

Scope 4 Methodology

Date: Jan 7, 2024



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1. Preamble

Henkel reports GHG emission savings align on a the customized accounting and reporting standard at hand It defines the framework, requirements and provisions to identify elements of the Henkel CO₂ savings portfolio and to determine the CO₂ emissions, which are saved by Henkel's customers/consumers during the use of the Henkel products in this portfolio ¹. (WBCSD/WRI 2004) (3) with a widely accepted methodology (WBCSD/WRI 2003) (2). The emission savings are reported for a portfolio of selected product or categories or products which bring about emissions savings for Henkel customers and during the use of the products. The standard differentiates between potentials savings² and implemented savings³. The implemented savings constitute the scope 4 emissions⁴. The implemented savings were measured to track progress to the Henkel target of saving 50 Mio tons of CO₂e between 2016 and 2020 and now with the new target of 100 Mio tons CO₂e between 2016 and 2025.

This document describes the boundaries and the GHG Scope 4 reporting categories relevant for the Henkel scope 4 reporting. It further outlines the methodology behind the relevant reporting categories. This guidance document is also established based on the following accounting and reporting principles, which are laid out in the document 'A Corporate Accounting and Reporting Standard' (WBCSD/WRI 2003) :

- Relevance
- Completeness
- Consistency
- Transparency
- Accuracy
- Conservatism
- Mutual Exclusiveness / Collective Exhaustiveness

This guidance follows an interpretation of these principles which is outlined in the Annex.

¹ Reduced emissions are the result of decreased emissions per functional unit. Avoided emissions can result from products which replace a functional unit associated with high emissions with a functional unit with low or zero emissions. In addition, avoided emissions can result after the use of a product is completed and has resulted in a final product, the use of which goes along with reduced emissions.

² Henkel products and awareness campaigns enable customers and consumers to achieve potential reductions in Scope 3 emissions. They are referred to as potential savings. Potential savings can develop into implemented savings by providing evidence of the potential being actually exploited.

³ The 'Implemented Savings' can be avoided emissions or reduced CO₂ emissions, for which there is evidence that the reductions do actually occur. The 'Implemented Savings' can be directly related to the reduction of CO₂ emissions during the use of a product. Alternatively, they can originate through the prolonged use of an object which incorporates a Henkel product either through production of the object with a Henkel product or through maintenance or refurbishing the object by using a Henkel product.

⁴ This is a wording develop by Henkel and it is referred to the avoided saved emission in the use phase of the product

2. Boundaries of Henkel Scope 4 Greenhouse Gas Emission Reporting

2.1. Basis of Consolidation

The emissions savings accounting and reporting shall be performed for Henkel and subsidiaries under control of Henkel. It covers a portfolio of selected product or categories or products which bring about emissions savings for Henkel customers and during the use of the Henkel Products. The product sales data from the Henkel systems are allocated to the elements of the portfolio and are the basis for determining the annual savings.

2.2. Savings from immediate use and from long-lasting objects

The Henkel emission savings occurring during the use of the products shall be reported based on the sales data for a reporting period financial year. In case the emission savings occur immediately along with the consumption of the Henkel product, the annual emission saving is calculated as reported in Figure 1. In case there are other significant CO₂ emissions in other value chain stages these emissions need to be assessed if the amount is 10% or more of the reported savings per functional unit.

| Annual Savings: Accounting for prolonged service lives Matching Maturities

Annual Saving	Calculation	Example
<p>Immediate:</p> $S_{\text{annual,immediate},i}$ Emissions / savings related to consumption of Henkel product	$= s_i \times Q_{\text{sold},i}$	Color catcher, dry shampoo, leave-in conditioner, machine cleaner, cold wash detergents, low temperature ADW, ...
<p>Prolonged service life</p> $S_{\text{annual,prolonged},i}$ related to use of an object with a Henkel product incorporated.	$= s_i \times Q_{\text{sold},i} \times t_{\text{service},i}$	ETICs building insulation, Cool Roof, automotive lightweighting, pump refurbishing, ...
s_i : Saving per functional unit $Q_{\text{sold},i}$: Number of functional units $t_{\text{service},i}$: duration of service life		

Figure 1 Overview of the calculation of the CO₂ emission savings from immediate product use and from the use of object with a prolonged service life

2.3. Portfolio saving

The overall annual Henkel emission savings in the portfolio (S_{annual}), Portfolio are obtained by summing up the emission savings over all portfolio elements (immediate and prolonged) The relevant measure for evaluating the target achievement are the implemented emission savings in the portfolio over the years 2016 to 2025. This is calculated by summing up the overall cumulated Henkel emission savings in the portfolio from 2016 to 2025.

