

# Restatement Report on Greenhouse Gas Emissions

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## Our goal

*By 2030, we will have decarbonized our corporate footprint in line with global efforts to cap global warming at 1.5 degrees.*

*By 2050, we will be a net zero company.*

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## Commitment to net zero emissions

Since the launch of our Forever Chocolate Initiative in 2016, we at Barry Callebaut have been actively reducing our greenhouse gas (GHG) emissions. By our fiscal year 2021/22, we achieved a reduction per ton of product of more than 18%<sup>1</sup>, compared to year 2016/17.

Accompanying our reduction efforts, we became industry pioneers in GHG reporting. In 2019, we submitted our first decarbonization targets to the Science Based Targets initiative (SBTi), supporting the global decarbonization trajectory required to limit global warming to +1.5°C. In the same year, we launched our agroforestry program to reduce our climate impact from cocoa farming and pioneered satellite-based deforestation monitoring of our deforestation-related cocoa emissions<sup>2</sup> in our corporate carbon footprint (CCF).

Now, it is time for us to move to the next chapter of our climate journey. During 2023, we refined and strengthened our SBTi commitments to decarbonize and ultimately reach net zero emissions, with quantified targets for 2030 and 2050. We have now submitted and validated our renewed commitment to SBTi and are for the first time publishing our climate roadmap. In the course of these efforts, we upgraded our CCF methodology to become future-proof, leading to this restatement of our CCF for the years 2021/22 and 2022/23.

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<sup>1</sup> Based on the previous corporate carbon footprint methodology and the audited reporting in year 2021/22

<sup>2</sup> Also referred to as direct land-use change (dLUC)

The Board of Directors of Barry Callebaut AG has reviewed and approved the Restatement Report on Greenhouse Gas Emissions for the years-ended 31 August 2022 (fiscal year 2021/22) and 2023 (fiscal year 2022/23).

We have obtained independent limited assurance from PricewaterhouseCoopers LLP over our total gross carbon footprint in the year 2021/22, over our scope 1, 2 and 3 GHG emissions in the year 2022/23 and our total gross carbon intensity for both years 2021/22 and 2022/23. The independent limited assurance of these metrics is marked with <sup>Ⓐ</sup> on page 4.

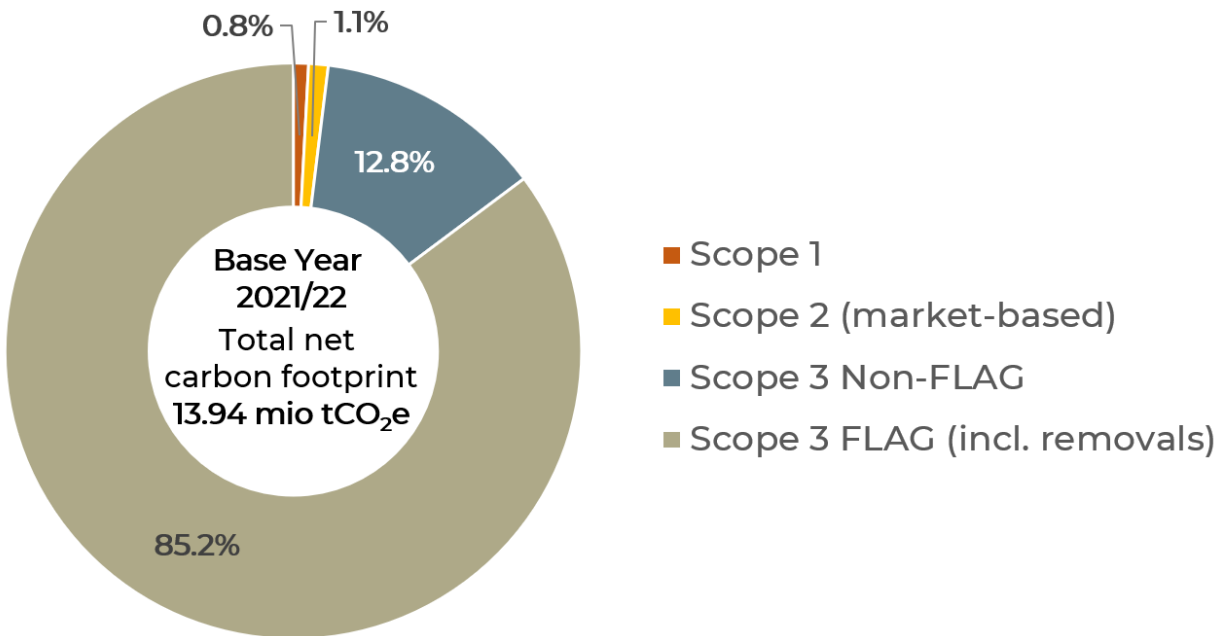
### **Aligned with latest science and standards**

