GRILLO-Werke AG

# SUSTAINABLE DEVELOPMENT Q3 2024

# SUSTAINABLE DEVELOPMENT AT GRILLO

In this issue, we return to the climate crisis and the GRILLO footprint.

As outlined in the last issue, it is becoming increasingly important for the entire economy and its ability to do business to know exactly the carbon dioxide equivalent ($CO_2e$) emissions of all climate-impacting gaseous substances (greenhouse gases). Various stakeholder groups are not only demanding a reduction and, where possible, avoidance of these emissions, but will also be keeping a close eye on them in the near future through mandatory reporting. Among other things, this can influence our customers' purchasing decisions or help determine the terms and conditions of financial institutions. Reducing greenhouse gases is therefore extremely important to us.

### Background to the creation of a reduction concept

In order to arrive at a reduction concept, it is first necessary to understand our own starting point:

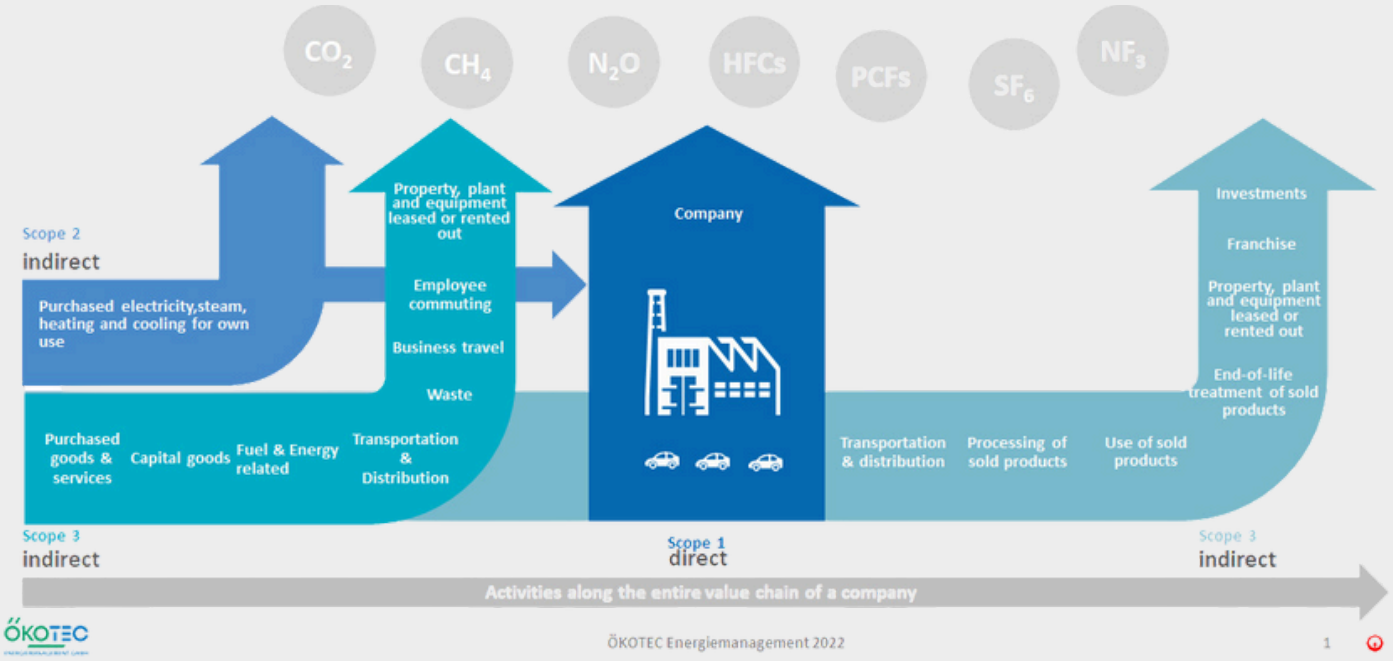
The GRILLO footprint is a so-called Company Carbon Footprint (CCF), which considers the total emissions of all our company's activities. This is to be distinguished from the Product Carbon Footprint (PCF), which summarizes the carbon dioxide equivalents of a specific product / a homogeneous product group and is already available for various of our products.

In the CCF, emissions are divided into three areas, known as scopes:

Scope 1: Direct emissions, caused, for example, by our own combustion of fossil fuels or chemical process gas emissions.

