



Hatmill Ltd

Net Zero Report

Reporting period: 31 March 2025

This report presents key findings from your journey towards Net Zero. The following pages encompass your emissions review and identify key carbon impact areas. Subsequently, the report outlines your short and long-term goals.

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Section 1

Executive Summary

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1 April 2020 - 31 March 2025

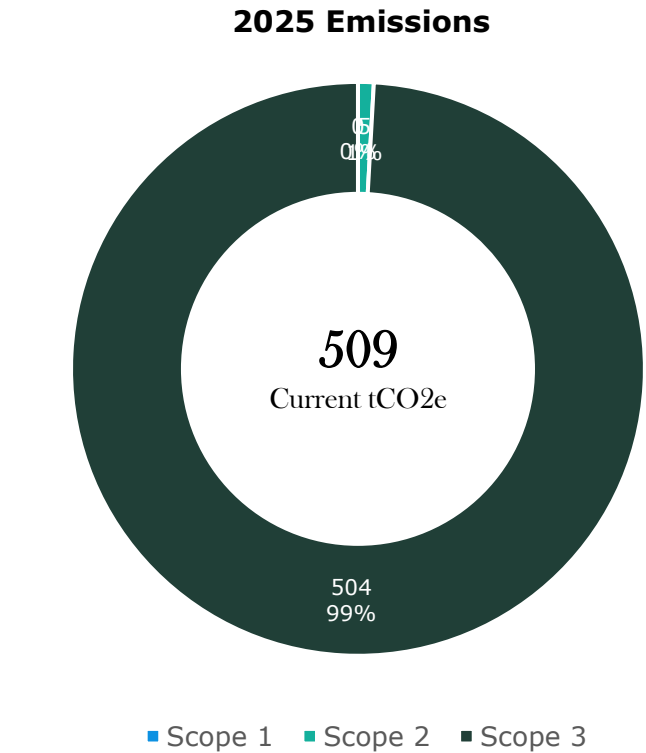


Executive Summary and Net Zero Commitments

- ▶ Hatmill Ltd is a leading logistics consultancy firm that specialises in helping businesses optimise their supply chain operations. With a team of experienced industry professionals, Hatmill works with clients to improve warehouse efficiency, reduce costs, and enhance overall supply chain performance. Their tailored solutions and innovative approach make them a trusted partner for companies looking to streamline their operations and drive growth.
- ▶ Whilst working with other companies to decarbonise their logistics and supply chains, Hatmill are also mindful of their own operational GHG emissions, working to decarbonise towards Net Zero by 2039. Hatmill are pursuing this ambitious target not only because they feel morally compelled to take action, but because they recognise the commercial benefits that come with pursuing Net Zero, such as securing top talent and building a positive brand image.
- ▶ Hatmill have commitment across the organisation, from an informed and aligned board, to a green team spanning all different departments and levels of the business. The team have already introduced governance structures, educated their team members, and worked to improve data quality and understanding over time. This puts Hatmill in a great position to drive decarbonisation across their operations moving forward.

Current Emissions and Hotspots

As a fully remote business, Hatmill’s emissions sit almost entirely in Scope 3. Travel & logistics accounts for 71% of Hatmills footprint, with grey fleet (23%), flights (12%), subsistence (10%), trains (8%) and hotels (7%) contributing significantly to the total. The supply chain accounts for 24% of emissions, and employee homeworking the remaining 4%.



Emissions Hotspot	Recommended Strategy
Short haul flights - economy class: 11%	Some suggested actions you could take to reduce this footprint: - Prioritise online meetings where possible - Travel by international rail where the destination allows - Implement a carbon budget for the teams who fly a lot
Subsistence: 10%	Some suggested actions you could take to reduce this footprint: - Break down subsistence spend further – higher quality data provides clearer insights, enabling smarter operational and strategic decisions. - When catering for staff, choose low-emissions providers & food.
Privately owned diesel cars: 10%	Some suggested actions you could take to reduce this footprint: - Promote your EV salary sacrifice scheme to increase adoption - Encourage staff to opt for public transport when travelling for business
Staff training: 8%	Some suggested actions you could take to reduce this footprint: - Most of the emissions here comes from room bookings, therefore attaining activity data from the sites where you host training is key to reducing emissions here.

Key Insights:

Targets

- ▶ Net Zero Target of 2039
- ▶ Interim Target of 2030
- ▶ Intensity target of 4.7 per £m turnover
- ▶ Intensity target of 0.9 per FTE

Buildings

- ▶ No associated emissions as Hatmill do not have an office.

Supply Chain

- ▶ 24% of the total footprint.
- ▶ 1 actions completed.
- ▶ 0 actions planned in the next 12 months.

GHG emissions

- ▶ Total emissions: 509 tCO₂e for 2025
- ▶ Equivalent to 46.6 tCO₂e per £m turnover for 2025
- ▶ Increase of 45% on an absolute basis from a 2023 baseline.
- ▶ Increase of 8% on an intensity basis from a 2023 baseline.

Travel & Logistics

- ▶ 71% of the total footprint.
- ▶ 9 actions completed.
- ▶ 1 actions planned in the next 12 months.

People

- ▶ 4% of the total footprint.
- ▶ 2 actions completed.
- ▶ 3 actions planned in the next 12 months.



Year on Year Analysis

Hatmill Ltd's footprint increased by 27% (107 tCO₂e) in the year to 31 March 2025, driven primarily by:

- ▶ An increased reporting boundary, to incorporate upstream fuel & energy related activities that aren't already captured in Scopes 1&2, which was not reported on in YE2024. This accounted for an additional 56 tCO₂e.
- ▶ A 31 tCO₂e increase in supply chain emissions.
- ▶ An increase in business travel emissions of 20 tCO₂e, mainly due to an increase in the spend-based taxi & rail travel emissions factors.

Enhanced accuracy and depth of emissions data will provide clearer insights, enabling smarter operational and strategic decisions and effective emissions reporting.

Activity-based emissions factors also fluctuate less than spend-based factors, therefore moving to activity data where possible will avoid emissions increases such as those from taxi & rail factor increases in 2025.

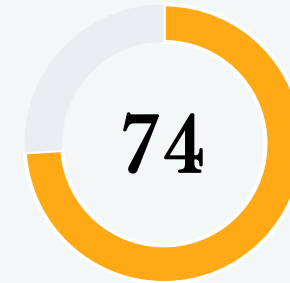
Conclusion

95% of Hatmill's emissions originate from two key impact areas: the supply chain and travel & logistics. Whilst 10% of the total emissions come from public or electric transport, 23% comes from grey fleet, 12% from flights, 10% from subsistence, and 7% from hotels. These areas must be addressed moving forward, through initiatives to reduce flights, promote lower-carbon hotels/subsistence suppliers and incentivise staff to use public or electric transport means where possible.

Regarding the supply chain, purchased services and technology & data account for 17% & 7% of total emissions, respectively. These emissions can be addressed through first surveying suppliers to obtain more accurate data, and to ascertain their ESG credentials to see if their decarbonisation goals align with Hatmill's.

Data Quality

The Flotilla data score considers precision and completeness of input data to give a score out of 100. Hatmill Ltd's current data quality score is 74 and further details this can be found on page 16:



Next Steps

- ▶ Conduct an internal review of your **Net Zero Report** to align on key insights and priorities.
- ▶ Use the **Flotilla platform** to explore our **Recommended Actions** and assess their relevance to your strategy.
- ▶ Access the **Analytics** section to gain deeper visibility into specific emission sources and activities.
- ▶ We will schedule a **Net Zero Workshop** with your team to discuss the report's findings, refine priorities, and align on key actions for the coming months.
- ▶ Start building your **Project Plan** by integrating recommended actions and selecting additional initiatives from the **Action Library** to drive meaningful change.



