



Frobishers Juices Ltd.

Green House Gas Inventory

Revision 0002

Period Start 1/04/21
Period End 31/03/22

Issued October 22

1.	Non-Technical Summary	3
	Quality Control	4
3.	Glossary & Abbreviations	5
3.1.	Glossary	5
3.2.	Abbreviations	6
4.	Introduction	7
4.1.	Climate Change Action	7
4.2.	The Journey	7
5.	Organisation Information	8
6.	Establishing Organisational Boundaries	9
6.1.	Background	9
6.2.	Selected Organisational Boundary Methodology	9
7.	Establishing Reporting (Operational) Boundaries	10
7.1.	Background	10
7.2.	Scope 1 – Direct Emissions Description	10
7.3.	Scope 2 – Indirect Energy Emissions Description	11
7.4.	Scope 3 – Other Indirect Emissions Description	11
7.5.	Screening to Establish Reporting Boundaries	11
7.6.	Activities of the Entity	13
8.	Calculations	14
8.1.	Selection of Quantification Approach	14
8.2.	Activity Data Collection and Emission Factors	14
8.3.	Global Warming Potentials	15
9.	Emissions Calculation for Frobishers Juices Ltd	16
9.1.	Deriving Relevant Activity Data	16
9.2.	Complete Activity Data	20
10.	Results	21
10.1.	Summary of Results in Green House Gas Protocol Format	21
10.2.	Carbon Footprint by Activity	22
10.3.	Carbon Footprint by Scope	23

10.4.	Carbon Footprint by Scope and Activity	23
10.5.	Selected Carbon Footprint by Scope and Activity	24
11.	Base Year & Intensity Metrics	24
11.1.	Base Year Background	24
11.2.	Intensity Metrics Background	24
11.3.	Base Year Comparison Results	25
11.4.	Intensity Metrics Results	25
12.	Carbon Management Projects	25
12.1.	Purpose	25
12.2.	Existing Projects	26
12.3.	Additional Projects for Consideration	26
13.	Carbon Neutrality	27
13.1.	Introduction	27
13.2.	Scope Boundaries	27
13.3.	Carbon Neutral Subject	28
13.4.	Offsetting Strategy	28
14.	Marketing	29
14.1.	Marketing Suggestions	29
15.	References	30

1. Non-Technical Summary

Name of the Entity making the declaration	Frobishers Juices Ltd
Subject of the Declaration	Frobishers Juices Ltd global operations, Scope 1, Scope 2, Selected Scope 3 emissions. Operational control.
Function of Subject	Production and sale of non-alcoholic fruit juices
Rationale for Selection of Subject	Subject selected based on the requirements under WRI Green House Gas Protocol Corporate Reporting and Accounting Standard to include all Scope 1 and 2 emissions and additional ambition to include Scope 3 emissions over which the company has the potential to influence, and measurement is feasible.
Process	Frobishers Juices Ltd has retained Blue Marble to compile and develop the GHG Inventory and corresponding GHG Report. The inventory has been compiled taking into account the requirements of ISO 14064-1 and the Green House Gas Protocol Corporate Reporting and Accounting Standard. Emissions factors utilised within the report have been supplied by the UK Government Department for Environment, Food and Rural Affairs unless otherwise specified.
Total Emissions	<p>Blue Marble has determined that Frobishers Juices Ltd has directly or indirectly emitted the following GHGs:</p> <p>Total Scope 1 emissions were calculated to be 25.2tCO₂e. The major direct emission was fuel use in company cars.</p> <p>Scope 2 emissions were 8.33 tCO₂e. The major Scope 2 emission was from the use of electricity for main facility operations.</p> <p>Scope 3 Emissions were 530 tCO₂e. The majority of scope 3 emissions were from the emissions associated with the fuel used in logistics</p> <p>Total included emissions for the subject were 564 tonnes.</p>
Offsetting Program	<p>Project: Kariba REDD+ Location: Zimbabwe Standard: VCS - Tonnes - 75 https://registry.verra.org/app/projectDetail/VCS/902</p> <p>Project: Pamir 1 Hydropower Generation Location: Tajikistan Standard: VCS - Tonnes - 500 https://registry.verra.org/app/projectDetail/VCS/98</p>
Reporting period start	April 1st 2021
Reporting period end	March 31st 2022
Declaration of Achievement of Carbon Neutrality as Certified by Blue Marble	Carbon Neutrality of global operations was achieved by Frobishers Juices Ltd in accordance with Blue Marble Standards at September 2022 for the period commencing 1st April 2021 to 31st March 2022, Certified by Blue Marble
Individual responsible for the evaluation and provision of data necessary for the declaration of Carbon Neutrality	Becca Winmill

Quality Control

Project Number	22183
Authored	Tim Kemp
Approved	Henry Waite
Report Date	October 2022
Report Revision	Rev 02
Prepared by	Blue Marble Environmental Partnerships Ltd, Odhams Wharf Exeter EX3 0PD www.blue-marble.co.uk
Prepared for	Frobishers 11 Mallard Rd, Sowton Industrial Estate, Exeter, Devon, EX2 7LD, UK. www.frobishers.com

3. Glossary & Abbreviations

3.1. Glossary

Term	Explanation	Source
Anthropogenic Biogenic Green House Gas Emission	GHG Emission from biogenic material as a result of human activities e.g. burning wood, biodiesel, or fugitive emissions from anaerobic digestion facilities.	ISO 14064-1
Base Year	Specific historical period identified for the purpose of comparing GHG emissions, GHG removals or other GHG related information over time.	ISO 14064-1
Biogenic Carbon	Carbon derived from materials of biological origin, excluding material embedded in geological formations and material transformed to fossilized material.	ISO 14064-1
Biogenic Carbon Dioxide (CO ₂)	CO ₂ derived from oxidation of biogenic carbon.	ISO 14064-1
Carbon footprint	The absolute sum of all emissions and removals of greenhouse gases caused directly and indirectly by a subject either over a defined period or in relation to a specified unit of product or instance of service and calculated in accordance with a recognized methodology.	BSI PAS 2060
Carbon Neutral	The condition in which during a specified period there has been no net increase in the global emission of greenhouse gases to the atmosphere as a result of the greenhouse gas emissions associated with the subject during the same period.	BSI PAS 2060
Global Warming Potential (GWP)	<p>The Global Warming Potential is defined "as the time-integrated radiative forcing due to a pulse emission of a given component, relative to a pulse emission of an equal mass of CO₂".</p> <p>These values are reported as a unit of CO₂ equivalent (CO₂e), which compensates for the greater impact of some non CO₂ GHGs.</p> <p>The GWP values used in this report are from IPCC Assessment Report 5, 2007.</p>	IPPC, 2013
Greenhouse Gas Inventory	A list of GHG Sources, GHG Sinks, and their quantified GHG emissions and GHG removals.	ISO 14064-1
Greenhouse Gas Report	A standalone document intended to communicate an organization's or GHG Project's GHG related information to its intended users.	ISO 14064-1
Green House Gas Projects	Activities or activity that alter the conditions of the GHG baseline and which cause GHG emission reductions or GHG removal enhancements.	ISO 14064-1
Intended Users	Individual or organization identified by those reporting GHG related information as being the persons who rely on that information to make decisions.	ISO 14064-1
Non-Anthropogenic Biogenic GHG Emission	GHG emission from biogenic material caused by natural disasters (e.g. wildfire or insect infestation), or natural evolution (e.g. growth and decomposition).	ISO 14064-1

