# CLIMATE ASSESSMENT

## Beckers Group 2016

# 1 Executive Summary

The Beckers Group has performed a comprehensive assessment of its carbon emissions for 2016 with respect to the base year (2013) and previous year's emissions, highlighting Beckers' strong initiative to comprehensively document the journey to becoming the most sustainable industrial coatings company in the world.

The assessment, as per Greenhouse Gas (GHG) Protocol Corporate Standard, is classified into three categories, scope 1, scope 2 and scope 3, which forms the bases for the emission source.

- **Scope 1 (direct GHG emissions)** – Emissions that occur from sources that are owned or controlled by the company
- **Scope 2 (electricity indirect GHG emissions)** – Emissions from purchased or acquired electricity, steam, heat, and cooling
- **Scope 3 (other indirect GHG emissions**) – Emissions that are a consequence of the activities of the company, but occur from sources not owned or controlled by the company

An important highlight this year, is the 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. The two methods, location-based and market-based emissions reporting, are required in order to be fully compliant with the GHG Protocol. Historically, this emission was open for interpretation to follow either of the two reporting methods, thus the amendment was introduced to unify results from all reporting industries. We will use the results of the location-based emissions in this report.

For 2016, Beckers Group's total emission amounted to 58,113 ton $CO_2e$ which is a 1% increase compared to base year emissions and 2% increase compared to previous year emissions. However, there has been establishment of three new sites and an 8% increase in total production compared to 2015 which highlights the initiatives taken to counter an exorbitant increase in emissions compared to the actual result.

The scope-wise summary is as follows:

- The result shows a year-over-year decrease in emissions from company-controlled sources (scope 1), highlighting a **16% reduction** compared to our base year (2013).
- Emission from scope 2 emissions **reduced by 1%** with respect to the base year. This includes the changes introduced as per GHG Protocol.
- Although there has been a **10% increase** in scope 3 emissions with respect to the base year emission, mainly arising from changes in the GHG Protocol, there has been a reduction of 2% compared to the previous year. 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.**

Sustainable development in the long term perspective means to limit the absolute climate impact from Beckers to a minimum level, but in order to accommodate the significant changes in the organisation, we recognise that it is of upmost importance to analyse especially 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 2 emissions per ton of product produced over the years.

Beckers Group has a positive trend that shows consistent reduction. Compared to the base year a 19% reduction is achieved and the reduction over the years converges to a value of 155 kgCO2e per ton product for 2016.

The encouraging results of our emissions continue to document our path towards sustainability.

# 2 Purpose & Background

The purpose of measuring climate data is to formulate a basis for action to reduce emissions and to provide a possibility for comparison with a base year. A comparative analysis is a prerequisite to systematically working with reduction initiatives. The base year selected for assessment of Beckers' emission is 2013.

To visualise the impact humans have on climate change, the unit of measurement, Carbon dioxide equivalent ($CO_2e$), has to be tangible.


Figure 2-1 Equivalent result to 1 $tCO_2e$*

As per United States Environmental Protection Agency (US EPA)* findings, 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 miles/gallon). Using that example it was found that **1 ton $CO_2e$ is emitted on driving an average car for 3,860 km.**

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

# 3 Methodology

The standard used for reporting is the Greenhouse Gas (GHG) Protocol Corporate Standard, an international standard developed by the World Resources Institute and the World Business Council for Sustainable Development.

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. 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.
  The newly introduced Scope 2 Guidance introduced by GHG Protocol is also implemented to portray location-based scope 2 emissions and market-based scope 2 emissions. (See section Analysis for more information)
- **Scope 3** – other indirect GHG emissions (optional category) that occur as a consequence of all activities of an organization.
  Scope 3 emissions can also emanate from upstream activities of scope 1 and scope 2 emissions, such as emissions due to grid loss through transmission and generation of electricity.

Beckers accounts for and reports on scope 1 and scope 2 (location-based approach) emissions while additionally reporting on major activities under scope 3 emissions. These activities includes business travel, third-party inbound/outbound deliveries, paper consumption and waste generated.

