



# **GREENHOUSE GAS EMISSIONS INVENTORY REPORT**

**Inventory Scope: Mainfreight Global**

**Reporting Period: 1 January 2019 to 31 December 2019**

**Version: 2.0**

**Audit Status: Verified to reasonable assurance**

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# CHAPTER 1: GENERAL DETAILS, PURPOSE AND POLICY

## 1.1 Introduction

The following document provides the Mainfreight Group of companies' full global greenhouse gas (GHG) emissions inventory for the 2019 calendar year.

Mainfreight's reporting processes and emissions classifications are consistent with international protocols and standards. This report has been prepared in accordance with the *International Standards Organisation* standard *ISO 14064-1:2018*. The information provided follows the requirements outlined in Part 9.3.1 and (where applicable) 9.3.2 of the standard.

## 1.2 Purpose

Mainfreight's intent here is to demonstrate best practice with respect to consistency, comparability and completeness in the accounting of greenhouse gas emissions.

This report:

- Relates to emissions for the Mainfreight Group of companies.
- Has been prepared in accordance with the requirements of the ISO 14064-1: 2018 standard.
- Endeavours to use primary data wherever possible but especially surrounding all major emissions sources. Where primary data is not available, a consistent and conservative approach to calculation will be applied.
- Reflects our commitment to better understanding and ultimately improving our operational performance with respect to emissions.
- Excludes specific targets.

## 1.3 Description of Mainfreight

Mainfreight is a global supply chain and logistics provider with over 260 branches worldwide offering full solutions across warehousing, international freight and domestic forwarding. Mainfreight is a New Zealand Stock Exchange listed company (MFT: NZX). The company is made up of "Mainfreight NZ Limited" (the 'Parent') and its subsidiaries (together the 'Group').

For further information see [www.mainfreight.com](http://www.mainfreight.com)

### 1.3.1 GHG and Sustainability Policies, Strategies and Programmes

Our vision for a 100-year company is not about reaching an end-point. It's a mind-set that every day and every deed is about growing a strong, iconic, enduring business. This means leaving the place better than we found it and doing all we can to safeguard the future of our people, our communities and our planet.

Climate change remains a defining issue for businesses and governments everywhere. For Mainfreight, it begins with accepting that our business is based on an activity that generates carbon emissions and therefore taking responsibility to reduce those emissions over time while maintaining our competitiveness and ability to deliver quality services as our customers expect.

Mainfreight's commitment to sustainability, safety, health and the environment has been, and continues to be, a fundamental element of our operating practices and success to date. For more on Mainfreight sustainability please visit:

<https://www.mainfreight.com/global/en/global-home/about-us/sustainability.aspx>

## 1.4 Persons Responsible

The provided GHG Inventory and Report has been prepared by the New Zealand based team, with significant support from many parties across all major operating regions.

Overall responsibility lies with Tim Williams, Chief Financial Officer.

Responsibility for the preparation of the inventory and report:

- Shaun Morrow, Business Development – New Zealand

Support and preparation of the inventory:

- Jodi McLaren, Project Analyst – New Zealand
- Alvin Datt, Financial Controller – New Zealand

Assisting with background data and supporting information:

- Graeme Illing, Financial Controller – New Zealand
- William Smith, Commercial Manager – New Zealand
- Joel Pereira, Financial Controller – New Zealand
- Richard Vlasblom, Financial Controller – Australia
- Joyce Wain, Financial Accountant – Australia
- Tarun Kumar, Financial Controller – Australia
- Paul Sharpe, Financial Controller – Americas
- Joyce-Guillen Cox, Financial Controller – Americas
- Ron Frady, Financial Controller – Americas
- Erik Berger, Financial Controller – Americas
- Franky Lui, Financial Controller – Asia
- Connie Cho, Regional Finance Manager – Asia
- Joost Froeling, Financial Controller – Europe

#### 1.4.1 Team Training for the Preparation of this Emissions Inventory and GHG Report

Members of the core inventory preparation team are aware of all principles and requirements within ISO 14064-1:2018 standard.

The inventory preparation team provided regional contributors with a detailed data input template and instructions on collection of data in line with the standard.

Individual skills and insight have also been informed through a separate service arrangement with Toitū Envirocare to provide a detailed gap analysis on Mainfreight's existing understanding and reporting methods.

#### 1.5 Audience and Dissemination Policy

This report is intended for all Mainfreight stakeholders interested in its greenhouse gas emissions inventory and the associated reporting structure, notation and explanations. It is provided publicly following appropriate third party verification.

#### 1.6 Reporting Period and Frequency of Reporting

This GHG report covers the calendar year 1<sup>st</sup> January 2019 to 31<sup>st</sup> December 2019.

GHG reports are produced annually.

#### 1.7 Reporting Standards, Approach and Verification

##### 1.7.1 Compliance with ISO 14064-1:2018

The GHG report for the year ending 31<sup>st</sup> December 2019 has been prepared in accordance with ISO 14064-1:2018. A reporting index has been provided in appendix 1.

##### 1.7.2 Audit of GHG Inventory

Verified to reasonable assurance by Toitū Envirocare.

## CHAPTER 2: ORGANISATIONAL BOUNDARIES

### 2.1 Consolidation Approach

Mainfreight utilises the ‘operational control’ consolidation method for our emissions inventory. This approach considers all emissions that Mainfreight has control over but not necessarily financial control.

The most significant application of this approach is the inclusion of emissions from our owner drivers, agents, rail providers, shipping lines and airlines that support our service offering to customers.

Franchises, although related to the Mainfreight Group, are not considered under its control and have not been included in the emissions summary.

### 2.2 Organisational Chart

The below organisational chart depicts the operating nature of the Mainfreight Group as is relevant to the emissions summary.

Mainfreight has over 260 branches across five regional operations, 4 of which run our 3 key service platforms, with Asia almost entirely focused on the Air & Ocean division.

The formal Group Structure is provided as appendix 2.