Since we started to report our CCF, requirements on GHG reporting and standards have significantly evolved. We have been actively driving discussions on GHG accounting methodologies, especially aligning with industry peers on cocoa farming within the World Cocoa Foundation (WCF).

In collaboration with Quantis and EY denkstatt, we reviewed and updated our CCF and its methodology to align with the latest science and international standards, e.g. the GHG Protocol's Land Sector and Removals Guidance. During this process, we have updated our CCF for two fiscal years, namely 2021/22 and 2022/23. The year 2021/22 will now serve as our new base year, building the foundation of our Net Zero Roadmap. We will apply our updated methodology consistently going forward to allow for an effective tracking of our improvements.

## The updated corporate carbon footprint

As the world's leading manufacturer of chocolate & cocoa products, about 98%<sup>3</sup> of our emissions belong to scope 3 and occur in our upstream supply chain (see graph below). The majority of our scope 3 emissions are forest, land and agriculture emissions (FLAG) from cocoa farming and producing other agricultural ingredients, such as dairy ingredients (85% of total emissions<sup>3</sup>).



*Barry Callebaut's total net carbon footprint in the base year 2021/22*

### Terminology

- **Scope 1:** Direct emissions from our own operations, i.e. by burning natural gas and fuel oil
- **Scope 2:** Indirect emissions from purchased energy, i.e. electricity
- **Scope 3:** Indirect emissions from our supply chain, incl. production and processing of all our raw materials
- **FLAG (Forest, Land and Agriculture):** GHG emissions from land-use change and land management (e.g. crop residues or fertilizer application)
- **Non-FLAG:** Emissions beyond the farm gate (e.g. for transport and processing)

<sup>3</sup> Figures relate to the base year 2021/22

## Measurable improvements in 2022/23

In the year 2022/23, our total net carbon footprint was 13.18 million tCO<sub>2</sub>e, which is a -5.4% decrease compared to our base year 2021/22 footprint. The underlying reductions could especially be seen in scope 2 and 3. Scope 2 emissions were reduced by an increased use of renewable energy in our factories. Scope 3 emissions have been reduced by optimizing the low-carbon sourcing of especially palm, dairy and sugar ingredients, while due to market conditions slight volume decreases in cocoa and other ingredients also contributed to the reduction. Additionally, we strongly increased our Scope 3 FLAG removals from agroforestry insetting to 231,408 tCO<sub>2</sub>e<sup>5)</sup> (independently verified by SustainCERT).

Overall, our total net carbon intensity for 2022/23 decreased by 4.3%, from 6.05 tCO<sub>2</sub>e to 5.79 tCO<sub>2</sub>e per ton of product sold.