3.2. Abbreviations

AC	Air Conditioning
BA	Biogenic Anthropogenic
BEIS	UK Government Department for Business Energy & Industrial Strategy
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
Defra	UK Government Department for Environment, Food and Rural Affairs.
EU	European Union
EV	Electric Vehicle
GHG	Greenhouse Gas
HGV	Heavy Goods Vehicle
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standards Organisation
km	Kilometres
kWh	Kilowatt Hours
NB	Non-Biogenic
NBA	Non-Biogenic Anthropogenic
PR	Public Relations
tCO _{2e}	Tonnes of Carbon Dioxide Equivalent

4. Introduction







4.1. Climate Change Action

Over the past two decades the effects of climate change have accelerated. Considerable evidence exists that climate change has been exacerbated by human activity. Changes in our post-industrial lifestyles have altered the chemical composition of the atmosphere, generating a build-up of greenhouse gases – primarily carbon dioxide, methane, and nitrous oxide levels – raising the average global temperature.

Climate change is a global threat which will impact the lives of everyone on the planet. Hence, it is vital that all individuals, businesses, organisations, and governments work towards the common goal of reducing greenhouse gas emissions.

Carbon management within organisations brings with it challenges but also opportunities as customers, employees, investors, and regulators increasingly look towards the triple bottom line of environmental, social as well as financial governance in their decision making.

4.2. The Journey

	Aim – Secure resources and management approval for the concept of carbon management and achieving Carbon Neutrality.
	Measure – Quantify emissions for a historical 12 month period using approved methods such as the GHG Protocol.
	Reduce – Using information from the GHG Inventory and advice from Blue Marble identify high impact opportunities for GHG Emissions Reduction.
	Remove – Offset GHG emissions for the reporting period using appropriate offset schemes to achieve Carbon Neutrality. Blue Marble focus on schemes which actively remove carbon dioxide from the atmosphere.
	Certification – Become Carbon Neutral Company.
	Communicate – Broadcast your targets, objectives and achievements in the area of GHG Management. Be part of the Carbon Neutral certified company directory to establish links with like-minded enterprises.

5. Organisation Information

Description of the reporting organisation	Frobishers produce a range of 20 not from concentrate drinks available in pubs, bars, restaurants, and hotels across the UK. This is supported with a new website allowing delivery direct to customer's doors.
Mergers or acquisitions during the reporting period	There have been no mergers or acquisitions within the reporting period.
Reporting period start	April 1st 2021
Reporting period end	March 31st 2022



Figure 1.

6. Establishing Organisational Boundaries

6.1. Background

Organisational boundaries are used to determine how GHGs are accounted for. Organisations can choose between three different boundary conceptions – Equity Share or Control Approaches. Control Approaches are then divided into Operational or Financial.

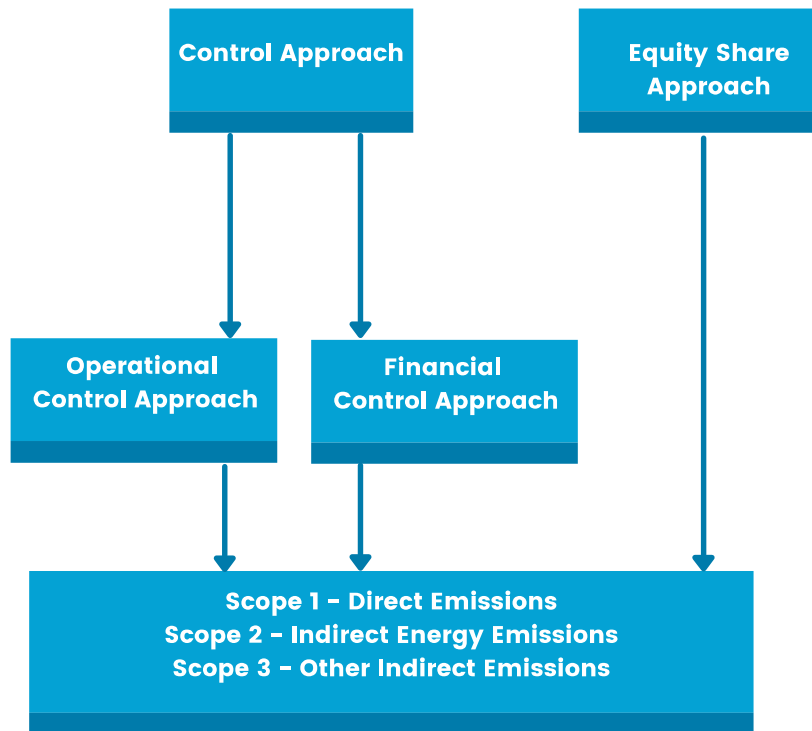


Figure 2. Graphic representation of the available organisational boundaries

6.2. Selected Organisational Boundary Methodology

<p>Selected Organisational Boundary</p>	<p>Following discussions with Frobishers Juices Ltd the Operational Control approach has been selected as being the most appropriate for the organisational boundaries</p> <p>There are no legal or contractual obligations to perform an alternative consolidation approach.</p>
---	--

7. Establishing Reporting (Operational) Boundaries

7.1. Background

Having established the organizational boundaries in terms of the operations that Frobishers Juices Ltd owns or controls the reporting boundaries were established.