Section 2

Report Context and Methodology

- ▶ The purpose of this report is to provide Hatmill Ltd with the knowledge and tools to understand their greenhouse gas emissions and inform smarter choices towards decarbonisation.
- ▶ This report provides a detailed analysis of the historical carbon footprint of Hatmill Ltd for the year ending March 2025.
- ▶ This report covers the total greenhouse gas emissions from Scopes 1, 2 and 3 of Hatmill Ltd's operational footprint.
- ▶ The footprint calculated is reliant on the data provided, Flotilla do not provide assurance or verification of the data collected.
- ▶ Throughout this report we have also grouped and analysed your data using Flotilla's categories: Governance, People, Travel & Logistics and Supply Chain. These categories allow you to view your data in a way that makes sense to your operations, and to identify the opportunities for change, engagement and influence.
- ▶ For a glossary of terms, details of the scope and boundary of this report, our methodology and accreditations, please refer to the appendices.



Greenhouse Gases (GHG)

Greenhouse gas emissions are the release of gases into the atmosphere that trap heat from the sun, causing the planet to warm. These gases act like a blanket, allowing sunlight to enter but preventing some of the Earth's heat from escaping back into space. There are 7 GHGs stated in the GHG protocol:

- ▶ Carbon dioxide (CO₂)
- ▶ Methane (CH₄)
- ▶ Nitrous oxide (N₂O)
- ▶ Hydrofluorocarbons (HFCs)
- ▶ Perfluorocarbons (PFCs)
- ▶ Sulphur hexafluoride (SF₆)
- ▶ Nitrogen trifluoride (NF₃)

tCO₂e

Different activities produce different gases. For carbon accounting purposes, greenhouse gases are converted into CO₂ equivalents for easier reporting and comparison. We refer to a business carbon footprint as 'tCO₂e', which is short for 'tonnes of carbon dioxide equivalent'.

Baseline Year

A reference point against which emissions reductions are measured. This is used by Flotilla in creating a Net Zero plan and determining reduction targets.

Scopes 1, 2 & 3

Carbon footprint measures are categorized into three scopes: 1, 2 and 3.

Scope 1

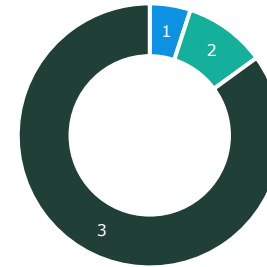
Direct emissions from sources that the company owns or controls.

Scope 2

Indirect emissions from electricity, steam, heat or cooling.

Scope 3

All other indirect emissions from activities of the organisation



Scope 3 can account for up to 90% of a business' carbon footprint. We measure all three scopes, so you can understand the full impact of your business activities. Further detail about the scopes and the methodology is detailed on the next page.

Net Zero

Net Zero is a target set by businesses and countries with the aim of limiting global temperature rises to 1.5c. Put simply, Net Zero means reducing GHG emissions to as close to zero as possible with any remaining emissions re-absorbed from the atmosphere. To achieve Net Zero, following science-based targets, a business must:

- ▶ Measure emissions across their value chain
- ▶ Focus on deep, rapid emission cuts, ideally halving emissions by 2030, and reducing by at least 90% by 2050
- ▶ Remove remaining hard-to-abate emissions from the atmosphere via carbon removal solutions

Impact Areas

Whilst the GHG protocol measures footprints based on scope, analysing the footprint by impact area is beneficial because they provide a more meaningful way to understand your data, set reduction targets and take meaningful action. The impact areas are:

- ▶ Travel & Logistics
- ▶ People
- ▶ Buildings
- ▶ Supply chain
- ▶ Governance*

Employee Commuting and Homeworking

Where surveys have been conducted to collect employee commute and homeworking data, this data is utilized and extrapolated to provide an accurate representation of your footprint. Where not, government average commute data is utilized to provide an estimate of those emissions based on the number of workers and your sector/industry.

Intensity Metrics

Intensity metrics allow your business to track how efficiently you are reducing emissions per unit of output. Intensity metrics are most impactful when monitoring scope 3 emissions.

They provide an alternative view to total emissions, allowing you to see progress as your business grows.

*Governance does not include any emissions or carbon footprint calculations

Baseline emissions are the emissions produced in the earliest possible reporting year when a holistic, representative GHG emissions measurement was completed. Baseline emissions are the reference point against which emissions reduction can be measured.

Hatmill Ltd's emissions have been calculated against a baseline year of 2023.

Hatmill Ltd's GHG emissions inventory is aligned to the GHG Protocol and covers:

Scope 1: Direct emissions

Direct emissions from sources owned or controlled by an organisation, such as natural gas used in boilers, fuel combustion in company vehicles, manufacturing processes, and onsite energy production.

Scope 2: Indirect emissions

Indirect emissions from the consumption of purchased electricity, steam, heating, and cooling. These emissions occur at the source of energy production but are attributed to the organisation that uses the energy.

Scope 3: Supply chain emissions and categories

Scope 3 emissions encompass all indirect greenhouse gas (GHG) emissions that occur in an organization's value chain, both upstream and downstream, that are not included in Scope 1 or Scope 2.

Scope 3 GHG Category	Description
Category 1: Purchased goods and Services	Emissions from the production of goods and services a company buys.
Category 2: Capital goods	Emissions from producing long-term assets such as buildings or equipment.
Category 3: Fuel and Energy-Related (not in Scopes 1 or 2)	Emissions from extraction, production, and transportation of fuels and energy purchased, no captured in Scope 1 or 2.
Category 4: Upstream Transportation and Distribution	Emissions from transporting and distributing products purchased by the reporting company.
Category 5: Waste Generated in Operations	Emissions from waste disposal and treatment.
Category 6: Business Travel	Emissions from travel by employees outside of company-owned vehicles (e.g., flights, rental cars).
Category 7: Employee Commuting	Emissions from employees commuting to and from work.
Category 8: Upstream Leased Assets	Emissions from leased assets not included in Scope 1 or 2, occurring upstream in the value chain.
Category 9: Downstream Transportations & Distributions	Emissions from transporting and distributing sold products to customers.
Category 10: Processing of Sold Products	Emissions from processing intermediate products sold by the company.
Category 11: Use of Sold Products	Emissions from the use of goods and services sold.
Category 12: End of Life of Sold Products	Emissions from waste disposal and treatment of sold products at their end-of-life.
Category 13: Downstream Leased Assets	Emissions from assets leased to other entities.
Category 14: Franchises	Emissions from operations of franchises.
Category 15: Investments	Emissions from investments made by the company, such as loans and equity.

An aerial photograph of a wind farm is shown, split diagonally. The left side features a bright, high-contrast image of green fields and brown patches with several white wind turbines. The right side is a darker, more muted version of the same scene. The text is overlaid on the right side.

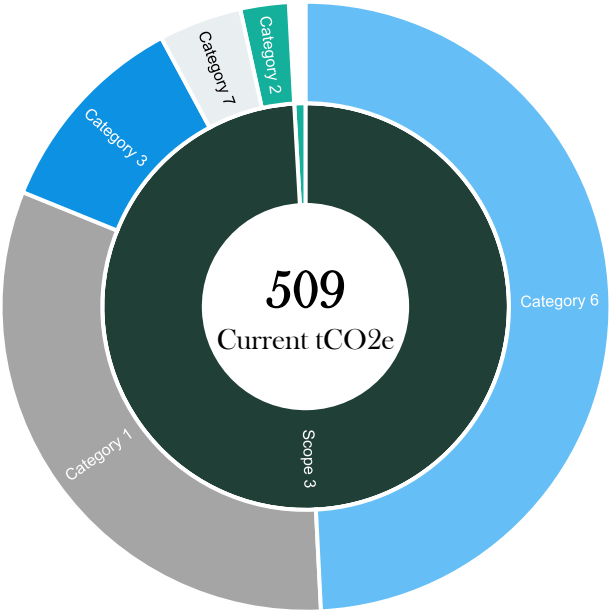
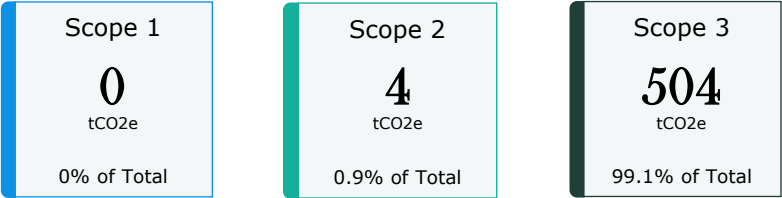
Section 3