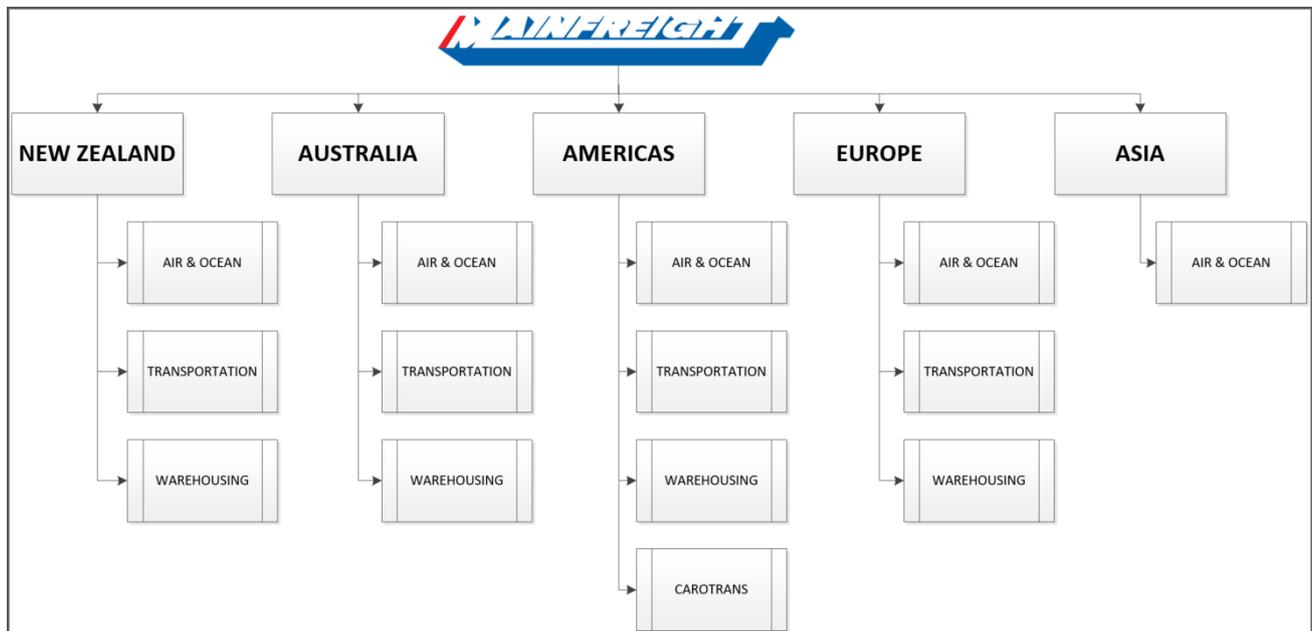


Figure 1: Mainfreight Operational Organisation Chart

## CHAPTER 3: REPORTING BOUNDARIES

### 3.1 Emissions Categories and Classification

Greenhouse gas emissions sources have been identified and grouped in accordance with the ISO 14064-1:2018 standard. This methodology lists six categories of emissions and differs somewhat from earlier categorisation in line with the Greenhouse Gas Protocol's Scopes 1 through 3.

- Category 1: Direct GHG emissions and removals
- Category 2: Indirect GHG emissions from imported energy
- Category 3: Indirect GHG emissions from transportation
- Category 4: Indirect GHG emissions from products used by the organisation
- Category 5: Indirect GHG emissions associated with the use of products from the organisation
- Category 6: Indirect GHG emissions from other sources

### 3.2 Significance and Materiality

Factors for consideration in assessing significance and materiality include:

- Size of the emissions
- Mainfreight's influence on the emission source
- Difficulty in obtaining data
- Poor validity in available estimation approaches

Whilst all of the above would be considered in materiality assessments, the criteria that would mandate disclosure of emissions sources as significant is:

- a) Where there is a single source with estimated emissions likely to be at least 1% of Mainfreight's total emissions. In this case, that emissions source must be included.
- b) Where the total of 'insignificant' sources has estimated emissions likely to be at least 5% of Mainfreight's total emissions. In this case, enough of the 'insignificant' emissions must be included until the estimate of excluded emissions is below 5%.

### 3.3 Summary of Emissions Source Inclusions

Category	Emission Source	Data Source	Methodology & Materiality
1	Fuel used by owner drivers	Fuel billing	Fuel use provided in litres
1	Fuel used by company trucks	Fuel billing	Fuel use provided in litres
1	Fuel used by company cars	Fuel billing	Fuel use provided in litres
1	Kms for mileage expensed	Expense accounts	
1	Fuel for mileage expensed	Expense accounts	
1	T/kms for transport where fuel is not available	TMS reports [1]	Where fuel is sourced independently t/kms are used
1	Fuel for material handling equipment	Fuel reports [2]	Fuel provided in litres or kgs
2	Electricity	Electricity billing	Billing by kWh
2	Energy from gas sources (heating)	Fuel billing	Gas energy for heating provided in m <sup>3</sup> or CCF
3	T/kms Road (third party carriers)	TMS reports & calculation [3]	Summary road t/kms by % of third party jobs
3	T/kms Rail – Diesel engine	TMS reports	Summary t/km by mode rail. Diesel assumed.
3	Fuel used by third party carriers		
3	T/kms Sea	Shipments & Port-Port km [4]	Summary of Shipment port-port distance x weight
3	T/kms Air – Short haul (<3700km)	Shipments & Port-Port km	Summary of Shipment port-port distance x weight
3	T/kms Air – Long haul (>3700kms)	Shipments & Port-Port km	Summary of Shipment port-port distance x weight
3	Business Travel	Provider reports on emissions/kms	Direct emissions reports or km summaries
4	Waste	Provider reports on tonnes	Tonnes of general waste (assumed)
4	Electricity transmission and distribution losses	Electricity billing	Uses same kWh input but with different emission factor
6	One off refrigerant leakage event	Top up billing	Top up volume x by GWP for R407F

Table 1: Emissions Source Inclusions

#### Notes to Table 1

1. We operate our own bespoke Transport Management System (TMS). We run specific queries to produce summary details on t/km by mode.
2. Different regions use different fuel types (i.e. LPG vs natural gas) and measures (kgs vs litres), electric MHE would be accounted for in 2.1.
3. Calculations for third party carriers use a similar assessment to note 1 but at the proportion of jobs done by third party carriers.
4. A Port-Port (and Airport-Airport) table has been developed as a reference for shipment details.