This involved identifying emissions associated with the entity’s operations and categorizing by Scope. The screening process involved selection of relevant emissions to be included within the inventory.

Scopes 1 and 2 are specifically defined to ensure that two or more companies will not account for emissions in the same scope. The relationship between all 3 scopes is shown below.

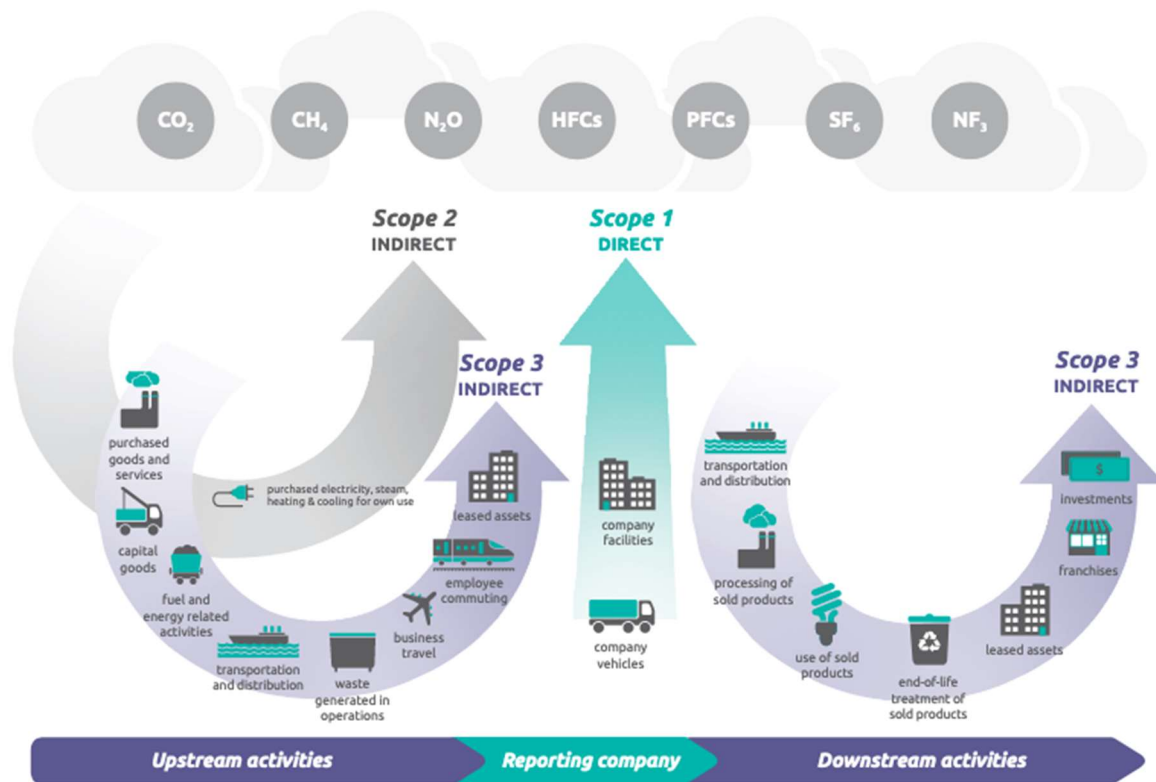


Figure 3: Green House Gas Protocol Scoping Diagram, (GHG Protocol 2013)

7.2. Scope 1 – Direct Emissions Description

Direct emissions and removals are those generated by organisational operations. They are normally owned or controlled by the organisation. Some examples include fuel consumption in heating / cooling, transportation, self-electricity production, process emissions from manufacture, and fugitive emissions.

Direct GHG emissions and removals are quantified separately for CO₂, CH₄, N₂O, NF₃, SF₆, and other appropriate groups where they have been identified. They are presented as an equivalent figure for CO₂ based on the Global Warming Potential values provided by IPCC in the 5th Annual

Report (AR5, 2014) – this is represented as CO₂e

Biogenic emissions are those caused by combustion of biomass. They are recorded and reported separately.

7.3. Scope 2 – Indirect Energy Emissions Description

These are emissions generated through the provision of energy by a third party. This could be in the form of compressed air, heating, steam, or electrical energy.

7.4. Scope 3 – Other Indirect Emissions Description

Scope 3 emissions are, according to the Green House Gas Protocol Corporate Standard, optional for inclusion within a GHG Inventory. It does however provide an opportunity for an entity to be innovative in GHG management. They can elect to focus on accounting for and reporting those activities which are relevant to their business goals, which they are able to effectively influence and for which they have reliable information.

ISO 14064-1 and the Green House Gas Corporate Standard both suggest the following criteria be used when making decisions in regard to indirect emissions

- Magnitude – The indirect emissions or removals that are assumed to be substantial
- Level of Influence – The extent to which the organisation has the ability to monitor and reduce emissions and removals
- Risk or Opportunity – The indirect emissions that contribute to an organisation's exposure to risk e.g. financial, regulatory, supply chain, reputational risks, or alternatively its opportunity for business such as new markets, new business models, or increased client base
- Sector Specific Guidance – GHG emissions deemed as significant by the business sector as provided for by sector specific guidance
- Outsourcing – Activities which were previously performed in house, or activities which are performed by a third party which are generally undertaken in house by other reporting companies within the market sector
- Employee Engagement – How important are particular Scope 3 emissions to the engagement of the company workforce
- Data Availability – There is a recognition that within the value chain both up and downstream data accuracy is likely to be reduced and estimated emissions are acceptable as long as there is transparency in the approach

7.5. Screening to Establish Reporting Boundaries

Using the standards explained above, and based on information supplied from the organisation, Blue Marble performs a screening process to establish the boundaries of the report.

