



Carbon Inventory Report:

ICOTRADERS
WIRE FURNITURE & HOMEWARES

Ico Traders Ltd

Period: 2020-2021 financial year

Unverified Inventory



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1 Summary

This carbon inventory was prepared for Ico Traders Ltd for the 2020-2021 financial year.

Organisation background	Name: Ico Traders Ltd Contact person: Miranda Osborne Contact email: miranda@icotraders.co.nz Area of business: Furniture Full Time Equivalents (FTEs): 1 Ico Traders Ltd is a kiwi business that designs and produces a wide range of household products, from lightshades to wire furniture.
Report period	01.04.2020 – 31.03.2021
Organisational boundary	This measurement covers the following sites: Head Office – Idris Rd, Fendalton, Christchurch Storage Unit – 34 Logistics Drive, Christchurch
Reporting boundary	Business operations direct and indirect emissions resulting from: • Direct (scope 1) ◦ Stationary Fuels ◦ Company Vehicles • Indirect electricity (scope 2) ◦ Electricity • Indirect (scope 3) ◦ Fuel & Energy Related Emissions ◦ Upstream Freight ◦ Business Waste ◦ Business Travel ◦ Staff Commuting
Exclusions:	• Indirect (scope 3) ◦ <i>Purchased Goods & Services</i>: IT Services and Data Storage, Water, Production materials, Contract Processing ◦ <i>Downstream Transport</i> ◦ <i>End of Life Treatment of Sold Products</i>
Emissions	Total emissions: 22.49 tCO ₂ e
Offsets	Total offsets: 26.99 tCO ₂ e (120%)

Ico Traders Ltd has elected to offset 120% of these emissions with 50% international indigenous forest VERs (Verified Emissions Reduction Units) certified to the Plan Vivo carbon standard and 50% indigenous forest New Zealand Units (NZUs), verified to the New Zealand Emissions Trading Register. Through this measurement and offsetting, Ico Traders Ltd has qualified for Climate Positive Business Operations certification for the 2020-2021 financial year and has been issued certificate 40000560.

2 Background

This report is the first annual greenhouse gas (GHG) emissions inventory, prepared for Ico Traders Ltd. It was prepared in accordance with the requirements of ISO 14064-1 (2018) and covers the 2020-2021 financial year period.

2.1 Communication and dissemination

This inventory was prepared as a management tool for Ico Traders 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 Ico Traders 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 Ico Traders Ltd, its shareholders and members. The summary of this inventory will be made available to all stakeholders on request.

2.2.1 Statement of intent

Ico Traders Ltd has provided the following statement of intent:

“Ico Traders Ltd is a small New Zealand business. We split production of our goods between local and offshore factories. We have researched extensively, the possibility of solely manufacturing in New Zealand but have found that it is not a viable. Our aim now is to reduce our carbon footprint as much as possible in New Zealand and with our factory overseas.”

2.2 Reporting period and base year

This inventory is for the 2020-2021 financial year. This is the base year for Ico Traders Ltd's. In subsequent inventories, comparisons will be made to this base year.

2.3 Verification and Compliance with Standard

This inventory is consistent with the International Standards Organisation's process for calculating and reporting GHG emissions 14064-1 (2018). Whilst this is the case, 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 Ico Traders 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 Ico Traders Ltd's inventory, the operational control method has been used to consolidate emissions. This means that all emissions over which Ico Traders Ltd has operational control have been included in the inventory.

Included within Ico Traders Ltd's organisational boundary are therefore all emission sources that occur within Ico Traders Ltd's operations at the Head Office; Idris Rd, Fendalton, Christchurch and at the Storage Unit; 34 Logistics Drive, Christchurch.

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, Ico Traders Ltd has measured all relevant direct and indirect emissions shown below in this GHG inventory.

