



Case Study

**Add value.
Inspire trust.**

Carbon footprint for packaging manufacturer

More and more manufacturers are opting for voluntary analysis and verification of their products' carbon footprints by an independent third party. One of them is HEINZ-GLAS GmbH & Co. KG, a Bavarian company manufacturing glass flacons and jars for the perfume and cosmetics industries. HEINZ-GLAS relies on a smart IT tool specifically developed in-house to systematically analyse emissions along its products' value chain. TÜV SÜD successfully validated the underlying methodology.

Task:

Validation of a complex calculation model

For the first time, a glass manufacturer can now accurately predict greenhouse-gas emissions to the nearest gram throughout the life cycles of specific products. As another first, the calculation program has been validated in accordance with an ISO standard.

To achieve this, the manufacturer recorded a number of key parameters, from the energy consumption of the production operations and the recycled-glass content to the electricity used by office operations or employee commutes. The IT-supported model is customised for the application in question. It bundles all data and subsequently calculates the expected emissions in grams per product.

The objective is to determine the product carbon footprint variable for each product during its design and development process, thereby allowing the company's customers to take the transparently presented carbon footprint into account when choosing individual designs, forms and decorations.

Family-owned HEINZ-GLAS was established in 1622 and is currently in the hands of the family's 16th generation. In the 1970s, the company installed Europe's first electric glass melting furnace at its Kleintettau location. All the company's locations in Germany switched to purchasing certified green electricity in 2016, joined by their glass production facilities in Peru and Poland in 2019.



To determine its current status and identify potential areas of improvement, the medium-sized business developed a calculation model that covers all product solutions and translates them into carbon footprints. The glass manufacturer commissioned the TÜV SÜD experts to perform independent third-party validation of the calculation method.

As part of this process, the experts analysed:

- the strategic direction and risk assessment,
- the energy and material consumption,
- the IT and data systems,
- the methods used for determining emissions,
- the calculations for greenhouse gas accounting,
- all associated processes and workflows, and
- employee know-how

Solution:

Analysis based on recognised standards

The requirements of the ISO 14067 standard served as guidelines for a systematic approach. As the product range



and the capacity utilisation of production change over time, the company started by defining a reference period. The data determined for this reference period can be used as a basis for calculations for subsequent periods and/or can be updated accordingly.

TÜV SÜD also verified that the company used rational methods that delivered reproducible results. Critical criteria in this context included relevance, completeness, accuracy, consistency and transparency. ISO 14064-3 was used as the validation standard.

Result:

Transparency and reproducibility verified

TÜV SÜD was among the first verification and validation bodies accredited for this scope to successfully validate the systematic approach for the calculation of product carbon footprints. HEINZ-GLAS benefited from the long-standing cross-industry expertise of an internationally leading verification body in the area of climate protection, which in Germany operates under accreditation by the German Accreditation Body (Deutsche Akkreditierungsstelle, DAkkS).*

At TÜV SÜD, environmental engineers work hand in hand with power engineers and plant engineers, all of them boasting in-depth knowledge of the applicable national and international standards and regulations.

Carletta Heinz, CEO, HEINZ-GLAS

“We are setting trends in the quality of premium flacons, but also in their sustainability, as is demonstrated by our product carbon footprint calculation model. Validation by TÜV SÜD allows us to prove this to our customers, strengthening their trust in our results.”

* Verification body accredited by DAkkS in accordance with DIN ISO/IEC 17029:2020. The accreditation only applies to the scope listed in the Appendix to accreditation certificate no. D-VS-14153-01-00

Project Overview

Customer	HEINZ-GLAS GmbH & Co. KGaA
Industry	Manufacturer of plastic and glass flacons for the cosmetics industry
Year/Period	Report period 2022 Period of validity 05/2023–06/2024
Key technical data	15 production sites with direct and indirect emissions caused by <ul style="list-style-type: none"> • Production of raw materials • Transport of raw materials to HEINZ-Glass • Transport of packaging material • Glass production • Finishing processes • Inhouse transport • Transport for the delivery of finished products • Business travel • Employee commute • Emissions caused by waste recycling • End-of-life emissions of sold products • Capital goods
Challenges	<ul style="list-style-type: none"> • Complex production processes • Extensive data volume • Determination of suitable key figures and reference values • IT supported calculation model • Results for precisely specified individual products
Our services	<ul style="list-style-type: none"> • Review of system boundaries • Analysis of the data and methods used • Review of the results for reproducibility, relevance, completeness, accuracy, consistency and transparency • Validation in accordance with EN ISO 14064-3
Results	<ul style="list-style-type: none"> • Confirmation of the applicability of the calculation method • Independent third-party confirmation of the product carbon footprint of clearly specified products