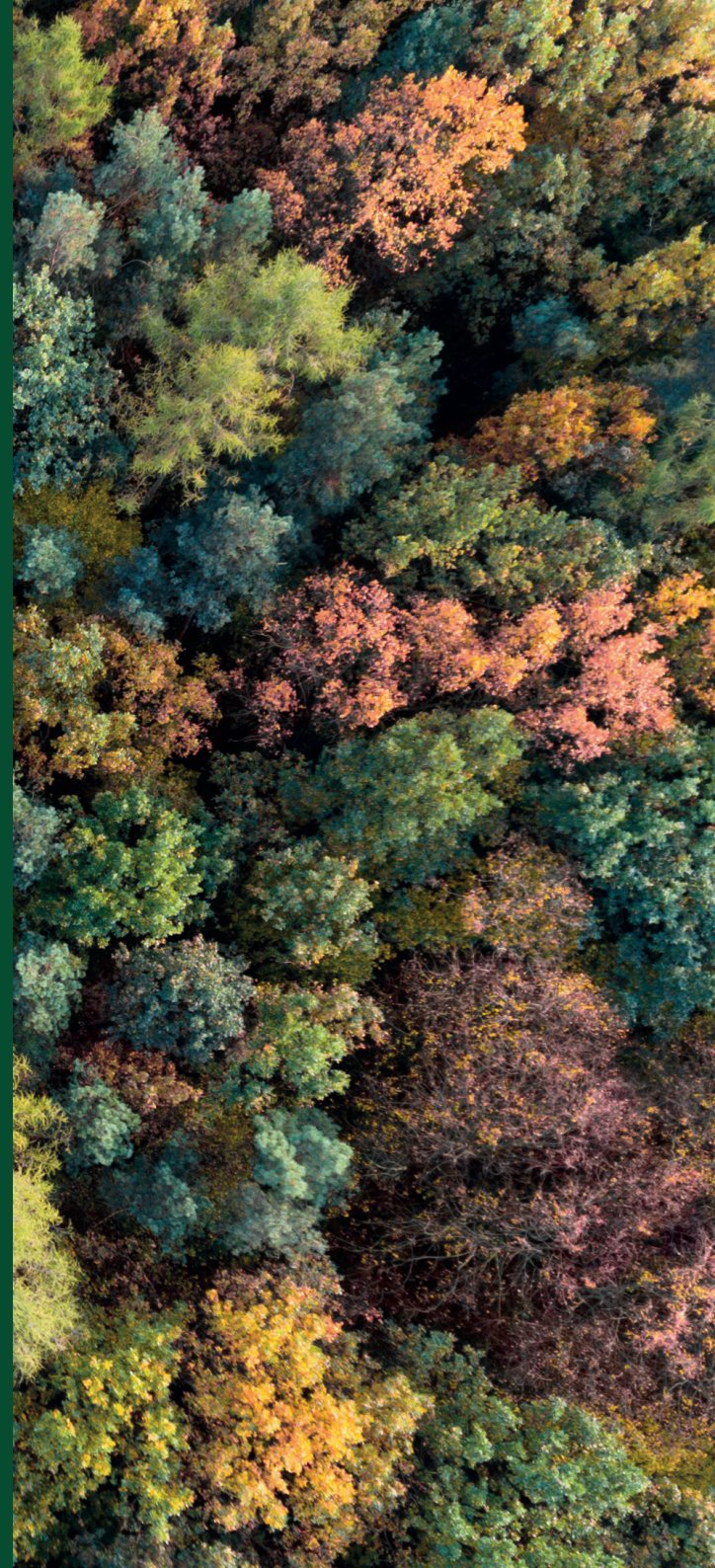


# ACTING SUSTAINABLY AND RESPONSIBLY

2022 environmental report





# SUSTAINABILITY – FROM CONSUMER TREND TO ECONOMIC FACTOR

As a business, we attach great importance to the responsibility we hold towards the environment. That is why we are actively committed to protecting natural resources. As part of our sustainability strategy, we have set ourselves the aim of continuously optimising the packaging that we produce. We use efficient processes and technologies to do this, and promote more environmentally-friendly materials.

The targeted actions we have put in place have allowed us to make significant progress, some illustrative examples of which we are delighted to present in this environmental report. However, our commitment extends even further beyond this: we are dedicated to designing packaging that is as easy and efficient as possible to recycle. To achieve this, we rely on innovative concepts and partnerships that actively promote the circular economy in our industry.



*“We intend to continue pursuing our efforts to reduce our environmental impact – and we are looking forward to a future in which our work moves in harmony with people and nature.”*

