Bischof+Klein®

Environmental Statement 2022

Living sustainability

www.bischof-klein.com

Contents

Economy – our family-owned company

Ecology – our environmental responsibility

All figures in tons (t) in this document are metric tonnes.

Our company. Our commitment.

We are transforming product protection. For a future worth living in.

Shaping the future **sustainably**

Bischof+Klein has a long tradition of sustainability. Our family-owned company is a recognized specialist in the field of resource-efficient product protection and a trailblazer in environmentally-friendly production processes. We are actively involved in structuring the future with our pioneering spirit and feel for the market. Bischof+Klein develops innovative and high-quality products, from gossamer-thin portion packaging and large, protective packaging for the consumer and industrial sectors up to and including complex special films for technical applications.

Together with its subsidiary, Bischof+Klein Extrusion SE & Co. KG, Bischof+Klein SE & Co. KG has production plants in Lengerich and Konzell. The central departments that operate for both locations belong to Bischof+Klein Holding SE & Co. KG. Further Bischof+Klein production plants are located in France, the United Kingdom, and Poland.

The GROUP employs a total of around 2,800 staff and supplies its products to trade and industry around the world on the basis of its strong international sales network. Bischof+Klein is wholly owned by the founding families. There were no changes to the company's form during the 2022 reporting year.

Employee figures **2022**

LENGERICH *	KONZELL *	SUBSIDIARY COMPANIES *
1,445 persons	**785** persons	**607** persons

* Status: 2022/12/31 including trainees

Bischof+Klein **Lengerich**

Bischof+Klein's company premises are situated at the southern edge of the town of Lengerich on the Lohesch industrial estate and border a residential area to the west. The nearby A1 and A30 interstate highways ensure good long-distance transport links. Without exception, all goods are delivered and shipped via the industrial estate and the southern beltway, the feeder road to the interstates. The "Intruper Berg" and "Lengericher Osning" nature conservation areas are both located in close proximity to the plant; a drinking water protection area is situated approximately 1.3 kilometers to the west of the plant.

Main production

Industrial packaging for:

- Agriculture and horticulture
- Construction
- Chemicals + petrochemicals
- House + home
- Food

Consumer packaging for:

- Hygiene + care
- Food
- Pet products
- Detergents + cleaning materials

Specials:

- Pharmaceuticals + medicine
- Metal + plastic surfaces
- House + home
- Tapes + liners

Bischof+Klein **Konzell**

Bischof+Klein's subsidiary plant in Konzell (district of Straubing-Bogen) is located to the northeast of the community's center in an industrial area with neighboring, rural settlements. All goods and commercial transportation is carried out via the A3 interstate and via federal highway B20 from Straubing. Konzell forms part of the Bavarian Forest nature park, which lies adjacent to the "Bavarian Forest national park" nature conservation area to the east.

Main production

Industrial packaging for:

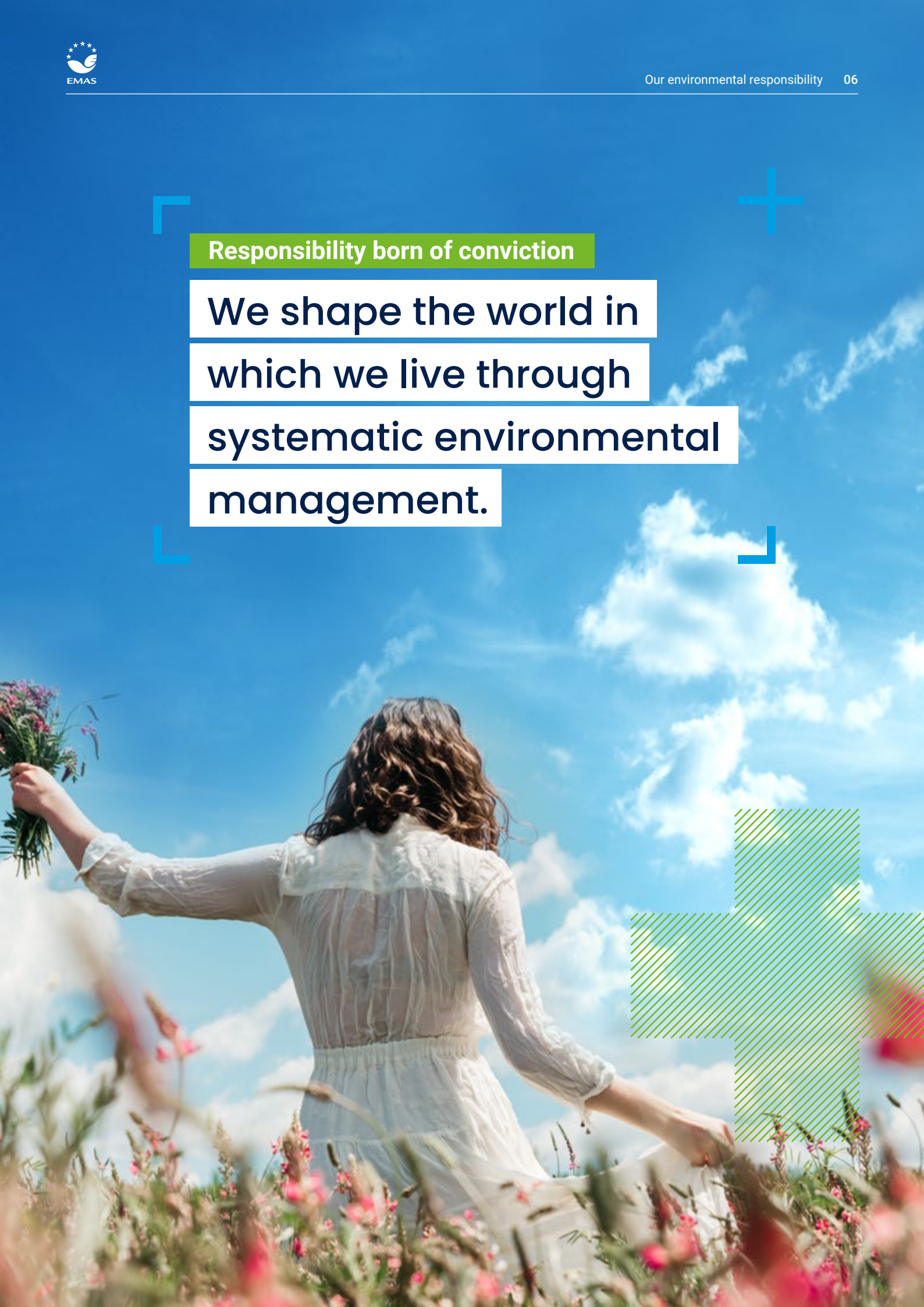
- Chemicals + petrochemicals

Consumer packaging for:

- Hygiene + care
- Food
- Pet products
- Detergents + cleaning materials

Responsibility born of conviction

We shape the world in which we live through systematic environmental management.