The included emission sources are shown in Figure 1 below:

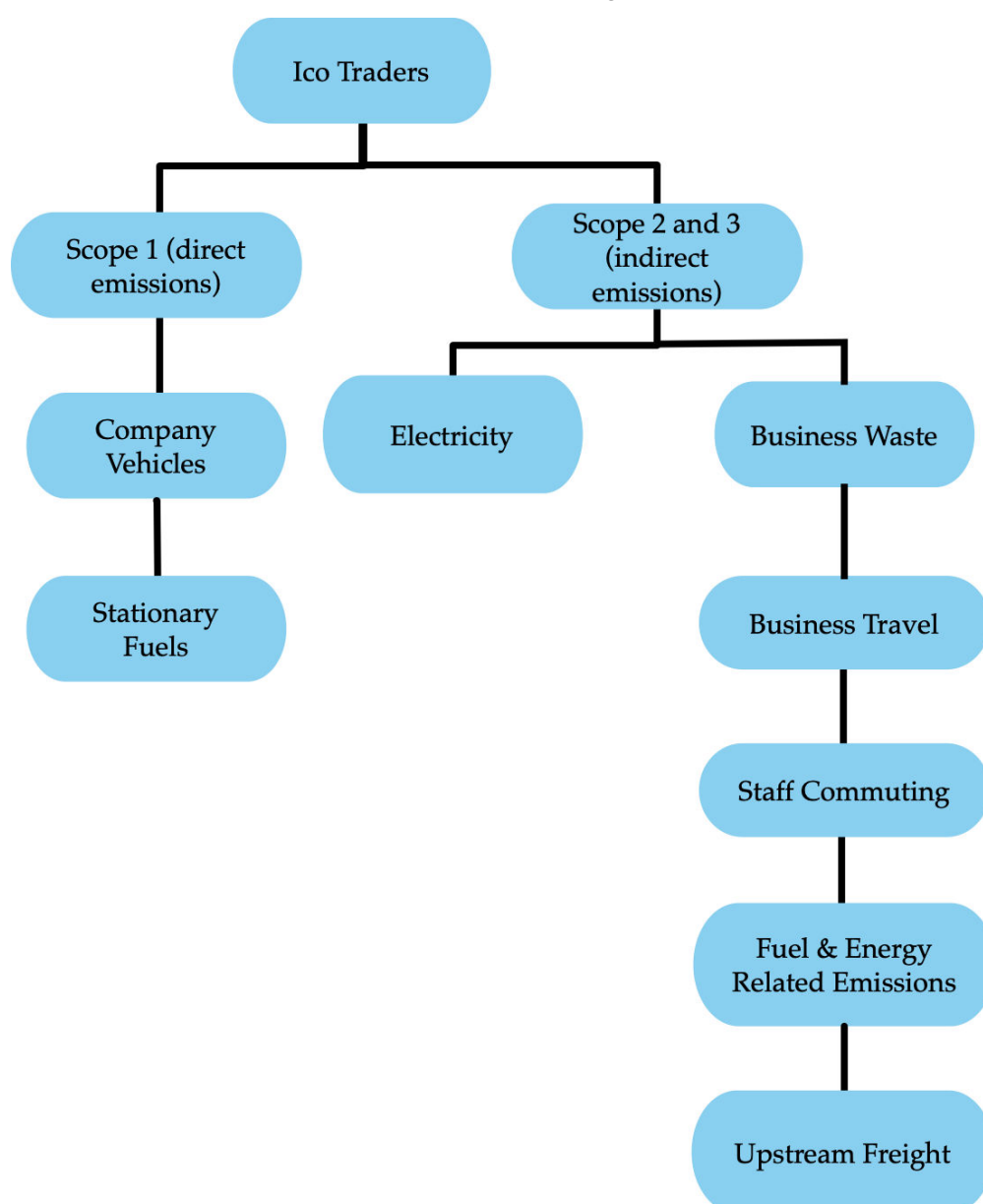


Figure 1: Ico Trader's 2020-2021 financial year Emission Sources

Exclusions

The following emission sources have been excluded from the reporting boundary:

- **Purchased Goods & Services:** Water, IT Services & Data Storage, Production Materials, Contract Processing
 - Data was unavailable for this measurement period, the client will aim to gather accurate data for these categories for the next measurement.
- **Downstream Transport:**
 - Ico Traders Ltd uses a small storage shed with three lights which are used rarely. The site has no electricity meter, therefore it has been excluded as it is unavailable and likely an insignificant emissions source.
- **End of Life Treatment of Sold Products:**
 - It is not possible to accurately assess at this time. Ico Traders Ltd will look to gather this information for subsequent measurements.

5 Greenhouse Gas (GHG) Inventory

5.1 Methodology

This GHG inventory was prepared to be consistent 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 14064-1 (2018)). In measuring this inventory, the five principles of ISO 14064-1 (2018) were strictly applied.