### 3.4 Summary of Emissions Source Exclusions

The following are emissions sources that have been identified but excluded from the emissions inventory. These sources are not considered significant or material to stakeholders, the context of the inventory, and/or are not feasible or practical to calculate at the current point in time.

As outlined in Section 3.2, the sum of estimated emissions associated with the below exclusions is less than 5% of Mainfreight’s total emissions.

Category	Emission Source	Data Source	Methodology & Materiality
1	Fugitive emissions from air conditioning systems	[1]	Difficult to obtain, estimated to be <i>de minimis</i> (<1%)
1	Methyl Bromide for pesticide treatment through customs	[2]	Difficult to obtain, estimated to be <i>de minimis</i> (<1%)
1	Emissions from workshop operations	[3]	Difficult to obtain, estimated to be <i>de minimis</i> (<1%)
3	Team commuting		Difficult to obtain estimated to be <i>de minimis</i> (<1%)
3	Upstream transportation	[4]	Difficult to obtain, estimated to be <i>de minimis</i> (<1%)
4	Emissions from use of consumables	[5]	Difficult to obtain, estimated to be <i>de minimis</i> (<1%)
4	Waste emissions for non-transporting services (Asia and Carotrans)		Difficult to obtain, estimated to be <i>de minimis</i> (<1%)
6	Building and construction projects		Difficult to obtain, estimated to be <i>de minimis</i> (<1%)
6	Hotel accommodation		Difficult to obtain, estimated to be <i>de minimis</i> (<1%)
	Biogenic emissions	[6]	Difficult to obtain, estimated to be <1%

Table 2: Emissions Source Exclusions

#### Notes to Table 2

1. We have over 260 branches across different regions and climates, as well as with different ownership and maintenance models. As a result, these figures are especially difficult to obtain.
2. Methyl Bromide is a toxic fumigant used to treat wood and agriculture products to prevent the spread of pests. It has a relatively modest GWP of 2 but high ozone depleting properties. Fumigants for customs and quarantined goods are an area for further examination but expected to be below the level of significance with respect to CO<sub>2</sub>-e.
3. We have a small number of workshops on our major sites, these do repair work and some metal fabrication and painting.
4. As a service industry, goods purchased and their associated transportation (by a party other than Mainfreight) represents a very small emissions activity area.
5. Consumables include packaging items like shrink wrap and pallets. While estimated to be below levels of significance, it remains a point of interest for future examination.
6. Biogenic emissions for the likes of composting has not been included in any part of this report.

# CHAPTER 4: QUANTIFIED GHG INVENTORY OF EMISSIONS

## 4.1 Consolidated Statement of Greenhouse Gas Emissions

EMISSIONS		Notes	CO <sub>2</sub> -e TOTAL (Tonnes p.a.)	Carbon (CO <sub>2</sub> )	Methane (CH <sub>4</sub> )	Nitrous (N <sub>2</sub> O)	Hydrofluoro- carbons (HFCs)
		1					
		2	<b>GWP</b>	<b>1</b>	<b>28</b>	<b>265</b>	<b>1825</b>
<b>1</b>	<b>Category 1: Direct GHG emissions and removals in tonnes CO<sub>2</sub>-e</b>	3	<b>310,626.37</b>	<b>305,992.56</b>	<b>414.62</b>	<b>3,935.99</b>	<b>282.88</b>
	Direct emissions from stationary combustion						
	Direct emissions from mobile combustion		310,343.49	305,992.56	414.62	3935.99	
	Direct process and removals from industrial processes						
	Direct fugitive emissions from the release of GHGs in anthropogenic systems						
	Direct emissions and removals from land use and forest change						
	One off - refrigerant major leakage	4	282.88				282.88
	Direct emissions in tonnes of CO <sub>2</sub> from biomass						
	<b>Indirect emissions in tonnes CO<sub>2</sub>-e</b>	NS	<b>1,352,240.88</b>				
<b>2</b>	<b>Category 2: Indirect GHG emissions from imported energy</b>		<b>16,026.59</b>				
	Indirect emissions from imported electricity		14,637.66				
	Indirect emissions from imported energy		1,388.93				
<b>3</b>	<b>Category 3. Indirect GHG Emissions from Transportation</b>		<b>1,329,717.38</b>				
	Emissions from upstream transportation and distribution of goods	NS					
	Emissions from downstream transportation and distribution of goods		1,326,247.27				
	Emissions from employee commuting	NS					
	Emissions from client and visitor transport	NS					
	Emissions from business travels		3,470.11				
<b>4</b>	<b>Category 4. Indirect GHG emissions associated with the use of products by the organisation</b>		<b>6,496.92</b>				
	Emissions from purchased goods and services	5	1,234.03				
	Emissions from capital goods	NS					
	Emissions from the disposal of solid and liquid waste		5,262.89				
	Emissions from the use of assets	NS					
	Emissions from other services not described above						
<b>5</b>	<b>Category 5. Indirect GHG emissions associated with the use of products from the organisation</b>		<b>-</b>				
	Emissions or removals from the usage of product	NS					
	Emissions from downstream leased assets	NS					
	Emissions from end of life stage of the product	NS					
	Emissions from investments	NS					
<b>6</b>	<b>Category 6. Other indirect GHG emissions sources</b>						
	<b>TOTAL EMISSIONS CATEGORIES 1 - 6</b>		<b>1,662,867.25</b>				
<b>REMOVALS</b>		6					
	Direct removals in tonnes CO <sub>2</sub> -e		-				
<b>Emissions Liabilities</b>		7					
	<b>Total Storage as of year end in tonnes CO<sub>2</sub>-e</b>		<b>7,085.47</b>				
<b>Other Related Information</b>							
	Performance tracking (emissions and removals by metric)		Greenhouse Gas Emissions Inventory Report				5
	Base year GHG emissions, removals and stocks; and adjustments to base year		Greenhouse Gas Emissions Inventory Report				4.5
	Disclosure of most significant sources and sinks		Greenhouse Gas Emissions Inventory Report				3.3
	Emissions Liabilities		Greenhouse Gas Emissions Inventory Report				4.2
	Significancy criteria		Greenhouse Gas Emissions Inventory Report				3.2
	Uncertainty assessment		Greenhouse Gas Emissions Inventory Report				4.4