*Winterthur, May 2023*

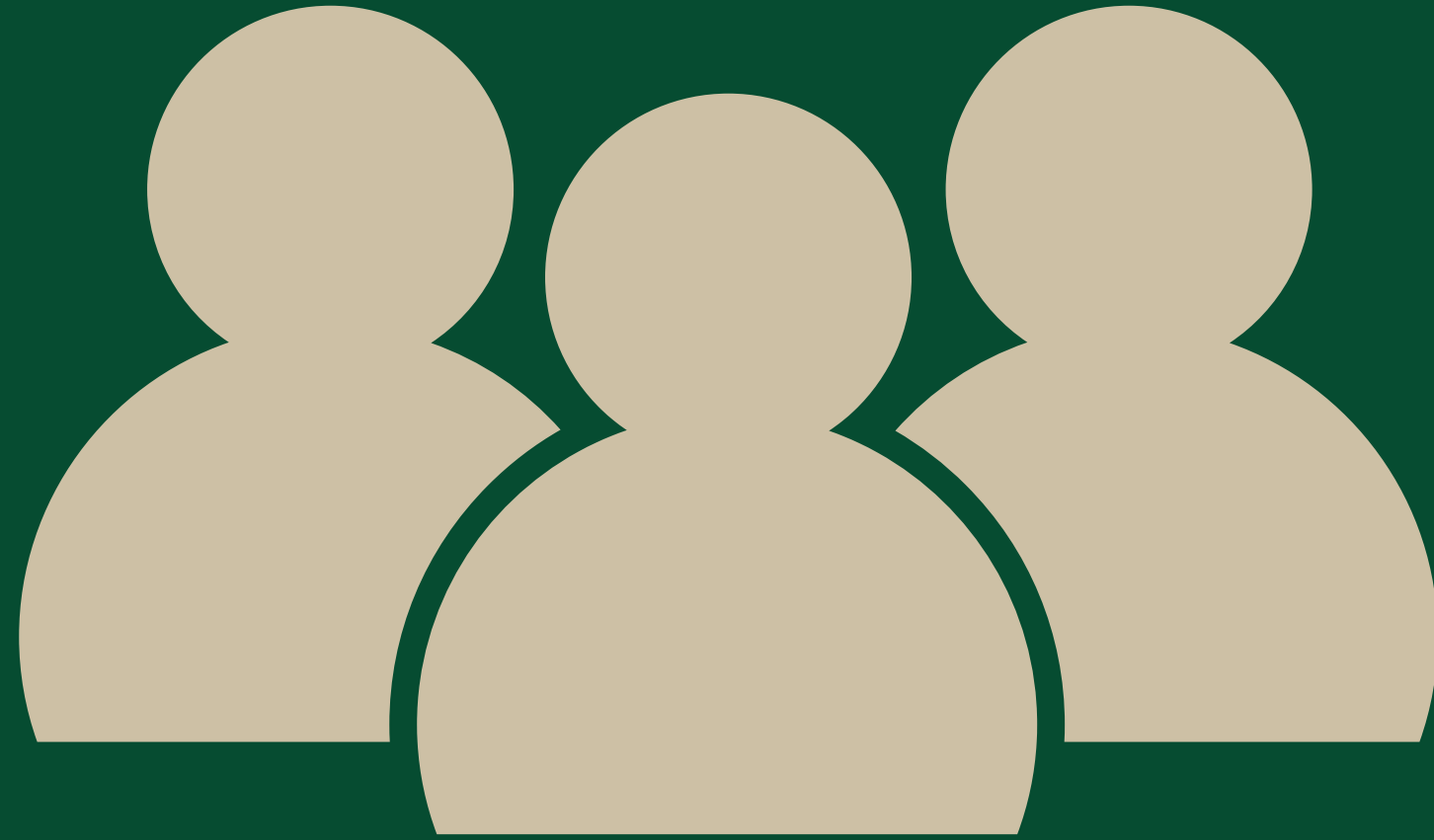
Handwritten signature of Andreas Keller in black ink.

**Andreas Keller**  
CEO  
PAWI Group

Handwritten signature of Ralf Kautzmann in black ink.

**Ralf Kautzmann**  
Managing Director  
PAWI Packaging GmbH, Singen





# WHO WE ARE AND WHAT WE DO

**300  
EMPLOYEES**

As a family-run company with locations in Winterthur, Switzerland, and Singen, Germany, the PAWI Group has around 300 employees and uses the latest technology to produce folding boxes and paper bags, primarily for the food industry – and always in line with the highest hygiene requirements and ecological considerations.

The focus is on a strong innovative spirit and quality, short delivery times and outstanding flexibility. Lean processes, high productivity and the best possible automation facilities are continuously being expanded and optimised.





# OUR ENVIRONMENTAL POLICY

*“Reduce. Reuse. Recycle. Recover.”*

**We care about the environment and its resources, use renewable sources of energy and work with our partners to create sustainable, eco-friendly solutions.**

We make sure to use resources (such as raw and auxiliary materials) judiciously and are committed to keeping all our emissions low. Our waste is disposed of professionally and recycled where possible.

We are among those feeling the effects of material shortages resulting from the ongoing war in Ukraine and the energy crisis. Working based on our fundamentally sustainable mindset, we are constantly striving to reduce the materials we use in our products.