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

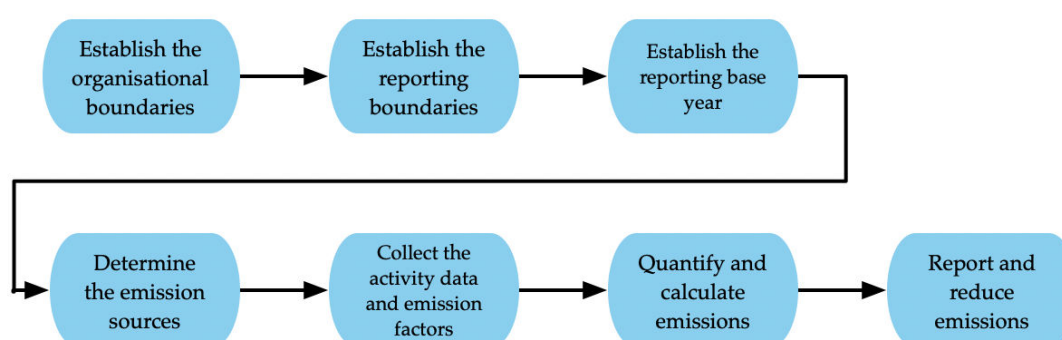


Figure 2: ISO 14064-1 (2018) Methodology for Measuring a GHG Inventory

5.2 Data Collection

Data was collected by Ico Trader's 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 emissions was the activity data multiplied by the appropriate emission factor:

$$\text{Tonnes CO}_2\text{e} = \text{Total GHG activity} \times \text{appropriate emission factor}$$

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, as provided in Appendix 1.

Table 1: Data Sources for Ico Trader's 2020-2021 financial year Emissions

Emission Source		Unit	Data Source
Stationary Fuels	Diesel	Litres	Internal Records
Company Vehicles		Litres of Fuel	Internal Fuel Records
Electricity		kWh	Power Bill
Fuel & Energy Related Emissions	Transmission and Distribution Losses	kWh	Power Bill
	Fuel & Energy Related Emissions	Litres of Fuel	
	Freight Related Emissions	Tonne km	Freight Report
	Air Travel	Passenger km	Air NZ Report (Xero)
	Rental Car	km	Budget Car Report
	Staff Commuting – Vehicle Mileage	km	Internal Records (weekly average)
Upstream Freight		Tonne km	Freight Report
Business Waste	Landfill Waste	Litres	External Waste Report
Business Travel	Taxis	\$spend	Uber Receipts (Xero)
	Rental Cars	km	Budget Car Report (Xero)
	Air Travel	Passenger km	Air NZ Report (Xero)
	Accommodation	Person nights	Internal Staff Records
Staff Commuting	Vehicle Mileage	km	Internal Staff Records

5.3 Ico Traders Ltd GHG Profile

Ico Trader's total emissions for the 2020-2021 financial year were 22.49 tonnes of CO₂e.

5.3.1 Emissions breakdown by scope

Figure 3 and Table 2 below show Ico Traders Ltd 's emissions by scope, with the majority of emissions coming from scope 3 at 69%, followed by scope 1 at 29% and scope 2 emissions at 2%.