[NS] Non significant.

## Notes to Consolidated Statement of Greenhouse Gas Emissions

1. *Direct and indirect emissions have been prepared in accordance with the recommendations of Annex B. Gas types CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O have been included as those relevant to direct emissions from mobile combustion. HFC has been included due to our holding of this gas type and possibility of leakage (as is the case for 2019). All other GHGs without values have been excluded.*
2. *The GWP applied here for Hydrofluorocarbons is specific to the particular refrigerant R407F.*
3. *In order to align to Annex B, category 1 emissions here summarise several subcategories of emissions sources relevant to our operations.*
4. *In the 2019 calendar year a one off leakage event was identified and quantified based on the required top-up. Specifically some 155kgs of R407F at a GWP of 1825.*
5. *This includes electricity transmission and distribution losses.*
6. *This document does not provide any recommendations or requirements for removal.*
7. *Emissions liabilities are denoted here but not included in the emissions total. For further details see section 4.2.*

## 4.2 Methodologies for the Collection and Quantification of Data

As a large global enterprise, the collection of emissions data spans a broad range of localities and consequently, service providers and data sources. As a result, source data varies widely in both format and degree of detail.

The emissions summary represents a best attempt to consolidate and standardise emissions data and provide a detailed explanation of working and estimation in line with the ISO 14064-1:2018 standard.

Due to their access and understanding of global reporting and data sources, Mainfreight's finance team have led the data collection efforts to date.

Section 3.3 describes the overview of emissions sources and their respective data sources. Where an estimation approach is required, the best available data and calculation method is applied. Where two or more estimation approaches are considered equally valid, that which produces the more conservative figure is used.

### 4.2.1 Approach to Emission Factors

Where possible, emission factors are specific to each reporting region. Where specific regional emission factors are not available or applicable, we have taken the most relevant as suggested by the website <https://emissionfactors.com/>.

#### 4.2.2 Changes in Methodologies on prior year/base year

The 2018 calendar year is the first GHG report published by Mainfreight, it provides the base year for the original assessment and for future years. There is no change in methodology used to produce this 2019 report.

#### 4.2.3 GWP Calculation and Source

Quantities of GHG emissions are expressed as tonnes of CO<sub>2</sub>-e (Carbon Dioxide Equivalents) using the global warming potentials (GWP) from the IPCC Fifth Assessment Report (AR5). The time horizon is 100 years.

Direct emissions sources (Category 1) are expressed as both CO<sub>2</sub>-e and their detailed GHG breakdown, including the GWP (Global Warming Potential) value. The most notable GHGs include:

GHG	Chemical Formula	GWP
Carbon dioxide	CO <sub>2</sub>	1
Methane	CH <sub>4</sub>	28
Nitrous oxide	N <sub>2</sub> O	265

Table 3: Greenhouse Gases and their respective Global Warming Potentials.

#### 4.2.4 GHG Liabilities

Mainfreight operates a small number of chilled storage facilities across New Zealand and Australia.

The refrigerants used to maintain temperature at these sites have extremely high GWP. As a result, despite relatively small volumes, their potential impact could be arguably significant.

GHG liabilities have been included separately in our emissions inventory to denote the risk associated with this pool of emissions were it to be released (by accident or leakage). Emissions liabilities are not included in the totals of our emissions count per the ISO 14064-1:2018 standard.

The provided GHG liabilities for Mainfreight are:

Region	GHG Liability / Site	Refrigerant	GWP	Quantity	GHG Liability
New Zealand	Auckland – Chiller	R407F	1,825	401kgs	731.83t
Australia	Sydney – Chiller	R404a	3,922	640kgs	2,510.08t
Australia	Brisbane – Chiller	R404a	3,922	300kgs	1,176.60t
Australia	Melbourne – Chiller	R404a	3,922	680kgs	2,666.96t
<b>Global</b>	<b>Total</b>				<b>7,085.47t</b>

Table 4: GHG Liabilities

GWP Source: <https://www.gov.uk/guidance/calculate-the-carbon-dioxide-equivalent-quantity-of-an-f-gas>

Liabilities excluded based on expected values below levels of significance or relevance include:

- Refrigerators and cool rooms as part of our canteens
- Diesel in backup generators (covered under category 1 purchased fuel)
- Fire extinguishers (numerous but small holding and low GWPs)

#### 4.2.5 Review, Internal Audit and Improvement

This report for the year ending 31<sup>st</sup> December 2019 has been prepared in parallel with the report ending 31<sup>st</sup> December 2018.

Primary data has been sought for all significant emissions sources. Where data is unavailable or not comparable, conservative estimation methods have been applied such that incentives lie in continually improving the ratio of primary data to estimation approaches.

In future years, our intention is to use this section to highlight improvements in our framework and process for capturing and calculating emissions figures and reducing uncertainty.

### 4.3 Information Management Procedures

The GHG measurement and reporting process has been developed to ensure conformance to the principles of the ISO 14064-1:2018 standard and to be consistent with the intended use of the GHG inventory.