Screening takes account of the categories within the Green House Gas Protocol Scoping Diagram in Figure 3, and aims to select from the overall list the main activities

Based on conversations with the client about their operations, as well as using the criteria presented in Section 8.4 on Scope 3 emissions, activities are classified and the results presented within the following categories:

- Scope 1
- Scope 2
- Scope 3
- Outside of Scopes – This is where the GHG Protocol captures anthropogenic biogenic emissions.
- Outside of the Reporting Boundary – not considered further within this report. This is either because they were not found to occur, or are excluded using the rationale described in Section 8.4

7.6. Activities of the Entity

Scope 1	Fuel used in owned vehicles
Scope 2	Electricity provided to facility & owned electric vehicles
Scope 3	
1 - Purchased Goods and Services	Water usage has been included
2 - Capital goods	No significant capital good purchases have been identified and this activity has been scoped out
3 - Fuel and Energy Related Activities	Energy related activities for Scope 1, 2, & 3 are included. Well to tank (WTT) is separated for fuel used in Scope 1. WTT, transmission and distribution, and the (WTT) for the fuel used in transmission and distribution are all considered and included within the figure for the relevant Scope 3 activity
4 - Upstream Transportation, distribution & storage	Included
5 - Waste Generated in Operations	Included
6 - Business Travel	Included - flights, taxi, train, hotels & grey fleet
7 - Employee Commuting & Home Working	Home working & commuting included
8 - Leased Assets	None identified
9 - Transportation and Distribution of sold Products	Included where entity procured delivery under Category 4
10 - Processing of Sold Products	No sold products requiring processing
11 - Use of Sold Products	Sold products are not responsible for emissions
12 - End of Life Treatment of Sold Products	Beyond the control of entity
13 - Leased Assets	No leased assets identified
14 - Franchises	Company does not operate a franchise model
15 - Investments	No investments into 3 rd parties as part of business activities have been identified

8. Calculations

8.1. Selection of Quantification Approach

Having identified the sources, the next step is to select the calculation approach. Direct measurement of GHG emissions by monitoring concentration and flow rate is not common. On occasion they may be calculated based on a mass balance or stoichiometric basis specific to a facility or process. The most common approach however is through the application of documented emission factors. These factors are calculated ratios relating GHG emissions to a proxy measure of activity at an emissions source.

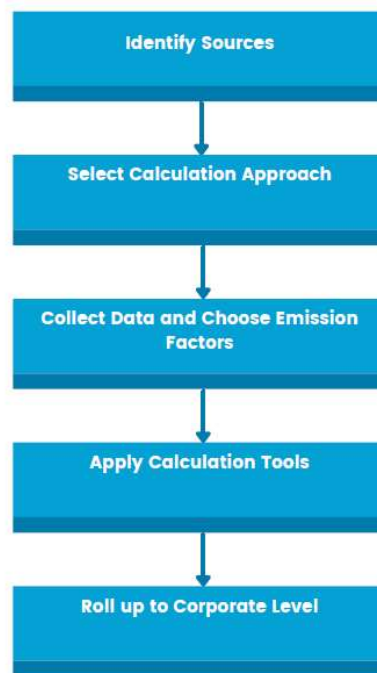


Figure 4: Quantification Approach Diagram

8.2. Activity Data Collection and Emission Factors

Calculation methods use activity data and emission factors to estimate GHG emissions. Activity data is a measure of the processes that result in GHG emissions e.g. miles travelled, litres of fuel used, or kWh of electricity consumed. Emission factors reflect the average GHG intensity per unit of activity data for a given source.

The GHG emissions data within this report are derived from a combination of client activity information and computation by Blue Marble. Frobishers Juices Ltd GHG Inventory has been calculated using the 2021 conversion factors developed by the UK Department for Environment, Food and Rural Affairs (Defra) and the Department for Business, Energy & Industrial Strategy (BEIS).

Blue Marble has selected this as the preferred method of calculation as a government recognised approach which uses data realistically available from the client.

8.3. Global Warming Potentials

There are many GHGs, and some are considerably more potent in their action than CO₂. The major ones are specified in the GHG protocol, and include CO₂, Methane, N₂O, as well as several other groups of chemicals covered by the Kyoto Agreement.

As an example of this effect; over a period of 100 years, 1kg of Sulphur Hexafluoride has the same effect as 23,900kg of CO₂.

Global Warming Potentials (GWPs) are included within the Blue Marble calculations to normalise data to the approved units of mass of CO₂ equivalent (CO₂e) over 100 years. These emissions are based on the GWP values provided in the IPCC 5th Annual Report (AR5 2014)

In the most recent data which are shown in Figure 6, it can be seen that methane has an anticipated GHG effect 28 times that of CO₂.

Chemical Common Name	Chemical Formula	GWP for a 100 Year Time Horizon (AR5)
Carbon Dioxide	CO ₂	1
Methane	CH ₄	28
Nitrous Oxide	N ₂ O	265

Figure 5: Global Warming Potential Examples (AR5 2014)

9. Emissions Calculation for Frobishers Juices Ltd

9.1. Deriving Relevant Activity Data

In order to calculate the CO₂e footprint values, it is necessary to have a measure of activity which can be combined with the relevant emissions factor.

In some cases, information is available from entities in a format which can be used directly, in others pre-processing or combination with secondary data is required to develop a measure of activity data. Section 10.2 explains any preprocessing, secondary data, or assumptions made to develop that activity data.

All data is then consolidated and presented in Section 10.2.

9.1.1. Company Owned Vehicles & Grey Fleet (Business Travel)

Mileage reports were provided, which included the miles covered, the fuel type and the engine size for both owned and non-owned vehicles. Engine size brackets are provided by DEFRA, and these were used to decide on the “size” of the vehicle.

Company Owned Vehicles

Vehicle Type	Miles
Diesel	
Large Diesel Car	8945
Medium Diesel Car	0
Small Diesel Car	0
Electric	
Medium Car	276
Hybrid	
Medium Car	108939
Petrol	
Large Car	0
Medium Car	0
Small Car	12579

Employee Owned Vehicles (Grey Fleet)

Vehicle Type	Miles
Diesel	
Large Diesel Car	0
Medium Diesel Car	734.5
Small Diesel Car	66
Electric	
Medium Car	532
Hybrid	
Medium Car	0
Petrol	
Large Car	383
Medium Car	0
Small Car	0

9.1.2. Working from home

Working from home calculations take account of direct electrical energy usage due to office equipment, the uplift from increased occupancy e.g. lighting, kettles etc.

In addition, it considers the heating energy usage based on the increase in heating duration due to daily occupancy, and the extension of the annual heating season.

Laptops have a reduced power requirement when compared to desktops, and therefore a separation between those two workstation types is considered.

Frobishers Juices Ltd reported 432 days working from home using laptops

9.1.3. Waste

Consolidated waste transfer notes were provided by Frobishers' waste contractor. Two types of collections are made, both of which are recycled or recovered.

Waste Type	Weight (kg)
Dry Mixed Recycling	2422
General Waste	344
Total	2766

9.1.4. Upstream Logistics and Transportation of Sold Product

- Raw Materials Transport

Detailed transport information was provided for product components in tonne.km for both sea freight and road transport.