<i>in tCO<sub>2</sub>e<sup>4)</sup></i> (if not stated differently)	Base year 2021/22	Fiscal year 2022/23	YoY change [%]
<b>Scope 1 &amp; 2</b>	<b>271,246</b>	<b>247,104</b>	<b>-8.9%</b>
Scope 1	118,281	118,777 <sup>(A)</sup>	0.4%
Scope 2 (market-based)	152,965	128,327 <sup>(A)</sup>	-16.1%
<b>Scope 3 Total (w/o removals)</b>	<b>13,672,575</b>	<b>13,168,697<sup>(A)</sup></b>	<b>-3.7%</b>
Scope 3 Non-FLAG	1,789,242	1,750,866	-2.1%
Scope 3 FLAG	11,883,333	11,417,830	-3.9%
<i>Scope 3 FLAG removals<sup>5)</sup></i>	0	231,408	--
<b>Total gross carbon footprint (w/o removals)</b>	<b>13,943,821<sup>(A)</sup></b>	<b>13,415,801</b>	<b>-3.8%</b>
<b>Total net carbon footprint (incl. removals)</b>	<b>13,943,821</b>	<b>13,184,393</b>	<b>-5.4%</b>
<b>Total gross carbon intensity [tCO<sub>2</sub>e / t of product sold]</b>	<b>6.05<sup>(A)</sup></b>	<b>5.89<sup>(A)</sup></b>	<b>-2.6%</b>
<b>Total net carbon intensity [tCO<sub>2</sub>e / t of product sold]</b>	<b>6.05</b>	<b>5.79</b>	<b>-4.3%</b>

*Our corporate carbon footprint for base year 2021/22 and fiscal year 2022/23*

<sup>4)</sup> Rounding can lead to deviations of sums

<sup>5)</sup> Base year 2021/22: FLAG removals considered zero; Fiscal year 2022/23: Excludes a 20% withholding buffer, safeguarding against potential unforeseen losses of planted trees under our agroforestry activities.

<sup>(A)</sup> This metric was subject to external independent limited assurance by PricewaterhouseCoopers LLP ('PwC'). For the results of that assurance, see PwC's assurance report on pages 6 to 10 and Barry Callebaut's Reporting Criteria (version 1.0), see the following [link](#).

## **Recalculation and methodological changes**

The recalculation of our corporate carbon footprint for the years 2021/22 and 2022/23 came with multiple methodological updates. The most significant ones concerned emissions from cocoa and dairy sourcing. By using the best geospatial and primary data available, we now consider direct land-use change (dLUC) linked to cocoa cultivation in the most advanced way. Our new approach is more conservative and thus consistent with industry benchmarks, leading to a higher emission contribution of cocoa land-use change (LUC) and land management to our overall corporate carbon footprint. This change is mainly driven by applying a 100% attribution of on-farm LUC emissions to cocoa, eliminating attribution to side-products such as timber and food. Our dairy ingredients are now also considered in more detail. We improved the calculations of raw milk content in multiple dairy ingredients, added more supplier-specific emissions factors and revised the emissions from LUC during soybean feed production.

For more details, please find the “Methodology of Corporate Carbon Footprint Calculation” (Version 1.0) [here](#).

## **Our ongoing ambitions in greenhouse gas reporting**

To serve our customers and achieve our net zero commitments, consistent and accurate tracking of our GHG emissions is key. Hence, we want to continue improving the granularity, transparency and consistency of our emission data along our complex supply chain to remain a forerunner for the chocolate industry. Our newly published GHG recalculation policy ensures consistent reporting of GHG performance over time, including the case of future refinements of our methodology and data. Finally, we will continue to obtain external independent limited assurance over our greenhouse gas emissions to critically challenge our data quality and calculations and ensure the trustworthiness of our GHG performance indicators.



# Independent Limited Assurance Report to the Directors of Barry Callebaut AG on Greenhouse Gas Emissions

## Our limited assurance conclusion

Based on the procedures we have performed, as described under the “Summary of work performed” and the “Key Assurance Matters” sections below, and the evidence we have obtained, nothing has come to our attention that causes us to believe that the information marked with the symbol **(A)** in Barry Callebaut AG (“Barry Callebaut”)’s Restatement Report on Greenhouse Gas Emissions for the year ended 31 August 2022 (“base year 2021/2022”) and 31 August 2023 (“fiscal year 2022/2023”) (the “Report”) and summarised below (together, the “Subject Matter Information”), has not been prepared, in all material respects, in accordance with Barry Callebaut’s Reporting Criteria (the “Reporting Criteria”) set out [here](#).

