

Climate Assessment



Beckers Group 2017



1.Executive summary

Beckers Group has carried out a comprehensive annual assessment report of its carbon emission since 2013 according to the GHG Protocol Corporate Standard. The report for 2017 compares progress to the base year of 2013 as well as previous year. The purpose of measuring climate data is to formulate a basis for action in order to reduce emissions and to systematically work with reduction initiatives to document our journey towards our vision of being the world's most sustainable industrial coatings company.

For 2017, Beckers Group's total emission amounted to **56,214 tons of carbon dioxide equivalents from [location-based emissions](#)** and **56,268 tons CO₂e from [market-based emissions](#)** which is a **2% reduction compared to base year emissions** and **3% reduction compared to previous year emissions**.

The highlights for our results in 2017 are:

- We have been able to **mitigate our emissions below the base year emissions** despite starting up 3 new sites in 2016 and a 13% increase in production since 2013.
- The sum of [scope 1](#) and [scope 2](#) product intensity emissions has shown a healthy **reduction of 22%** compared to the base year and **3% reduction** compared to the previous

year, highlighting an increased efficiency in resource handling per unit product.

- The report for the first time, presents the 2017 emissions results, as two separate values based on the '[scope 2 guidance](#)' from GHG protocol standards.

[Market-based](#) figures have not been included in 2016 results due to the higher inaccuracy seen in the first year of reporting with the new scope 2 guidance from the GHG protocol standard. For 2017 and onwards, both, market-based and location-based results, will be analysed and published by Beckers.

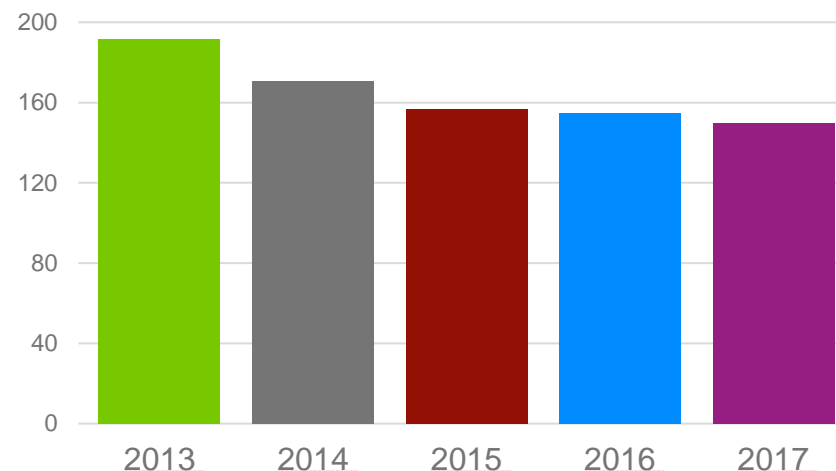


Chart 1-1 Scope 1 + scope 2 emissions per ton production (kgCO₂e/ton product)

The emission results for 2017 and their comparison to the base year and previous year is depicted in the table below. There is only an increase in [scope 3](#) emissions when compared to the base year emissions. The increase is due to the addition of 'upstream emissions' for multiple activities in 2015. This was done at an international level in line with the GHG Protocol in order to include the climate impact of the value chain.

Beckers emission		Scope 1 (tCO ₂ e)	Scope 2 (tCO ₂ e)	Scope 3 (tCO ₂ e)	Total emission (tCO ₂ e)
2017	Location	10,129	14,205	31,881	56,214
	Market	10,129	14,208	31,932	56,268
2016 (Location)		10,660	14,603	32,850	58,113
2013		12,763	14,804	29,827	57,393
Reduction % (vs 2016)		5%	3%	3%	3%
Reduction % (vs 2013)		21%	4%	-7%	2%

Table 1-1 Beckers Group - scope results

Sustainability in the long perspective means no negative climate impact at all from Beckers but in order to accommodate the significant changes in the organisation, we recognise that it is important to analyse the intensity of our emissions. This means representing the data in a relevant format to compare with historical trends. This is achieved by calculating the Group scope 1 and scope 2 emissions per ton of product produced over the years.

We see encouraging results of our absolute emissions as well as our intensity emissions. The absolute emission has decreased noticeably despite our growth and the intensity emission has been reduced substantially. We have a long-term commitment and strive to continue our journey towards sustainability.