The procedural elements below are designed to set structure and consistent checks to provide accuracy and completeness of the inventory and address errors and omissions.

Figure 2 outlines the structure and storage approach for documentation. Its intention is to enable relevant access and traceability to the source information of our emissions inventory for our verifiers.

#### 4.3.1 Key Procedural Elements for GHG Information Management

- Regional and divisional finance teams collect source data from third party suppliers and Mainfreight's finance and transport management systems.
- Data is organised by region and within each region by business unit.
- Documentation is held in an access controlled folder on Mainfreight's intranet.
- Data is reviewed and consolidated by the GHG inventory and report preparation team based in New Zealand.
- Emission factors are provided against emissions source for each region. They are reviewed annually.
- The emissions inventory and GHG report are independently audited by Toitū Envirocare.
- This GHG report also outlines consideration for the following:
  - Responsibility and authority for inventory development.
  - Review and implementation of training for the inventory development team.
  - Identification of organisational and reporting boundaries.
  - Selection and review of GHG sources and sinks.
  - Details of quantification approaches and consideration to their consistent application.

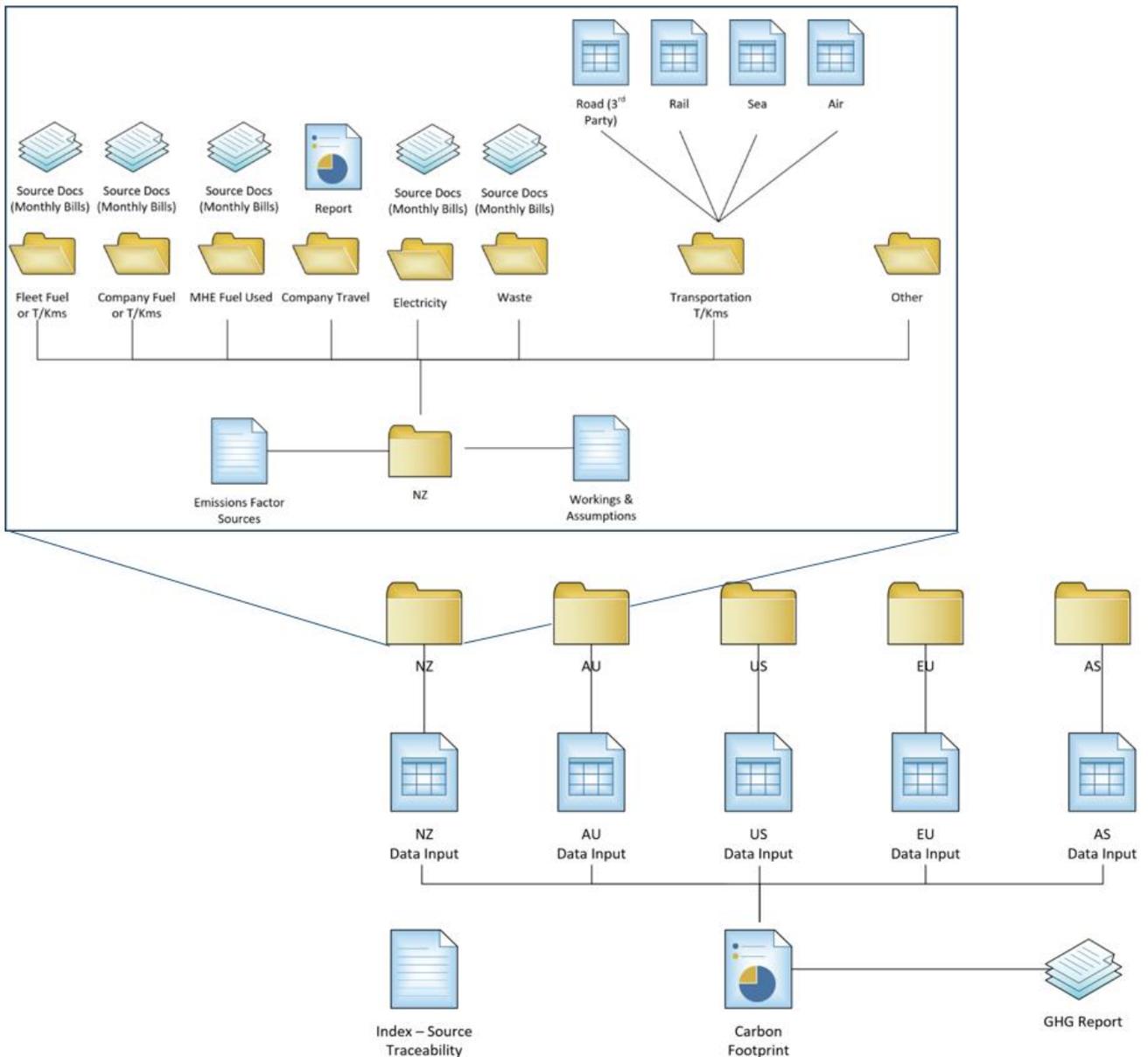


Figure 2: Documentation and Source information Structure

#### 4.4 Assessment of Uncertainty

For this 2019 report a qualitative rather than quantitative assessment of uncertainty has been applied. With the current tools and variety of emission sources, our view is that a quantitative assessment would be complex, time consuming and offer little validity in respect to statistical uncertainty. The applicability of these quantitative assessments will be reviewed in each reporting period.

The emissions inventory provided in 4.1 carries some degree of uncertainty, which can be heavily associated with two core considerations:

## **1. Complexity in operations, supply chain party interdependency and data availability**

International supply chain networks can be notoriously complex, involve numerous different parties and a huge quantity of data (for even a single shipment). Data availability, systems integration and commercial sensitivity can all inhibit how emissions information might be conveyed and interpreted across the chain.

Nonetheless, we are confident our own technology infrastructure and reporting approach has done the best to minimise uncertainty here and/or describe where the limitations in any approach lie.