GHG Emissions Summary

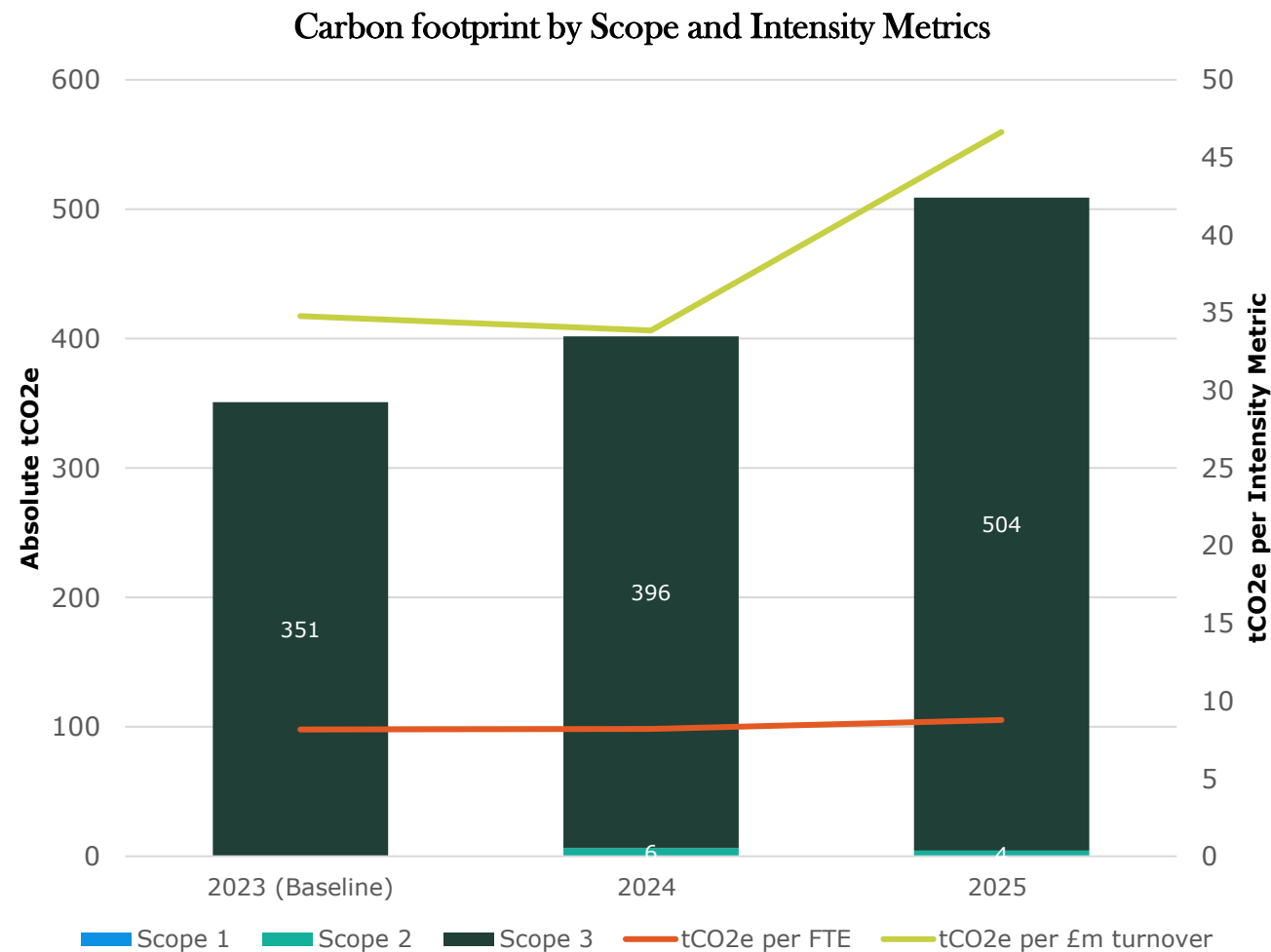
1 April 2020 - 31 March 2025

GHG Emissions Summary

The footprint calculated is reliant on the data provided. Flotilla do not provide assurance or verification of the data collected. The Scope 3 categories that are not material to Hatmill are indicated as 'not relevant.'



Scope	GHG Category	2023 Tonnes CO2e (Baseline)	2025 Tonnes CO2e (Current)	2025 % of emissions	Change
1	Fuel in company vehicles	0	0	0.00%	0%
	Direct fuel	0	0	0.00%	0%
2	Electricity – for charging company vehicles	0.0	4.5	0.88%	100%
	Indirect fuel usage in leased offices	0	0	0.00%	0%
	Indirect fuel usage in leased assets	0	0	0.00%	0%
3	Category 1: Purchased goods and Services	115.3	162.5	31.92%	40.9%
	Category 2: Capital goods	23.1	13.0	2.56%	-43.6%
	Category 3: Fuel and Energy-Related (not in Scopes 1 or 2)	0	56.3	11.06%	100%
	Category 4: Upstream Transportation and Distribution	0	0	0.00%	0%
	Category 5: Waste Generated in Operations	0	0.0	0.00%	0%
	Category 6: Business Travel	193.9	250.4	49.19%	29.2%
	Category 7: Employee Commuting	18.7	22.3	4.38%	19.4%
	Category 8: Upstream Leased Assets	0	0	0.00%	0%
	Category 9: Downstream Transportations & Distributions	0	0	0.00%	0%
	Category 10: Processing of Sold Products	Not relevant	Not relevant	Not relevant	0%
	Category 11: Use of Sold Products	Not relevant	Not relevant	Not relevant	0%
	Category 12: End of Life of Sold Products	Not relevant	Not relevant	Not relevant	0%
	Category 13: Downstream Leased Assets	0	0	0.00%	0%
	Category 14: Franchises	Not relevant	Not relevant	Not relevant	0%
	Category 15: Investments	Not relevant	Not relevant	Not relevant	0%
Total Emissions		351.0	509.0	100.00%	45.0%



Intensity metrics allow your business to track how efficiently you are reducing emissions per unit of output. Intensity metrics are most impactful when monitoring Scope 3 emissions. They provide an alternative view to total emissions, allowing you to see progress as your business grows.

Scope 1: Direct emissions

Scope 1 has increased by 0.0% (0.0 tCO2e) driven by:

- ▶ No emissions exist in this Scope so there has been no movement.

Scope 2: Indirect emissions

Scope 2 has decreased by 29.2% (1.9 tCO2e) compared to 2024, driven by:

- ▶ Company controlled electric cars - down 29.2% (1.9 tCO2e).