- Transport from Producer to Exeter Facility

Detailed transport information was provided for the import of finished product in terms of distance travelled, but this was done on a per vehicle basis rather than a tonne.km.

Vehicle Type	Km Travelled	KgCO ₂ e
100% Laden Artic	220785	
Channel Tunnel		1904

- Amazon Deliveries

Primary data was available for a 90 day period when this study was being completed, but it was not available for actual subject 12 month timeframe. The partial data have been extrapolated to cover a year. The period for which the data exists was particularly active and therefore will likely over, rather than under-estimate the footprint for the year.

292 deliveries were undertaken within the 90 days. The weight of the products, as well as the starting and delivery postcode of each was known. The postcodes were broken down into each of the 129 UK postcode areas, and the distance from each of them from the point of origin was obtained using AA routemap – which follow roads rather than the euclidean distance.

The weight of the package was combined with the postcode area distance to develop a tonne.km figure. It was assumed that deliveries of this nature were made through an “average van” of less than 3.5 tonnes. This again provides a conservative value for the GHG footprint.

1135 tonne.km x 4 = 4544 tonne.km

Vehicle Type	Tonne.km
Average Van <3.5 tons	4544

- Pallet Deliveries

Postcode data and number of pallets sent to each was available for the subject period. These were dealt with in the same way as the Amazon deliveries in terms of the breakdown of the postcode into a postcode area. 87% of pallet deliveries were for the Frobisher Juice range, these pallets weigh 924kg each. It was assumed that the remaining 13% were the same weight. The legal maximum is 1000kg, so in the event these pallets were heavier than the juice ones, any underestimation would be minimal

A significant number of loads were sent though intermodal systems using various companies within the Pallet Network. It was not there possible to isolate the vehicle type beyond the fact it was done by a non refrigerated HGV, therefore this is the emissions factor used. It was assumed to be a full load based on the shared transport method.

The tonne.km value was 1,731,974 tonne.km.

Vehicle Type	Tonne.km
Average HGV 100% laden	1731974

9.1.5. Business Travel – Tube

Information on travelled distance was not available, and therefore the cost (£) was used as a proxy. Cost data assumed to equate to £0.375 / km based travel at oyster / contactless discount level. The journey used to generate that figure was: Euston to East Finchley 9.6 km and cost of £3.60.

9.1.6. Business Travel – Taxi

Information on travelled distance was not available, although the money spent on taxis

provided. The expense reports indicate that taxi journeys happened in both London and outside. The conservative approach has been taken in assuming that all travel was outside of London. This would result in a slightly greater mileage figure due to the lower cost per mile outside of the capital.

<https://www.northdevon.gov.uk/business/licences-and-permits/taxi-licences/taxi-hackney-carriage-fares/>

A daytime taxi journey for up to four people is 3.10 for the first half a mile, and £0.28 / half mile thereafter.

9.1.7. Commuting

Vehicle Type	Miles
Medium Diesel car	7930
Medium Electric car	9214.4
Medium Petrol car	5551
Small Diesel car	13618.4
Small Petrol car	4171.2

9.2. Compete Activity Data

Activity	Units	Value
Large Diesel Car	Miles	8945
Medium Hybrid Car	Miles	108939
Small Petrol Car	Miles	12579
Medium Electric Car	Miles	276
Total Electricity Use	kWh	39107
Business Travel - Train Travel	Passenger.km	3532
Business Travel - Tor Point Ferry	Passenger.km	2.6
Business Travel - Tube / Oyster	Passenger.km	452
Business Travel - Taxi	Passenger.km	370
Business Travel - Grey Fleet - Large Petrol Car	Miles	383
Business Travel - Grey Fleet - Medium Diesel Car	Miles	734.5
Business Travel - Grey Fleet - Small Diesel Car	Miles	66
Business Travel - Grey Fleet - Medium Electric Car	Miles	532
Business Travel - Hotel Rooms	Nights	264
Commuting - Medium Diesel Car	Miles	7930
Commuting - Medium Electric Car	Miles	9214.4
Commuting - Medium Petrol Car	Miles	5551
Commuting - Small Diesel Car	Miles	13618.4
Commuting - Small Petrol Car	Miles	4171.2
Purchased Goods and Services - Water Usage	m ³	80
Working from Home - Laptop	Days	432
Upstream T & D - 100% Laden Artic	Km	220785
Upstream T & D - 100% Laden Artic	Tonne.km	370922
Upstream T & D - General Cargo (Average Deadweight)	Tonne.km	2118128
Upstream T & D - Average Van <3.5 tons (sales)	Tonne.km	4544
Upstream T & D - Average HGV 100% laden (sales)	Tonne.km	1731974
Waste	Tonnes	2.766

10. Results

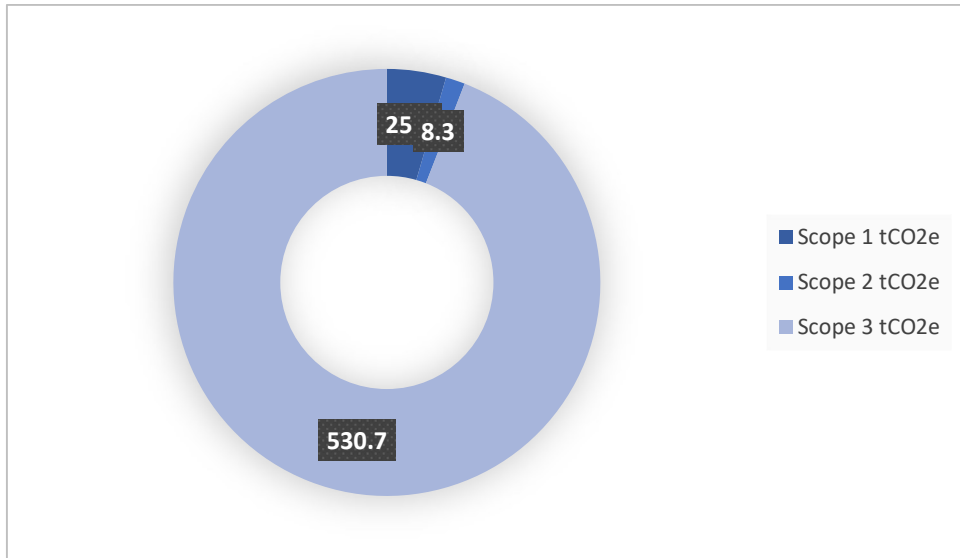
10.1. Summary of Results in Green House Gas Protocol Format

