

Carbon Footprint Analysis

prepared for

Packaging Products

Reporting Year End
31 December 2023

**positive
planet**

Dear Packaging Products Team,

Thank you for choosing Positive Planet to help measure your business carbon footprint

We have enjoyed working with you, learning about your business, and understanding your needs and current impact on the environment.

We are on a mission to help as many businesses as possible to measure and understand their carbon emissions.

Our goal is to **enable you to take action** to protect the planet and **inspire others** to do the same.

Carbon reduction is a long-term journey but should be made simple, accessible, and even fun; our aim is to **empower**, not overwhelm. Now that you have measured your emissions, we encourage you to join the 300+ Positive Planet community working to reduce emissions to Net Zero and beyond.

"It has never been more important for businesses to take actions to reduce their environmental impact associated with their operations. By starting this journey you can build positive impact into your business model whilst inspiring and influencing employees, suppliers, customers, and stakeholders.

During 2020 14% of the overall UK emissions came from businesses of all sizes, but we know that only 1 in 10 businesses are committing to measuring, understanding and reducing their emissions - thank you for being one of them!

Committing to measuring your emissions and understanding your carbon footprint is the most important step in your carbon reduction journey and we look forward to continuing to work with you."

Bryony Salter | Head of Sustainability,



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Calculating your carbon footprint

In this carbon footprint analysis, Packaging Products's annual carbon footprint is calculated in tonnes of carbon dioxide equivalent (tCO₂e).

This measurement accounts for the emission of all 7 greenhouse gases noted in the UNFCCC Kyoto Protocol along with their relative global warming potential values (GWP), as recommended by The Greenhouse Gas Protocol and the UK Government Public Procurement Notice 06/21.

To calculate your carbon footprint, Positive Planet measures emissions of the following gases:



Carbon Dioxide CO ₂	Methane CH ₄	Nitrous Oxide N ₂ O	F-Gases HFCs PFCs SF ₆ NF ₃
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The GWP accounts for the variable potency and atmospheric lifetime of each GHG emitted, and converts this to the equivalent amount of carbon dioxide over a 100-year period.

Methodology

Positive Planet's GHG emissions reports are carried out in accordance with the GHG Emissions Protocol Accounting and Reporting Standard. Using the most widely recognised and used emission standard in the world ensures all measurements, calculations, and estimations are completed to the most regulated and accurate standards possible.

Positive Planet was supplied information by the client covering each of the emission sources included in the inventory for all sites (where usage occurred), and the greenhouse gas (CO₂e) emissions were calculated based on relevant emission factors. The provided data has been subject to high level review, but not verification to source.

The comprehensive Carbon Footprint Analysis we have provided will enable Packaging Products to confidently report and publish its carbon emissions. Figures and tables are included throughout this document, which provides opportunity to share your carbon reduction progress with interested parties.

This Carbon Footprint Analysis forms part of Packaging Products's ongoing commitment to measure and reduce its business carbon footprint. In this document, the measured emissions from the current reporting period (Year Ending 31 December 2023) are given for each relevant reporting category, where included in the measurement type. This analysis exceeds the standard required by the HM Public Procurement Notice (06/21) and asserts your organisation's commitment to supporting a sustainable future.

Methodology - Emissions Factors

Emission Factors and Methodology

- Consumption-based Factors: UK Government (BEIS / DEFRA) GHG Conversion Factors for Company Reporting
- Spend-based Factors: UK Government Conversion factors by SIC code 2020 (with inflation adjustment to the reporting year)
- Electricity (market-based): Emissions have been calculated as zero (scope 2) where renewable electricity has been purchased. Scope 3 transmission and distribution of electricity will still be included.
- Well-to-tank and transmission and distribution loss emissions are included for direct and upstream indirect energy consumption.
- The variable impact of radiative forcing has been accounted for when quantifying emissions of air travel.

Assumptions and Exclusions

- Purchased goods and services (including capital good) emissions have been estimated using spend-based factors. This means that the results are based on industry averages per £ spent and not specific supplier or product data.
- Where spend has been used to calculate emissions related to physical goods, the emissions from the transportation of goods from the supplier to the reporting organisation have not been calculated as this is covered by the spend-based factors.
- Emissions arising from the processing of bitumen have been excluded, due to data limitations.

Data Quality

Positive Planet uses a data quality rating based on the accuracy of the data supplied by the client. The rating system works on a three-tiered traffic light system with green representing good quality data, yellow representing average quality data and orange representing poor quality data. The quality of your data is very important, as you cannot understand and manage what you cannot properly measure. Higher quality data provides a more accurate carbon footprint and so we encourage all our clients to improve their data quality year-on-year.

The below table shows the data quality rating. Ideas for improving data quality for each category will be discussed during your carbon management meeting.



High data quality

Primary data sources have been used. Data completeness and accuracy is high. Most often consumption-based data, for example kWh electricity used.

Medium data quality

Mixed primary and secondary data sources. Limited extrapolation with average completeness and accuracy.

Low data quality

High levels of estimation and benchmarking. Poor completeness and accuracy. Often means that the client has provided spend data instead of consumption data, for example £s spent on electricity instead of kWh used.

Emissions Scopes: Explained

Using the information you provided in line with our outlined Methodology, we have calculated the annual carbon emissions of Packaging Products.

Your business emissions are described and measured in three different Scopes: 1, 2, & 3. We have broken down the differences between each Scope for you below:

Scope 1

Direct Emissions

Your direct emissions come from things such as your company vehicles, buildings, and facilities.