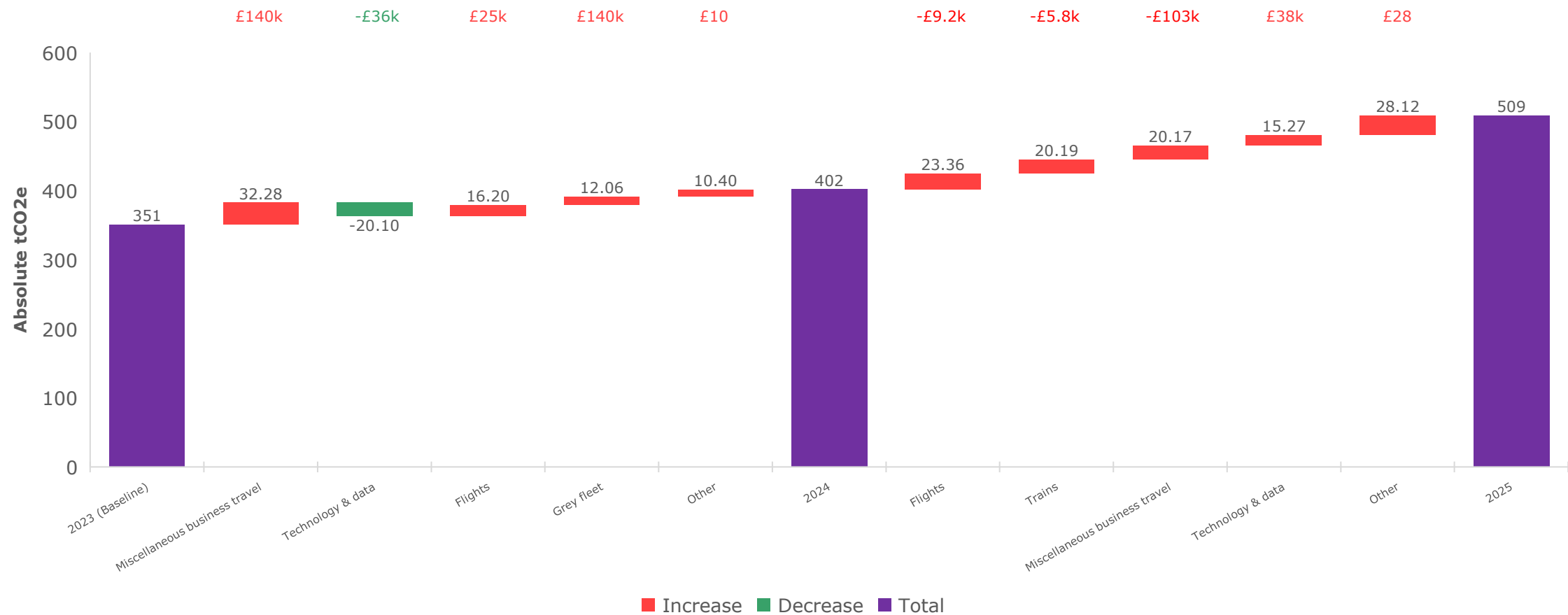
Scope 3: Supply chain emissions

Scope 3 has increased by 27.6% (109.0 tCO2e) compared to 2024, driven by:

- ▶ Supply chain emissions – up 33% (31 tCO2e)
- ▶ Additional measurement of upstream fuel & energy-related activities, not measured in 2024 (56 tCO2e)
- ▶ Business travel - up 8% (20 tCO2e) mainly due to an increase in the spend-based taxi & rail travel emissions factors.

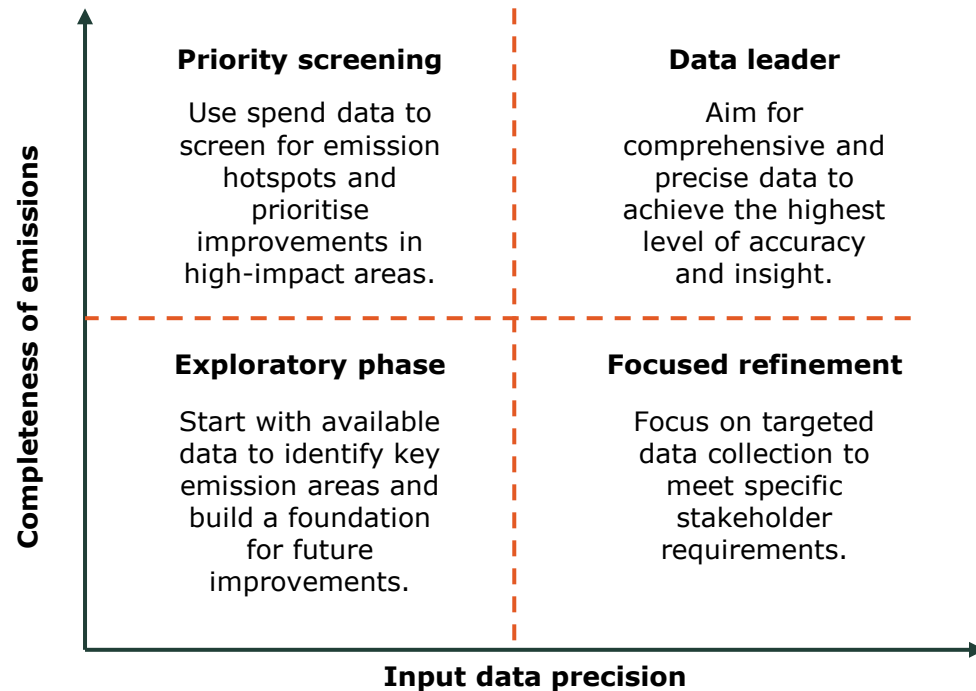
Carbon footprint trends explained

Understanding the movements in your emissions over time helps to draw out the key areas of impact, their magnitude on your footprint, and how financial decisions can have a significant impact on your footprint.

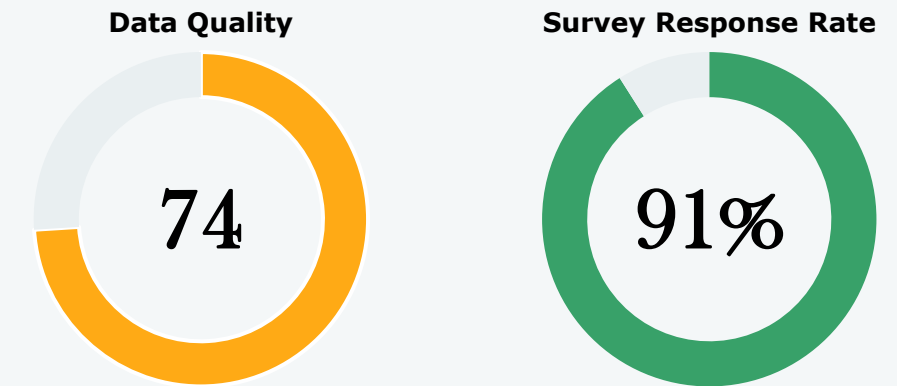


The quality and accuracy of GHG emissions calculations are highly dependent on the completeness and appropriateness of the data provided.

All relevant business activities, scope 3 categories, and emission sources should be captured. The input data should reflect the actual activity as precisely as possible. High-quality data reduces the amount of estimation within the emissions calculation, improving the accuracy of the output.



The Flotilla data score considers precision and completeness of input data to give a score out of 100. As part of the data collection process, an employee survey is issued to gather good quality employee commuting data. The response rate of the survey naturally impacts the quality of the employee commuting data. Hatmill Ltd's current data quality score and employee survey response rates are:



Recommended data improvement actions:

- ▶ Provide mileage data for flights and trains.
- ▶ Provide 'nights stayed' rather than spend for hotels.
- ▶ Provide activity-based data for your supply chain emissions.