Regarding emission sources, the following activities are included in the calculations:

| Activities | |
|---|---|
| **Premises** | Premises involves the total energy consumption and water usage on site. |
| **Outbound third-party deliveries** | The boundary is the transportation by the last third-party contractor from supplier to the sites. |
| **Inbound third-party deliveries** | The system boundary applies to 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 air emissions from the production process and equate directly to VOC (Volatile Organic Compounds) emissions from the site. |
| **Business travel** | Flights, rail and cars |
| **Company-owned vehicles** | Cars, trucks and vans |
| **Waste** | Recycled, incinerated and landfilled |
| **Paper** | Office paper |

Table 3-1 Beckers' activities

# 4 Participants

**Contact in Beckers:**

Nicklas Augustsson (Global Sustainability Director)
Ingela Nordin (Global Sustainability Manager)
Shaan Akerkar (Global Sustainability Scientist)
sustainability@beckers-group.com

In order to achieve a justifiably high accuracy of data for reporting, Beckers maintains at least one reporter per site for all its manufacturing sites around the world. This relates to a network of 24 ‘site reporters’ and one additional reporter for the Group’s Headquarters office. The spatial distribution is illustrated below:

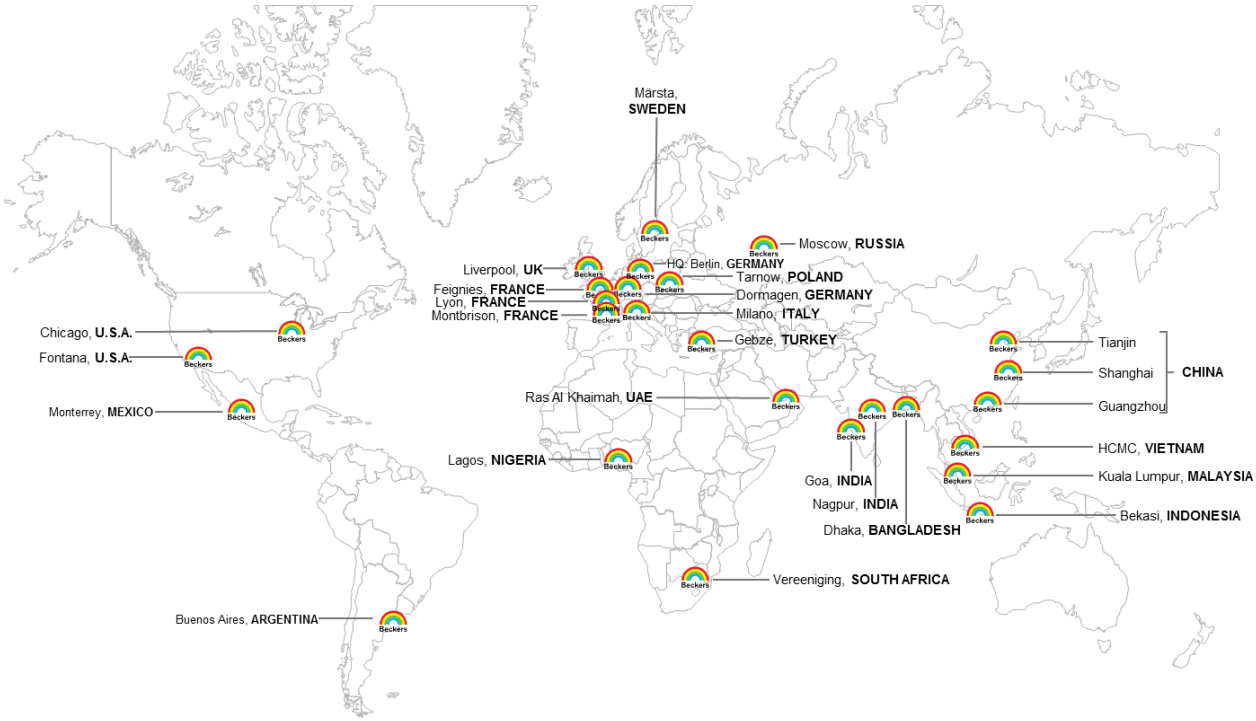


Figure 4-1 Beckers locations

# 5 Results

The results encompass emissions from all Beckers' entities around the world, including the regional and corporate offices.