Scope 2

Indirect Emissions

Your indirect emissions consist of your purchased electricity (and steam, heating, and cooling) for business use.

Scope 3

Upstream & Downstream Emissions

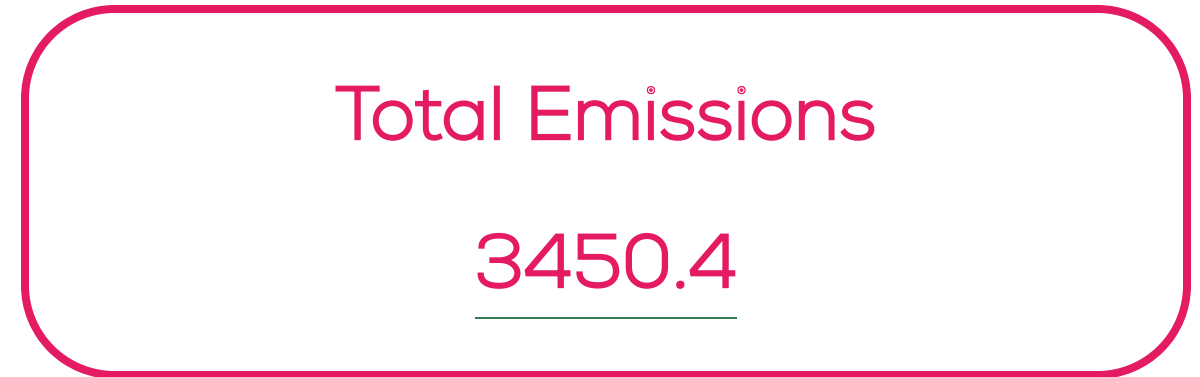
Upstream activities include commuting, business travel, transportation from suppliers, and purchased goods & services. Downstream activities include deliveries to customers, plus the use and disposal of your products.

It is important to know, and report on, your emissions using the above Scopes. However, sharing the data with your team is often more effective when it is linked with activities they can relate to, such as commuting or energy consumption.

Your Carbon Footprint

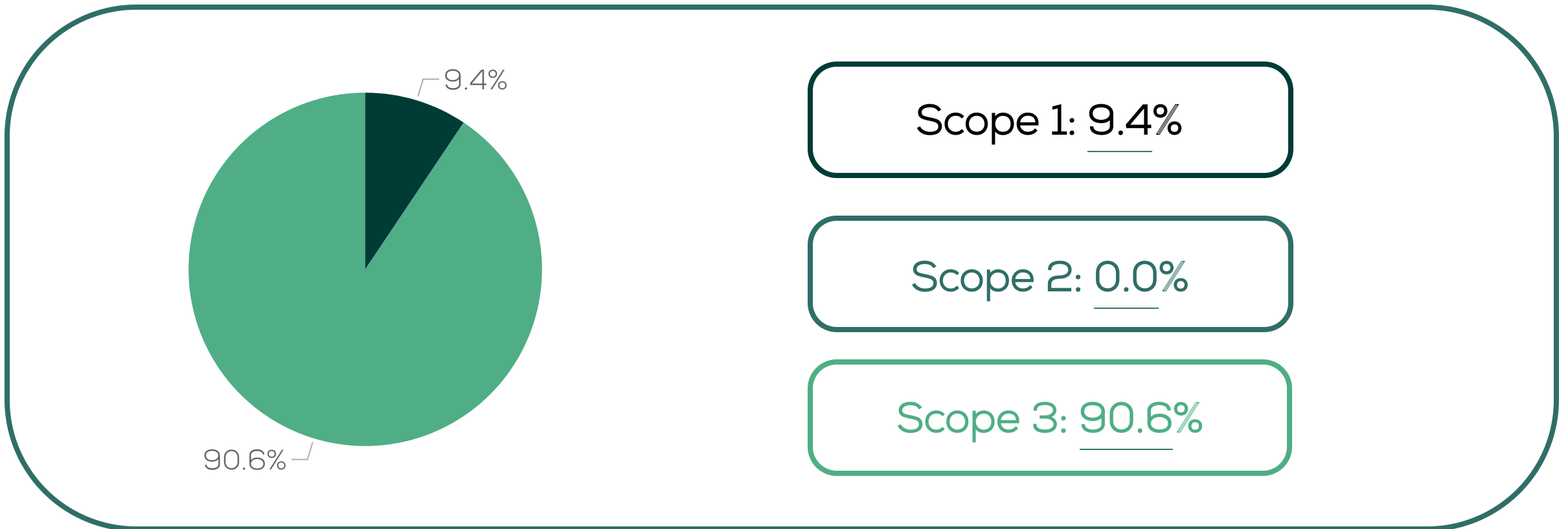
The top-level analysis below demonstrates which activities contribute to your Scope 1, 2, & 3 business emissions. Also included is an overview of your emissions by Scope, along with your calculated annual carbon footprint.

Throughout this analysis, all measurements are given in tonnes of carbon dioxide equivalent (tCO₂e).