2. Purpose & Background

“If you can't measure it, you can't improve it.” - Peter Drucker

Quantifying our emissions enables Beckers to formulate an action plan to systematically work with reduction initiatives and assess the progress towards our goal.

To visualise the impact the company has on climate change, the unit of measurement, Carbon dioxide equivalent (CO_{2e}), has to be made tangible.

VISUALISING CO₂ EMISSIONS

Understanding the scope

As per United States Environmental Protection Agency (US EPA)* the emission of 1 ton CO_{2e} was equated to equivalent number of km driven by an average car (fuel economy was assumed to be 9.2 km/litre or 21.6 US miles/gallon). The study revealed:

1 ton CO_{2e} is emitted on driving an average car for 3,860 km

Did you know

Approximately 1 ton of CO_{2e} is released travelling across Europe from Liverpool, UK to Moscow, Russia!

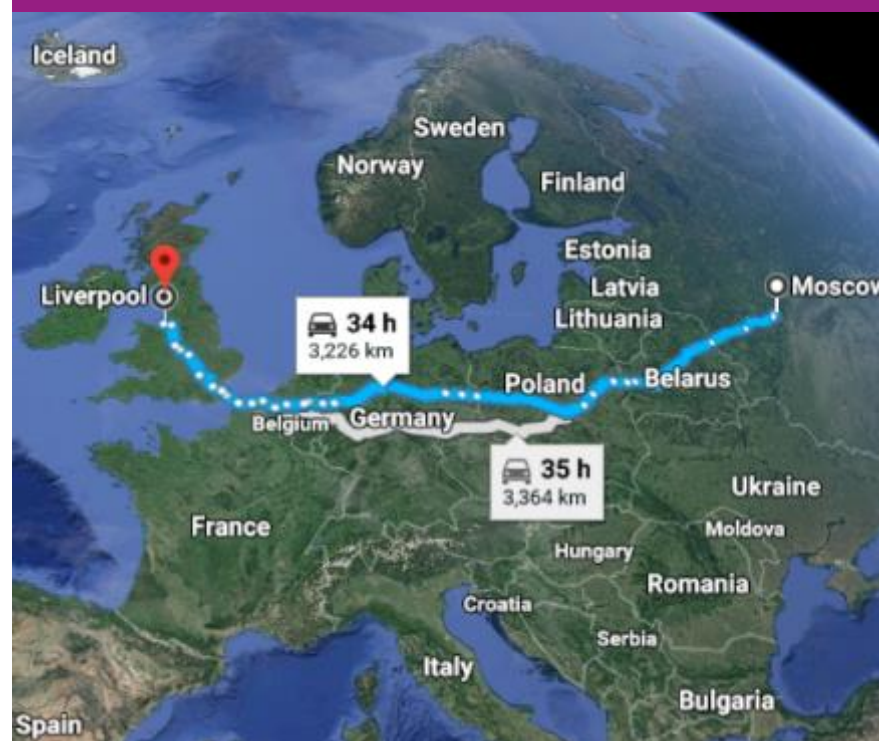


Figure 2-1 Equivalent result to 1 tCO_{2e}*

* United States Environmental Protection Agency
<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>

3. Methodology

According to the GHG Protocol, a company is accountable for emissions from all operations over which it has control. Control can be defined in either financial or operational terms.

Beckers is using the Greenhouse Gas (GHG) Protocol, an international standard developed by the World Resources Institute and the World Business Council for Sustainable Development. GHG Protocol divides greenhouse gases into three scopes:

- **Scope 1** – direct GHG emissions from sources that are owned by the company, for example, emissions from combustions in boilers, furnaces and vehicles.
- **Scope 2** – indirect GHG emissions from purchased or acquired electricity, heating/cooling or steam consumed by the company.
- **Scope 3** – other indirect GHG emissions (optional category) that occur as a consequence of all activities of an organization.

The report incorporates ‘The scope 2 guidance’ introduced by GHG Protocol in 2015 to portray emissions from specific contractual energy procured by the sites (see ‘scope 2 guidance’ section below).