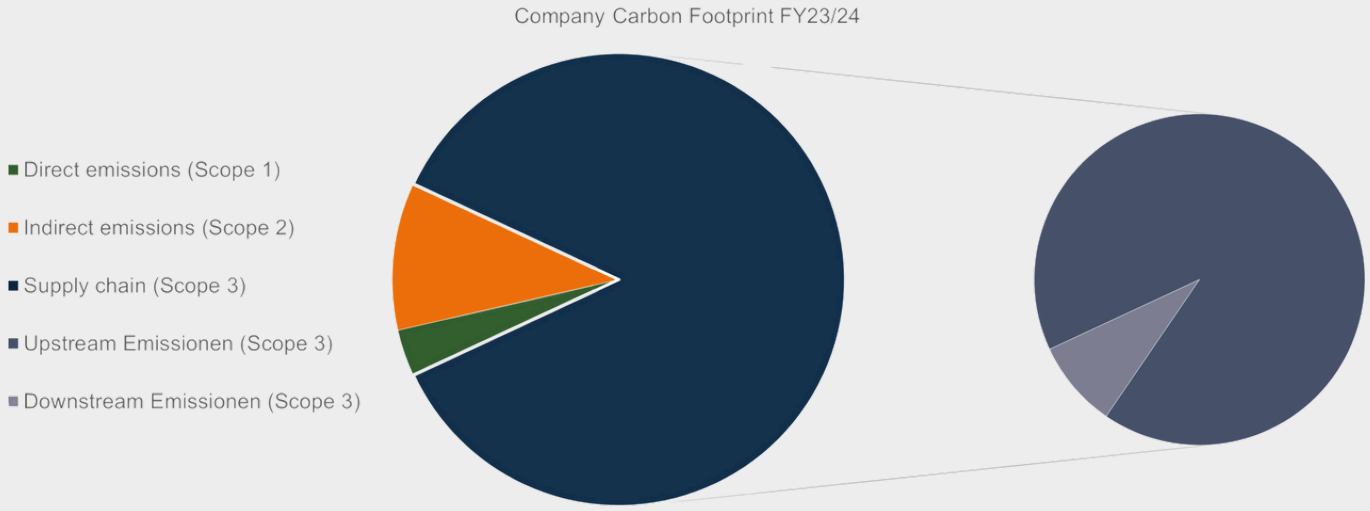
Scope 2: Indirect emissions, such as those released during the generation of purchased electricity or other energies.

Scope 3: Emissions that occur in our upstream and downstream value chain, e.g. through the provision of raw materials or the transportation of our products to customers.




## ACTUAL situation at GRILLO

At GRILLO, we have determined and summarized the emissions for all activities of all scopes in the last financial year. The result is that the majority of $CO_2e$ emissions at GRILLO are released in Scope 3, which is common for manufacturing companies. A deeper analysis reveals that the focus of emissions is on purchasing (metal) goods and services. And this is well ahead of the transportation emissions of our products, stationary combustion processes and process gases as well as purchased electricity.



## Our planned measures

Measures can now be derived and implemented from the transparent balancing of emissions in order to pursue the German government's goal of a climate-neutral Germany by 2045 ("net zero"). To this end, there are initial starting points for the best possible assessable measures to avoid and reduce emissions in the future through efficiency, choice of energy source and technical savings. It is also important to anticipate technological leaps in the future, even if these are not yet conclusively certain. This applies, for example, to the extent of the availability of "green" hydrogen, a sufficient supply of "green" electricity, the capture and storage or use of $CO_2$, etc.

A holistically integrated climate management system must be formalized in all areas and equipped with appropriate resources and responsibilities that allow for reliable forward planning and tracking.

The dominant area of what we buy will play a particularly important role in the future, as this is where the greatest potential for reducing emissions lies. In addition to smart and modified purchasing decisions, we are of course largely dependent on decarbonization efforts in the supply chain itself.

At the same time, we need our own reduction pathways for scopes 1 and 2, as these are emissions that we can reduce ourselves. This can be achieved, for example, by converting heat generation in production to lower-emission/free processes or the targeted purchase of externally sourced energy with a high proportion of renewables.