## **2. Variety in maturity and sophistication in data from third party suppliers in global operations**

With over 260 branches operating across some 24 countries, it is necessary to engage with a large number of third party suppliers for our local needs. In particular, electricity, waste and different fuel sources. Adding further complexity here is different site operating models - for instance lease or rent arrangements that might include electricity or waste.

Our regional teams have done their best to gather and report back in a consistent fashion. However, it should be noted that these emissions sources are relatively small in scale in comparison to the significance of our direct emissions in the supply chain and logistics industry.

Where uncertainty or omissions in data exist, a conservative estimation approach is applied.

## 4.5 Changes to Base Year

The base year for emissions inventory assessments is the 2018 calendar year. There are three underlying reasons for the selection of the 2018 calendar year as the base year:

1. Calendar year has been used rather than financial year, as limitations on data availability would delay publishing by several months (and outside our core-reporting window).
2. In our first effort to publish to the ISO standard, we elected to investigate two years of emissions to examine initial trend.
3. The two years with the most reliable and available data were 2018 and 2019.

Recalculation of the base year will only be applied where it is necessary to maintain an effective base year comparison. Reasons for this might include:

- If the emission factors used change significantly and are relevant to prior years.
- If a significant estimation method has been changed/improved.
- If a significant data sourcing strategy has been changed/improved.
- If the scope of the inventory is changed (for instance the purchase of a new business).

There is no change to the base year calculation in this reporting period.

## 4.6 Removals and Reductions / Increases

### 4.6.1 Removals

There are no emissions removals to declare in this reporting period.

### 4.6.2 Emissions Reductions / Increases

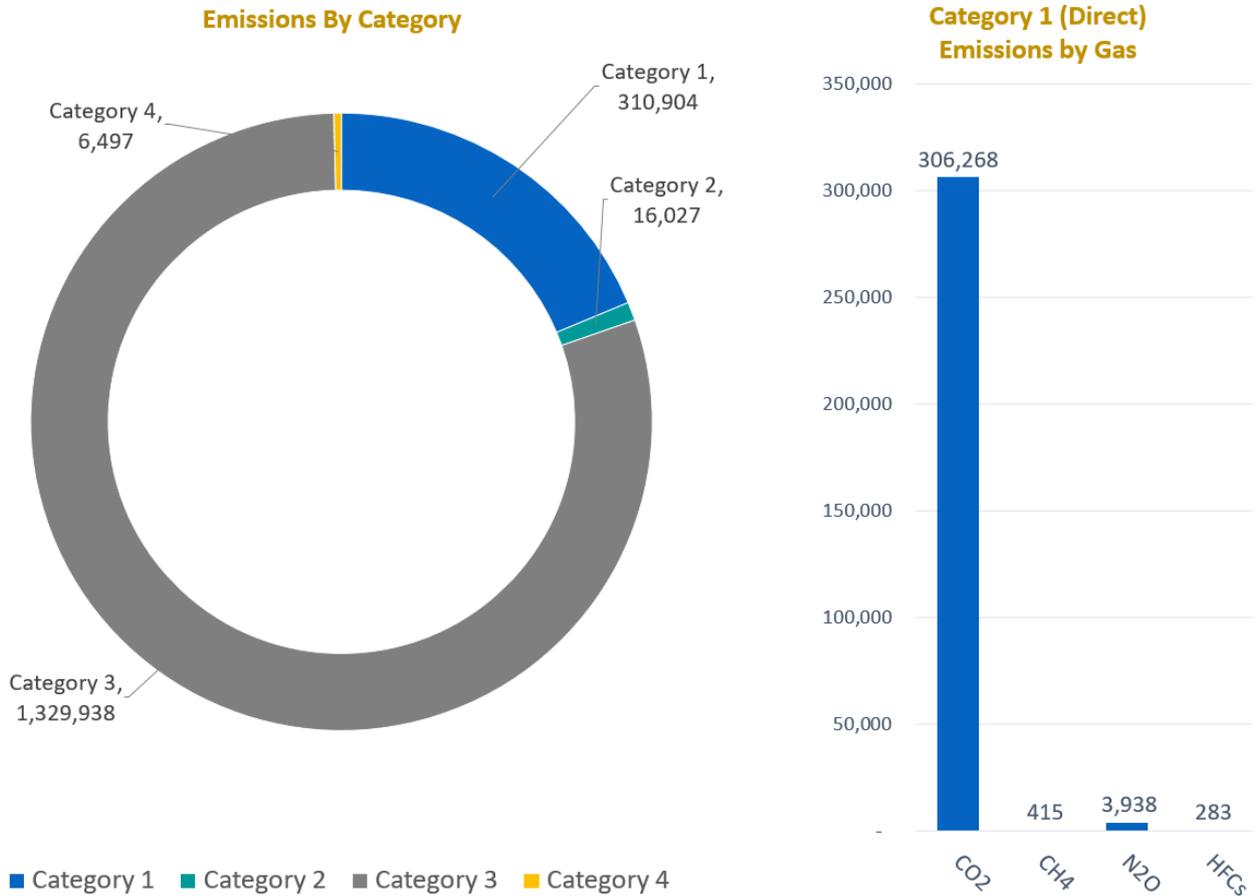
Year on year we have recorded a 9,339.6 tonne increase in emissions across our global operations. This represents a 0.56% increase in gross emissions.

In contrast, over the past two years we have seen revenue, domestic tonnage and sea freight volumes all grow at greater than 10%.