In addition to indirect emissions from activities influenced by the company, scope 3 emissions can also emanate from upstream activities of scope 1 and scope 2 emissions. For example, emissions due to grid loss through transmission and generation of electricity purchased. The upstream emissions from various activities are periodically added onto the platform in the spirit of continuous improvement to capture the total emissions from the value chain. One major update was seen in 2015, which resulted in an increase in scope 3 emissions for the company.

Monitoring, documentation and representation of the data is done as per the ‘activities’ where the emissions occur. These activities promote easy comprehension of emission generation, which in turn will enhance decision-making while formulating reduction initiatives. The activities are independent of the classification based on scopes i.e. a particular activity may be classified under multiple scope emissions.

Activities

Premises	The total energy consumption and water usage on site.
Outbound third-party deliveries	The transportation by the last third-party contractor from supplier to the sites.
Inbound third-party deliveries	The total transportation of our final products from a Beckers' site to the customer via multiple modes of transport.
Production gases	Production gases are the VOC (Volatile Organic Compounds) emissions from the site.
Business travel	Internal or external transportation used for business activities
Company-owned vehicles	Use of vehicles owned or long-leased under the company name
Waste	Disposal of waste
Paper	Office paper

Table 3-1 Beckers' activities

Scope 2 Guidance

In 2015, the GHG Protocol presented a change in reporting methodology regarding scope 2 emissions calculations. The new approach introduced by GHG Protocol constitutes two dual reporting methods for scope 2 emissions. This was implemented in 2016 in our web platform. The two methods, location-based and market-based emissions reporting, are required in order to be fully compliant with the GHG Protocol.

FACT BOX

Location-based method

Uses grid average emission factors specific to the location of consumption to calculate emissions

Market-based method

Conveys emissions from electricity that companies have specifically procured through contractual instruments – or, conversely, reflects a lack of procurement through the application of residual emission factors.

Contractual instruments, also known as Market-based Instruments, can be:

- Energy attribute certificates (eg. REC, GOs, iREC)
- Direct energy contracts (e.g. PPAs)
- Supplier-specific emissions rates



Historically, the emission from scope 2 was open for interpretation to follow either of the two reporting methods, thus the amendment was introduced to unify results from all reporting industries.

Market based figures have not been included in Beckers' 2016 results due to the higher inaccuracy seen in the first year of reporting. For 2017 and onwards, both results will be analysed and published.

Since a market-based method reflects emissions from electricity that companies have purposefully chosen, evidence of such 'contractual instruments' is a prerequisite. These contractual instruments need to convey information such as emission rates, traceability, issuance, source etc. In absence of such information, the company will be allotted untracked or unclaimed emission factors (aka Residual Mix). The application of these requirements and the data availability for calculations is developing, among reporting companies and their energy suppliers, at the moment. A higher maturity in the figures will be achieved as the entire value chain unifies around the scope 2 guidance amendment.



4. Participants

In order to achieve a good accuracy of data for reporting, Beckers maintains at least one reporter per site for all its manufacturing sites around the world. This network of 'Climate reporters' collect and document relevant parameters into our web-based tool. This data is consolidated to form the global climate footprint of the company. The network of the reporting units is presented in the adjoining table.

Contact

Bernd Vogel (Chief Technology Officer)

Nicklas Augustsson (Global Sustainability Director)

Ingela Nordin (Global Sustainability Manager)

Shaan Akerkar (Global Sustainability Scientist)

sustainability@beckers-group.com

Beckers EA&A	Beckers A&ME
Argentina, Buenos Aires	Bangladesh, Dhaka
France, Feignies	China, Guangzhou
France, Montbrison	China, Shanghai
Germany, Berlin (HQ)	China, Tianjin
Germany, Dormagen	India, Goa
Italy, Caleppio	India, Nagpur
Mexico, Monterrey	Indonesia, Jakarta
Poland, Tarnow	Malaysia, Kuala Lumpur
South Africa, Johannesburg	UAE, Ras Al Khaimah
Sweden, Maersta	Vietnam, Ho Chi Minh
Turkey, Gebze	
UK, Liverpool	
USA, Chicago	
USA, Fontana	

Table 4-1 Beckers locations

5. Results and analysis

Overall analysis

For 2017, Beckers Group's total emission amounted to **56,214 tons of CO₂e from location-based emissions** and **56,268 tons CO₂e from market-based emissions** which is a **2% reduction compared to base year emissions** and **3% reduction compared to previous year emissions**. This is a major reduction to our base year, since we have been able to mitigate our emissions below the base year emissions despite the introduction of three new sites in 2016.