Total emissions for Beckers Group during 2016 amounted to **58,113 tons of carbon dioxide equivalents ($tCO_2e$)**, which is an increase of 1,142 $tCO_2e$, or 2%, compared to 2015. Compared to our base year 2013, it is a 1% increase equivalent to 720 $tCO_2e$. However, there has been establishment of three new sites and an 8% increase in total production compared to 2015 which highlights the initiatives taken to counter an exorbitant increase in emissions compared to the actual result.

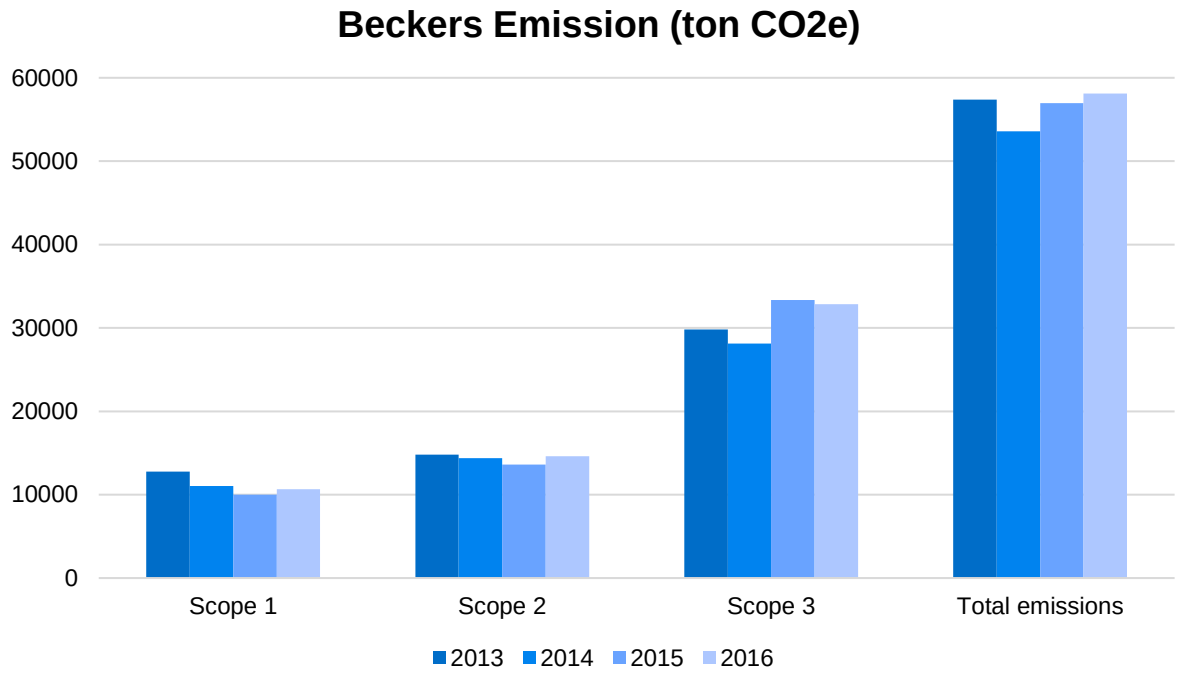


Figure 5-1 Scope-wise annual emissions

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

- The result shows a year-over-year decrease in emissions from company controlled sources (scope 1), highlighting a **16% reduction** compared to our base year (2013).
- Emission from scope 2 emissions **reduced by 1%** with respect to the base year. This includes the changes introduced as per GHG Protocol.
- Although there has been a **10% increase** in scope 3 emissions with respect to the base year emission, mainly arising from changes in the GHG Protocol, there has been a reduction of 2% compared to the previous year. 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**.

As shown below, the activities with the highest emissions are premises (40% of total emission), outbound third-party deliveries (21%) and inbound third-party deliveries (20%).