## What we were engaged to assure

The Subject Matter Information needs to be read and understood together with the Reporting Criteria which Barry Callebaut’s Directors are solely responsible for selecting and applying. The Subject Matter Information and the Reporting Criteria are as set out in the table below:

<i>Subject Matter Information</i>	<i>Location of Subject Matter Information</i>	<i>Reporting Criteria</i>
<i>Base year 2021/22: Total gross carbon footprint – 13,943,821 tCO<sub>2</sub>e</i>	<i>Restatement Report on Greenhouse Gas Emissions, page 3</i>	<a href="#">Methodology of Corporate Carbon Footprint Calculation, Version 1.0</a> <sup>[1]</sup>
<i>Base year 2021/22: Total gross carbon intensity [tCO<sub>2</sub>e/ t of product sold] – 6.05</i>		
<i>Fiscal year 2022/23: Scope 1 – 118,777 tCO<sub>2</sub>e</i>		
<i>Fiscal year 2022/23: Scope 2 (market-based) – 128,327 tCO<sub>2</sub>e</i>		
<i>Fiscal year 2022/23: Scope 3 total (excluding removals) – 13,168,697 tCO<sub>2</sub>e</i>		
<i>Fiscal year 2022/23: Total gross carbon intensity [tCO<sub>2</sub>e/ t of product sold] – 5.89</i>		

<sup>1</sup> The maintenance and integrity of Barry Callebaut’s website is the responsibility of the Directors; the work carried out by us does not involve consideration of these matters and, accordingly, we accept no responsibility for any changes that may have occurred to the reported Subject Matter Information or Reporting Criteria when presented on Barry Callebaut’s website.

The scope of our work did not extend to information in respect of earlier periods or to any other information included in, or linked from, the Report, including any images. Specifically, but without limitation, the scope of our assurance did not extend to any net Greenhouse Gas Emissions figures nor Greenhouse Gas Emission removals.

## **Our work**

### **Professional standards applied**

We performed a limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) 'Assurance Engagements other than Audits or Reviews of Historical Financial Information' and, in respect of the greenhouse gas (GHG) emissions, in accordance with International Standard on Assurance Engagements 3410 'Assurance Engagements on Greenhouse Gas Statements', issued by the International Auditing and Assurance Standards Board.

### **Our independence and quality control**

We have complied with the Institute of Chartered Accountants in England and Wales Code of Ethics, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour, that are at least as demanding as the applicable provisions of the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants (IESBA Code).

We apply International Standard on Quality Management (UK) 1 and accordingly maintain a comprehensive system of quality management including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

### **Summary of work performed**

We performed a limited assurance engagement. Because the level of assurance obtained in a limited assurance can vary, we give more detail about the procedures performed, so that the intended users of the Subject Matter Information can understand the nature, timing and extent of procedures we performed as context for our conclusion. These procedures performed vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

In performing our assurance procedures, which were based on our professional judgement, we performed the following:

- evaluated the suitability in the circumstances of Barry Callebaut's use of the Reporting Criteria as the basis for preparing the Subject Matter Information including the associated reporting boundaries;
- through inquiries, obtained an understanding of Barry Callebaut's control environment, processes and systems relevant to the preparation of the Subject Matter Information. Our procedures did not include evaluating the suitability of design, obtaining evidence about their implementation or testing operating effectiveness of particular control activities;
- evaluated whether Barry Callebaut's methods for developing estimates are appropriate and had been consistently applied, noting that our procedures did not involve testing the data on which the estimates are based or separately developing our own estimates against which to evaluate Barry Callebaut's estimates;
- compared year on year movements and obtained explanations from management for significant differences we identified;
- performed limited substantive testing of the Subject Matter Information, which is aggregated from information submitted by Barry Callebaut's operational sites. Testing involved agreeing arithmetical accuracy of calculations, and agreeing data points to or from source information to check that the underlying subject matter had been appropriately evaluated or measured, recorded, collated and reported;
- undertook site visits at one of Barry Callebaut's factory sites, Barry Callebaut Wieze, to understand the key processes involved in chocolate production and the key controls for reporting site data to the group reporting team; we selected this site based on its materiality to Barry Callebaut; and
- evaluated the disclosures in, and overall presentation of, the Subject Matter Information.