Since the emissions from both types of approaches have a 0.1% difference, the report will reflect only location-based figures when relevant.

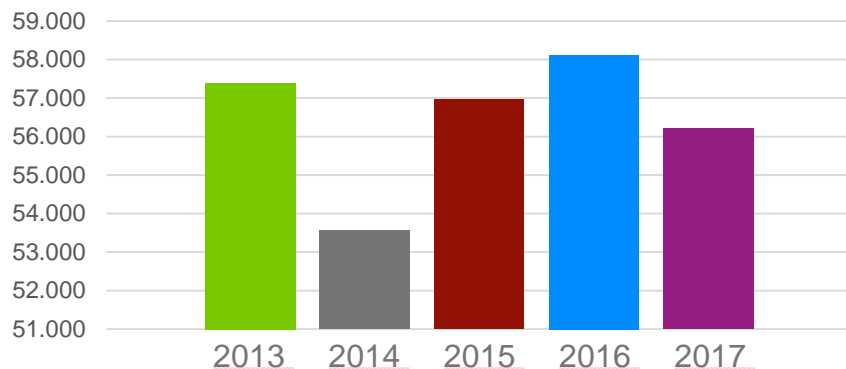


Chart 5-1 Beckers total emissions (tCO₂e)

Scope analysis

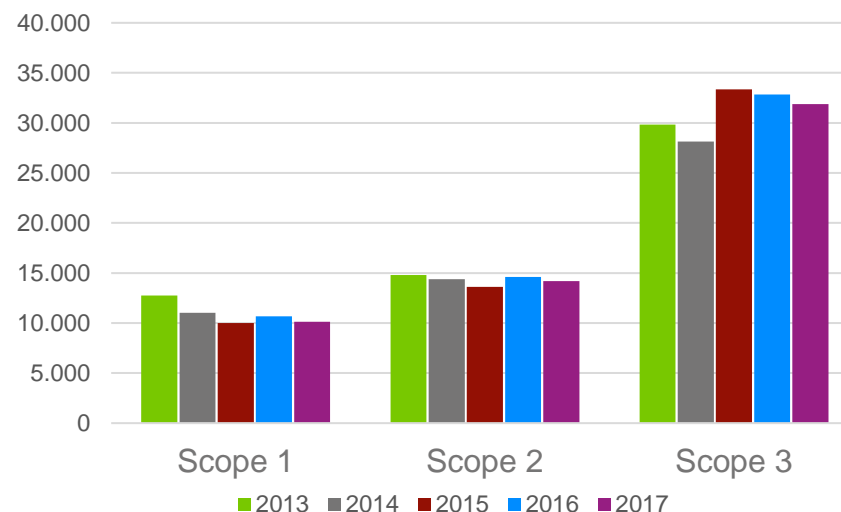


Chart 5-2 Scope-wise annual emissions (tCO₂e)

A scope-wise overview of the results is covered below:

- The result shows a decrease in emissions from company-controlled sources (scope 1), highlighting a **21% reduction** compared to our base year (2013) and **5% reduction** compared to the previous year.
- Emission from scope 2 emissions **reduced by 4%** with respect to the base year and **3% reduction** compared to the previous year. This includes the changes introduced as per GHG Protocol.
- Although there has been a **7% increase** in scope 3 emissions with respect to the base year emission. this is

because in 2015, there had been a major emission factor update in the reporting tool due to the introduction of the ‘upstream emission’ for most activities. This was done at an international level in line with the GHG Protocol in order to include the climate impact of the value chain. However, there has been a **reduction of 3%** compared to the previous year.

An important finding this year, is that despite having renewable energy sourced in Märsta, Liverpool, Caleppio and Kuala Lumpur, we have the scope 2 emissions of **market-based results equal to the location-based results** (with a negligible 0.02% difference in total scope 2 emissions). This is due to lack of timely documentation of Guarantee of Origin (GoO) certificate from the energy supplier in Caleppio that authenticates our claim for renewably sourced energy. Additionally, this is also due to receiving ‘residual energy mix’ for sites which do not have any contractual instruments in place to source renewable energy e.g. in Dormagen, Tarnow and Caleppio.