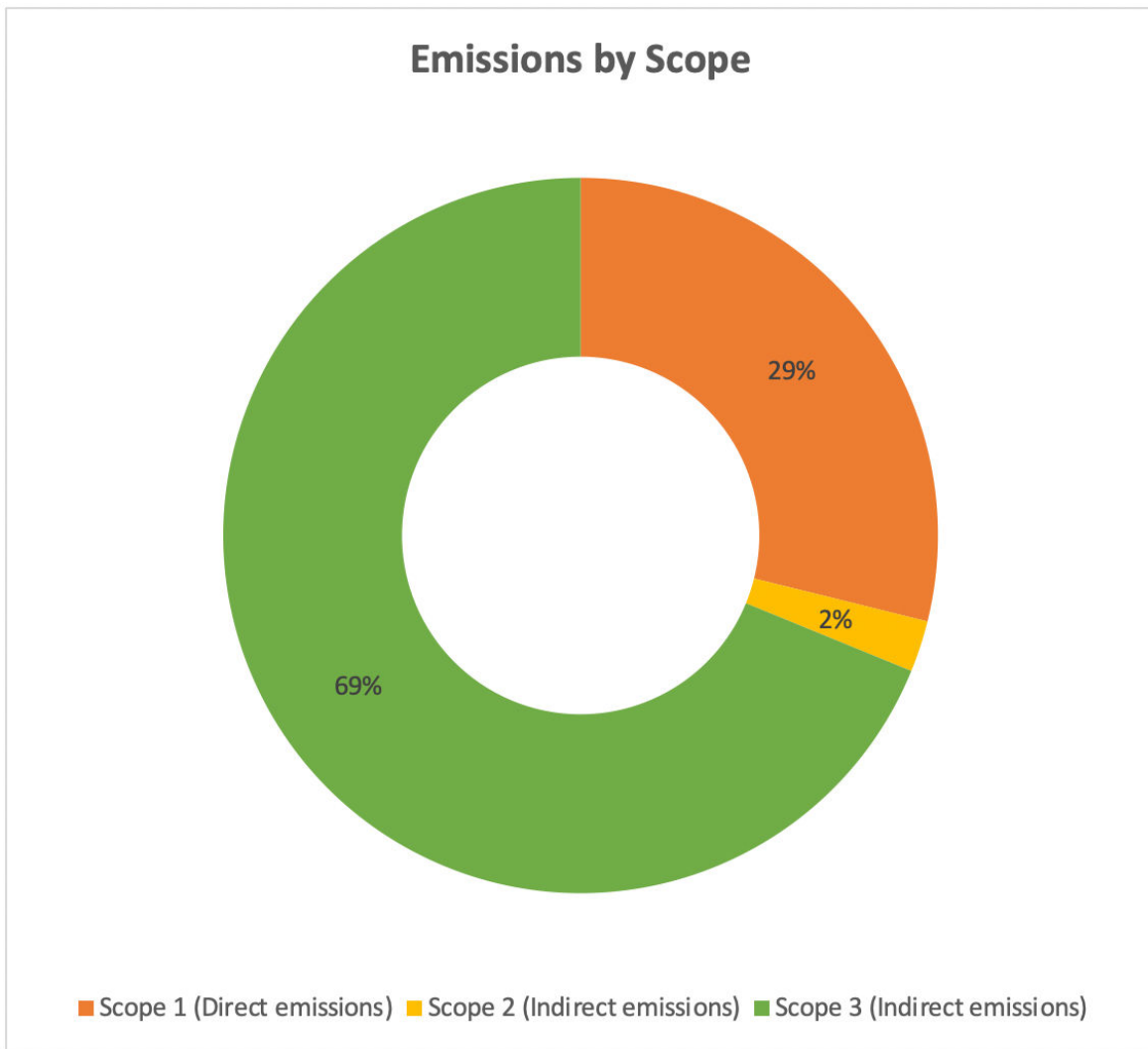


Figure 3: Ico Trader's 2020-2021 financial year Emissions by Scope

Table 2: Ico Trader's 2020-2021 financial year Emissions by Scope

Scope	Tonnes of CO ₂ e	% of total
Scope 1	6.49	29%
Scope 2	0.52	2%
Scope 3	15.48	69%
Total	22.49	

5.3.2 Scope one emissions by gas type

ISO 14064-1 (2018) requires that scope 1 emissions are reported separately by gas type. Table 3 below shows these separated emissions for each scope 1 emissions source. The vast majority of this is carbon dioxide.

Table 3: Ico Traders Ltd's 2020-2021 financial year Scope 1 Emissions by Gas Type

Emissions Source	Activity	Carbon Dioxide Equivalent Emissions	Carbon Dioxide Emissions	Methane Emissions	Nitrous Oxide Emissions
Stationary Fuels	Diesel - Litres	1.88	1.87	0.01	0.00
Company Vehicles	Diesel - Litres	4.03	3.96	0.01	0.06

5.3.3 Emissions breakdown by activity

Figure 4 and Table 4 below show Ico Trader's emissions by activity. The majority of emissions came from Upstream Freight at 45%, followed by Company Vehicles at 18%, Fuel & Energy Related Emissions at 14%, Stationary Fuels at 11%, Business Travel at 7%, Electricity at 2%, Business Waste at 1% and Staff Commuting at 1%.