Waste management hierarchy

highest

Prevention

Re-use

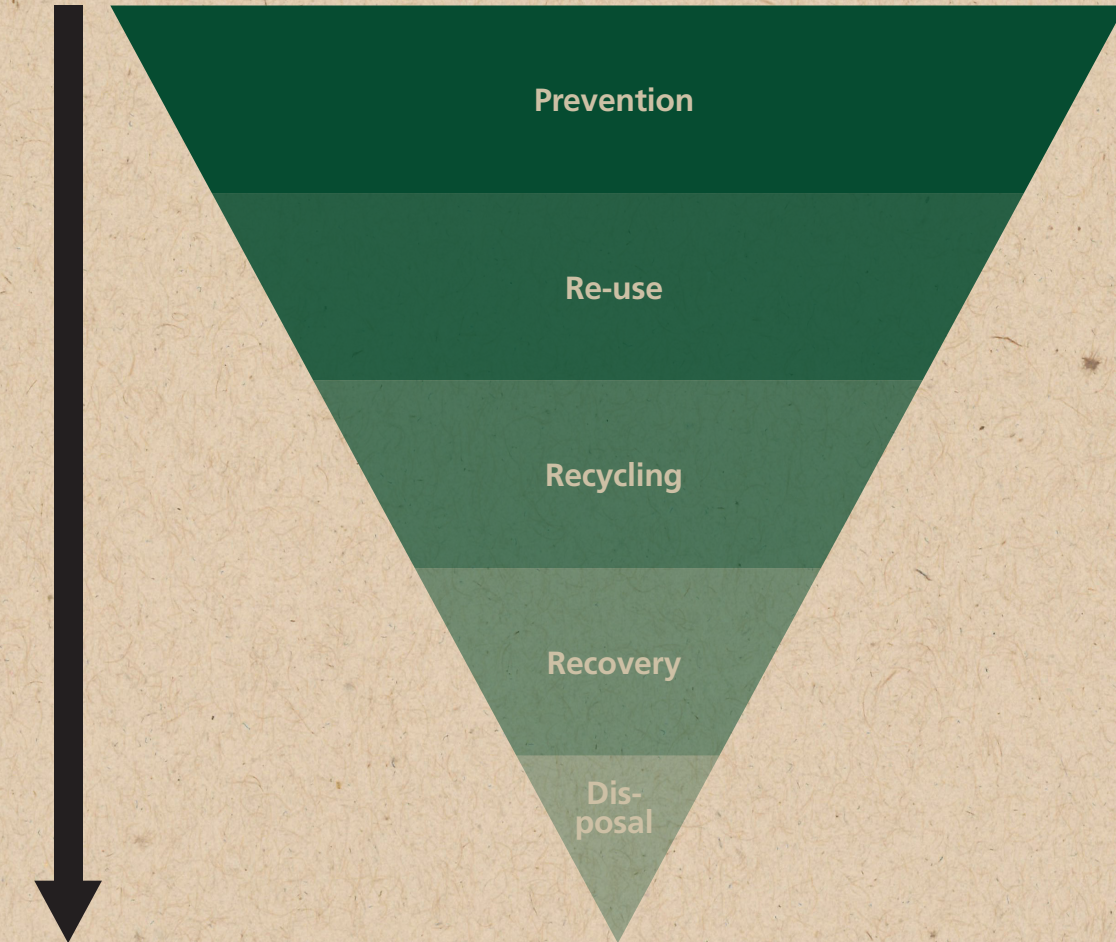
Potential to decrease waste

Recycling

Recovery

lowest

Disposal







# HOW DO WE MAKE PACKAGING SUSTAINABLE?

## Innovation management

**In the packaging industry, innovation management is a key element in developing sustainable solutions.**

Making use of new materials and technologies allows us to optimise our packaging and ensure it is more sustainable – an approach that prioritises not only environmental considerations, but also function and cost.

Our effective innovation management strategy enables us to be more competitive by offering innovative solutions that meet the needs of our clients and, at the same time, satisfy sustainability criteria.

As part of our efforts to ensure sustainability, we are testing an innovative approach to bread packaging, using glassine instead of plastic for the transparent windows found on bags. Glassine is a biodegradable material made from unbleached pulp. Initial tests have delivered promising results.





The herbs supplied by Mäder, a company based in Boppelsen, Switzerland, were encased in entirely plastic packaging until recently. Now, however, they are packed in easy-reseal cardboard boxes with a small plastic window. The close partnership that we have established while working with the herb producer has made it possible to achieve annual plastic savings of approximately 80 tons.

Together with our clients in the berry production industry, we are making even more strides in sustainability by providing eco-friendly trays for berries. This not only reduces the impact on the environment, but also delivers an aesthetically pleasing product that satisfies the needs of eco-conscious consumers.

**Product development**

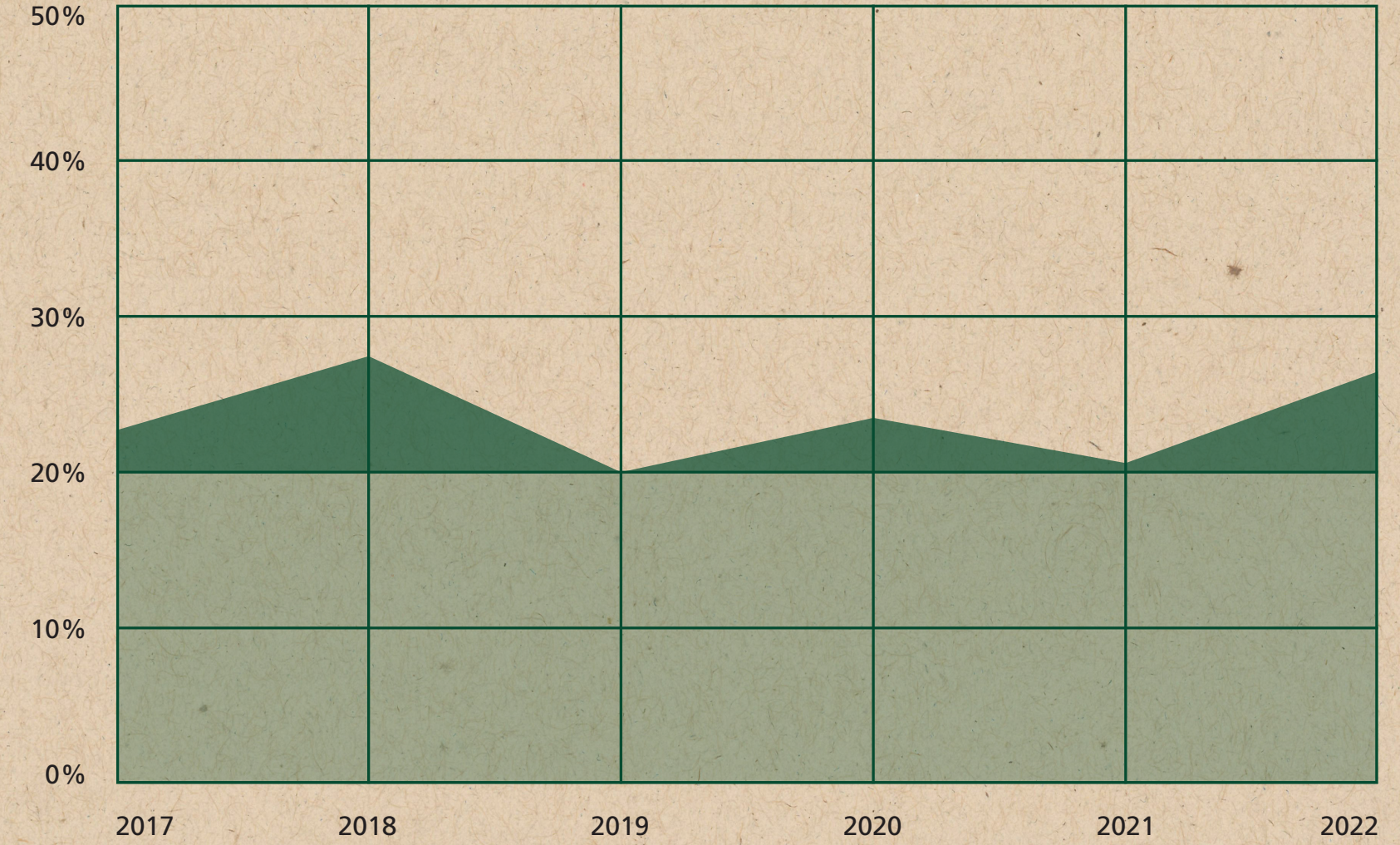
**The product development process sets the course for selecting materials and carrying out production.**