Your Carbon Footprint

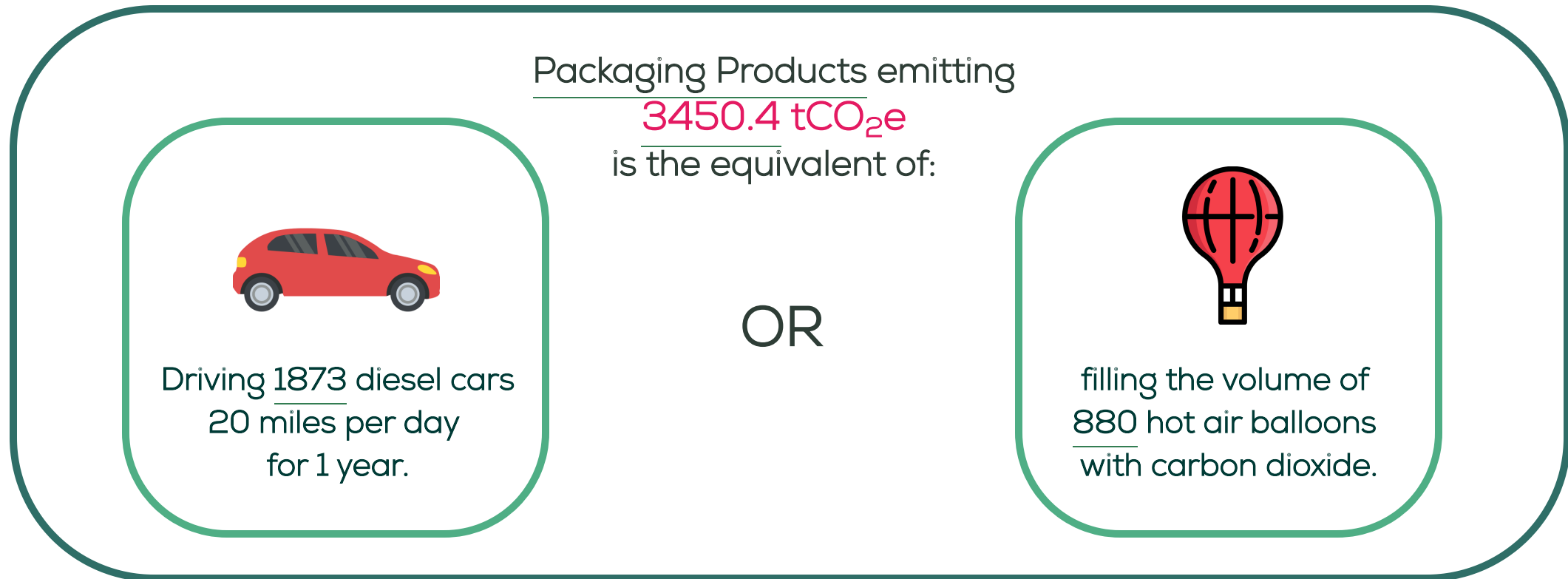
Included below is a pie chart which demonstrates the relative contribution (%) of each Scope towards your total carbon footprint.



Throughout this analysis, each Scope of Packaging Products's carbon footprint will be further broken down into its contributing aspects. This will enable you to understand your carbon footprint and effectively target your emission reductions.

Your Carbon Footprint in Context

The concept of a carbon footprint and its contributing emissions can feel abstract, and is often difficult to visualise. To better contextualise Packaging Products's annual footprint, there are some real-world reference points below:



When Packaging Products reaches net zero emissions, it will have as high an impact as permanently removing 1873 diesel cars from UK roads - preventing 1919116 m³ of carbon dioxide from being released every year.

