3 Sharesies Group Ltd GHG Profile

Total emissions for Sharesies Group Ltd for the 12-month period from  $1^{st}$  January 2020 –  $31^{st}$  December 2020 were 505.26 tonnes of CO<sub>2</sub>e (including Radiative Forcing).

#### 5.3.1 Emissions breakdown by scope

The majority of Sharesies Group Ltd's emissions are Indirect (scope 2 and 3) emissions. Purchased Goods and Services, Capital Expenditure and Business Travel emissions are the majority of the Indirect (scope 3) emissions, with Electricity from External Providers making up 100% of the Indirect (scope 2) emissions. See Figure 3 which shows the emission source distribution.

#### 5.3.2 Scope one emissions by gas type

ISO 14064-1 requires that Scope 1 emissions are reported separately by gas type with Table 2 below showing these separated emissions for each Scope 1 emissions source. The majority of these are carbon dioxide.

Table 2: Sharesies Group Ltd scope 1 emissions by gas type

	Emiss	sion Source	Tonnes of Carbon Dioxide Equivalent (CO₂e)	Tonnes of Carbon Dioxide (CO <sub>2</sub> )	Tonnes of Methane (CH4)	Tonnes of Nitrous Oxide (N₂O)	Tonnes of Hydroflouro carbons (HFC)	Tonnes of Perofluoro Carbons (PFC)	Tonnes of Sulpur Hexaflouride (SF <sub>6</sub> )
Fug	gitive	Various	0.00	0.00	0.00	0.00	0.00	0.00	0.00

_	Sub Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Company Vehicles	Petrol	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stationary Fuel	Petrol	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas	1.39	1.38	0.003	0.001	0.00	0.00	0.00
_	Sub Total	1.39	1.38	0.003	0.001	0.00	0.00	0.00
	Total	1.39	1.38	0.003	0.001	0.00	0.00	0.00

## 5.4 Emissions breakdown by activity

Figure 3 and table 3 shows Sharesies Group Ltd's emissions breakdown by Direct (scope 1) emissions and Indirect (scope 2 and 3).



Figure 3: Sharesies Group Ltd emissions breakdown by Direct (scope 1) and Indirect (scope 2 and 3) including Radiative Forcing

Table 3: Sharesies Group Ltd emissions breakdown by Direct (scope 1) and Indirect (scope 2 and 3) including Radiative Forcing

Scope 1 (Direct emissions)	1.39	0.3%
Scope 2 (Indirect emissions)	1.61	0.3%
Scope 3 (Indirect emissions)	502.26	99.4%
Total	505.26	

Figure 4 and table 4 shows Sharesies Group Ltd's emissions breakdown by Direct (scope 1) and Indirect (scope 2 and 3) emissions by activity.



Figure 4: Sharesies Group Ltd's emissions breakdown by activity and Direct (scope 1), Indirect (scope 2 and 3) including Radiative Forcing

Table 4: Sharesies Group Ltd emissions breakdown by Direct (scope 1), Indirect (scope 2 and 3) emissions including Radiative Forcing)

	Activity	tCO2e	% of footprint
	Stationary Fuel	1.39	0.3%
	Mobile Combustion	NA	NA
Scope 1 (Direct emissions)	Industrial Processes	NA	NA
	Fugitive Emissions	NA	NA
	Landuse Change	NA	NA
Scope 2 (Indirect emissions)	Electricity	1.61	0.3%
	Category 1 - Purchased goods	415.06	82.1%
	Category 2 - Capital Goods	51.14	10.1%
	Category 3 - Fuel Related emissions	1.89	0.4%
	Category 4 - Upstream Freight	Excluded	NA
	Category 5 - Business Waste	2.09	0.4%
	Category 6 - Business Travel	27.38	5.4%
Scope 3 (Indirect emissions)	Category 7 - Staff commuting	4.71	0.9%
	Category 8 - Upstream leased assets	0.00	0%
	Category 9 - Downstream transport	NA	NA
	Category 10 - Processing of sold goods	NA	NA
	Category 11 - Use of sold goods	Excluded	NA
	Category 12 - End of life disposal	NA	NA
	Category 13 - Downstream leased assets	NA	NA
	Category 14 - Franchises	NA	NA
	Category 15 - Investments	NA	NA
Total		505.26	
FTEs		89	
Footprint per FTE		5.68	

## 5.5 Uncertainty and Data Quality

Where accurate data is not available, it is appropriate to estimate to ensure that a comprehensive inventory measurement is completed. Estimates must be carried out on a scientifically-derived basis to ensure accuracy. For Sharesies Group Ltd's GHG inventory, there are the following areas of uncertainty:

• Fuels (stationary)

The stationary fuels data was provided by the Landlord of Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. The landlord had access to the total Natural Gas consumption for the entire facility at Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. The Natural Gas consumption is not currently metered on a per floor or tenant basis. Due to this, Sharesies proportion of this Natural Gas consumption was determined based on the proportion of the floor space occupied by Sharesies Group Ltd at Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. Ekos recommends further engagement with the landlord regarding improving the availability of accurate per tenant consumption data in order to improve the accuracy of future stationary fuel emissions measurements and reduction efforts.