3. Scope 4 – Process

3.1. Roles in the process

The portfolio element owners (HSA team, business unit team) identify and qualify the elements of the Henkel CO2 savings portfolio according to the criteria outlined above. In addition, they quantify the respective savings and document the portfolio element definition in the portfolio element factsheets.

The review panel (Sustainability experts, Sustainability Council) has a control function. It evaluates the validity of the individual portfolio elements and their respective savings according to the rules of this standard. To that end, the review panel evaluates the portfolio element factsheets against the following criteria:

- Is the Sustainability Master® evaluation sufficiently complete? ⁵
- Is the portfolio element classified adequately as implemented or potential saving?
- Is the savings mechanism generally accepted, i.e. has it been published by a third party?
- Are there substantial trade-offs according to this standard?
- The allocation of the Henkel contribution to a saving: is it in line with this standard?
- Does the choice of the baseline conform to the rules of this standard?
- Has the calculation of the CO2 saving been checked according to the four-eyes principle?

3.2. Process Steps

The process of accounting for the emission savings can be divided into three steps:

1. The initial development of a portfolio element process starts by developing and testing a proposal (by portfolio element owner) and concludes with an approval of the portfolio element and the supporting documentation (by the review panel).
2. The annual accounting of the savings involves obtaining the sales data, updating the emission savings per functional unit (e.g. by updating relevant emission factors) and performing the emissions savings calculation (by the portfolio element owner).
3. The entire portfolio is checked (by the review panel) each year for possible classification in the portfolio based on the criteria defined (reported in Figure 2). This includes both newly developed and existing product solutions/ technologies that were not qualified earlier. Solutions that no longer meet the qualification criteria are removed from the portfolio. Those will be revisited in the subsequent period for inclusion.

⁵ Evaluation model developed in 2011 that analyzes the economic, ecological and social criteria of Henkel products along the entire value chain. At its heart is a matrix in which the so-called hotspots per product category (Fields where the greatest environmental impact occurs by default). In this way, the sustainability balance of two products or processes can be compared and improvements and deteriorations can be presented transparently.

4. Scope 4 – Methodology

The unit emissions savings of a portfolio element are established as the difference between the reference emissions (e.g. the emissions related to the market standard, per unit) and the emissions related to the portfolio element, per unit. The emissions are quantified in line with the established Greenhouse Gas Protocol Product Life Cycle Accounting and Reporting Standard (for potential reductions in Scope 3 emissions) and the ICCA / WBCSD ICCA-WBCSD Avoided Emissions Guidance (1). In addition, consistency is warranted by using the same emission factors for avoided emissions as for the Scope 3 reporting (4).

The unit emissions savings may represent an average scenario, which is derived based on representative products. The derivation of the average scenario needs to follow the principle of conservatism. Further details per portfolio element are provided in the factsheet for the portfolio element.

4.1. Activity Data

As a general rule, the product sales data and the corresponding 'external sales quantities' are the basis of the savings accounting. The sales data of a product or a group of products are assigned to one single portfolio element. Further details on the relationship between Henkel sales figures for the portfolio elements and the quantity of functional units represented by those are provided in the factsheet for the portfolio element.

4.2. Baseline Methods for Determining the Savings per functional unit

Annual assessments of CO₂ emissions reductions for our customers and consumers are carried out by comparison with a reference solution (baseline). The unit emissions savings of a portfolio element are established as the difference between the reference emissions (e.g. the emissions related to the market standard, per unit) and the emissions related to the portfolio element, per unit. The unit emissions savings may represent an average scenario, which is derived based on representative products.

The decision as to which comparison category is used for a given portfolio element is taken by the owner of a portfolio element according with details in ICCA WBCSD 2017 (1).

Once the suitable reference has been identified, it needs to be modeled. In case sufficient data is available to that end, these will be used. Else, a proxy (representative solution) that is as similar as possible to the solution may be modeled and used for the comparison.