We are constantly seeking out packaging solutions that make environmental sense and provide replacements for plastic or aluminium products. However, sustainable concepts must not mean compromises in food hygiene standards.

We always develop our products with the aim of keeping the rate of cardboard and paper waste from the production process below 20 percent. However, due to exceptional circumstances involving the disposal of storage material during the reporting year, we were not able to achieve our target in this case.

**Trend:**  
raw material waste rate

● Reject rate    ● Target





*“Purchasing sustainable materials is a very important part of what we do. We rely on partners who align with our environmental policy and make a point of ensuring a transparent supply chain.”*

*Alexander Honsel, Head of Strategic Purchasing*

### Raw material purchasing

**We use renewable raw materials such as cardboard and paper in our products.**

Our FSC® certification affirms our commitment to use only as many renewable resources as it is possible to replenish sustainably. In 2022, we processed 2,227 tons of cardboard and 1,350 tons of paper in line with FSC® quality standards, representing 45 percent of the entire quantity of cardboard and paper purchased by the PAWI Group.

To produce paper bags with a transparent window, we use extra-thin plastic that is biodegradable. It consists of polymers that can be destroyed by micro-organisms such as fungus and bacteria. Naturally, however, we are always on the lookout for other sustainably produced forms of plastic and work with third parties in doing so.



FSC® C099972

FSC® C106536



### Printing

**We are deeply committed to increasing the amount of water-based inks and environmentally compatible adhesives we use.**

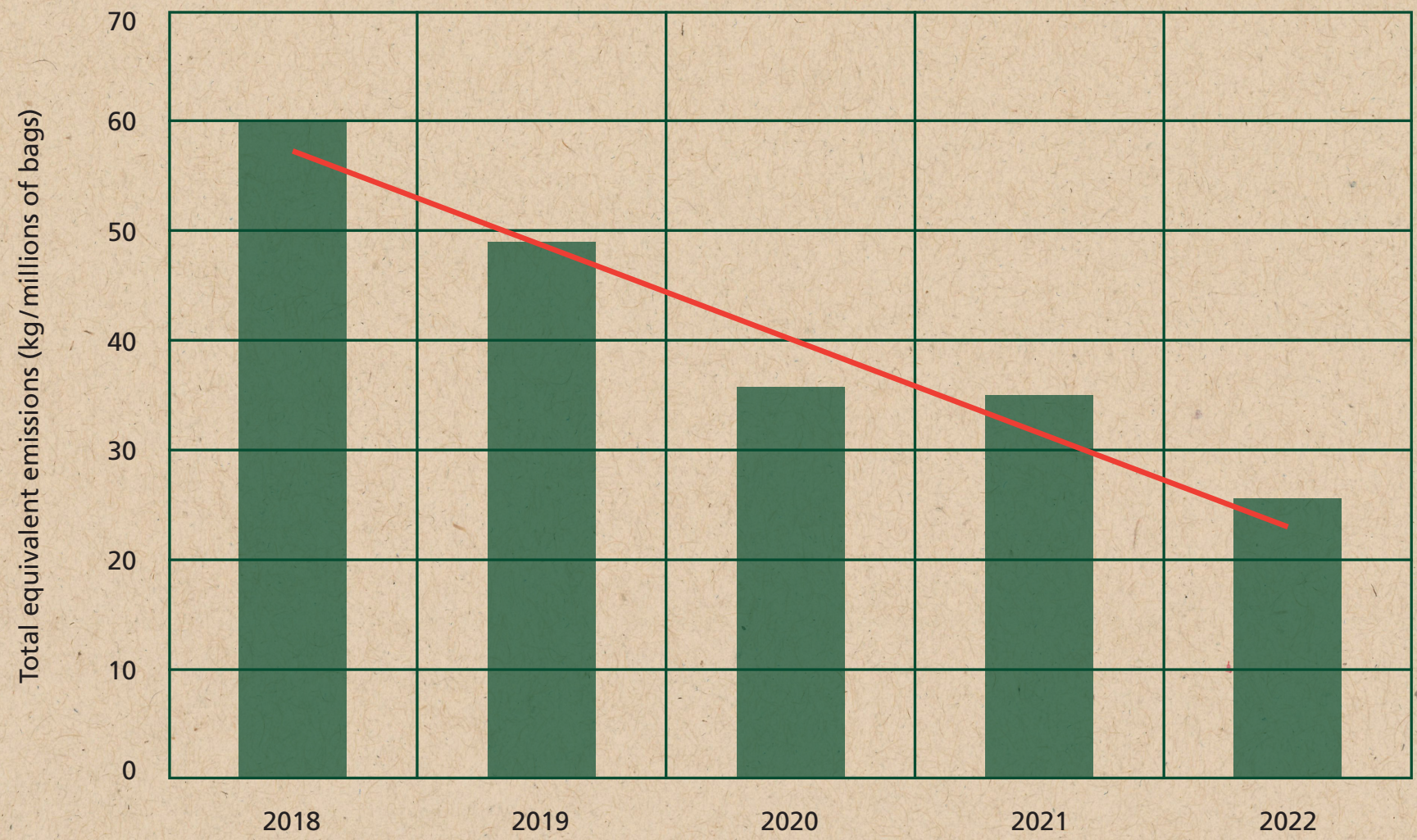
We use additives such as isopropyl alcohol (IPA) extremely sparingly and consider sustainable alternatives, as incorrect handling or disposal of IPA can be harmful to both the environment and human health. When manufacturing paper bags, we focus actively on favouring the paper as a printing surface rather than the transparent film. This enables us to significantly