Systematic environmental protection

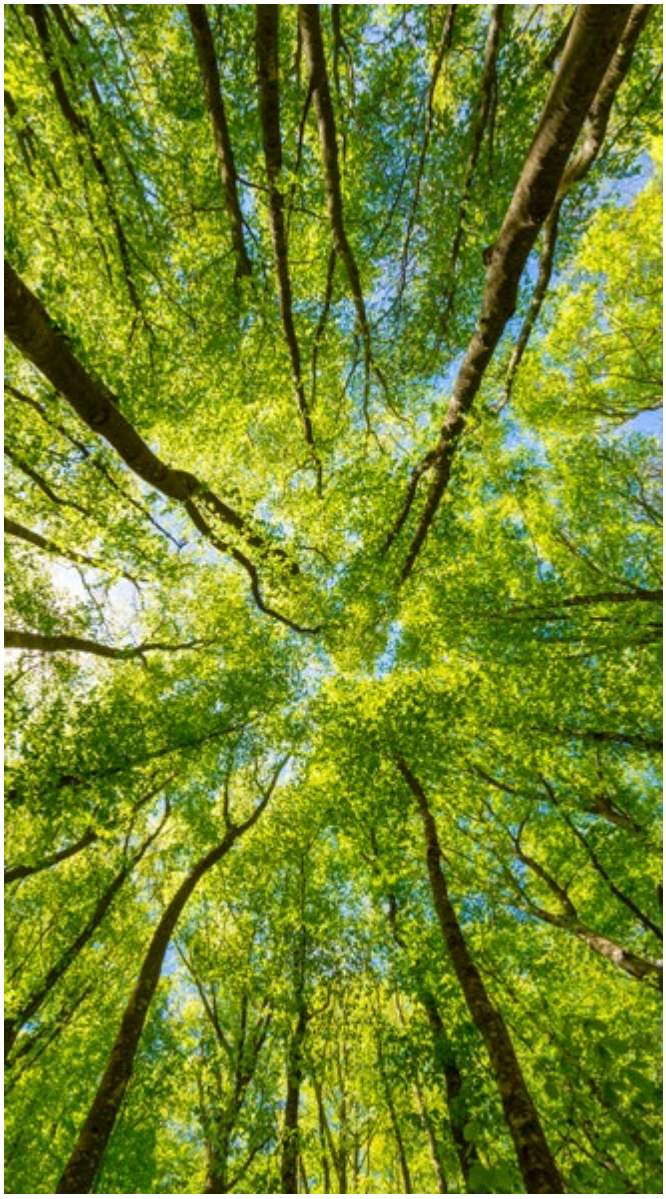
Active and systematic environmental protection has already been a central element of our corporate strategy since 1985. Our company's consistent environmental policy helps us to achieve our objective of a sustainable and environmentally sound corporate organization. This environmental policy is based on substantial investment in modern technology and the continuous improvement of our processes for the benefit of our environment.

Over 25 years ago, in 1995, the Environmental Audit Act was enacted in Germany to establish the bases for the EMAS. The EMAS is the EU regulation concerning the voluntary participation of organizations in a community environmental management and corporate environmental auditing system that came into force in 1993. Bischof+Klein took part in it from the outset and has its environmental performance audited each year as part of the EMAS system.

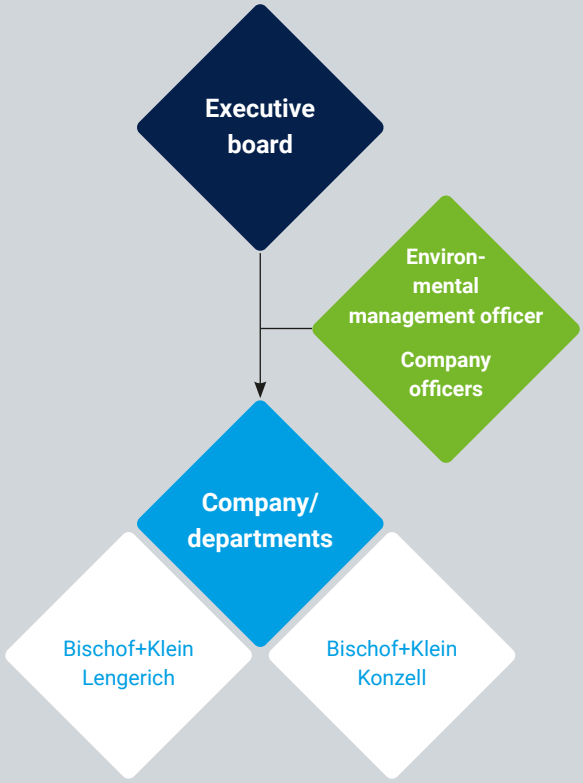
The environmental management system that Bischof+Klein has introduced for this purpose at Bischof+Klein Lengerich was successfully audited for the first time by an independent expert back in 1996. The first EMAS audit at Bischof+Klein Konzell took place in 1999. In 2002, the corporate environmental management system was extended by the element of occupational health and safety. Changing environmental specifications necessitate continuous and systematic analysis of the requirements on corporate operations and their implementation in specific, binding obligations.