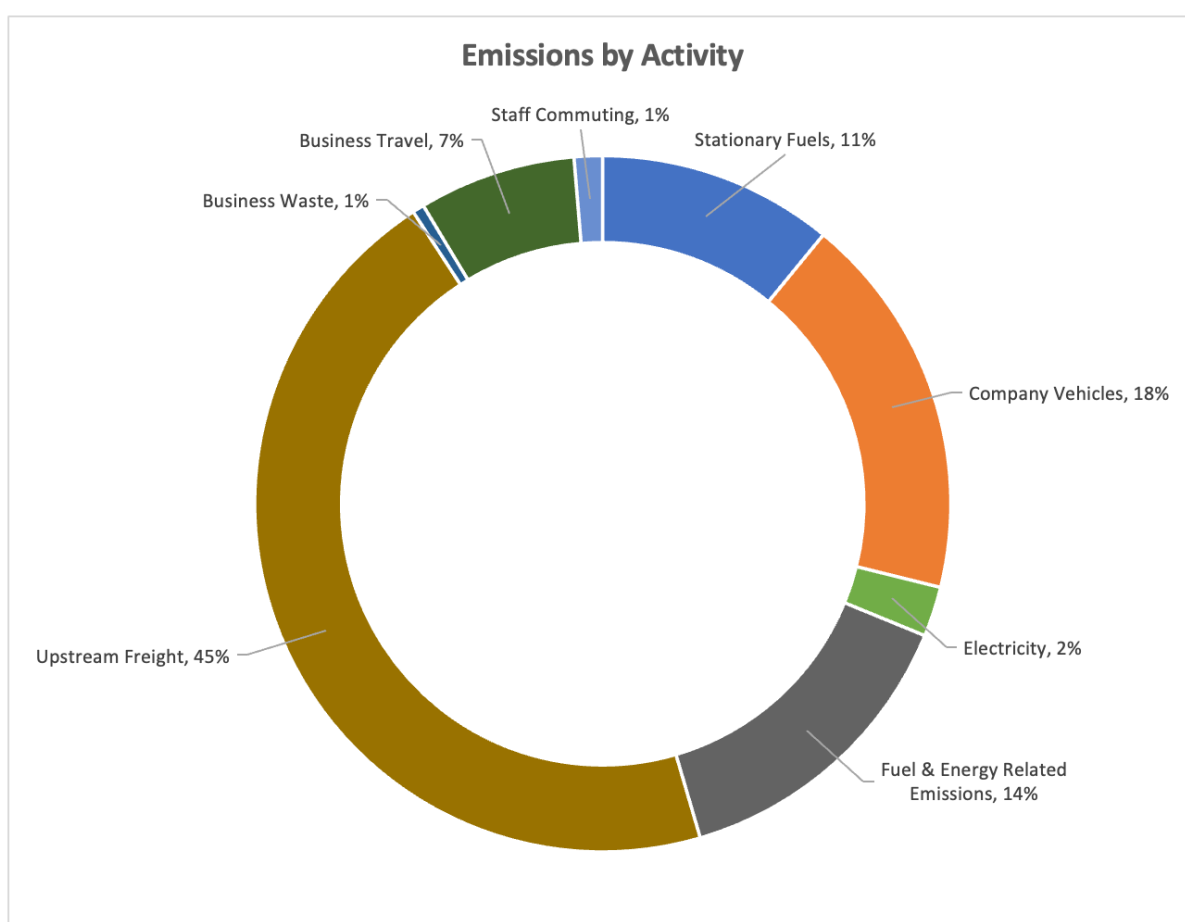


Figure 4: Ico Trader's 2020-2021 financial year Emissions By Activity

Table 4: Ico Trader's 2020-2021 financial year Emissions By Activity

Scope of emissions	Activity	tCO2e	% of total emissions
Scope 1	Stationary Fuels	2.46	11%
	Company Vehicles	4.03	18%
	Industrial Processes	NA	0%
	Air Conditioning/Refrigerants	NA	0%
	Agriculture	NA	0%
Scope 2	Electricity	0.52	2%
Scope 3	Purchased Goods & Services	Excluded	0%
	Capital Expenditure	NA	0%
	Fuel & Energy Related Emissions	3.22	14%
	Upstream Freight	10.20	45%
	Business Waste	0.12	1%
	Business Travel	1.64	7%
	Staff Commuting	0.30	1%
	Upstream Leased Assets	NA	0%
	Downstream Transport	Excluded	0%
	Processing of Sold Goods	NA	0%
	Use of Sold Goods	NA	0%
	End of Life Treatment of Sold Goods	Excluded	0%
	Downstream Leased Assets	NA	0%
	Franchises	NA	0%
	Investments	NA	0%
Total		22.49	
FTEs		1	

5.4 Other Emissions

5.4.1 Fugitive Emissions (refrigerants)

Fugitive emissions were not applicable to this measurement period.