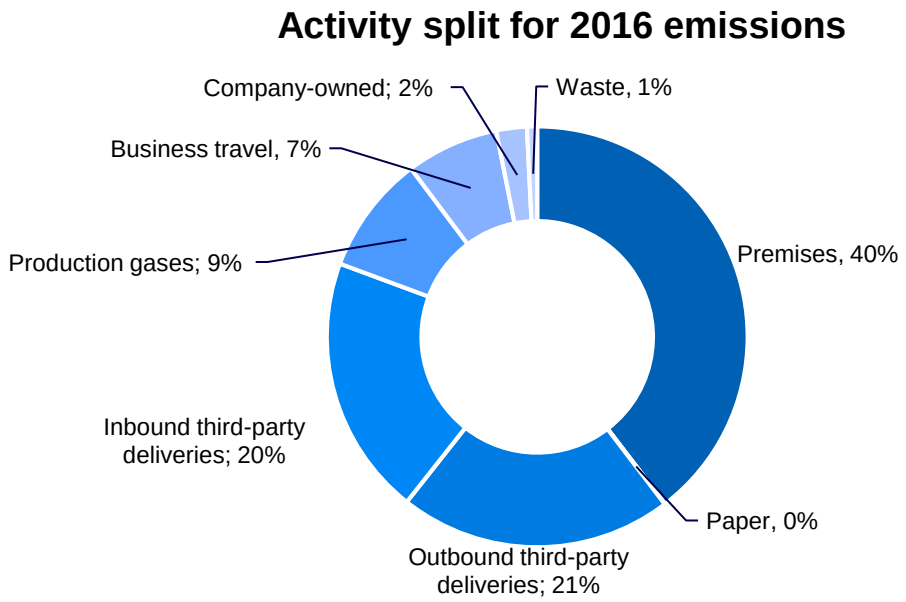


Figure 5-2 Activity-wise 2016 emissions

Major changes in activities, compared to 2013 and 2015, are described in the following table:

| By activity | 2013 $tCO_2e$ | 2015 $tCO_2e$ | 2016 $tCO_2e$ | Percentage change (2015) | Percentage change (base year) |
|---|---|---|---|---|---|
| Premises | 20,036 | 21,470 | 23,009 | 7% | 15% |
| Company-owned vehicles | 1,382 | 1,201 | 1,366 | 14% | -1% |
| Business travel | 2,737 | 4,041 | 4,131 | 2% | 51% |
| Inbound third-party deliveries | 11,585 | 10,956 | 11,333 | 3% | -2% |
| Outbound third-party deliveries | 14,368 | 13,982 | 12,515 | -10% | -13% |
| Paper | 22 | 19 | 16 | -14% | -26% |
| Waste | 432 | 373 | 453 | 22% | 5% |
| Production gases | 6,833 | 4,931 | 5,290 | 7% | -23% |
| **Total** | **57,393** | **56,972** | **58,113** | **2%** | **1%** |

Table 5-1 Percentage change for 2016 emissions

Only outbound third-party deliveries achieved major reduction over 2016, whereas, emissions due to premises, production gases and inbound deliveries increased over 2016.

# 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 2016, 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)** | 1,736 |
| **Product (tons)** | 163,000 |
| **Sales (MSEK)** | 5,400 |

Table 6-1 Beckers' 2016 KPIs

An analysis of the emissions KPI over the years is depicted in the table below. The range of reported values by site per KPI for 2016, is also illustrated in the same table.

| KPI | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Total tCO2e/FTE | 32.6 | 29.9 | 32.9 | 33.5 |
| Total tCO2e/turnover (MSEK) | 12.5 | 10.9 | 10.8 | 10.7 |
| Total tCO2e/ton product | 0.40 | 0.36 | 0.38 | 0.36 |

Table 6-2 Annual Beckers KPIs

Of the three KPIs selected, the sales and production KPI are important to keep track of, to understand an organisation's climate impact and subsequent footprint it leaves on the planet. It is thus of relevance to visualise the same to accommodate for the changes in the organisation's structure and/or business.