Activity	Scope 1				Scope 2				Scope 3	Outside of Scopes
	kg CO ₂ e	kg CO ₂	kg CH ₄	kg N ₂ O	kg CO ₂ e	kg CO ₂	kg CH ₄	kg N ₂ O	kg CO ₂ e	kg CO ₂ e
Provided Electrical, Heat or Steam Energy					8304	8219	31	54	3100.2	
Company Controlled Cars Mileage	25220	24947	33	240	21	21	0	0	6591.6	277
Water Usage									11.9	
Personal Car Mileage									537.7	18
Public Transport									234.4	
Upstream Delivery and Freight									505442.7	
Hotels									3669.6	
Waste Disposal									58.9	
Employee / Contractor Working from Home									321.9	
Commuting									10718.0	
TOTAL GHG EMISSIONS kg CO₂e	25220	24947	33	240	8325	8240	31	54	530686.9	295
TOTAL GHG EMISSIONS tonnes CO₂e	25.2	24.95	0.03	0.24	8.33	8.24	0.03	0.05	530.7	0.30
TOTAL tCO₂e	564.23									

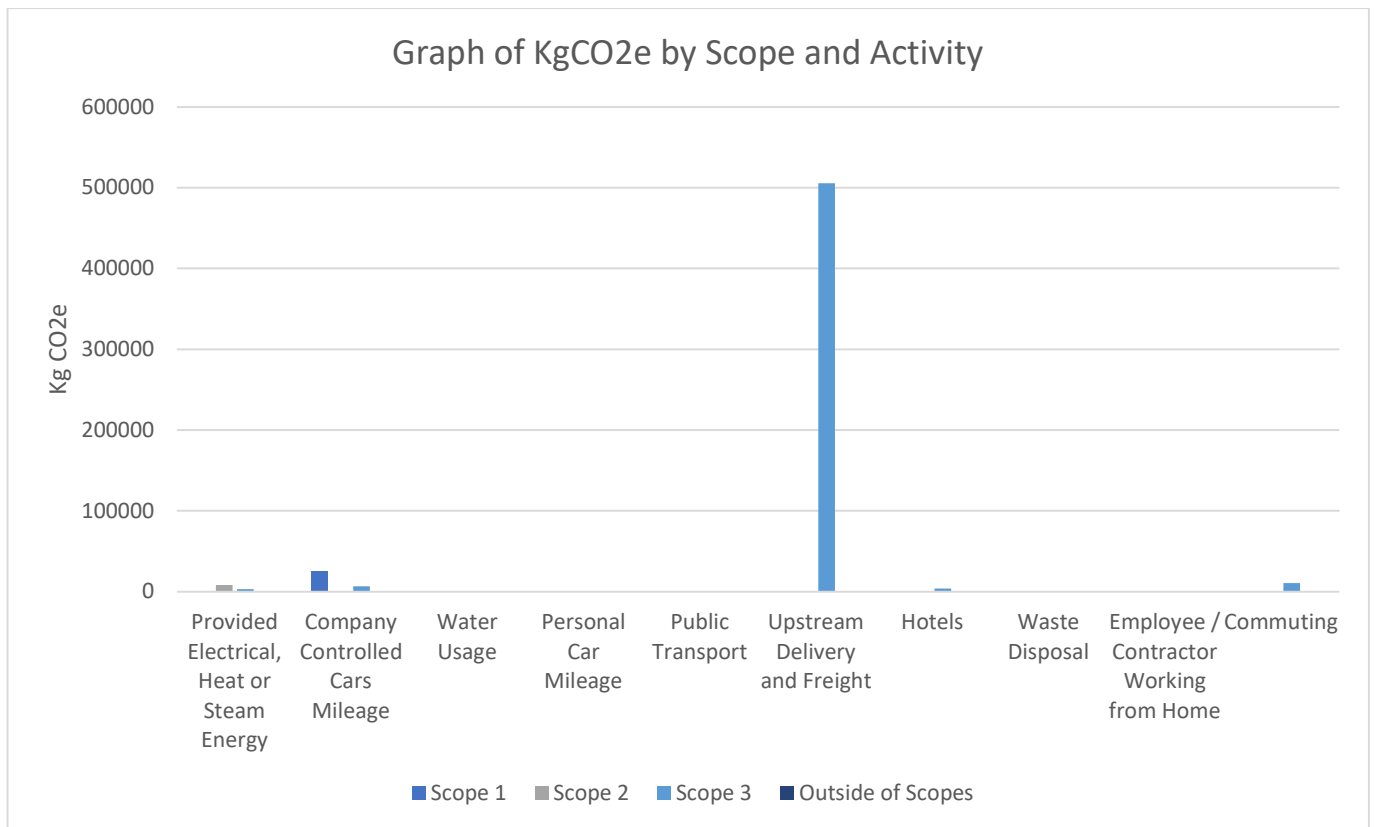
10.2. Carbon Footprint by Activity

Activity	Scope 1 (kgCO ₂ e)	Scope 2 (kgCO ₂ e)	Scope 3 (kgCO ₂ e)
Large Diesel Car	2983		728
Medium Petrol Car	0		0
Medium Hybrid Car	19211		5007
Small Petrol Car	3025		847
Medium Electric Car		21.4	8
Total Electricity Use		8304	3100
Business Travel - Train Travel			151
Business Travel - Tor Point Ferry			0.011
Business Travel - Tube / Oyster			14.65
Business Travel - Taxi			68.4
Business Travel - Grey Fleet - Large Petrol Car			220.3
Business Travel - Grey Fleet - Medium Diesel Car			242.5
Business Travel - Grey Fleet - Small Diesel Car			18.16
Business Travel - Grey Fleet - Medium Electric Car			56.7
Business Travel - Hotel Rooms			3670
Commuting - Medium Diesel Car			2618
Commuting - Medium Electric Car			918
Commuting - Medium Petrol Car			2148
Commuting - Small Diesel Car			3748
Commuting - Small Petrol Car			1284
Purchased Goods and Services - Water Usage			12
Working from Home - Laptop			321
Upstream T & D - 100% Laden Artic			319919
Upstream T & D - General Cargo (Average Deadweight)			23432
Upstream T & D - Average Van <3.5 tons (sales)			3407
Upstream T & D - Average HGV 100% laden (sales)			158683
Waste			58.90