5.4.2 Combustion of Biomass

No combustion of biomass occurred during the measurement period.

5.4.3 Land Use and Land Use Change

No Land Use and Land Use Change occurred during the measurement period.

5.4.4 Pre-verified data

No pre-verified data was used in this emissions inventory.

5.4.5 Double counting

No double counting of emissions occurred within this emissions inventory.

5.5 Uncertainty and Data Quality

Where accurate data is not available, it is appropriate in some situations to estimate activity data to ensure that a comprehensive inventory measurement is completed. Estimates must be carried out on a scientifically-derived basis. For Ico Traders Ltd's GHG inventory, there are these areas of uncertainty:

- Company Vehicles - Diesel

Ico Traders Ltd estimated the total litres used based on the total dollar spent on fuel during the measurement period. This was done using monthly fuel costs recorded in Xero and dividing these costs by the average diesel price/litre for that month. It is strongly advised that Ico Traders Ltd looks to obtain a fuel card so that accurate fuel consumption data can be gathered for future measurements as the current methodology results in poor quality data results.

These improvements should start as soon as possible.

6 Offsets and Certification

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

Ico Traders Ltd has measured all required activity emissions, totalling 22.49 tonnes of CO₂e.

Ico Traders Ltd has offset 120% of these emissions, totalling 26.99 tonnes of CO₂e.

Ico Traders Ltd has qualified for Climate Positive Business Operations Certification for the 2020-2021 financial year.

The offsets purchased for this certification are in the form of both indigenous forest VERs (Verified Emissions Reduction Units) certified to the Plan Vivo Carbon standard and New Zealand indigenous forest units (NZUs) verified to the New Zealand Emissions Trading Register.

7 Carbon Emission Reduction Planning Process

As part of the programme rules for Ekos' carbon measurement programme, it is recommended that Ico Traders Ltd develop a Carbon Emissions Reduction Plan.

Deciding on what further reductions should occur and when offsetting should start can be difficult. To assist in developing a Carbon Emissions Reduction Plan, Ekos recommends undertaking the following four-step process.

7.1 Rank emissions activities by contribution to organisational emissions

First, identify the highest emitting activities. This will show where the greatest opportunity to reduce emissions can be found. For Ico Traders Ltd, the emission sources in order of highest to lowest emissions are shown in Table 5 below:

Table 5: Ico Traders Ltd's 2020-2021 financial year Emissions Sources from Highest to Lowest Emissions

Activity	tCO ₂ e	% of total emissions
<i>Upstream Freight</i>	10.20	45%
<i>Company Vehicles</i>	4.03	18%
<i>Fuel & Energy Related Emissions</i>	3.22	14%
<i>Stationary Fuels</i>	2.46	11%
<i>Business Travel</i>	1.64	7%
<i>Electricity</i>	0.52	2%
<i>Staff Commuting</i>	0.30	1%
<i>Business Waste</i>	0.12	1%

7.2 Actions that could be taken to reduce emissions

The next step is to identify actions that will reduce emissions for each of Ico Traders Ltd emissions activities. This can be done through a workshop with all staff or with just one or two people. No idea is a silly idea, just record everything that comes to mind. Ekos has made the following recommendations for actions to reduce emissions in the top three emissions sources:

- **Upstream Freight**
 - **Behaviour/Policy:** Only send international freight by ship (not air).
 - **Policy:** Procurement – where are you sourcing your goods from?
 - **Supply chain:** Upgrade your freight company to one that is actively reducing their emissions (using low carbon vehicles and freight networks)
 - Ensure that the company you are working with is prepared to send you the data you require for your measurement: weight and distances travelled by each shipment.
 - *Kiwi Express is already Zero Carbon, so if you were to use them, although freight emissions will still be part of your businesses carbon footprint, you would not have to offset these emissions.*
 - **Influence:** Put pressure on your freight company to measure and offset their own emissions. Start by asking to speak to their sustainability team about their intentions. The more pressure clients put on freight companies to take responsibility for their emissions, the sooner we will see a transition to more efficient technologies.
 - **Influence:** Research and give preference to any freight companies using lower emission freight e.g. train freight or electric vehicles. The uptake of low emission freight is very much in its infancy, but if you can let your freight companies know you are shopping for this - the sooner we will see a transition to more efficient technologies.