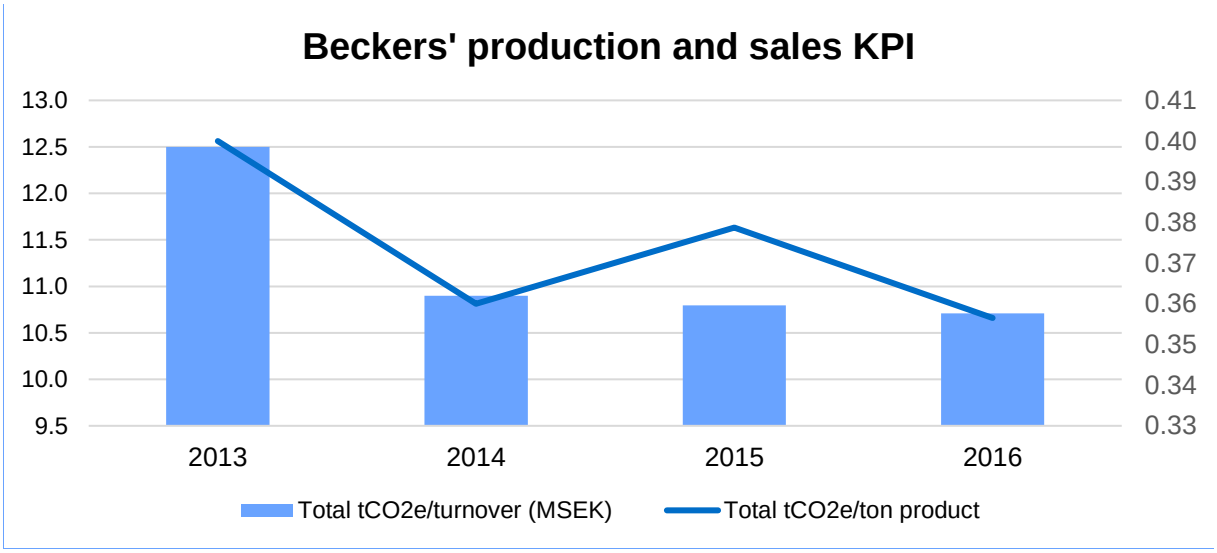


Figure 6-1 Beckers' annual production and sales KPI

All external effects, from global GHG Protocol changes to internal company-specific initiatives are captured in this chart and we still see a year-over-year reduction in the total emissions per ton production. This is further detailed in the Analysis section where we specifically focus on scope 1 and scope 2 emissions per ton production.

# 7 Analysis

Apart from the major changes in the organisation mentioned earlier, that is, establishment of three new sites and 8% increase in production volume, there have been significant external reasons for the fluctuations in the results.

In 2016, our climate reporting provider, 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. The two methods, location-based and market-based emissions reporting, are required in order to be fully compliant with the GHG Protocol. Historically, this emission was open for interpretation to follow either of the two reporting methods, thus the amendment was introduced to unify results from all reporting industries.

This is the first reporting year that Beckers applies the dual reporting methodology making it incomparable with the reporting from previous years, however the comparison of the results between years will be more straight-forward next year.

**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

Since a market-based method reflects emissions from electricity that companies have purposefully chosen (or lack procurement of the same), 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. Thus its entire impact will be better seen in the coming years, for Beckers and the world.

Other major changes in results for 2016 are due to a 10% drop in outbound third-party delivery emissions for the Group, compared to 2015. This is an impact from changes in Emissions Factors documented by the EPA in the United States. The changes, which show a 51% decrease in road transport systems, have also affected outbound

third-party delivery results from other non-European countries that have historically adopted the EPA figures.

The change has been checked and verified with the source. The change represents a) a methodology change from previous factors, based on improved data, b) statistics on vehicles from the Federal Highway Administration - Highway Statistics.

Looking at the effect of the data calculated with this particular emission factor, the impact is less than 5% of the total emissions for 2016. This reflects a change of less than 5% on the base year emissions. Thus, as per Beckers' climate recalculation policy, a recalculation of base year is not required.

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.