Section 4

Net Zero Transition Plan

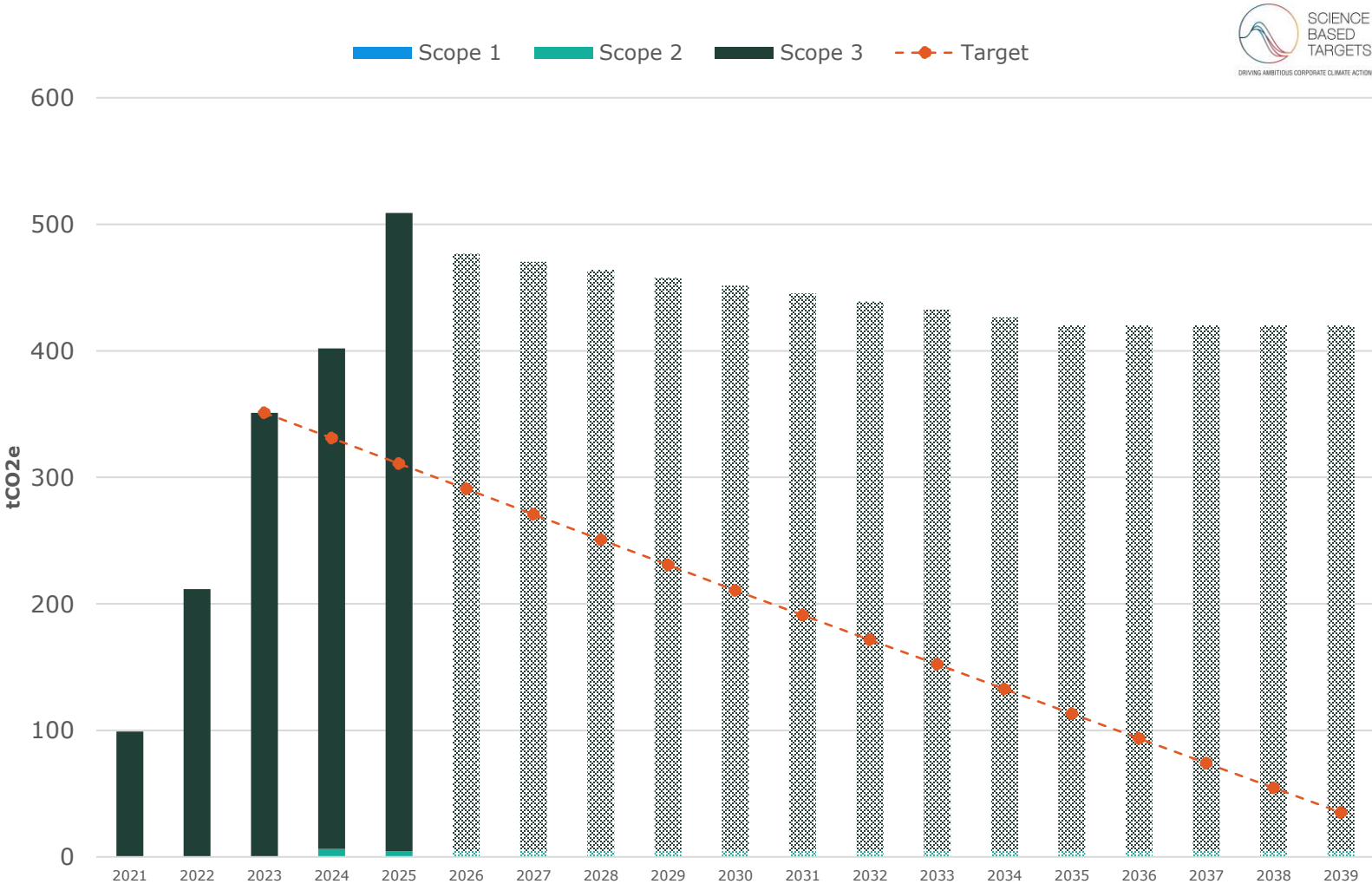
Emissions Reduction Target and Forecast

Hatmill have committed to reduce emissions in line with science-based targets. They project that carbon emissions will decrease over the next five years to 211 tCO2e by 2030. This is a reduction of 58.6%. Emissions have steadily increased year-on-year due to increased data quality, reporting boundary and activity.

Key Targets

Target Year	2039
tCO2e Per FTE	0.9
tCO2e Per £m Turnover	4.7
Target annual emissions reduction	15.2%

Reduction Targets	2030	2039
Scope 1	50%	90%
Scope 2	50%	90%
Scope 3	40%	90%



Impact areas provide a crucial framework for developing effective climate action plans. Identifying key levers and areas of influence allows for targeted action and meaningful strategies.

Here's a summary of the impact areas and their associated major emission:



Travel & Logistics

Includes travel and shipping in company owned vehicles as well as business travel on flights, trains and nights in hotels. The most significant emissions in this area are short haul flights - economy class (55.4 tCO2e), subsistence (51.6 tCO2e) and privately owned diesel cars (48.9 tCO2e). To decarbonise this impact area, introduce travel policies to reduce unnecessary flying, incentivise staff to switch to EVs and improve understanding of subsistence spend.



People

Includes the impact of employees working from home, which accounts for 22.3 tCO2e. To decarbonise this impact area, the focus is on incentivising staff to transition to renewable tariffs and away from gas at home, as well as engaging and influencing employee behaviours. This can be done by e.g. securing discount group rates with renewable energy providers or hosting educational sessions around heat pump installation and the grants available.



Buildings

Includes the footprint of locations, covering both energy usage and utilities. Hatmill have no building emissions as they are a fully remote business, therefore do not have an office.



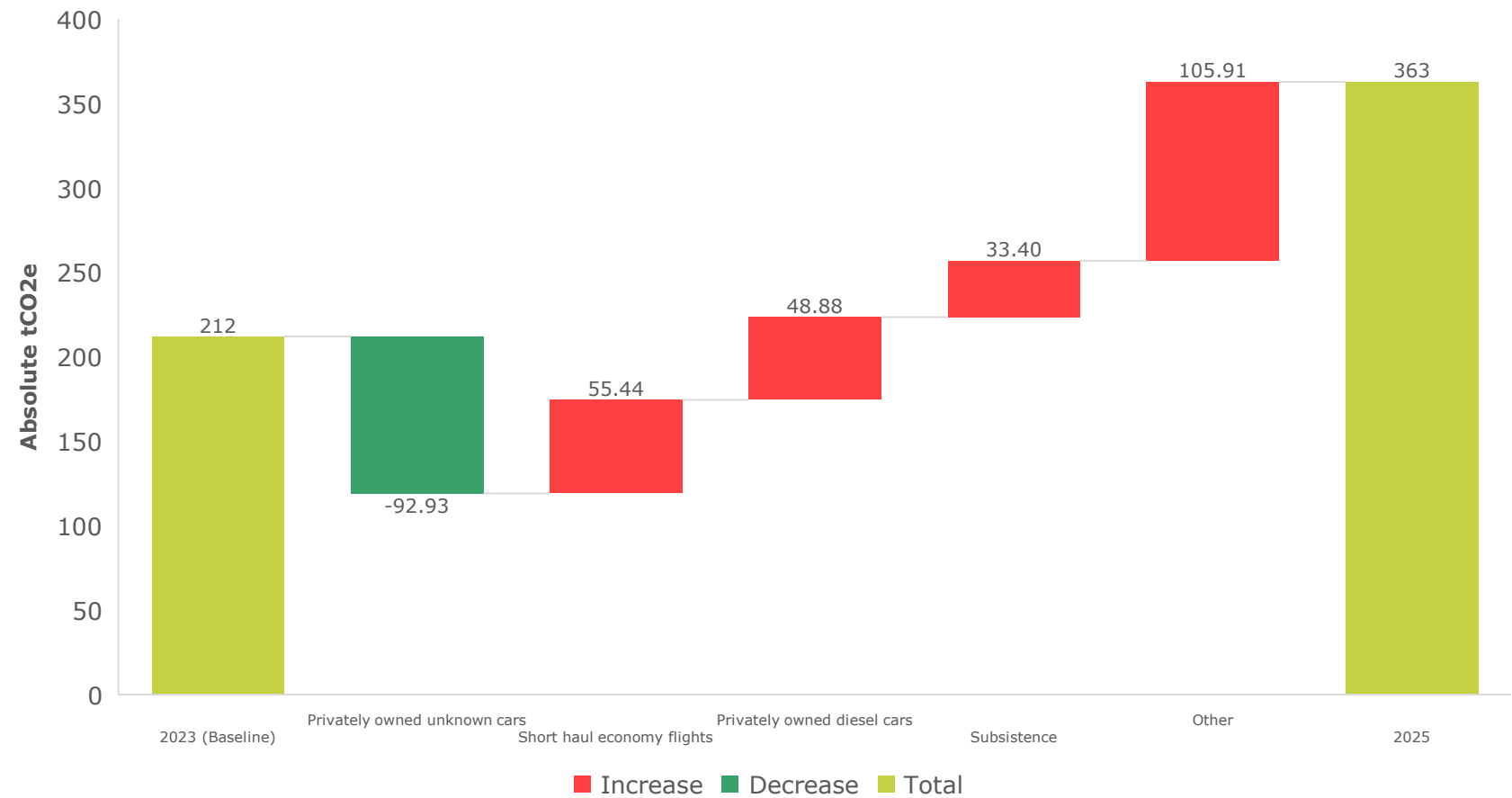
Supply chain

Includes purchased good and services, asset acquisitions, as well as technology. The most significant emissions in this area are staff training (42.5 tCO2e), computer services including software licences (21.1 tCO2e) and other professional fees (18.7 tCO2e). To decarbonise this impact area, the focus is on supplier engagement and introducing procurement criteria to opt for lower carbon providers of goods & services.

Impact Areas - Travel

The large decrease seen in privately owned unknown cars and increase in privately owned diesel, petrol and cars are due to recategorization of data, from unknown car type to specific vehicle type.

The increase in short haul economy flights is partially due to a recategorization from economy flights to short haul – economy flights and partially due to the inclusion of upstream fuel & energy related activities for air travel in 2025, which was not included in 2024.