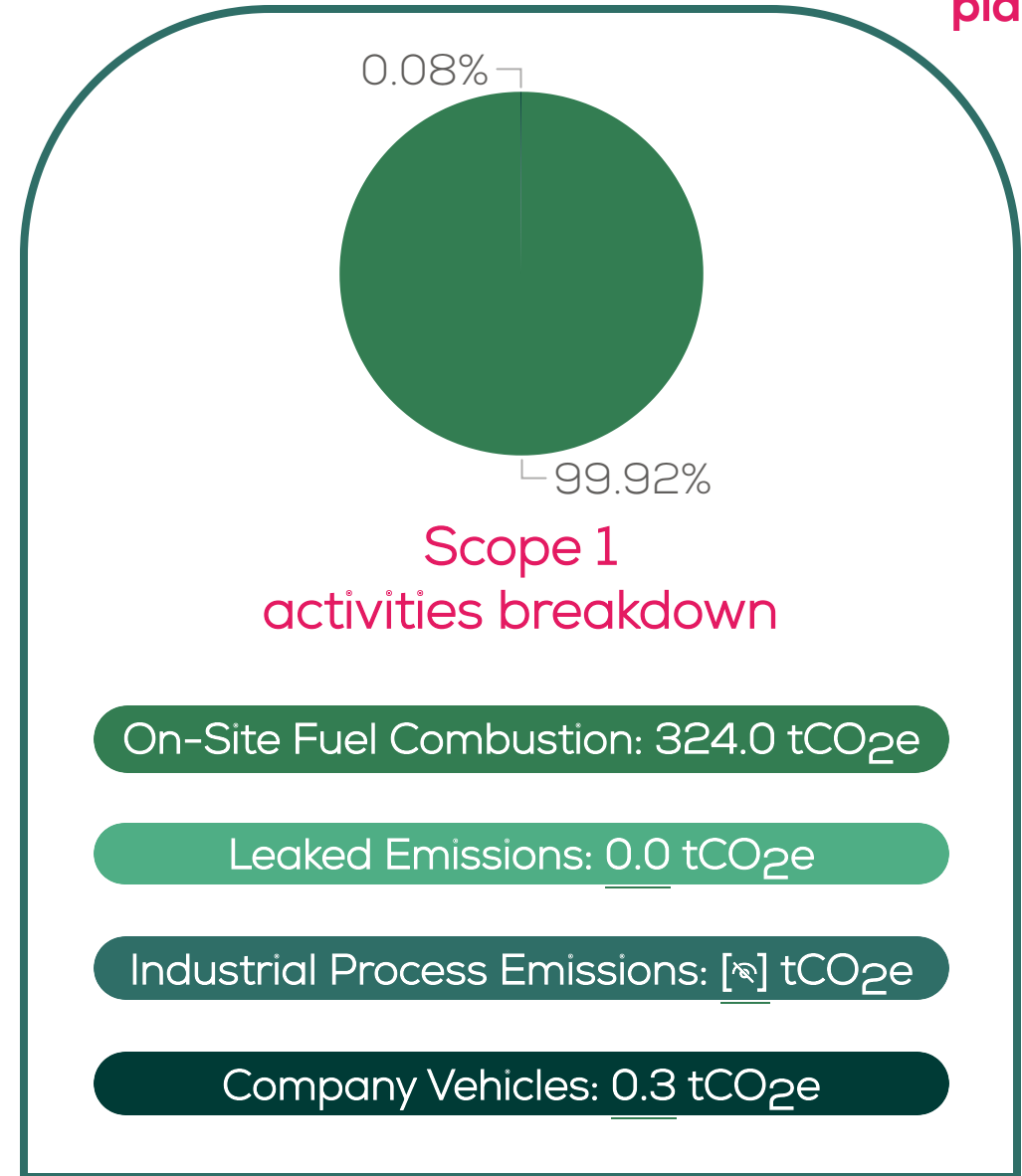
Scope One Emissions

Scope 1 includes emissions that occur as a direct result of your operations. This includes fuel combustion, chemical processes or gas leakages that occur in buildings, vehicles or machinery owned or controlled by your business.



Scope 1 total emissions: 324.3 tCO₂e

Contribution to overall footprint: 9.4%



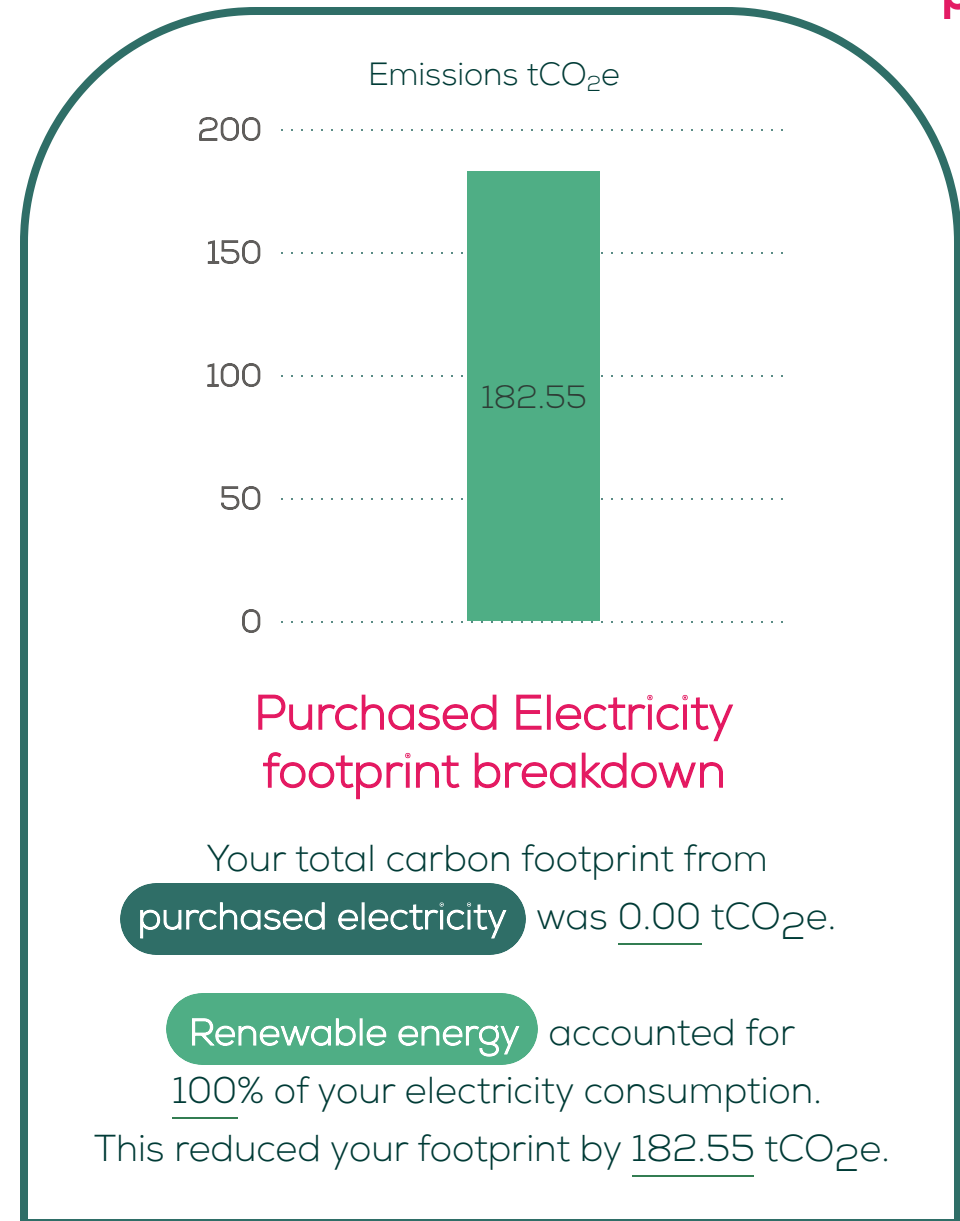
Scope Two Emissions

Scope 2 emissions occur offsite during the generation of energy used by your organisation. This includes the generation of electricity, heat, steam or cooling that has been purchased by your organisation.