As seen below, the historical trend shows a consistent reduction year over year from 2013 to 2016. The reduction over the years converges to a value of 155 kg $CO_2e$ per ton production for 2016. Beckers has achieved a 1% reduction compared to last year and a 19% reduction compared to the base year.

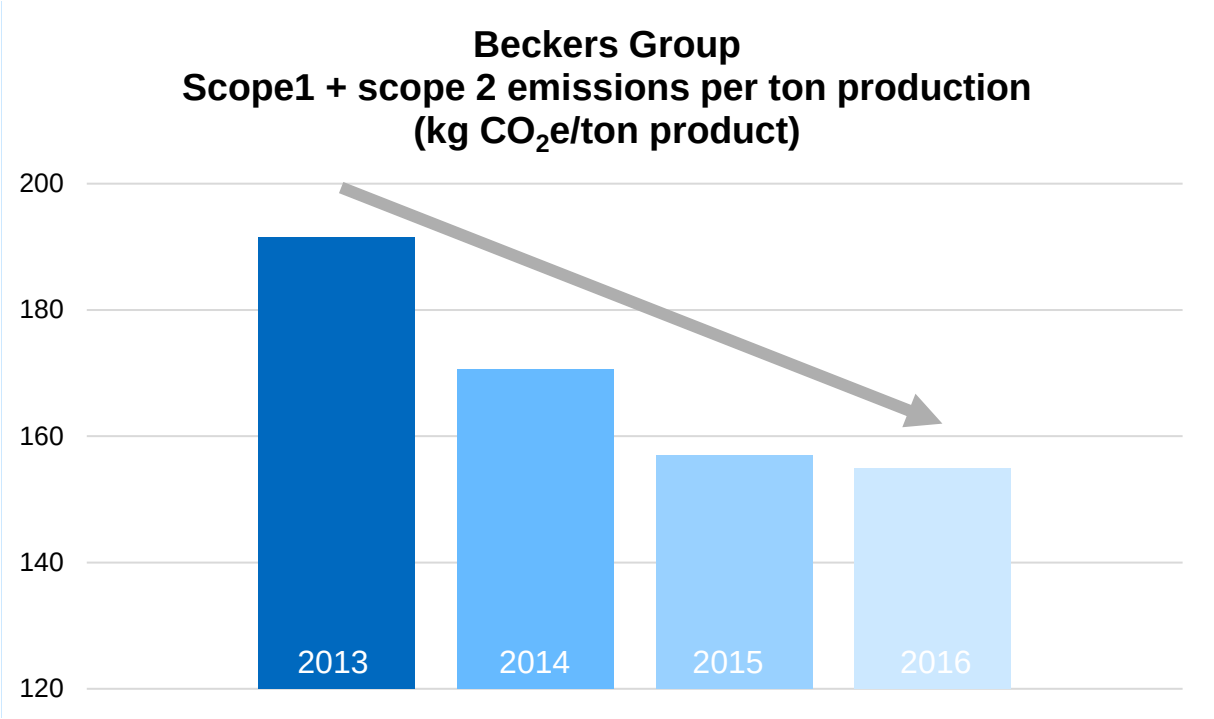


Figure 7-1 Scope 1 + scope 2 emissions per ton production

# 8 Conclusion

Beckers Group has seen immense expansion over 2016, increasing not only its production volume by 8% but also establishing three new sites globally. Even though there has been an increase in emissions due to the new Scope 2 Guidance amendment, the Group has seen only a 2% increase in emissions compared to 2015.

Focusing on the amendment brought about by the Scope 2 Guidance, Beckers has reported according to its location-based scope 2 emission. Over the coming years as the guidance gains traction, we will be able to accurately report on our market based scope 2 emissions and highlight our ongoing commitment towards renewable energy. The scope 2 emissions result used in this report does not take into account the renewable energy we use in our Märsta and Liverpool sites.

Other major changes in results for 2016 are due to a 10% drop in outbound third-party delivery emissions for the Group, compared to 2015. This is an impact from changes in Emissions Factors documented by the EPA in the United States. The changes, which show a 51% decrease in road transport systems, have also affected outbound third-party delivery results from other non-European countries that have historically adopted the EPA figures.

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