4.3. Allocation of emission savings

The savings brought about by some portfolio elements represent one of several components of a solution. To avoid double counting of CO₂ savings Henkel quantifies the contribution of the portfolio element. This is possible through economic, physical and functional allocation. Many Henkel solutions are enablers of overall solutions. As a result, the economic or physical attribution may not truly reflect the Henkel contribution. Consequently, this standard provides clear guidance on how to use the functional allocation outlined in ICCA / WBCSD (2017) (1) to quantify the contribution of a Henkel portfolio element to a solution.

5. Scope 4 – Portfolio

The implemented savings were measured to track progress to the Henkel target of saving 50 Mio tons of CO₂e between 2016 and 2020 and now with the new target of 100 Mio tons CO₂e between 2016 and 2025. a number of 14 portfolio cases are reported which are grouped into six clusters:

- 1) Building Envelopes – Energy Saving:**
 - a. External thermal insulation composite systems (ETICS)
 - b. Energy saving building envelopes (highly reflective roof coating)
- 2) Automotive Light weighting:**
 - a. Automotive light-weighting (enabling high aluminum contents in car bodies)
 - b. Lighter sound dampening systems
 - c. Non-metal reinforcements
- 3) Renewable Energy:**
 - a. Renewable energy (higher efficiency solar panels)
- 4) Industrial Overhaul:**
 - a. Increase energy efficiency of pumps
 - b. Extend life-times of industrial equipment
- 5) Smart Material Replacement:**
 - a. Wood to replace concrete)
 - b. Threadlocking case (replace steel with Loctite)
- 6) Less Domestic Hot Water Used:**
 - a. Dry shampoo
 - b. Leave-in hair conditioners
 - c. Color catcher sheets
 - d. Machine Cleaner

The portfolio elements were identified in a thorough analysis of the entire portfolio. They were qualified by assessing the social and environmental impacts along the entire value chain ensuring that no trade-offs occur.

For each portfolio element the annual saving per year is calculated by multiplying the unit emission saving with the number of units that are related to the annual Henkel sales with the respective portfolio element. The resulting values are reported as the annual saving for the portfolio elements (4b, 5a, 5b, 6a, 6b, 6c, 6d). For the portfolio elements 1a, 1b, 2a, 2b, 2c, 3a, 4b the emission savings occur during the service life of the objects (cars, solar panels, building insulation, roof coatings) which were manufactured or treated with a Henkel product. For these portfolio elements the annual saving over the service-life saving is reported. It is obtained by multiplying the annual saving per year with the duration of the service life. For target tracking the annual saving are cumulated from 2016 to 2025.

The unit emissions savings of a portfolio element are established as the difference between the reference emissions (e.g. the emissions related to the market standard, per unit) and the emissions related to the portfolio element, per unit. This can be illustrated with the color catcher example. In the reference scenario, two washloads are needed for machine laundering, one for lightly and one for intensely colored garments. The Henkel color catcher sheets inhibit the transfer of textile dyes from intensely to lightly colored garments and thus allow to launder both garment types in one washload. As result, one washload and the respective CO₂ emissions are avoided. The emissions are quantified in line with the established Greenhouse Gas Protocol Product Life Cycle Accounting and Reporting Standard (for potential

reductions in Scope 3 emissions) and the ICCA / WBCSD ICCA-WBCSD Avoided Emissions Guidance. In addition, consistency is warranted by using the same emission factors for avoided emissions as for the Scope 3 reporting. The calculations are based on publicly available information (where available), on in-house data, and on expert estimates and assumptions. The reference was established by before/after comparison, comparison with the situation that has been improved, or comparison with the solution that has been replaced. For none of the clusters the savings are offset with emissions in other value chain-stages, as compared to the reference. The savings of the clusters (1b, 2c, 3a, 4b, 5b, 6a, 6b, 6c, 6d) are allocated entirely to Henkel. For the remaining portfolio elements, a fraction of the entire emission saving is ascribed to Henkel because the Henkel product is not the exclusive contributor. The respective allocation of the remaining portfolio elements is defined in terms two dimensions. In the first dimension the Henkel product contribution is rated in terms of indispensability, unique positioning, depth of knowledge of customer process required, and share in the economic value of the entire solution. For the second dimension a distinction is made between extensive and minor contributions.