Purchased electricity: 0.00 tCO_{2e}
Steam, Heat, and Cooling: 0.0 tCO_{2e}

Scope 2 total emissions: 0.00 tCO_{2e}
Contribution to overall footprint: 0.0%



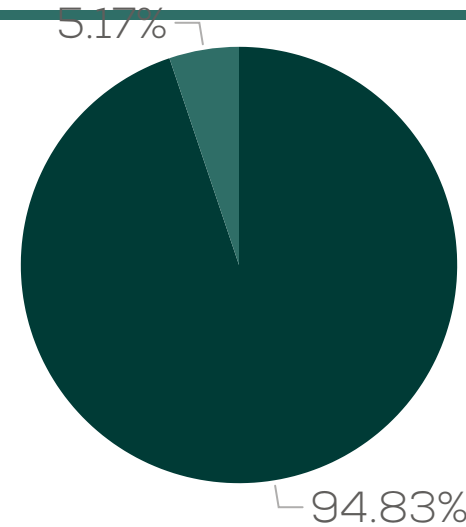
Scope Three Emissions

A range of activities are reported within every company's Scope 3 footprint. Each of these activities are noted below, separated into Upstream and Downstream emissions. Often, Scope 3 emissions comprise the largest part of an organisation's carbon footprint. It is therefore imperative that these activities are measured, and their negative impact reduced.



Scope 3 total emissions: 3126.1 tCO₂e

Contribution to overall footprint: 90.6%



Contribution to Scope 3 Total

Upstream Emissions: 95%

Downstream Emissions: 5%

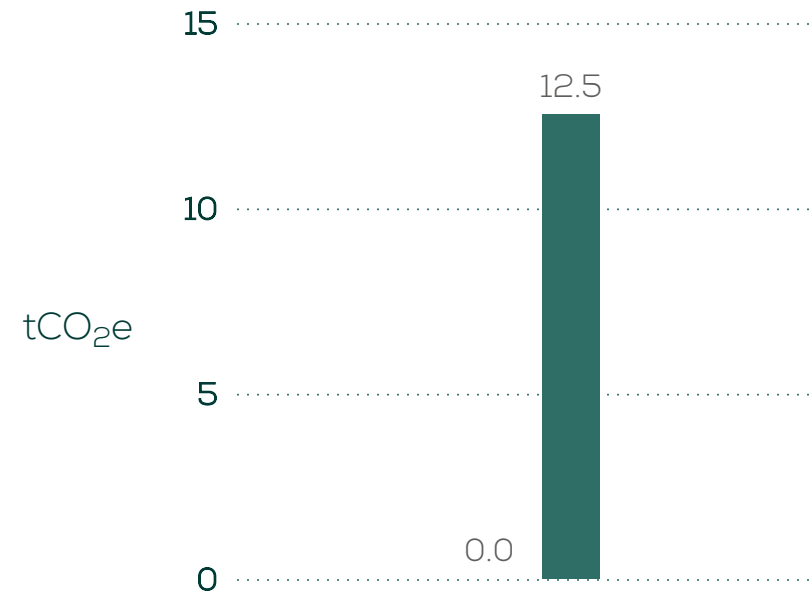
Scope Three Emissions: Upstream

Upstream emissions are a consequence of your supply chain. This includes all purchased goods & services, along with travelling to meetings and employee commuting.

Scope 3 Upstream Emissions contributing activities

Purchased Goods & Services	2,823.1
Capital Goods	21.1
Fuel & Energy Related Activities	84.3
Transportation & Distribution	0.0
Operational Waste	21.7
Business Travel	2.0
Employee Commuting & Home Working	12.5
Leased Assets	0.0

Scope 3 total upstream emissions:
2964.6 tCO₂e



Employee Homeworking: 0.0 tCO₂e

Commuting: 12.5 tCO₂e

Scope Three Emissions: Downstream

Downstream emissions come from your clients and customers' use of your product or service. This includes the distribution, use, and disposal of your product.