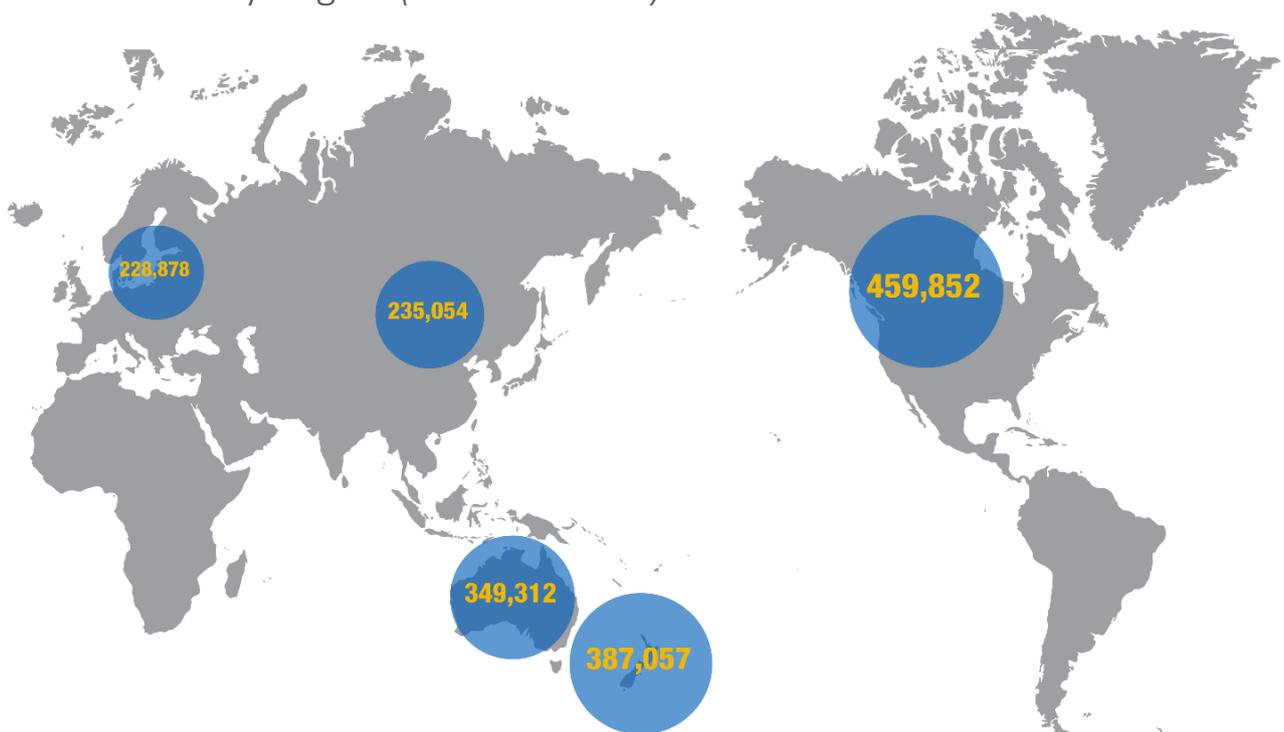
The modest increase in emissions compared to growth bodes well for this first year on year comparison.

## CHAPTER 5: INTERNAL REPORTING & PERFORMANCE

### 5.1 Emissions by Category & Gas (Tonnes CO<sub>2</sub>-e)



### 5.2 Emissions by Region (Tonnes CO<sub>2</sub>-e)



### 5.3 Emissions Intensity Measures



CO<sub>2</sub>-e per tonne of Domestic Freight

**52.60 kilograms**

Down from 53.66 kilograms



CO<sub>2</sub>-e per TEU of International Sea Freight

**1.10 tonnes**

Up from 1.06 tonnes



CO<sub>2</sub>-e per tonne of International Air Freight

**6.69 tonnes**

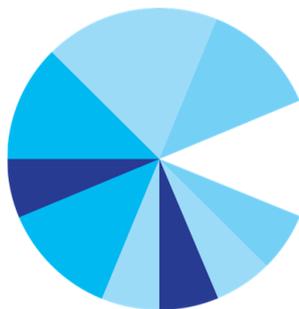
Down from 6.74 tonnes



CO<sub>2</sub>-e per Mainfreight Team Member

**192.66 tonnes**

Down from 203.16 tonnes



CO<sub>2</sub>-e per million \$ in Revenue

**537.27 tonnes**

Down from 559.76 tonnes

## 5.4 Freight Emissions by Mode

Transport Mode (CAT1 & CAT3)	2019 Tonnes CO2e	2018 Tonnes CO2e
Road	406,087	394,399
Rail	7,159	6,450
Air	843,399	853,821
Sea	367,591	361,947
<b>Total</b>	<b>1,624,236</b>	<b>1,616,617</b>
<b>% of Organisation Total</b>	<b>97.7%</b>	<b>97.8%</b>

## 5.5 Performance Measures, Targets and Benchmarks

Specific performance measures have not yet been set (this inventory and report were prepared in parallel with our base year). Instead, it is intended that the insights offered here will provide a foundation for future decision making to support the establishment of performance measures and the tracking of their progress.

## APPENDICES

### Appendix 1 – ISO 14064-1:2018 Reporting Index

ISO Reporting	Section in this Report
9.3.1 (a)	1.3
9.3.1 (b)	1.4
9.3.1 (c)	1.6
9.3.1 (d)	2
9.3.1 (e)	3
9.3.1 (f)	4.1
9.3.1 (g)	3.3
9.3.1 (h)	4.6
9.3.1 (i)	3.3
9.3.1 (j)	4.1
9.3.1 (k)	4.5
9.3.1 (l)	4.5
9.3.1 (m)	4.2
9.3.1 (n)	4.2
9.3.1 (o)	4.6
9.3.1 (p)	4.4
9.3.1 (q)	4.4
9.3.1 (r)	1.7
9.3.1 (s)	1.7
9.3.1 (t)	4.2

ISO Reporting	Section in this Report
9.3.2 (a)	1.3
9.3.2 (b)	4.6
9.3.2 (c)	4.6
9.3.2 (d)	NA
9.3.2 (e)	4.6
9.3.2 (f)	4.1
9.3.2 (g)	5.3
9.3.2 (h)	5.5
9.3.2 (i)	4.3
9.3.2 (j)	4.6
9.3.2 (k)	4.6