reduce the use of inks containing volatile organic compounds (VOCs), which can have a damaging effect on people and the environment if exposed to the air.



**Trend:**  
kg of VOC per million bags

— Linear (total equivalent emissions)  
● Total equivalent emissions



We consider it extremely important to handle chemicals and other materials in an environmentally friendly manner during our printing process. Our printing ink containers and other sources of chemical waste are picked up and correctly disposed of by specialists. We also make consistent efforts to separate different materials and ensure everything is disposed of properly.

In the offset printing process, we work with a system of reusable cleaning cloths. In 2022, we had 17,140 cloths in our cycle and washed 830 kilograms of soiling out of them.

Our Equinox technology also significantly reduces the need for frequent ink changes, resulting in a considerable increase in machine productivity while simultaneously reducing ink costs and accelerating production times. As we are also able to create more complex ink mix-

We offer our clients products that have been printed with climate-neutral credentials, one example being our Nature product line. As part of this, we have been able to offset the carbon emissions of the energy and materials we use through the Luangwa Community Forests Project for climate protection in Zambia, which is creating a green belt for climate protection and species conservation purposes. The project is being executed in close partnership with the country's forest and national park authorities, and is currently providing conservation efforts for a forest area of around 766,000 hectares in the Luangwa Valley. The second stage of the project will see the protected area increase to more than three million hectares!

tures directly on the printing device using multiple inks in the printing process, there is no need for separate cleaning stages.

A few years ago, we introduced a program for simplifying and accelerating offset plate manufacturing, and making it more sustainable. As part of this, we optimised CTP plate imaging and switched from conventional thermal plates that used wet chemical processing to KODAK SONORA process-free plates. This allows the printing machines to create their re-



\*natureoffice.com/CH-077-608890

quired plates quickly and easily, eliminating the need for plate processing systems, curing ovens, process chemicals, electricity, and water. We are also reducing waste and no longer require measurement, inspection, and maintenance processes.



## Refining

The rinsing water we use during the varnishing stage is collected and professionally added to an organic recycling process by a disposal company.

By doing this, we make sure we are handling water carefully and avoiding any unnecessary strain on wastewater treatment facilities.

## Production

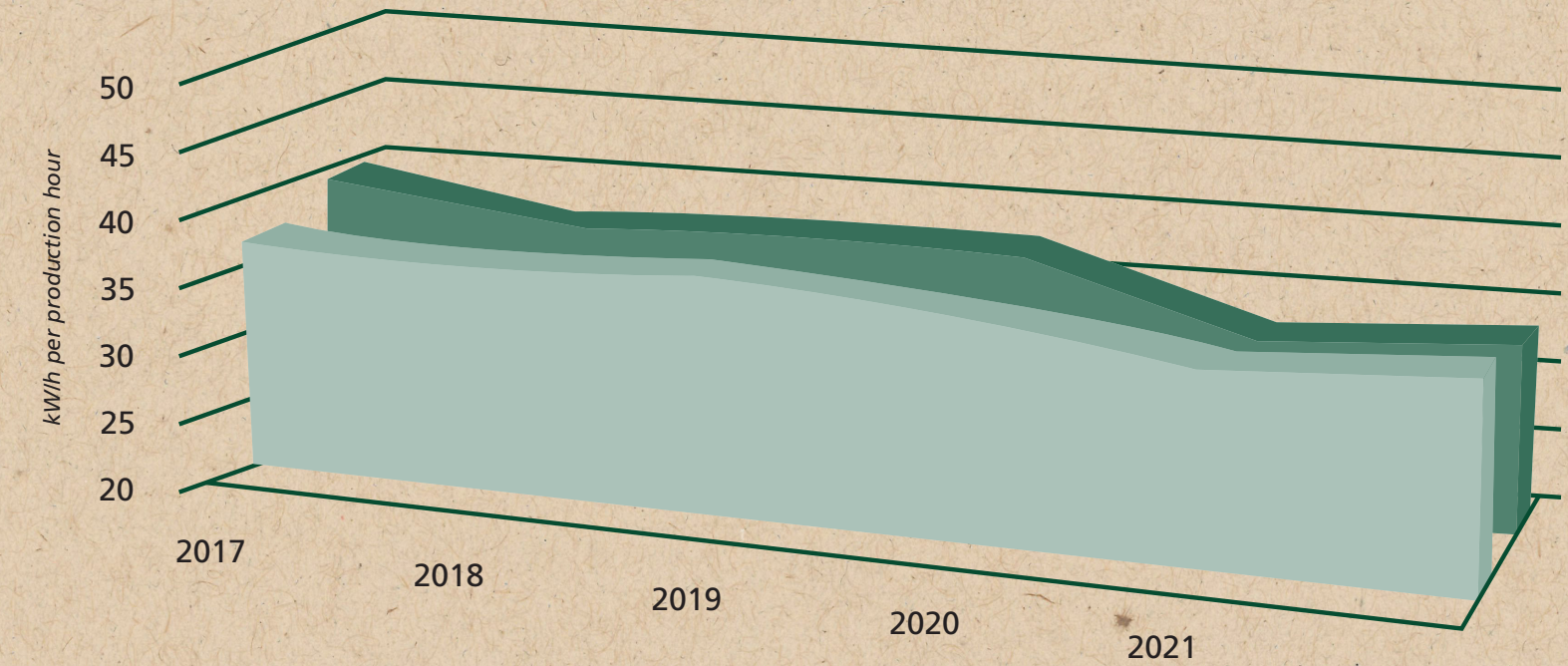
We separate our waste carefully and ensure it is recycled wherever possible.