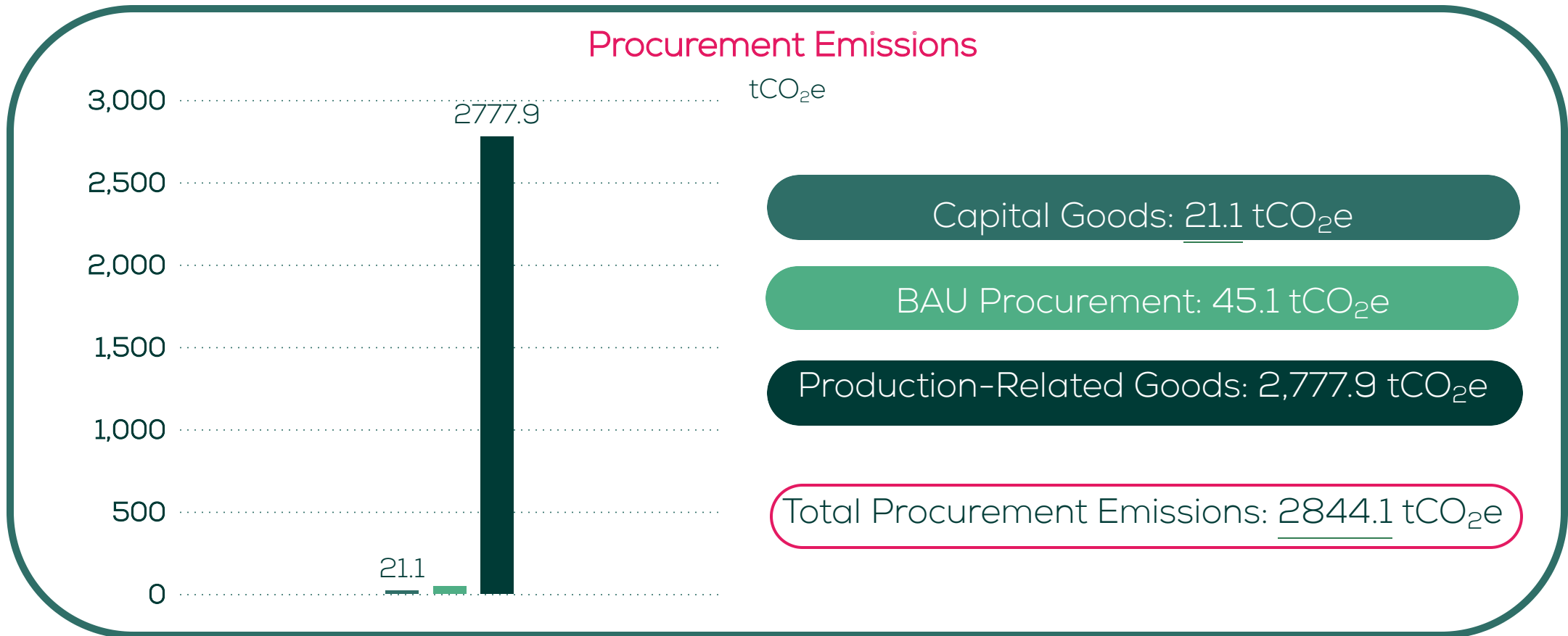
Scope 3 Downstream Emissions contributing activities

Transportation & Distribution	161.5
Processing of Sold Products	
Use of Sold Products	
End-Of-Life Treatment of Sold Products	
Leased Assets	0.0
Franchises	0.0
Investments	0.0

Scope 3 total downstream emissions: 161.5 tCO_{2e}

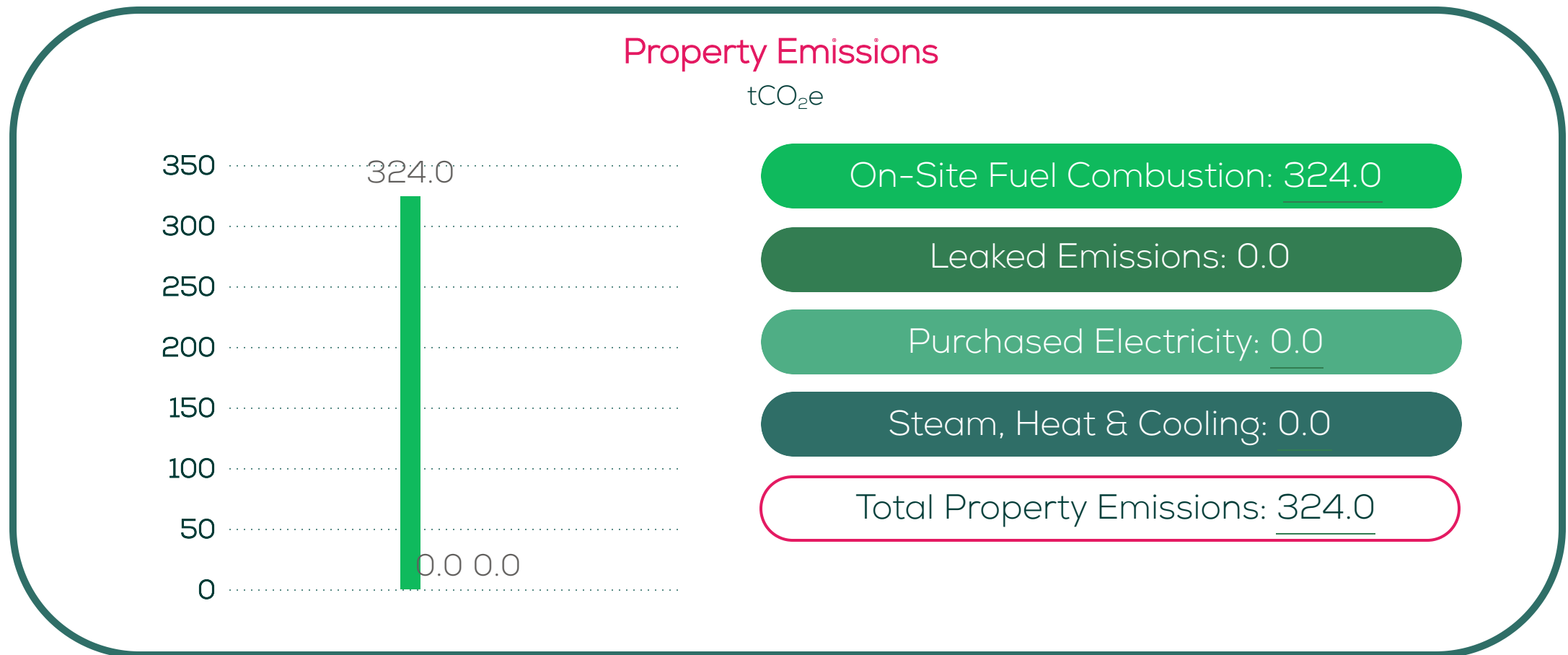
Footprint Analysis: Procurement

The figure below describes the emissions associated with all acquired assets and business purchases within your reporting period. *Production-Related Goods* are those required to create the final product, including purchased packaging. *BAU Procurement* is all other non-capital procurement of goods and services. Production-Related Goods and BAU Procurement are reported under the *Scope 3: Purchased Goods & Services* category.