Activity analysis

As shown below, the activities with the highest emissions are premises (40% of total emission), inbound third-party deliveries (24%) and outbound third-party deliveries (18%).

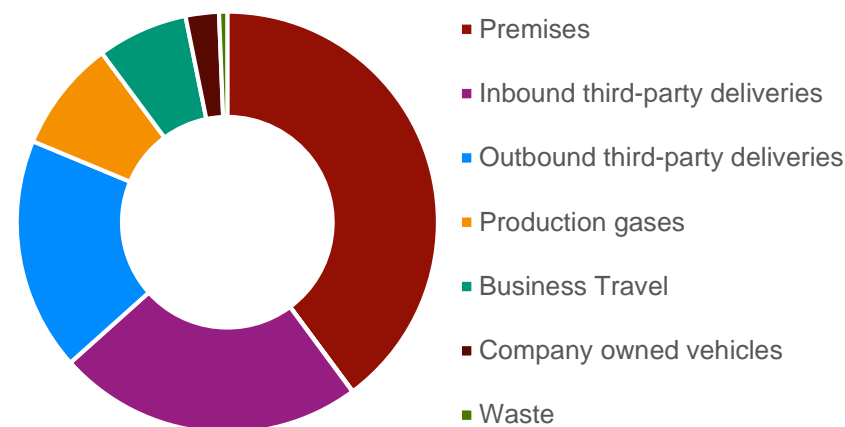


Chart 5-3 Activity-wise 2017 emissions (%)

The chart above depicts that more than 80% of Beckers’ emissions are a result of energy consumption on site and logistics for raw materials and finished goods.

Major changes in activities, compared to 2013 and 2016, are described in the following table:

By Activity	2013 tCO ₂ e	2016 tCO ₂ e	2017 tCO ₂ e
Premises (location/market)	20,036	23,009	22,399/ 22,453
Company owned vehicles	1,382	1,366	1,439
Business Travel	2,737	4,131	3,915
Inbound third-party deliveries	11,585	11,331	13,213
Outbound third-party deliveries	14,368	12,518	10,063
Paper	22	16	17
Waste	432	453	356
Production gases	6,833	5,290	4,813
Total (location/market)	57,393	58,114	56,214/ 56,268

Table 5-1 Activity-wise historical emissions

Compared to 2016, the table above shows a 22% and 20% reduction in waste and outbound third-party deliveries respectively. Whereas, inbound third-party deliveries increased by 17%.

Emissions from inbound and outbound third-party deliveries showed significant counteracting changes due to increase in production from new sites like Gebze and Monterrey, redistribution of logistics from old sites to new sites due to their close proximity to customers as in Goa and Nagpur. Also, improvements in the reporting methods, where all inter-company deliveries are captured under inbound deliveries of the receiving site.

The biggest reduction of 22% in waste emissions is due to implementation of the reused waste strategy, where an increased number of sites are proactively sending packaging waste for reuse via a government-certified contractor. This will ensure the material is being refurbished and sold or reused into the market. This is in contrast to the traditional recycling (eg smelting of metal drums) or incinerating packaging materials with other waste streams that result in higher emissions.

6. Emission Intensity

To estimate the emission change over the year, with regards to the growth of the company, **Key performance indicators (KPIs)**, are adopted. We have maintained our KPIs for 2017, which include: products (volume produced in metric tons), full time employees (FTE) and total sales (MSEK).

The total KPI values for the Group are as illustrated below:

FTE (Number)	1,722*
Product (tons)	160,000
Sales (MSEK)	5,640

Table 6-1 Beckers' 2017 KPIs

*Variation in FTE from the sustainability report is due to technical discrepancies

An analysis of the emissions KPI over the years is depicted in the table below.

KPI	2013	2014	2015	2016	2017
FTE (number)	32.6	29.9	32.9	33.5	32.6
Sales (MSEK)	12.5	10.9	10.8	10.7	10.0
Product (ton)	0.40	0.36	0.38	0.36	0.35

Table 6-2 Annual Beckers KPIs

To analyse an organisation's climate impact based on changes in the structure and/or business, it is important to keep track of the sales and production KPI.