### **Materiality**

We are required to plan and perform our work to address the areas where we have identified that a material misstatement of the Subject Matter Information is likely to arise. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the nature, timing and extent of our procedures in support of our conclusion. We believe that it is important that the intended users have the information they need to understand the concept and the level of materiality to place our conclusion in context. Based on our professional judgement, we determined materiality for the Subject Matter Information as follows:

<b>Overall materiality</b>	Materiality may differ depending upon the nature of the Subject Matter Information. We apply professional judgement to consider the most appropriate materiality benchmark for each aspect of the Subject Matter Information, having considered how the intended users may use the information. Materiality has been set at 5% of each reported key performance indicator.
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We also agreed to report to the Directors misstatements (“reportable misstatements”) identified during our work at a level below overall materiality, as well as misstatements below that lower level that in our view warranted reporting for qualitative reasons. The Directors are responsible for deciding whether adjustments should be made to the Subject Matter Information in respect of those items.

### Key assurance matters

Key Assurance Matters are those areas of our work that in our professional judgement required particular focus and attention, including those which had the greatest effect on the overall assurance strategy, the allocation of resources, and directing the efforts of the engagement team.

We considered the following areas to be key assurance matters and discussed these with Barry Callebaut’s management.

Accuracy of natural gas consumption data in relation to the fiscal year 2022/23	
<b>Nature of the issue</b>	Emissions arising from consumption of natural gas across Barry Callebaut’s sites represent the largest component of its scope 1 greenhouse gas emissions. Previously, our assurance work identified a number of errors in the underlying data set which included: (i) manual errors transposing actual data into the central energy dashboard, (ii) inconsistent application of the Reporting Criteria across sites (iii) estimated meter readings not being updated when actual data became available, with the actual data in some instances showing large variances and (iv) inconsistent rounding of underlying data to the nearest thousand kWh. Since the issuance of the Forever Chocolate 2023 Progress report, management has revised the data to address the errors in the year ended 31 December 2023 information and our work has focused on testing the accuracy of the updated data.
<b>How our work addressed the key assurance matter</b>	To address the risk of inaccurate underlying source data from natural gas consumption, we have performed the following procedures: <ul style="list-style-type: none"> <li>• Enquired with management to understand the key improvements in recording and collating natural gas consumption data since the errors set out above were identified, which included the creation of a ‘new’ central energy dashboard, with data collected by one team;</li> <li>• Compared natural gas consumption data reported in the central energy dashboard to natural gas consumption data per invoices (extracted from SAP) for a limited number of samples, identifying no material differences; and</li> <li>• Performed substantive testing over the updated energy data for a limited number of samples, tracing each sample back to supporting evidence.</li> </ul>
<b>Element(s) of the Subject Matter Information most significantly impacted</b>	<ul style="list-style-type: none"> <li>• Scope 1 emissions for the fiscal year 2022/2023.</li> </ul>



<b>Accuracy of estimated emissions arising from land use change due to cocoa farming for the base year 2021/2022 and the fiscal year 2022/2023</b>	
<b>Nature of the issue</b>	Emissions arising from land use change as a result of cocoa farming represent the largest component of Barry Callebaut's reported scope 3 greenhouse gas emissions. Calculation of such emissions as a result of land use change involves: mapped cocoa farms being overlaid with satellite imagery to identify the change in tree density; cocoa sourced volumes during the year; and a number of emissions factors. Minor variations in these can lead to significant changes in the calculated figure, which would lead to a material impact on the reported scope 3 greenhouse gas emissions.
<b>How our work addressed the key assurance matter</b>	To address the risk of inaccurately calculating emissions arising from land use change due to cocoa farming, we have performed the following procedures: <ul style="list-style-type: none"> <li>• Agreed a sample of the land use change emissions factors applied to supporting documentation, re-performed management's calculations and assessed their appropriateness;</li> <li>• Independently tested the computer programming script used by Barry Callebaut to overlay satellite data of changing land use on the farms mapped data, to assess the appropriateness of computations performed to calculate changing tree loss and tree density of cocoa farms;</li> <li>• Assessed the accuracy of the mapped cocoa farms, through substantively testing a sample of the mapped plots to confirm the accuracy of the plot size and location; and</li> <li>• Evaluated the competency, capability and objectivity of third-party experts used by Barry Callebaut in developing significant estimates and judgements. Obtained an understanding of their work and evaluated the appropriateness of that work as assurance evidence.</li> </ul>
<b>Element(s) of the Subject Matter Information most significantly impacted</b>	<ul style="list-style-type: none"> <li>• Scope 3 emissions for the base year 2021/2022 and fiscal year 2022/2023</li> <li>• Total gross carbon intensity [tCO<sub>2</sub>e / t of product sold] for the base year 2021/2022 and fiscal year 2022/2023</li> </ul>