- **Policy:** Think about the weight of your goods and the distance they are travelling because these factors affect your emissions. This may in turn cause you to think about waste and the packaging you use.
 - When you are arranging an order with your suppliers – let them know that you are measuring and offsetting the carbon emissions in your supply chain. You might want to let them know that you have an expectation that they will do the same in the future.
 - One of the most significant ways that we as ‘consumers’ can start to influence and decrease the impact that freight emissions have on our climate, is to change our expectations around the speed of delivery. When we expect overnight or fast deliveries, the pressure on suppliers and freight companies often results in vehicles travelling half empty. Where possible, let your suppliers know that you want them to use a freight company that is actively prioritising lowering their emissions, even if this means a slower form of delivery. This may mean a slight change to the way you plan your orders and year. Either way, be a leader and start the conversation.
- **Company Vehicles**
 Covid-19 will likely result in a dramatic reduction in your company vehicle driving emissions and an upgrade in tele-conferencing habits. The challenge now, is how we can lock-in these new behaviours in order to keep emissions down in the long-term. To reduce your driving emissions, Ekos recommends:
 - Investing in efficient electric or hybrid vehicles.
 - If you can’t replace the vehicle type, take a deep dive into efficiency. This can be looked at in three ways: 1) the efficiency of vehicle utilisation and making sure you need the vehicles you own 2) efficient driving of that vehicle and 3) regular servicing of the current fleet to optimise efficiency.
 - GPS vehicle tracking services are increasingly being used by businesses to allow them to monitor and analyse the use of their vehicle fleet. The data produced allows businesses to analyse whether their fleet is being used optimally or whether changes could be made. Changes could include potentially reducing the size of their fleet or exploring lease options as opposed to vehicle ownership. One example of such a tracking application is [Eroad](#).
 - **Policy:** Set an “only when Essential” driving policy along with an annual driving emissions reduction target.
 - **Behaviour change:** Encourage active transport or alternative to fossil fueled vehicles by educating staff on the sustainable and active transport options available around your workplace. Make sure their use is encouraged for transit to business meetings.
 - **Infrastructure Upgrade/Policy set:** Upgrade fossil fuel reliant vehicle fleets to hybrid and electric models.
 - [Ecogeek optimise and electrify services](https://www.ecogeekco.co.nz/fleet-electrification-service)
<https://www.ecogeekco.co.nz/fleet-electrification-service>
 - **Infrastructure Upgrade/Policy set:** Provide staff with alternative modes of transport when they are carrying out business operations. Such a policy reduces the use of fossil fuel reliant company vehicles. These alternative modes of transport could include push bikes, electric bikes, electric scooters.
 - **Internal policy changes:** Develop a policy that supports the transition from a fossil fuel reliant fleet to an electric and hybrid fleet by 2030. When setting such a policy, it is important to get an understanding of charging requirements and how this would impact your building/relationship with the grid.

- Ecogeek optimise and electrify services
<https://www.ecogeekcplo.co.nz/fleet-electrification-service>
 - **Infrastrucutre Upgrade/Policy set:** Where electric or hybrid models are not available or appropriate (for company vehicles that operate on vineyards e.g. tractors), we recommend investing in the most efficient vehicles possible. Due to the fact that the most efficient vehicles may have a higher cost up front, we recommend speaking with other business owners about vehicle upgrades they may have made, and considering whether any purchasing power could be leveraged in your region or industry.
- **Fuel & Energy Related Emissions**
 - Fuel & Energy Related Emissions reflect the emissions that arise from the production, processing, and delivery of fuel and Energy. A reduction in activities that directly and indirectly use fossil fuels will therefore reduce Fuel & Energy Related Emissions. These activities include Company Vehicles, Staff Commuting, Electricity, Upstream Freight and Business Travel.

7.3 Ranking actions (marginal cost abatement analysis)

The next step is to rank the actions identified previously according to cost. Some research will be required to find out the associated cost of each potential action. Rank the actions as negative cost (1), low cost (2), medium cost (3), or high cost (4).