10.3. Carbon Footprint by Scope

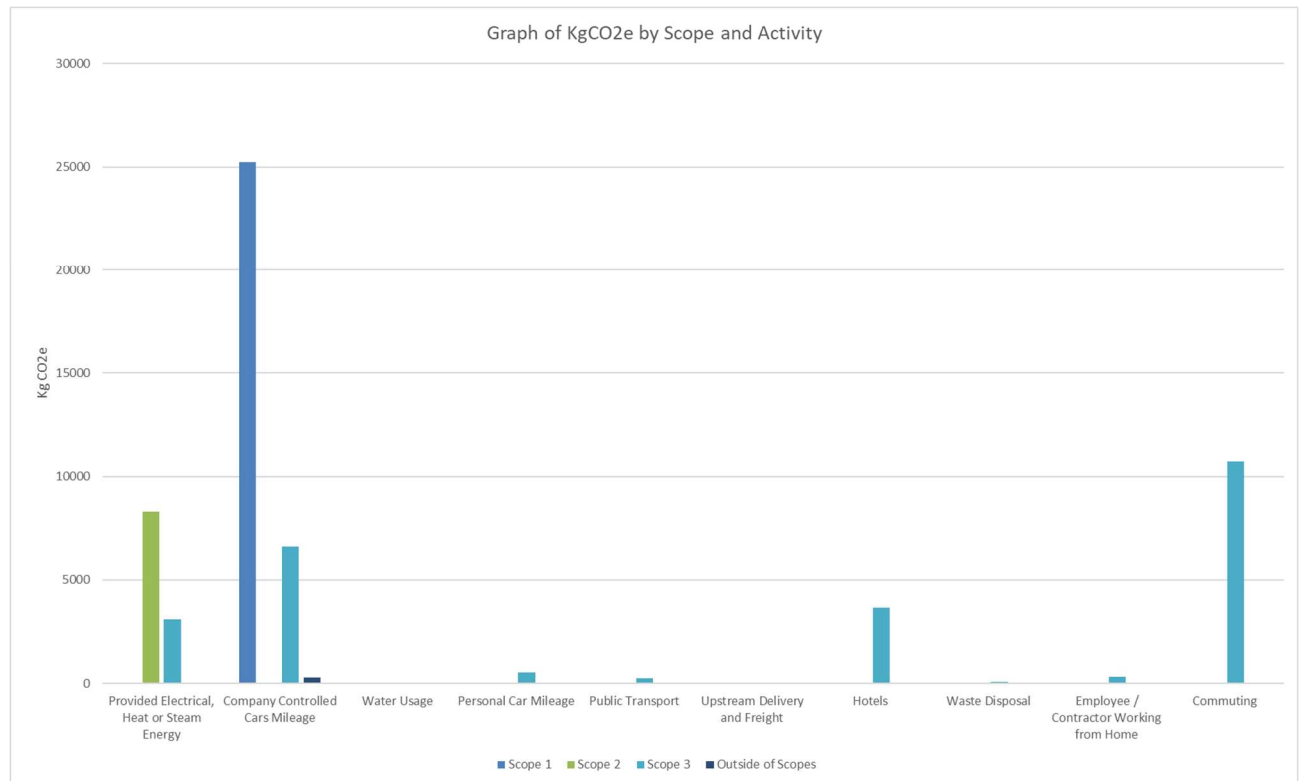


10.4. Carbon Footprint by Scope and Activity



10.5. Selected Carbon Footprint by Scope and Activity

The graph above shows the complete company carbon footprint. However, due to the relative size of Upstream Delivery and Freight, the other activities are hard to see. This graph shows the complete footprint with that highest activity group removed for increased definition



11. Base Year & Intensity Metrics

11.1. Base Year Background

Entities may elect to track emissions over time in response to a variety of business goals including public reporting, establishing GHG targets, managing risks and opportunities. This is done using a base year which is a specific historical period identified for the purpose of comparing GHG emissions, GHG removals, or other GHG related information over time.

Where possible, the base year should remain constant however it may need to be occasionally revisited to ensure transparency over time while allowing for “significant changes” such as structural alterations within a business to be accounted for. Structural alterations include acquisitions, divestments, and mergers.

A commonly used significance threshold is a 5% change in total Scope 1 and Scope 2 emissions due to relevant “significant changes”.

11.2. Intensity Metrics Background

The base year comparative values provided in this report reflect the GHG footprint for the organisation and how it compares to that point in time.

Although the base year can be revisited according to the criteria presented above, this does not account for factors such as organic business development, an increase in production, or in the number of staff. It is therefore helpful to consider how the GHG footprint has altered in relation to an appropriate metric. These are known as intensity metrics and are a good indicator of performance on a per unit basis.

Examples of intensity metrics include CO₂e per unit produced, per £ earned, or per employee.

The GHG Protocol allows for intensity metrics to be included in the report in addition to the total GHG values but not instead of them. The rationale is that organizations should strive to decouple their GHG emissions from their productivity as part of their carbon management strategy. Simply put, the aim is for production, employees and revenue to increase whilst GHG emissions decrease overall.

11.3. Base Year Comparison Results

	Total (kgCO ₂ e)	Scope 1 (kgCO ₂ e)	Scope 2 (kgCO ₂ e)	Scope 3 (kgCO ₂ e)
Base Year GHG Footprint (tCO ₂ e)	564231	25220	8325	530686
Current Year GHG Footprint (tCO ₂ e)	As above	As above	As above	As above

11.4. Intensity Metrics Results

	Total	Scope 1	Scope 2	Scope 3
Base Year - tCO ₂ e / £ Million Turnover	63.9	2.858	0.943	60.132
Current Year - tCO ₂ e / £ Million Turnover	As above	As above	As above	As above
Base Year - tCO ₂ e / Employee	33.190	1.484	0.490	31.217
Current Year - tCO ₂ e / Employee	As above	As above	As above	As above
Base Year - tCO ₂ e / 100,000 litres of product	16.049	0.717	0.237	15.095
Current Year - tCO ₂ e / 100,000 litres of product	As above	As above	As above	As above

12. Carbon Management Projects

12.1. Purpose

Some of the key benefits to Carbon Neutrality are related to the financial savings and business risk reduction conferred by a reduced reliance on fossil fuels. Entirely managing an organization's footprint through offsetting programs negates these benefits and is not consistent with Carbon Neutrality standards. Therefore, it is important that businesses strive to implement practical solutions. Frobishers Juices Ltd is committed to identifying and implementing carbon saving projects.