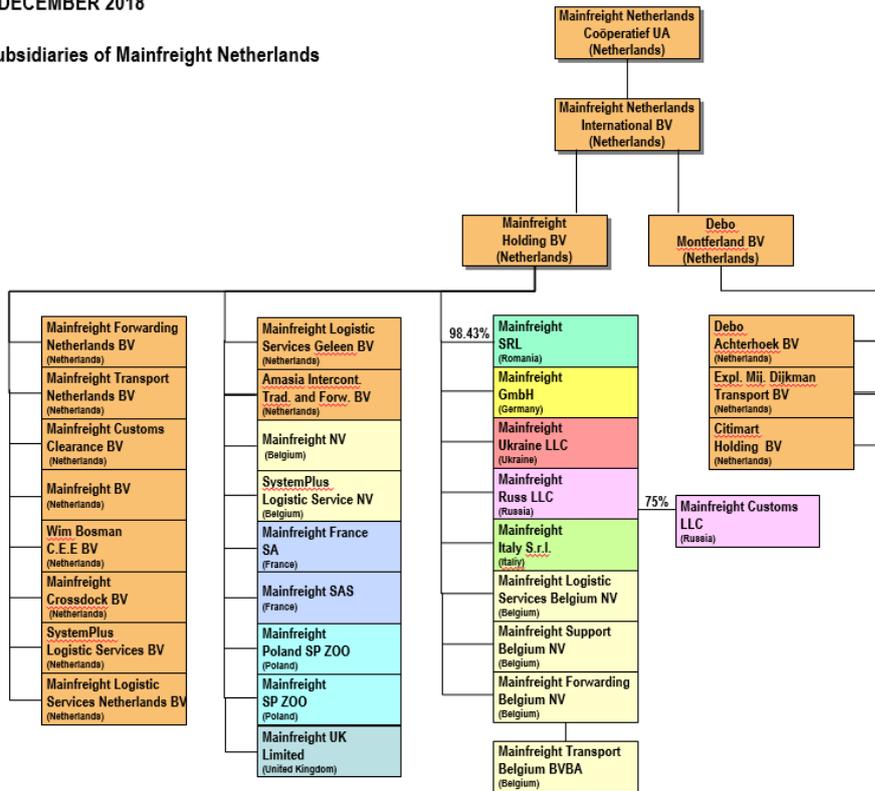
ISO Reporting	Section in this Report
9.3.3	NA



**MAINFREIGHT GROUP STRUCTURE**  
1 DECEMBER 2018



**Subsidiaries of Mainfreight Netherlands**



# INDEPENDENT ASSURANCE STATEMENT

## ISO 14064-3:2019

### TO THE DIRECTORS OF THE TOITŪ ENVIROCARE BOARD

<b>Responsible Party:</b>	Mainfreight Limited
<b>Registered address:</b>	2 Railway Lane, Otahuhu, Auckland 1741
<b>Inventory period:</b>	01/01/2019 - 31/12/2019
<b>Inventory report:</b>	GHG Report - 2019 V2.0
<b>Contract:</b>	Mainfreight Limited, 3/03/2020

We have verified the greenhouse gas (GHG) emissions and removals in Mainfreight Limited's GHG statement for the period 1 January 2019 to 31 December 2019, which comprise the following:

### BOARD OF DIRECTORS' RESPONSIBILITIES (RESPONSIBLE PARTY)

The Board of Directors of the Responsible Party is responsible for the preparation of an inventory report which gives a true and fair view of the greenhouse gas emissions of the Responsible Party in accordance with ISO 14064-1:2018. This responsibility includes designing, implementing and maintaining a data management system relevant to the preparation and fair presentation of a GHG statement that is free from material misstatement.

### VERIFIERS' RESPONSIBILITIES

Our responsibility is to express an opinion on the onsite GHG inventory based on our verification. We conduct our verification in accordance with the ISO specification with guidance for the verification and validation of greenhouse gas statements, i.e. ISO 14064-3. This International Standard requires that we comply with ethical requirements and plan and perform the verification to obtain reasonable assurance that the onsite GHG emissions, removals and storage in the GHG statement are free from material misstatement.

### BASIS OF OPINION

The subject matter contained in the inventory report is based on historical information for the stated inventory period. Our review was carried out in accordance with the criteria stated in ISO 14064-3:2019.

Our verification strategy used a combined data and controls testing approach. Evidence-gathering procedures included but were not limited to:

- interview of personnel to confirm operational behaviour and standard operating procedures;
- sampling of fuel records to confirm accuracy of source data into calculations;
- recalculation of emissions;
- analytical procedures between production and energy consumption.

We conducted our verification in accordance with ISO 14064-3:2019 and the requirements of the Toitū Verifier Manual. We planned and performed our verification so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to obtain the specified level of assurance that the inventory report is free from material misstatements, whether caused by error or fraud. In forming our opinion we also evaluated the overall adequacy of the presentation of information and data in the inventory report.

Other than in our capacity as an independent verifier of the emissions inventory we have no relationship with or interests in the Responsible Party.

## QUALIFICATIONS

No site visit could be conducted due to Covid-19 Alert Level 4 requirements. A remote visit using video technology was conducted and no issues were identified but the opinion is qualified in this regard as it is an initial verification of Mainfreight by Toitū Envirocare.

## OPINION REASONABLE ASSURANCE

In our qualified reasonable assurance opinion, Mainfreight Limited has measured its greenhouse gas emissions in accordance with ISO 14064-1:2018, with respect to the operational activities of its organisation including all New Zealand and global subsidiaries.

## ACHIEVED LEVEL OF ASSURANCE

Reasonable

Verified by:		Authorised by:	
Name:	Sonia Groes-Petrie	Name:	Karen Tipper
Position:	Verifier, Toitū Envirocare	Position:	Certifier, Toitū Envirocare
Signature:		Signature:	
Date verification audit:	28-30/04/2020		
Date opinion expressed:	12/05/2020	Date:	27/05/2020