The aim of this process is to identify the “low hanging fruit” on the carbon emissions reduction (abatement) tree as shown in Figure 5 below.

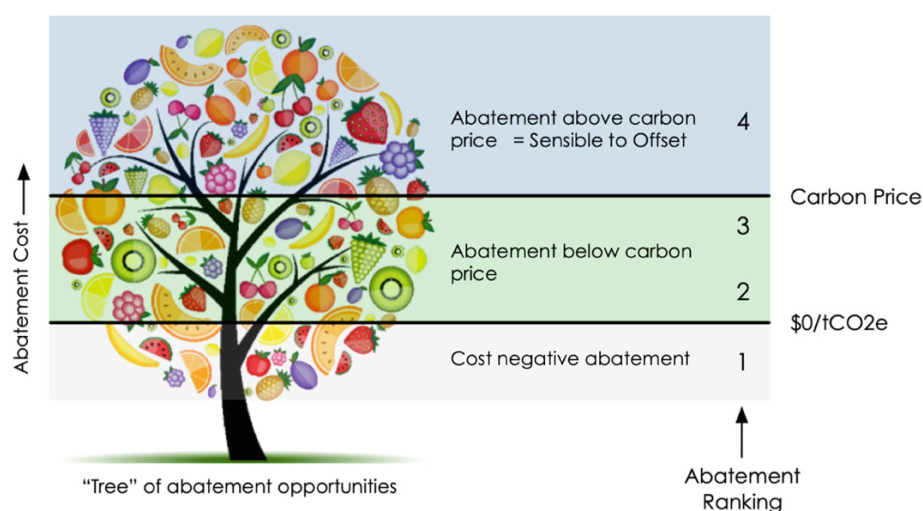


Figure 5: The Abatement Tree

The lowest actions (fruit), category 1, are actions such as changing policies or processes. Category 2 actions (those slightly higher up the tree) will require some expense, such as replacing lightbulbs for more efficient LEDs. Category 3 actions are those costing slightly more but are still a relatively low cost, such as buying new equipment. Category 4 actions are very expensive, such as building energy efficient buildings or are just not possible yet.

An efficient reduction strategy targets the lowest cost actions first and will not move to higher ones until the lowest are complete. For the most expensive actions, it may be more effective, affordable and beneficial for the Ico Traders Ltd to purchase restorative forest carbon credits rather than invest money into these projects.

This process is shown in Table 6.

Table 6: The “Abatement Tree” Ranking Categories

Abatement ranking		Action	Examples from the recommended actions
1. Cost negative and easy wins.		Highest priority actions. Do these first.	Changing policies for inward international freight Allow alternative modes of transport for staff to travel to site visits
2. Cost positive but still easy wins.		Second highest priority. Do these second.	Installing LED lights Change policies for outward freight to lower emissions options (e.g. avoiding air freight) Install bike parks
3. Cost positive harder wins but below the carbon price.		Third highest priority. Do these after 1 & 2 above.	Conduct an energy audit
4. Cost positive and above the carbon price.		Don't do these because offsetting is cheaper to enable reductions than paying for the action	Replacing petrol cars with electric Installation of solar PV panels

7.4 Implement emission reduction plan and repeat

The next step is set a time frame for when the plan will be implemented. This will include setting aside funding in annual budgets to pay for the actions and monitoring the plan going forward. One thing that may be useful to consider at this point is committing dedicated staff time to the project and establishing an implementation group.

Finally, the process starts again and repeats the following year by measuring once more. This enables Ico Traders Ltd to monitor progress of the reduction plan and its impact on organisational emissions. At this point new actions can be identified and ranked in terms of the abatement tree and added to the plan as implementation continues.

8 Glossary

De minimis

Certain activities contribute less than 1 percent of the total of CO₂e 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's surface, the atmosphere and clouds. These include:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF₆)

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.

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*. Ekos emission factors for air travel include Radiative Forcing, which 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.

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*.

Where emission sources are not covered by the MfE publication, Ekos identifies suitable factors for use have been sourced from the Department for Environment and Rural Affairs (DEFRA), UK Government document *Factors for Greenhouse Gas Reporting 2018*, the Motu institute and Aslan, J. Mayers, K. Koomey, J. France, C. 2017. *Electricity Intensity of Internet Data Transmissions, Untangling the Estimates*. Journal of Industrial Ecology, Volume 22, number 4.