• Purchased Goods and Services

Food and Drink consumption:

• This aspect of the Purchased Goods and Services category was included through the use of financial spend (carbon intensity) emission factors provided by the Motu Institute. This type of emissions factor contain significant levels of uncertainty. In future years, this category will only be included if there is specific emissions data for the purchased goods and services, scope 1 and 2 emissions data of the producer, or provider of this goods or service is available.

#### Water Consumption:

 The Water data was provided by the Landlord of Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. The landlord had access to total Water consumption for the entire facility at Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. The Water consumption is not currently metered on a per floor or tenant basis. Due to this, Sharesies proportion of this Water consumption was determined based on the proportion of the floor space occupied by Sharesies Group Ltd at Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. Ekos recommends further engagement with the landlord regarding improving the availability of accurate per tenant consumption data in order to improve the accuracy of future measurements and tracking of emission reduction efforts.

IT Services and Data Storage

• Through engaging with Amazon Web Services, Sharesies Group Ltd was able to access estimated electricity consumption data for its Australian based data storage and web hosting. During this engagement, Amazon Web Services shared that it is currently improving the accessibility of emissions data relating to its web services. Ekos encourages Sharesies Group Ltd to continue engaging with Amazon Web Hosting Services in order to improve the accuracy of the IT Services and Data Storage data available and therefore improve the accuracy of future carbon emission measurements and tracking of emission reduction efforts.

• Capital Expenditure

This category was included through the use of financial spend (carbon intensity) emission factors provided by the Motu Institute. This type of emissions factor contain significant levels of uncertainty. In future years, this category will only be included if there is specific emissions data for the capital item purchased or if scope 1 and 2 emissions data of the producer is available.

• Waste

The waste data was provided by the Landlord of Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. The landlord had total waste volumes for the entire facility at Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. Waste production is not currently measured on a per floor or tenant basis. Due to this, Sharesies Group Ltd's proportion of waste production was determined based on the proportion of the floor space occupied by Sharesies Group Ltd at Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. Ekos recommends further engagement with the landlord regarding improving the availability of accurate per tenant waste production data in order to improve the accuracy of future waste emissions measurements and emission reduction tracking efforts.

• Wastewater

Accurate Wastewater data was unavailable as Wellington City Council is not currently metering or charging for Wastewater at Level 6, 111 Customhouse Quay Te Aro, Wellington 6011. Due to this, Ekos applied Watercare's proxy of attributing 95% of Water consumption to Wastewater. It is difficult for Sharesies Group Ltd to improve the quality of this data and it is unlikely that the quality of this data can be improved until Wellington City Council starts metering and charging for this business activity.

To increase the quality of the carbon inventory, Sharesies Group Ltd should plan to improve data collections processes for as appropriate. These improvements should start as soon as possible.

# 6 Offsets and Certification

To qualify for Zero Carbon Business Operations Certification with Ekos, an organisation must measure its business operations inventory (carbon footprint) and offset 100% of direct and indirect emissions. To qualify for Climate Positive Business Operations Certification, and organisation must offset 120% of direct and indirect emissions.

Sharesies Group Ltd has measured all required activity emissions, totalling 505.26 tonnes of  $CO_2e$  (including Radiative Forcing, excluding Inward Freight, the travel to and from work component of Staff Commuting, the construction and office fit out component of Capital Expenditure and Use of Sold Products). Sharesies Group Ltd have offset 500.02 tonnes of  $CO_2e$  (including Radiative Forcing and excluding previously offset emissions) (100%), therefore, Sharesies Group Ltd has qualified for Zero Carbon Business Operations certification for the 2020 calendar year period.

The offsets Sharesies Group Ltd has selected are as follows;

Verified Emission Reduction Units (VERs) produced in the Rarakau Rainforest Conservation Project in Southland, New Zealand. These offsets are retired in the Markit Environmental registry.

New Zealand Carbon Units (NZUs) produced in the Hōpai Bay Native Regeneration Project in Marlborough, New Zealand. These offsets are retired in the New Zealand Carbon Register.

Verified Emission Reduction units (VERs) from Ekos' Pacific Island carbon credit supply chain. These offsets are retired on the Markit Environmental Registry.

Verified Carbon Units (VCUs) produced in the NIHT Topaiyo REDD+Project in New Ireland Papua New Guinea. These offsets are retired on the Verra Registry.

## 7 Emission Reduction Recommendations

Ekos recommends Sharesies Group Ltd take action to reduce its operational carbon emissions. These recommendations are based on Sharesies Group Ltd's emission hotspots. These are the highest level emission sources, and provide the greatest opportunity to reduce emissions for Sharesies Group Ltd at potentially the lowest cost.