Completed actions in 2024 & 2025

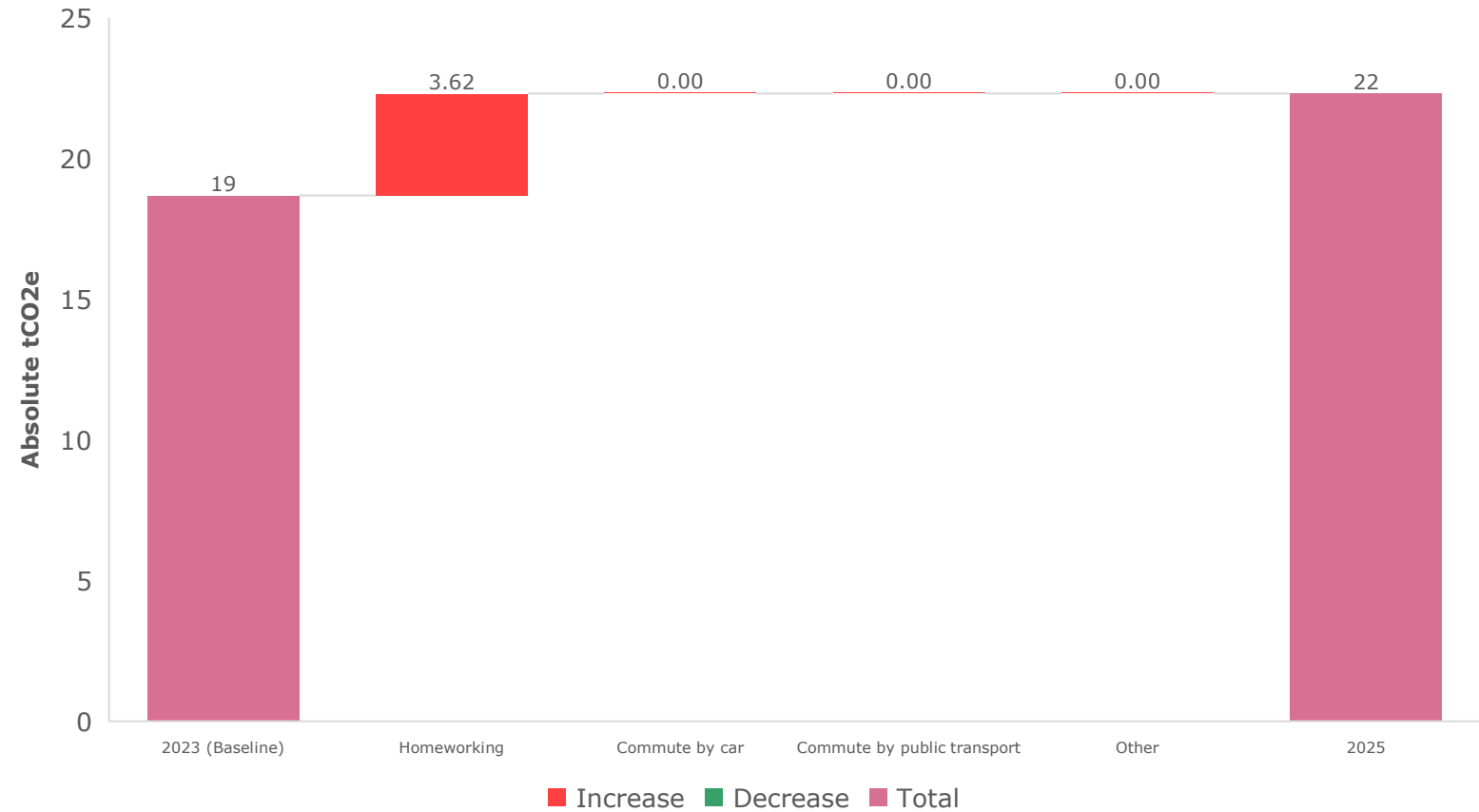
Initiative	Date Completed
Reduce 'undefined travel' category so all travel costs are allocated	01/02/2024
Track business mileage claimed in employees vehicles (grey fleet)	01/02/2024
Implement a sustainable travel policy	24/01/2024
Implement a 'Stay or Go' travel policy to limit emissions from train travel	24/01/2024
Plus many more...	

Planned actions in 2025

Initiative	Due Date
Flights - Move from £ to track flight miles by class of ticket	31/12/2025
Review completed actions to check for impact – could they be repeated to greater effect?	31/12/2025

Impact Areas - People

The focus is on fostering a culture where individuals feel empowered to contribute to sustainability efforts. From core values to policies, there is a commitment to cultivating a workplace that supports building a more sustainable business and world, recognising people as the greatest asset. You can see below what has changed in your people emissions from this year to last as well as to the right, what reduction initiatives have been completed and planned.

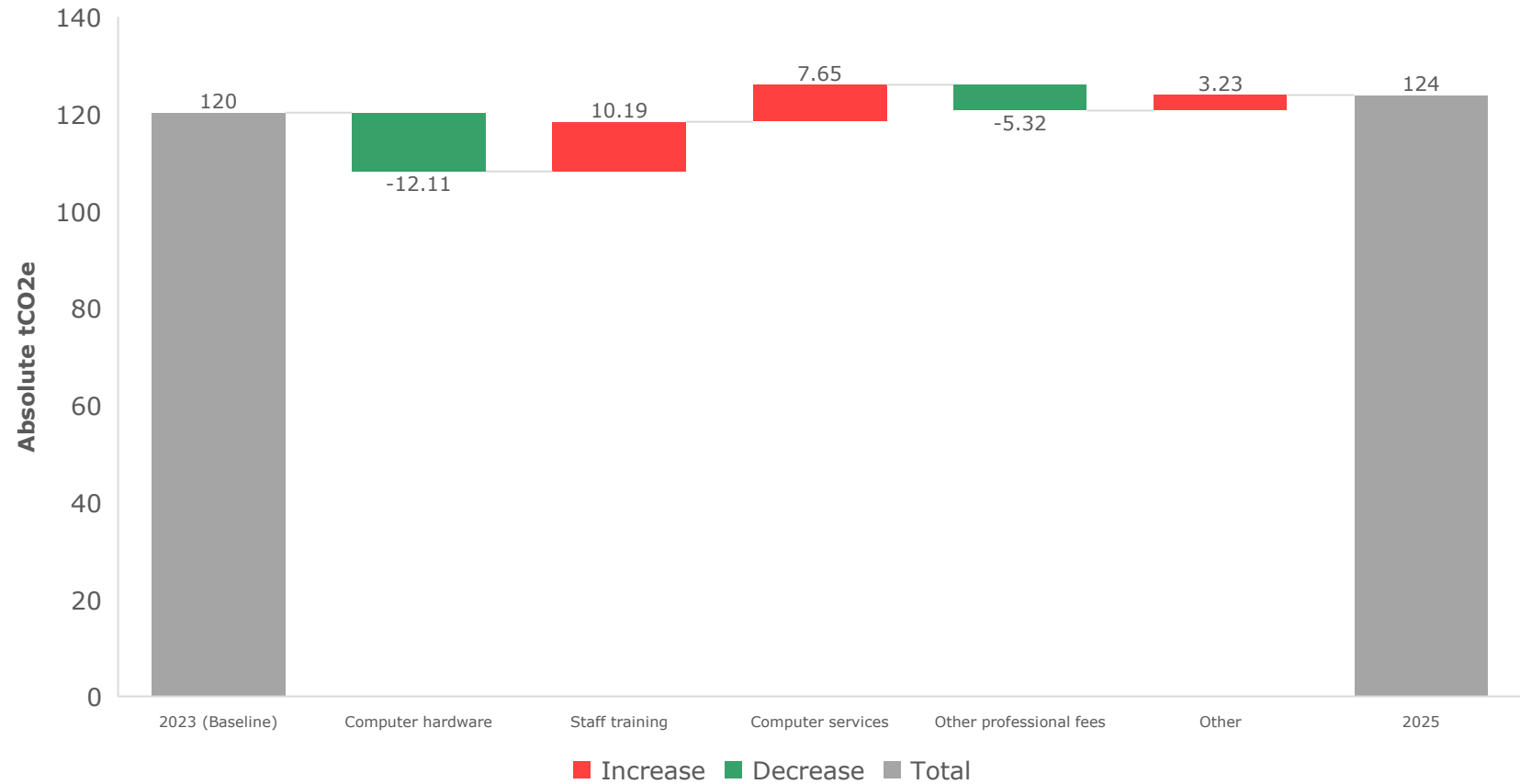


Completed actions in 2024 & 2025	
Initiative	Date Completed
Create an employee-led green team	25/11/2024
Understand carbon accounting & net zero key terms and methodologies	22/03/2024

Planned actions in 2025	
Initiative	Due Date
Implement sustainable home-working guidance	31/12/2025
Provide comprehensive training for your sustainability lead	31/12/2025
Provide your employees with job-specific sustainability training	31/12/2025

Impact Areas – Supply chain

Engagement with the supply chain is crucial to the net-zero plan. Sustainable procurement practices will be developed by prioritising options with a low environmental and climate impact. In alignment with circular economy principles, the aim will be to minimise waste generation and optimise the use of raw materials, energy, and other resources. You can see below what has changed in your travel emissions from this year to last as well as to the right, what reduction initiatives have been completed and planned.