In the reporting year, 988 tons of cardboard and paper were sent for recycling – equating to 66 percent of the entire quantity of PAWI Group waste that was sent for recycling.



## Trend: electricity consumption at the Winterthur site

- Electricity consumption
- Target



## Energy

**At our site in Winterthur, Switzerland, we use eco-friendly electricity generated entirely from hydrogen.**

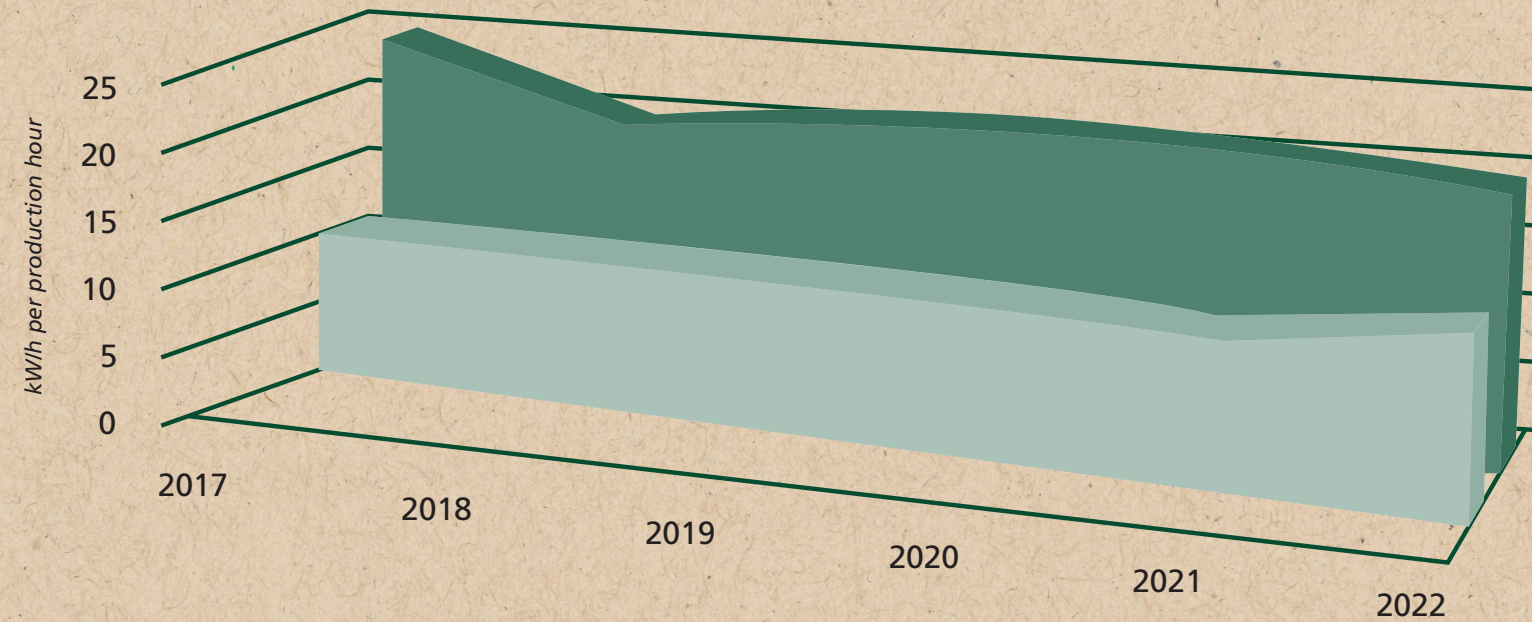
By introducing additional technical measures and reforms (such as switching to LED lighting), we have managed to keep our electricity consumption figure for 2022 low at 2,263,379 million kilowatt hours. Where gas and water consumption was concerned, we used 677,445 kilowatt hours and 3,249 m<sup>3</sup> respectively.

In 2023, we will be connecting to the city of Winterthur's district heating network. This will bring our gas consumption down to zero – and eliminate our use of fossil fuels as a result. Another advantage of using Winterthur's extensive heating plant is that it optimises energy supplies at every time of year. There will also be a photovoltaic facility installed across our entire roof space.