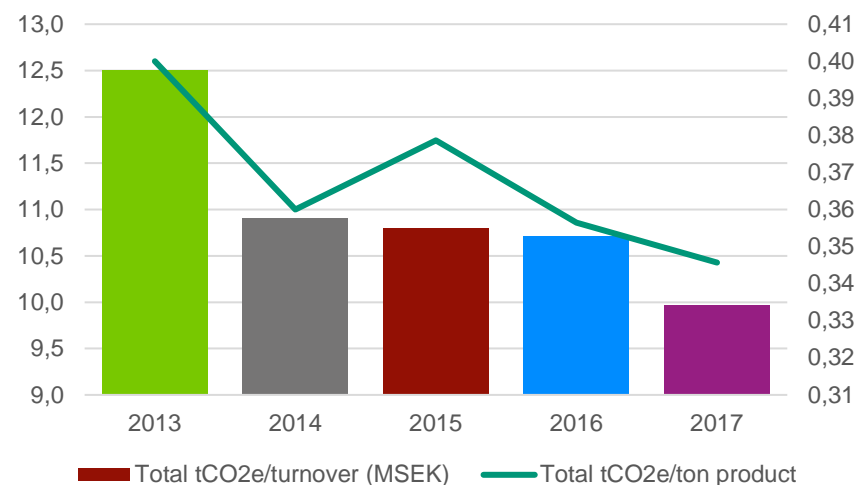


Chart 6-1 Beckers' annual production and sales KPI

The graph depicts an increase in emissions per ton product in 2015, which can be correlated to the additional upstream emissions added to scope 3 activities as per the GHG protocol, without a significant increase in production or changes in the organisation activities. Thereafter, the figure has reduced, portraying an increased efficiency in operations by the increased production at new sites via economies of scale compared to 2016.

7. Conclusion

Beckers Group was able to reduce its emission to pre-2015 levels despite having significant increase in production and an addition to the scope 3 emissions introduced in 2015 by the GHG protocol.

There is no significant difference between location-based and market-based emission figures despite sourcing renewable energy at Maersta, Caleppio, Kuala Lumpur and Liverpool, due to absence of proper timely certification from the energy supplier and an offset from residual energy mix received in sites with no renewable energy sourcing.

The biggest reduction of 22% in waste emissions is due to implementation of the reused waste strategy, where an increased number of sites are proactively sending packaging waste for reuse via a government-certified contractor. This will ensure the material is being refurbished and sold or reused into the market. This is in contrast to the traditional recycling (eg smelting of metal drums) or incinerating packaging materials with other waste streams that result in higher emissions.

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Sustainability in the long perspective means no negative climate impact at all from Beckers but in order to accommodate the significant changes in the organisation, we recognise that it is important to analyse the intensity of our emissions. This means representing the data in a relevant format to compare with historical trends. This is achieved by calculating the Group scope 1 and scope 2 emissions per ton of product produced over the years.

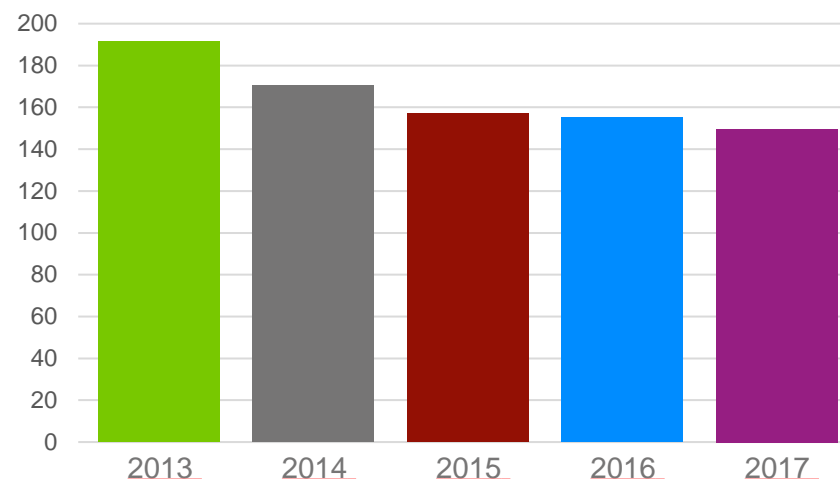


Chart 7-1 Scope 1 + scope 2 emissions per ton product (kgCO₂e/ton product)

The encouraging results of our scope 1 and scope 2 emissions continue to document Beckers' path towards sustainability.