Frobishers Juices Ltd recognises that successful attainment of its carbon reduction targets is contingent upon the following key elements being in place:

- An organisational framework within the entity that is sufficiently robust to support the financing, delivery and monitoring of carbon reduction projects.
- Clearly identified responsibility and accountability for delivery of carbon reduction projects.

-
- Identification of a realistic suite of carbon reduction projects across a range of areas relevant to the carbon footprint; this list should be regularly reviewed and flexible to adapt to emerging needs and opportunities for funding.
 - A data collection and collation system that is integrated sufficiently to inform an annual progress update on the Carbon Footprint.

12.2. Existing Projects

The following initiatives and projects have already been completed or implemented:

- LED Lights have been installed
- Electric vehicles have been purchased
- Hybrid vehicles have been purchased.
- Increased use of remote meetings to reduce business travel
- Production sites use on site wells to reduce transport of any water used as ingredients
- Purchase of electric forklift to replace diesel one completed
- Reduce market-based electricity related emissions through usage of renewables focused electricity supplier.

12.3. Additional Projects for Consideration

- Make pledge and commitment with the SME Climate hub to develop Net Zero trajectory

13. Carbon Neutrality

13.1. Introduction

The technical definition of Carbon Neutral is defined in British Standard Institution PAS 2060:2014 Specification for the Demonstration of Carbon Neutrality. It is “the condition in which during a specified period there has been no net increase in the global emission of greenhouse gases to the atmosphere as a result of the greenhouse gas emissions associated with the subject during the same period”.

This definition is specific to discussion and achievement of Carbon Neutrality by an entity rather than as a generic reference to a balance of emissions within nature, as it introduces the concept of a “subject”. The subject is in effect the boundary and should be established as part of a Carbon Neutral claim. This is shown in Section 13.3.

13.2. Scope Boundaries

Within claims for Carbon Neutrality under PAS 2060 and Blue Marble Certification, Scope 1 and 2 Emissions are required to be included, Scope 3 by contrast is encouraged. It is not a requirement of Carbon Neutrality specifications that a company offset its Scope 3 emissions.

This is because a company has limited control over many of those Scope 3 Value chain emissions, but also the costs associated with offsetting in many cases would be disproportionate and potentially unaffordable. It is therefore preferable that an entity utilise investment into its own Scope 1 and 2 carbon reduction programs rather than purchase offsets.

Despite the above, some basic Scope 3 emissions are reasonably controllable by an organisation, and data as to the activity is accurate. It is therefore considered by Blue Marble as good practice to offset these emissions where they occur.

- Waste Generated in Operations
- Transmission and distribution losses
- Business Travel
- Employee teleworking / remote working
- 3rd party transportation and storage of sold products

Frobishers Juices Ltd has gone beyond the Scope 3 emissions listed above (where they occur) and has included additional activities:

- Fuel and Energy Related Activities (well to tank for Scope 1 & 3 activities, non-controlled energy provision)
- Water supply
- Upstream transportation

13.3. Carbon Neutral Subject

The subject of the Carbon Neutrality as defined in PAS 2060, in regard to Frobishers Juices Ltd are shown below. These include all Scope 1 and 2 emissions and Selected Scope 3.

The Scope 3 Category numbers are aligned with the GHG Protocol (Figure 3).

Scoping Category		Assessment Emissions		Tonnes (CO ₂ e)
Scope 1		Company Controlled Vehicles		25.2
Scope 2		Location based Emissions from purchased energy e.g. heat, steam, electricity		8.33
Scope 3 Categories	1	Purchased Goods and Services	1a Website hosting services & water usage	0.012
	3	Fuel and Energy related Activities	3a Upstream emissions of purchased electricity and fuels	9.69
			3b Transmission and distribution losses	
	4	Upstream Transport and Distribution	4a Outbound courier deliveries of packages	505.4
			4b Third party transportation and storage of inbound production related goods	
	5	Waste Generated in Operations	5a Wastewater	N/A
			5b Other waste	0.059
	6	Business Travel	6a All transportation by air, public transport, rented/leased vehicle, taxi or grey fleet	0.772
			6b Accommodation and hotels	3.770
	7	Employee Commuting and Homeworking	7a Employee transport between home and worksite	10.718
	7b Employee homeworking		0.321	
9	Downstream Transport and Distribution	9a Third party transportation of sold products	N/A	

13.4. Offsetting Strategy

The total offsets required to achieve Carbon Neutrality for the identified subject are as follows:

- Scope 1: 25.2 tonnes CO₂e
- Scope 2: 8.33 tonnes CO₂e
- Scope 3: 530.7 tonnes CO₂e
- Total: 564.23 tonnes CO₂e
- Total offset: 575 Tonnes

Project: Kariba REDD+
Location: Zimbabwe
Standard: VCS
Tonnes – 75
<https://registry.verra.org/app/projectDetail/VCS/902>

Project: Pamir 1 Hydropower Generation
Location: Tajikistan
Standard: VCS
Tonnes – 500
<https://registry.verra.org/app/projectDetail/VCS/98>

14. Marketing

14.1. Marketing Suggestions

Consider communicating your actions and achievements both within your organisation, to help develop your culture, and externally to further improve your brand image.

- Use the Blue Marble Certification Logo to show the Carbon status of your organisation.
- Present the history of your sustainability journey and why it is important to your organisation
- Explain where you plan to go in the future – provide targets and measures you are going to implement
- Always be accurate and transparent about what your organisation has achieved. Blue Marble will support you on your messaging if you are in any doubt as to the applicability of a claim.
- Use the Blue Marble branding, certificates, images of any offset projects you are supporting and graphs of your carbon performance to help communicate your point in a clear and enticing manner.
- Visit the Blue Marble Marketplace and Directory to find opportunities for your company, or to utilise the products and services of other Carbon Neutral Companies. In this way, value chain emissions are driven down.

15. References

IPCC, 2013: Myhre, G., D. Shindell, F.-M. Bréon, W. Collins, J. Fuglestvedt, J. Huang, D. Koch, J.-F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura and H. Zhang, 2013: *Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

IPCC, 2014: *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

IPCC, 2018: Annex I: Glossary [Matthews, J.B.R. (ed.)]. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press

PAS 2060, 2014: Specification for the Demonstration of Carbon Neutrality. The British Standards Institution