Completed actions in 2024 & 2025

Initiative	Date Completed
Educate employees on ways to reduce online emissions	13/05/2025

Planned actions in 2025

Initiative	Due Date
Engage suppliers to move your data to a green data centre	31/12/2025
Repair before replace end-user devices	31/12/2025
Issue a sustainability supplier questionnaire to your marketing suppliers	31/12/2025
Issue a sustainability questionnaire to 'other professional' service suppliers	31/12/2025
Issue a sustainability supplier questionnaire to your computer services providers	31/12/2025

The governance framework will embed sustainability into core values, business strategies, and daily operations. Risks and opportunities in the shift to a low-carbon economy will be assessed, ensuring active stakeholder participation in achieving net-zero goals. Sustainability will be a central element of decision-making and long-term planning. Unlike the other impact areas, governance actions have no direct emissions savings and no footprint is measured relating to governance, but through their implementation they can help drive sustainability and reduction indirectly across the other impact areas.

Below are details of the governance initiatives completed and planned this year and last.

Completed actions in 2024 & 2025	
Initiative	Date Completed
Create a board-level climate committee or appoint a key sustainability lead	22/01/2024
Ensure the board has oversight of sustainability	17/02/2025
Publicly commit to interim and long term net zero targets	10/09/2024
Set climate commitments with interim targets	22/03/2024
Plus many more...	

Planned actions in 2025	
Initiative	Due Date
Incorporate sustainability into your procurement processes and policies	31/12/2025
Create a sustainability-focused supplier code of conduct	31/12/2025





Section 5

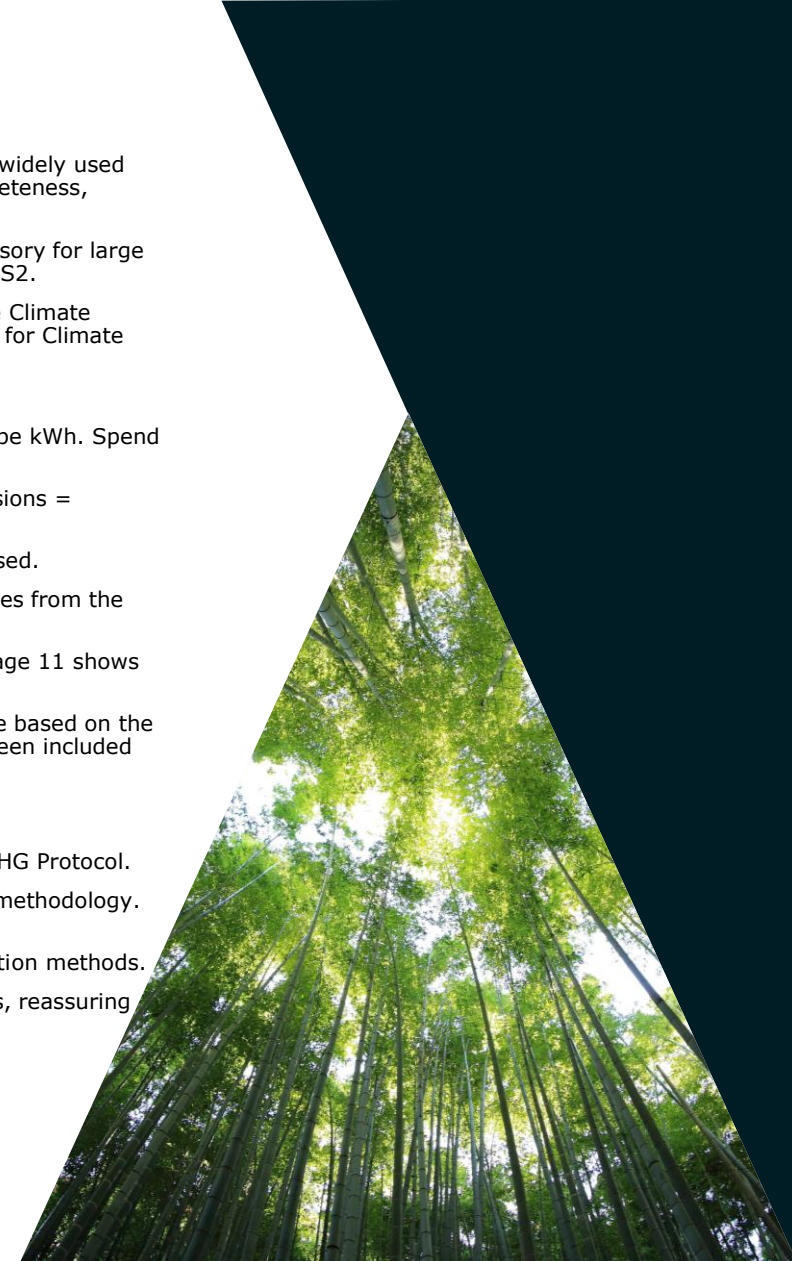
Appendix

Methodology

- ▶ Flotilla's carbon accounting platform is developed in accordance with the Greenhouse Gas (GHG) Protocol which provides the world's most widely used accounting standards. The report issued covers scope 1, 2 and 3 in line with this protocol. The GHG Protocol principles of relevance, completeness, consistency, transparency and accuracy have been followed throughout.
- ▶ Flotilla's reporting is designed to align to the Government's SECR (Streamlined Energy and Carbon Reporting) guidelines which are compulsory for large organisations. This in turn is aligned with the ISSB (International Standards Sustainability Board) upcoming regulations IFRS S1 and IFRS S2.
- ▶ Flotilla's methodology has been reviewed and endorsed by Prof Piers Forster, Climate Scientist at Leeds University and Interim Chair of the Climate Change Committee (CCC). Piers has served on the CCC since December 2018. He is founding Director of the Priestley International Centre for Climate and has acted as lead author for several Intergovernmental Panel on Climate Change (IPCC) reports.
- ▶ The data collection process gives the option of providing activity data or spend data.
- ▶ Activity data allows a more accurate footprint as it measures the activities themselves. For example, activity data for electricity use would be kWh. Spend data can be retrieved directly from the company's financial accounting systems and indicates the total spend in specific categories.
- ▶ Both activity data and spend data are converted to emissions of carbon dioxide equivalent using relevant emission factors such that: $\text{Emissions} = \text{Business Data} \times \text{Emission factor}$.
- ▶ The primary source of activity emission factors is the annual UK government factors, additional data collected from ONS and DEFRA is utilised.
- ▶ Flotilla have captured the full impact of the business operations using the data submitted in the platform, and the activities of the employees from the employee questionnaire, which are often missed despite forming a significant proportion of a business' carbon footprint.
- ▶ The footprint calculated by Flotilla may omit specific operations when the associated footprint is immaterial (<5% of the total footprint). Page 11 shows what emission categories have been included and excluded.
- ▶ It is important to note that it is impossible to accurately guarantee the impact of all activities; as referenced herein, certain calculations are based on the information provided, the current available conversion data, and governmental resources. Page 11 shows what emission categories have been included and excluded.