# NEWS



## Aug. 24 — **Declaration of principles for human rights**

The GRILLO-Werke AG Human Rights Policy Statement was published on August 1, 2024. This applies to all business units at all locations and to our entire value chains.
It reaffirms our commitment to respecting and promoting human rights in all our business areas and supply chains and was adopted by the Executive Board.
As an internationally active and therefore responsible company, GRILLO is committed to respecting human rights. In order to prevent risks, we carry out regular and ad hoc analyses and take preventive measures where necessary. In particular, we address risks relating to the violation of labor and human rights, the environment and ethical conduct. High standards also ensure a safe working environment for all our own employees. Possible compliance violations or complaints regarding human rights violations can be reported via our publicly accessible whistleblower system.
You can find the policy statement in our media library at any time or read it here:

## Jul. 24 — **TED Talk Climate crisis - yesterday, today and tomorrow**

We're nearly halfway through the 2020s, dubbed the most decisive decade for action on climate change. Where exactly do things stand? Johan Rockström, Director of the Potsdam Institute for Climate Impact Research and Professor of Earth System Research at the University of Potsdam offers the most up-to-date scientific assessment of the state of the planet and explains what must be done to preserve Earth's resilience to human pressure. To the talk:

## Jul. 24 — **Mass-balanced REDcert² certification for sulphur dioxide and zinc sulphate**

At the Duisburg site, our zinc sulphate plant and our recycling plant were successfully certified for the first time in accordance with the REDcert² standard for sustainable material flows in the chemical industry.

Chemical recycling and a sustainable circular economy play a key role in achieving the goals of the European Green Deal (climate neutrality by 2050). Chemical recycling is already the focus of GRILLO Chemicals GmbH's activities at the Duisburg site. Used sulphuric acids are recycled into sulphur dioxide in the recycling plant and zinc-containing secondary raw materials are processed in the zinc sulphate plant as part of the "Closing the Loop" project with our cooperation partner, Aurubis AG.

Thanks to REDcert² certification, we have now received independent confirmation through a mass balance approach and proof of origin that our production processes are sustainable material flows and that 100% of our sulphur dioxide and 60% of our zinc sulphate products consist of recycled material (also known as recyclate content).

So what do sustainable material flows and the proportion of recycled materials mean for the future of our chemical activities?

On the way to a functioning circular economy, it is the declared aim of industry, society and politics to transform today's waste into tomorrow's secondary raw materials. In Europe, it will play a major role in the future that a minimum proportion of recycled material (recyclate content) will be prescribed for the manufacture of products in many industrial sectors. The sustainable use of our products with recycled content by our customers can therefore become a competitive advantage for GRILLO.

## Jul. 24 — **Biomass-balanced REDcert² certification for DMS and DME**

Our products dimethyl sulphate ECO (DMS) and GRILLO-one Green Dimethyl Ether (DME) manufactured at the Frankfurt-Höchst site have now been certified for the third time in a row in accordance with the REDcert² standard for biomass-balanced products in the chemical industry.
There is increasing demand from the chemical industry and the consumer goods industry in particular for products in which fossil raw materials (crude oil, natural gas, coal, etc.) are demonstrably replaced by renewable raw materials (biomass) in the manufacturing process.

In Frankfurt, we produce DME and DMS from methanol, one of the world's most widely produced organic chemicals. Methanol production is usually based either on natural gas or on the gasification of coal (gray methanol). In our production, however, we replace part of this gray methanol with biomethanol (green methanol), which is obtained from sustainable biomass sources (e.g. from the fermentation of biowaste). Thanks to REDcert² certification, we have now received independent confirmation that our production processes are sustainable material flows and that our products are based 100% on natural raw materials by means of a biomass balance approach and proof of origin.

So what does biomass balancing mean for chemical products?

Mass balancing is already used today in many product areas (green electricity, biofuels, fair trade chocolate or in sustainable forestry). The mass balance principle works in a similar way to green electricity. Consumers buy 100% green electricity from their electricity provider. However, a mixed product from conventional and sustainable energy sources comes out of the socket. The electricity provider therefore buys a quota of electricity generated from fossil fuels (natural gas, coal, etc.) and a quota of renewable electricity with guarantees of origin, e.g. from wind, solar or hydroelectric power plants, or produces these quotas itself. Mass balancing allows the electricity provider to market the renewable share of the electricity volume purely mathematically as pure green electricity.

We proceed in exactly the same way with our biomass as a source material - the biomethanol content of the raw materials is mathematically allocated exactly to one part of the end products DMS and DME. When certifying these products, the auditors attach great importance to the proof of origin of the raw materials and the audit of the books. If a REDcert² audit reveals that a supplier sells more organic product than is mathematically possible with the amount of biomass purchased, not only would the certificate be withdrawn, but this would also be interpreted as fraud under criminal law.

DMS-Certificate:

DME-Certificate:

## ? | Questions or suggestions?

Bastian Bach and Nadine Hoffmann look forward to hearing from you by Teams, e-mail, Viva Engage or telephone.