**Trend:  
electricity consumption  
at the Singen site**

- Total electricity consumption
- PV electricity production



In Singen, Germany, we cover more than 60% of our energy demand through our modern photovoltaic facility. Using its integrated solar cells, the facility converts light energy into electrical energy that is then used to generate power – a huge contribution to creating packaging sustainably.

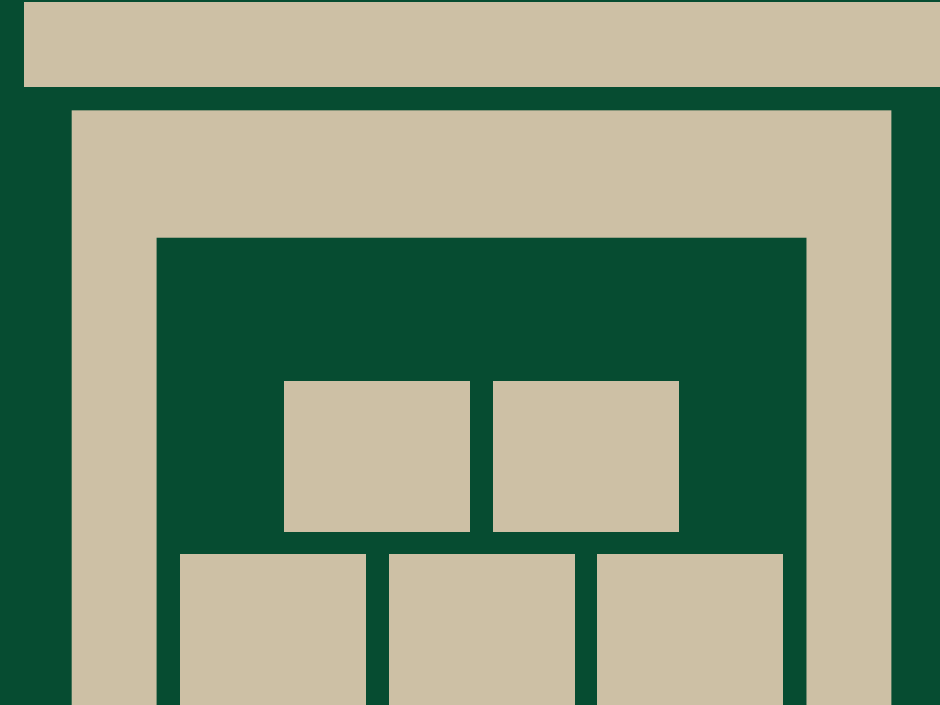
We are also committed to sustainable mobility, something that has led us to install electric charging stations at our premises in Singen. This allows us to offer our employees and visitors alike a convenient, eco-friendly location for charging their electric vehicles.

### Storage

**To find more sustainable solutions for storing and transporting our products, we are increasingly turning to reusable boxes.**

After delivery, the boxes are retrieved, cleaned, and prepared for their next use. This not only reduces waste, but also minimises the environmental impact that is created in comparison to manufacturing and getting rid of disposable pallets.

To improve our contribution to energy efficiency, at the end of 2022 we replaced the outdated control system and electric motors used in our high-bay warehouse. Swapping out this equipment has achieved a significant reduction in the amount of energy consumed by our warehouse, something that has also had a positive impact on our operating costs.