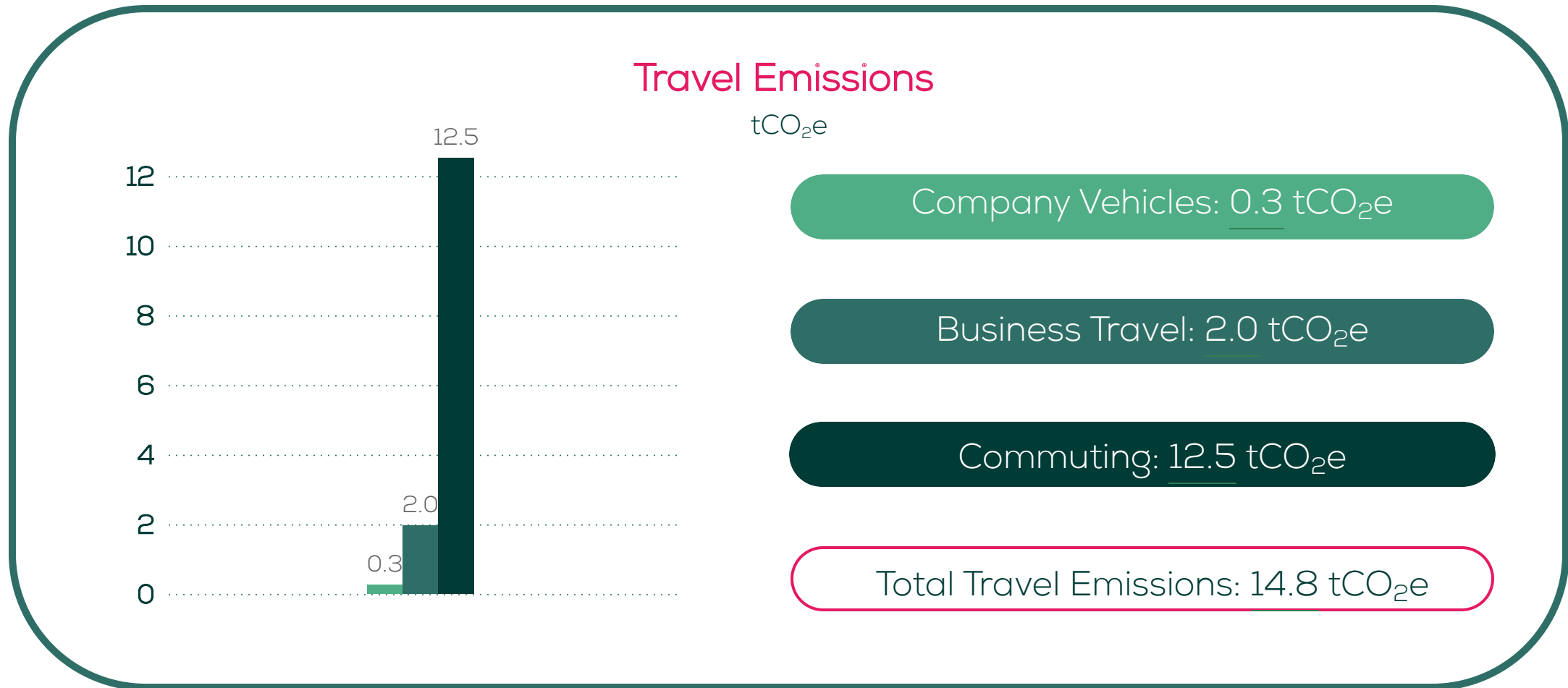
Footprint Analysis: Property

The emissions analysed below are a direct result of on-site fuel consumption and other uses of energy at your company properties. The activities included here contribute to your Scope 1 & Scope 2 carbon footprint.



Footprint Analysis: Travel

The emissions analysed below are emitted from personnel travel associated with Packaging Products. The activities included here contribute to your Scope 1 & Scope 3 carbon footprint.



Data Quality

It is expected that most companies will not have access to High Quality data during their first few years of reporting carbon emissions. However, it is very important to improve data quality where possible to enable a detailed analysis of emissions may support targeted carbon reduction activities.

The below table shows the data quality rating for the emissions categories reported in this document. Descriptions for each Quality rating are detailed on page 6.