## Challenges of non-financial information

The absence of a significant body of established practice upon which to draw to evaluate and measure non-financial information allows for different, but acceptable, evaluation and measurement techniques that can affect comparability between entities, and over time.

Non-financial information is subject to more inherent limitations than financial information, given the characteristics of the underlying subject matter and the methods used for measuring or evaluating it. The precision of different measurement techniques may also vary.

In addition, where reporting of the 'scope 2 emissions' and 'number of factories using only renewable electricity sources' key performance indicators relies on electricity suppliers supplying renewable electricity backed by Renewable Energy Certificates ('RECs'), there is an inherent risk as to whether the third-party electricity supplier will purchase and retire sufficient number of RECs to cover all of the energy supplied to its customers who have purchased the energy through renewable tariffs in the reporting period, over which the customer has no oversight. The uncertainties and limitations are laid out in more detail in the reporting criteria.

## Reporting on Other Information

The other information comprises all of the information in the Report other than the Subject Matter Information and our assurance report. The Directors are responsible for the other information. As explained above, our conclusion does not extend to the other information and, accordingly, we do not express any form of assurance thereon. In connection with our assurance of the Subject Matter Information, our responsibility is to read the other information. In doing so, we consider whether the other information is materially inconsistent with the Subject Matter Information or our knowledge obtained during the assurance engagement, or otherwise appears to contain a material misstatement of fact. If we identify an apparent material inconsistency or material misstatement of fact, we

are required to perform procedures to conclude whether there is a material misstatement of the Subject Matter Information or a material misstatement of the other information, and to take appropriate actions in the circumstances.

## **Responsibilities of the Directors**

The Directors of Barry Callebaut are responsible for:

- determining appropriate reporting topics and selecting or establishing suitable criteria for measuring or evaluating the underlying subject matter;
- ensuring that those criteria are relevant and appropriate to Barry Callebaut and the intended users of the Report;
- the preparation of the Subject Matter Information in accordance with the Reporting Criteria including designing, implementing and maintaining systems, processes and internal controls over the evaluation or measurement of the underlying subject matter to result in Subject Matter Information that is free from material misstatement, whether due to fraud or error;
- documenting and retaining underlying data and records to support the Subject Matter Information; and
- producing the Report that provides a balanced reflection of Barry Callebaut 's performance in this area and discloses, with supporting rationale, matters relevant to the intended users of the Report.

## **Our responsibilities**

We are responsible for:

- planning and performing the engagement to obtain limited assurance about whether the Subject Matter Information is free from material misstatement, whether due to fraud or error;
- forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- reporting our conclusion to the Directors of Barry Callebaut.

## **Use of our report**

Our report, including our conclusion, has been prepared solely for the Directors of Barry Callebaut in accordance with the agreement between us dated 4 July 2023 as varied on 30 October 2023 and 17 January 2024 (the "agreement"). To the fullest extent permitted by law, we do not accept or assume responsibility or liability to anyone other than the Board of Directors and Barry Callebaut for our work or our report except where terms are expressly agreed between us in writing.



**PricewaterhouseCoopers LLP**  
**Chartered Accountants**  
**Leeds**  
**19 August 2024**