6. References:

1. ICCA, WBCSD (2017) Addressing the Avoided Emissions Challenge, International Council of Chemical Associations, Washington DC (USA), World Business Council on Sustainable Development, Geneva (CH), https://www.icca-chem.org/wp-content/uploads/2017/12/ICCA-2017_Adressing_guidelines_WEB.pdf.
2. WBCSD, WRI (2003) The GHG Protocol for Project Accounting, World Business Council on Sustainable Development, Geneva (CH) and World Resource Institute, Washington DC (USA), accessed at https://ghgprotocol.org/sites/default/files/standards/ghg_project_accounting.pdf.
3. WBCSD, WRI (2004) A Corporate Accounting and Reporting Standard, World Business Council on Sustainable Development, Geneva (CH) and World Resource Institute, Washington DC (USA), <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>.
4. Henkel (2021) Scope 3 Methodology documentation

7. Annex:

1. Interpretation of the accounting principles in this standard.

Table A1 below outlines how the principles are implemented in the generation of the factsheets.

<p>Relevance</p>	<p>Quality of environmental impact: Using the Henkel Sustainability#Master® as an evaluation system which centers around a matrix based on the individual steps of the value chain and on our six focal areas, the assessment of a portfolio element shall reflect a significant sustainability contribution in the focus area “Energy & Climate” in relation to customer / consumer use.</p> <p>Quantity of environmental impact: Savings of a portfolio element have to exceed a minimum threshold of 10.000 ton CO₂ per year.</p>
<p>Completeness</p>	<p>Overall impact evaluation: Henkel uses its Sustainability#Master® to reflect the impact of a portfolio element holistically – relating to all focal areas of Henkel’s sustainability strategy and along the entire value chain. Via this comprehensive impact analysis significant trade-offs can be identified. Product solutions displaying significant trade-offs will not be admitted to the portfolio.</p> <p>Henkel CO₂ Savings portfolio definition: The entire range of Henkel products shall be screened to identify potential portfolio elements. The standard ensures that all relevant CO₂ emission savings within the boundaries of the chosen portfolio are accounted for and reported. To obtain the emission savings of a portfolio element, the sales data of the related products is accounted for and complemented with emissions data per unit use.</p>
<p>Consistency</p>	<p>The methodology described in this Standard ensures that accounted and reported savings are consistent with Henkel business activities, with generally accepted emissions data and allow for meaningful comparisons of emissions over time.</p> <p>Activity data: The activity data are consistent with the Henkel business activities because they reflect the sales (sold products) for the reporting period, i.e. Henkel financial year.</p> <p>Emissions data: In order to base the reporting on a consistent set of footprint data as reported for our GHG Scope 3 emissions reporting, the most recent set of emission factors available from IEA (for electricity) and from Defra are used whenever possible.</p> <p>Temporal consistency: The savings will be accounted for in the year in which the sales occurred. This also holds true for savings originating from products with prolonged service lifes. In these cases, the savings over the entire service life will be accounted in the year of the sales.</p>
<p>Transparency</p>	<p>Documentation: All relevant issues will be described in a factual and coherent manner. All input information (including data sources used), assumptions and processes in conjunction with the Henkel CO₂ savings accounting are traceable as verified by the limited assurance verification through a 3rd party.</p> <p>Publication: The summary of the results of the savings accounting will be subject to publication in the Henkel Sustainability report, which is</p>

	publicly available online. Data and calculations are shared as part of a third-party review. To that end, spreadsheet calculations are made available to the auditor. These allow for tracing all steps of the calculation.
Accuracy	<p>Activity data: High accuracy data are the amounts of products sold. The respective data are taken from the Henkel systems. Approximations can be used, e.g. portfolio elements consist of larger groups products.</p> <p>Footprint data: Intermediate accuracy data are footprint data based on average / assumed values for energy and water consumption during the use of Henkel products or through the use of objects produced with Henkel solutions.</p>
Conservatism	<p>Footprint data: With some of our CO₂ savings portfolio elements, we do not know the exact operating parameters of use at our customers. To be on the safe side, we apply conservative estimates by internal and external experts.</p>
Mutual Exclusiveness / Collective Exhaustiveness	<p>Separating Scope 3 and CO₂-savings accounting: To strictly manage double counting of emission savings, Henkel clearly separates the corporate-level GHG Scope 3 accounting and the accounting of CO₂-savings.</p> <p>Attributing savings in the value chain: The risk of double-counting of avoided CO₂ emissions by different partners along the value chain is addressed by accounting for Henkel contributions on a pro rata basis following the ICCA/WBCSD guideline on avoided emissions.</p>