Carbon footprints are subject to change

- ▶ Flotilla routinely updates emission factors to reflect the latest data, methodologies, and industry standards, including alignment with the GHG Protocol.
- ▶ These updates ensure carbon accounting remains accurate and consistent by incorporating changes in economic conditions, inflation, and methodology. This means that your carbon footprint calculations remain accurate, transparent, and reflective of the latest data and methodologies.
- ▶ **Please note** that updated factors may result in changes to previously reported emissions due to improvements in data quality and calculation methods.
- ▶ Our team is here to help you understand the impact of these updates and support you to communicate these changes to your stakeholders, reassuring them that these changes reflect your commitment to best practice in sustainability reporting.



Estimation and uncertainty in carbon footprinting

Carbon footprinting, like any measurement, comes with its share of uncertainty. These uncertainties can arise from a variety of factors, making it crucial to understand their existence and potential impact. Here are some key reasons why carbon footprint calculations can be uncertain:

- ▶ **Activity data:** Measuring our activities that generate emissions, like fuel usage or electricity consumption, isn't always precise. Estimations or incomplete records can lead to inaccuracies in footprint calculations.
- ▶ **Emission factors:** Emission factors, which convert activities into their equivalent carbon emissions, can vary depending on factors like location or specific technology used. Flotilla use the UK government factors as a primary source which are regarded amongst the most reliable in the UK. However, there remains estimation in the emission factor which considers the UK average emissions by activity.

Where primary activity data could not be collected, the following assumptions and estimations were used by Flotilla:

- ▶ **Employee survey:** The footprint associated with employees (homeworking and commuting) has been derived using an employee survey. This is extrapolated across the employee population when a response rate of 100% is not obtained.
- ▶ **Working day:** There is an assumption that for a full-time employee there are 8 hours in a working day for 48 weeks a year. The number of days an employee works is collected within the employee survey.
- ▶ **Public transport:** The employee survey details commute by public transport but not by transport type and thus an average of the UK government emission factors for public transport is used.



Key terms explained:

Term	Description
Baseline	A reference point against which emissions reductions are measured.
Boundaries	GHG accounting and reporting boundaries can have several dimensions, i.e. organizational, operational, geographic, business unit, and target boundaries. The inventory boundary determines which emissions are accounted and reported by the company.
Carbon dioxide (CO ₂)	The most significant GHG, primarily emitted from burning fossil fuels like coal, oil, and natural gas. CO ₂ traps heat efficiently and remains in the atmosphere for centuries.
Carbon footprint	The total amount of GHG emissions produced by an individual, organization, event, or product. Measured in metric tonnes of carbon dioxide equivalent (CO ₂ e).
Carbon neutral	Investing in offset projects that reduce GHG emissions elsewhere, to counter-balance GHG emissions generated by the business.
CO ₂ -equivalent (CO ₂ e)	The amount of CO ₂ that would cause the same integrated radiative forcing over a given time horizon as an emitted amount of another GHG or mixture of GHGs. Conversion factors vary based on the underlying assumptions and as the science advances.
Consolidation approach	Refers to how an organization sets boundaries for GHG accounting. Types include equity share approach, financial control, and operational control.
Dual reporting	The disclosure of two separate Scope 2 electricity emissions figures: one based on the average grid emissions (location-based) and another based on the company's specific energy contracts (market-based).
Emission factor	A value that represents the average amount of GHG emissions produced per unit of activity, such as the amount of CO ₂ emitted per kilowatt-hour of electricity generated.
Emission scopes	The GHG Protocol Corporate Accounting and Reporting Standard classifies an organisation's GHG emissions into three scopes. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting organization, including both upstream and downstream emissions.

Key terms continued:

Term	Description
GHG Protocol	Comprehensive global standardised frameworks to measure and manage GHG emissions from private and public sector operations, value chains, and mitigation actions. The GHG Protocol supplies the world's most widely used GHG accounting standards. The Corporate Accounting and Reporting Standard provides the accounting platform for virtually every corporate GHG reporting program in the world.
Greenhouse gases (GHG)	Greenhouse gases (GHGs) are atmospheric gases that absorb and re-emit heat radiation, creating a warming effect on the planet. This phenomenon, known as the greenhouse effect, is essential for maintaining Earth's habitable temperature. However, increased GHG concentrations due to human activities are causing an intensification of the greenhouse effect, leading to global warming and climate change.
Hexafluoride (SF6)	Man-made greenhouse gas used in electrical equipment, windows, and soundproofing. Extremely potent GHG (23,000x more effective than CO2), very long atmospheric lifespan (3,200 years).
Hydrofluorocarbons (HFCs)	Man-made synthetic greenhouse gases used in refrigerants, air conditioners, and foams. Thousands of times more effective at trapping heat than CO2, variable atmospheric lifespans.
Intensity metric	Expresses the amount of GHG emissions per unit of some activity or output. It helps normalize emissions and allows for better comparison and tracking of progress over time.
Indirect emissions	Emissions that are a consequence of the activities of the reporting entity but occur at sources owned or controlled by another entity.
Impact area	Categories of emissions, aligned with business functions and suppliers. There are 4 impact areas in the Flotilla report: Travel, Energy, Facilities, Supply Chain.
Location-based method	This figure calculates GHG emissions for electricity using average emissions intensity of the grid from which the company purchases electricity. In the UK this is the national grid.
Market-based method	This figure calculates GHG emissions for electricity using the specific energy contracts or instruments held by the company. It therefore shows lower emissions for renewable tariffs and higher emissions for non-renewable tariffs.

Key terms continued:

Term	Description
Materiality	The relevance of an ESG issue to a company's business.
Methane (CH ₄)	A potent GHG released from natural sources like wetlands and human activities like livestock farming, landfills, and energy production. Methane traps heat about 25 times more effectively than CO ₂ but has a shorter lifespan in the atmosphere (around 12 years).
Nitrogen Fluoride (NF ₃)	Man-made greenhouse gas used in electronics and semiconductor production. Highly potent GHG (7,200x more effective than CO ₂), very long atmospheric lifespan (740 years).
Nitrous Oxide (N ₂ O)	Emitted during fertilizer use, land clearing, and combustion processes. It's less abundant than CO ₂ and methane but traps heat about 300 times more effectively than CO ₂ and persists in the atmosphere for over 100 years.
Operational boundary	Operational boundaries outline the specific activities and emissions sources that an organization includes within its GHG inventory. They define which emissions fall under Scope 1 (direct emissions) and Scope 2 (indirect emissions associated with purchased energy) for reporting purposes.
Perfluorocarbons (PFCs)	Man-made synthetic gases used in semiconductors, electronics, and some industrial applications. Extremely potent GHGs (thousands of times more effective than CO ₂), very long atmospheric lifespans (thousands of years).
Scope 1 emissions	Direct GHG emissions that occur from sources owned or controlled by the reporting company i.e., emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.
Scope 2 emissions	Indirect GHG emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company. Scope 2 emissions physically occur at the facility where the electricity, steam, heating, or cooling is generated.
Scope 3 emissions	All other indirect GHG emissions (not included in Scope 2) that occur in the value chain of the reporting company. Scope 3 can be broken down into upstream emissions and downstream emissions: Upstream emissions include all emissions that occur in the life cycle of a material/product/service up to the point of sale by the producer, such as from the production or extraction of purchased materials. Downstream emissions include all emissions that occur because of the distribution, storage, use, and end-of-life treatment of the organization's products or services.

Trust Flotilla with your carbon accounting and Net Zero journey.

“The Flotilla carbon accounting platform enables real, evidence-driven change. With science-based measurement and reporting, Flotilla allows businesses to take an honest look at their emissions, set achievable goals, make wise data-led decisions and become genuinely sustainable.”

Professor Piers Forster

Founder Director of the Priestley International Centre for Climate, University of Leeds, IPCC Sixth Assessment Report, Lead Author, Nobel prize winner for climate action

“The United Nations Climate Change Initiative is pleased to recommend Flotilla's science-based carbon reduction service, supporting businesses on their crucial journey to net zero. The Flotilla approach creates positive action throughout the entire ecosystem of a company, involving, motivating and empowering every individual to drive meaningful change.”

Miguel Naranjo

Programme Officer - UN Climate Change



SCIENCE
BASED
TARGETS





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