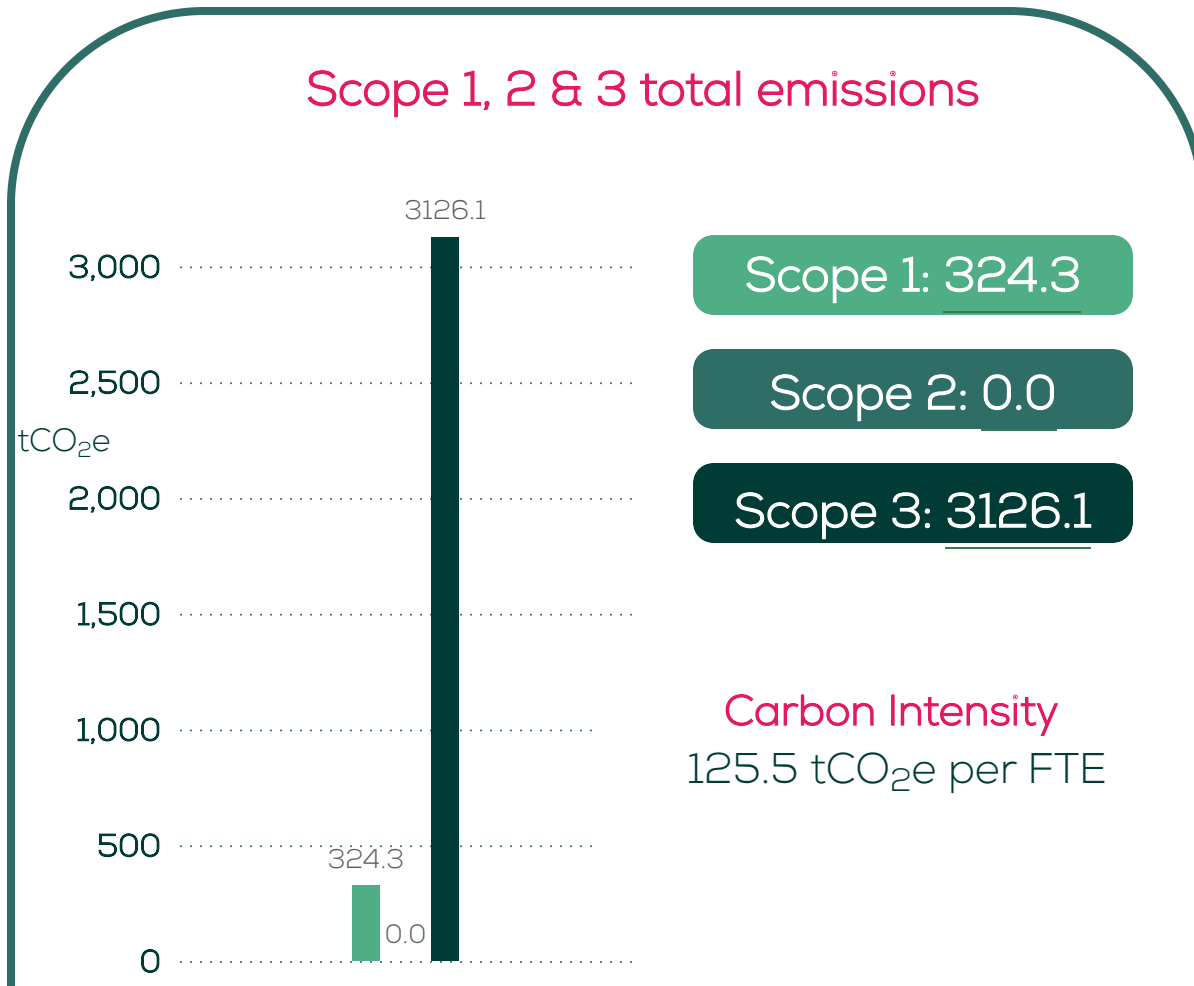


Utilities	High
Waste	High
Travel	High
Distribution	Low
Procurement	Low
Finance	N/A
Product	N/A

We recommend initially focussing on improving data quality for Packaging Products's highest emitting categories.

All Emissions: Summary

The figures below demonstrate the emissions of each activity (tCO₂e) and how this has impacted your footprint.



On-Site Fuel Combustion	324.0
Company Vehicles	0.3
Leaked Emissions	0.0
Industrial Process Emissions	
Purchased Electricity	0.0
Steam, Heat & Cooling	0.0
Purchased Goods & Services	2,823.1
Capital Goods	21.1
Fuel & Energy Related Activities	84.3
Transportation & Distribution (Upstream)	0.0
Operational Waste	21.7
Business Travel	2.0
Employee Commuting & Home Working	12.5
Leased Assets (Upstream)	0.0
Transportation & Distribution (Downstream)	161.5
Processing of Sold Products	
Use of Sold Products	
End-Of-Life Treatment of Sold Products	
Leased Assets (Downstream)	0.0
Franchises	0.0
Investments	0.0

Next steps

It has been a pleasure working with you to measure your carbon emissions. Now that you have this measurement and a better understanding of the carbon impact of your organisation, we recommend taking the following steps to keep the momentum going:

1. Develop a carbon reduction plan

Our team has highlighted core carbon hotspots within your carbon footprint. Now you need to consider actions to start to reduce these emissions and work toward Net Zero carbon, which our carbon reduction team can support you to do.

2. Communicate your impact

Measuring your carbon emissions and taking action to reduce them are extremely important first steps. Communicating this out to your stakeholders is a great way to x10 your impact. Share, inspire, and collaborate.

3. Engage your team

Internal awareness and buy-in is essential to a successful carbon reduction initiative. Not only will this help to reduce your organisation's emissions, but it will have a wider impact on everyone your employees engage with including suppliers, customers, friends, and family. Positive Planet offers certified Carbon Literacy Training which decreases individual emissions by 5-15% on average.

4. Improve data quality

Get ready for your next carbon reporting year! It is important to improve the quality of your data over time. In the next few years this will start to become regulated (high quality data will be required) so it is good to get on top of it early.

Thank You

We look forward to supporting you on the rest of your carbon reduction journey.

If you have any questions, please contact your Positive Planet team or hq@positiveplanet.uk



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