The highest emission sources for Sharesies Group Ltd are:

- Indirect (scope 3) Purchased Goods and Services emissions
- Indirect (scope 3) Flight emissions
- Indirect (scope 2) Electricity from External Sources emissions

# To reduce Indirect (scope 3) Purchased Goods and Services emissions, Ekos recommends the following:

Scoping/researching web service providers located in countries with more efficient national electricity grids than the current provider. The current provider (Amazon Web Services) is providing IT Services and Data Storage services to Sharesies Group Ltd based in Sydney Australia. An example of a significantly less carbon intensive national electricity grid compared to the one currently being used is New Zealand. Transitioning to a region with a less carbon intensive electricity grid would result in significant carbon emission reductions.

#### To reduce Indirect (scope 3) Flight emissions, Ekos recommends the following:

Reducing the number of flights taken as much as possible. This can be achieved through the increased use of video conferencing platforms such as Microsoft Teams and Zoom. Ekos understands such platforms are not always appropriate, however, it is important to only travel by air when essential. If a trip requiring a flight is considered essential, an internal policy could be implemented regarding a minimum number of meetings to be attended during trips where flights are needed. Such a policy reduces the number of unnecessary flights taken and improves the overall carbon efficiency of the organisation.

# To reduce Indirect (scope 2) Electricity From External Sources emissions, Ekos recommends the following:

Focussing on staff behaviour change surrounding electricity consumption. 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.

Ekos also recommends adding energy efficiency considerations within infrastructure procurement policies to ensure energy efficient models are prioritised. This can apply to the procurement of new goods or for the replacement of current models when they reach end of life.

# 8 Glossary

#### De minimis

Certain activities contribute less than 1 percent of the total of  $CO_2e$  emissions. These may be excluded from the GHG inventory, provided that the total of excluded emissions does not exceed a materiality threshold of 5 percent. That is, the total of all excluded emission sources should not exceed 5 percent of the total inventory.

#### 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' surface, the atmosphere and clouds. These include:

- Carbon dioxide (CO<sub>2</sub>)
- Methane (MH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF<sub>6</sub>)

#### **GHG Scopes:**

- Scope 1: Direct emissions from sources owned or controlled by reporting entity. For example diesel generator, coal heating, own vehicle fleet, agriculture
- Scope 2: Indirect emissions generated by purchased energy. For example, electricity, gas.
- Scope 3: Indirect emissions that are a consequence of activities undertaken by the reporting organisation or related individual, but not directly controlled by the organisation. For example, flights, freight, non-company vehicles, waste, electricity line distribution and transmission 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, which seeks to express the relationship between emissions and climate warming effects of aviation. Inclusion of radiative forcing effects is optional for Ekos' clients as the science is still evolving.

Ekos uses a multiplier of 1.9 to account for radiative forcing effects in line with the Ministry for the Environment publication *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) publication *Measuring Emissions: A Guide for Organisations 2019*. Where emission sources are not covered by the MfE publication, Ekos identifies suitable factors for use from the Department for Environment and Rural Affairs (DEFRA), UK Government document *Factors for Greenhouse Gas Reporting 2018*. A full list of the emission factors used in this report are shown below:

Emission source	Emission Factor	Notes			
	Electricity				
Electricity	0.000098 tCO2e/kWh				
	Fuels	·			
Natural Gas	0.002/kWh	Commercial			
	Non-Company Vehicles	·			
Taxi	0.000075 tCO2e/\$				
Public Transport	0.00109tCO2e/km				
	Waste to Landfill				
Office Waste (with gas recovery)	0.00006 tCO2e/L	Conversion from kgs to L divides by 7.6923			
	Flights	·			
NZ Domestic	0.000130 tCO2e/km	If Radiative Forcing is included a			
NZ International 3,700km Economy Business	0.000084 tCO2e/km 0.000127 tCO2e/km	multiplier of 1.9 is applied, as recommended by MFE.			
	Accommodation	·			
Hotel stays	0.01230tCO2e/room per night	In New Zealand			
	Purchased goods				
Food and Drink	0.0002249tCO2e/\$	Food and Beverage Services (Motu Institute).			
Potable Water	0.000031 tCO2e/M <sup>3</sup>				
IT Services and Data Storage	0.0008tCO2e/kWh	Australian National Greenhouse Accounts October 2020			
Contracted Service Providers	0.000098 tCO2e/kWh				
	Capital goods				
Furniture and Office Equipment	0.0002202 tCO2e/\$	Furniture Manufacturing emissions factor (Motu Institute).			
	Wastewater				
Wastewater	0.000457tCO2e/M <sup>3</sup>				
	Fuel and Energy Related Emissions				
Electricity Transmission and Distribution: Electricity:	0.000007 tCO2e/kWh				
Natural Gas: Well to Tank emissions:	0.000023 tCO2e/kWh				
Natural Gas Taxis	`0.000026 tCO2e/kWh NA				

Domestic Flights Short-Haul International (economy)	0.000027tCO2e/passenger.km 0.000017 tCO2e/passenger.km	