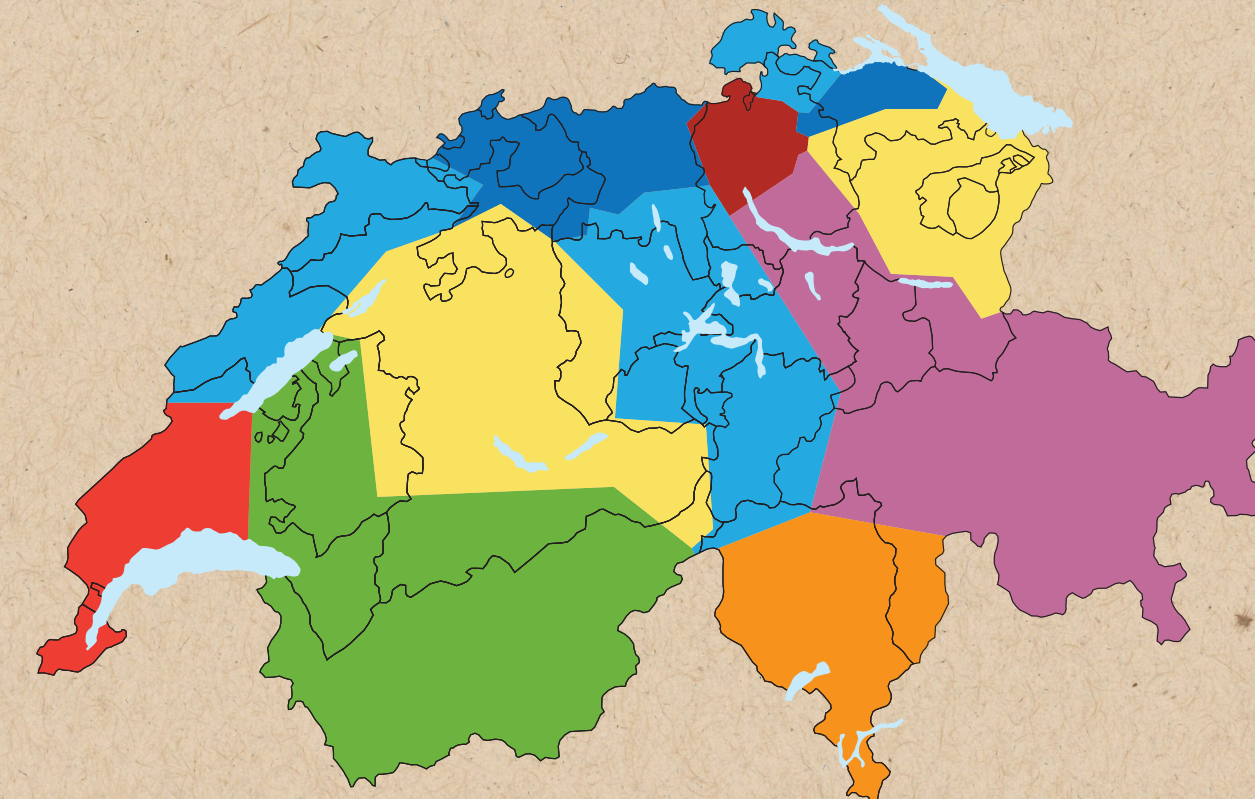
### Logistics





**Our seven lorries comply with the very latest and strictest regulations concerning engine management (the Euro 6 standards).**




To keep them running efficiently and ensure our transport methods are as sustainable as possible, we always load them up to the maximum volume. After delivery, we then pick up raw materials, auxiliary materials, and merchandise from our partners rather than drive back with empty containers.

Our drivers attend annual training courses that cover subjects including sustainable driving, helping to reduce pollutant emissions and fuel consumption.

To make our transport logistics greener and more efficient, we send small quantities by post, which in turn means we can reserve our lorry resources for what they do best – transporting large quantities.



-  Daily external transports
-  Tuesday
-  Tuesday and Wednesday
-  Tuesday and Thursday

-  Wednesday
-  Thursday
-  Thursday and Friday
-  Friday

Our fleet of forklifts features the very latest battery technology, which charges efficiently and is sustainable to run. If necessary, it is also possible to simply replace the battery and leave the rest of the forklift unchanged if it is otherwise in good condition. This minimises the need to purchase new forklifts and makes our fleet more sustainable.



*“I stay alert to everything that’s happening when I’m walking through our production facilities every day, so that I can identify challenges and work with the team to develop solutions.”*

*Christian Holzer, Packaging Developer*

### Process management

**Our ongoing efforts to optimise packaging is one of the keys to ensuring efficient production and saving energy.**

By improving our packaging design, for example, we can make our production processes run more smoothly and cut machine running times. Using more lightweight materials is another method we employ in reducing energy consumption during production and transport.

### Quality management and training

**We feel a sense of responsibility towards end consumers when it comes to waste prevention, reuse, and composting.**

For that reason, we regularly publish articles containing information on how end consumers can reuse or recycle food industry packaging materials, thus encouraging an eco-friendlier approach to disposal. We also consider the compostability of our products to ensure they can be disposed of using green methods at the end of their lives.

# OUR SPECIFIC MEASURES IN 2023

(not an exhaustive overview)

**We intend to begin producing our white cake underlays using coated, unbleached kraft cardboard made from virgin fibres.**

This will allow us to save around 30 tons of cardboard. We will also be using a food-safe, low-migration barrier coating that repels both grease and water, saving around 4,8 tons of plastic coating and creating reductions in both transport weight and, therefore, carbon emissions.

We will be connecting to the city of Winterthur’s district heating network, bringing our gas consumption down to zero – and eliminating our use of fossil fuels as a result. Another advantage of using Winterthur’s extensive heating plant is that it optimises energy supplies at every time of year. Additionally, we will be conducting extensive renovation work on the roof spaces at our Winterthur site, something that will not only enhance the outer appearance of our three buildings, but also create a significant improvement in en-

ergy usage. The new roofs will be equipped with state-of-the-art technology, creating better heat insulation, and allowing us to reduce our heating costs as a result. There will also be a photovoltaic facility installed across our entire roof space.



# WHAT PACKAGING WILL NEED TO ACHIEVE IN THE FUTURE

Source: EPR compact GmbH & Co. KG

**Proportion of recyclates**  
in plastic packaging

**Recyclability**  
of all packaging

**Material restrictions**  
Basic requirements  
for packaging



**Compostability**  
including requirement for stickers  
attached to fruit and vegetables

**Minimisation**  
of weight and volume based on  
defined performance criteria

**Reuse/multiple use**  
Encouragement of reuse,  
deposit schemes & refills



*“As we move into the future of packaging, we will continue to engage in the perpetual process of optimisation.”*



# DID YOU KNOW?



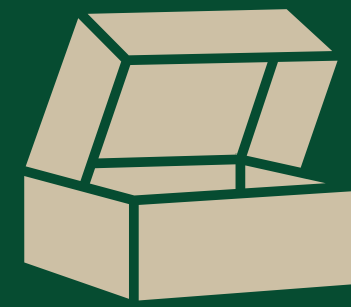
Cardboard and paper purchased by the Group:

**8,006 t**



Number of stock picks at Winterthur:

**165,000**



Number of folding boxes produced by the Group:

**115 Mio.**

*500,000 per working day*



Number of trays produced at Singen:

**32 Mio.**



Number of orders processed by the Group:

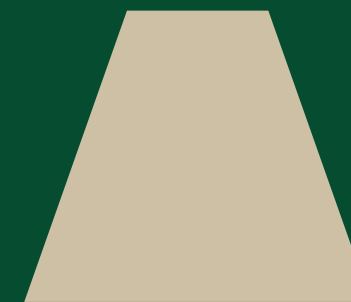
**11,638**



Number of paper bags produced at Winterthur:

**238 Mio.**

*1,1 million per working day*



Number of blanks produced at Singen:

**121 Mio.**

*550,000 per working day*



Number of kilometres driven by the Group:

**440,000**

*14,400 by electric vehicles*