Besides full process documentation, the Bischof+Klein environmental management system also encompasses the definition of responsibilities and control mechanisms at departmental and corporate level. The EMAS amendments in 2017 and 2018 again led to the specific expansion of the environmental management system, focusing on four areas that form the basis of the materiality assessment for environmentally-relevant topics:

+ Effects that the company's environment can have on its success (context of the organization; see also glossary, page 30)
+ Stakeholders' expectations and requirements of the company
+ Analysis of the environmental impacts that upstream or downstream sections of Bischof+Klein products' life cycles have
+ Assessment of opportunities and risks



Bischof+Klein **environmental organization**



Committed to shouldering and coordinating responsibility

The Bischof+Klein executive board is accountable for the environmental management system and responsible for its effectiveness. It provides the necessary funds and appoints the environmental management officer, who reports directly to the executive board. Together with the environmental officers and work safety specialists, he advises the executive board, the divisions, and the specialist departments on environmental and safety issues. The environmental management officer also takes part in the operational managers' meeting. Environmentally-relevant topics are discussed and evaluated there each month together with the plant managers and the heads of the logistics and quality assurance departments.

The effectiveness of the environmental management system and the company's environmental performance are additionally subjected to a systematic evaluation once a year by the executive board in the management review. In 2022, all relevant legislative requirements were met in full at both Bischof+Klein locations.

Voluntary commitment: the Bischof+Klein environmental and safety policy

To us, environmental protection is more than just a legal regulation. We regard our common commitment to the environment and safety as a contribution to a future that is livable in every respect. We have therefore set down our self-obligation in specific guiding principles for all employees; these principles are written here verbatim.

It is anchored in our management system that we comply with all statutory requirements and binding obligations, actively maintain the natural bases of life, and protect and foster the health of our employees in the context of our commercial activities. To accomplish this, we pursue the following principles.

We assume responsibility for environmental protection.

The protection of our environment and continuous improvement of our environmental performance are two of our primary corporate goals. We therefore evaluate the environmental impacts of each existing and new task actively, voluntarily, and early on in all areas of the company. We regard legal regulations as the minimum requirement. We pursue more extensive requirements on the part of our stakeholders with the same intensity and implement corresponding organizational and technical measures at our plants or with our partners

We optimize processes and products from an ecological point of view.

Our production and the products that we manufacture impact on the environment. We avoid activities that place strain on the environment or reduce these wherever possible. We are particularly committed to using natural resources sparingly, and reduce harmful emissions wherever we cannot eliminate them entirely. This applies to both normal operations and emergency situations, for which we implement special contingencies.

We keep sight of individuals.

Each employee contributes to the success of the company. Our primary objective is therefore to protect and promote their health and ability to work. The legislator specifies a minimum set of regulations for achieving this. Implementing these forms the basis of our activities. With our own experience and ideas, we additionally ensure that our workplaces are designed safely and that the health and performance of our employees are fostered.

We meet the requirements of our stakeholders with the same intensity as we comply with legal regulations.

We involve our employees.

Corporate environmental and health protection as well as safety are particularly successful if all employees are involved and are personally responsible for working towards them. We promote this through corresponding motivation, training, and further training offers as well as idea management. Practiced by all members of staff, foresighted behavior, mutual consideration, and helpfulness contribute to achieving a clean, safe, and friendly working environment.

We talk to others and act together.

Environmental protection necessitates open dialogue with the company's environment. Based on mutual trust, we seek contact with our business partners, the authorities, research and educational establishments, our neighbors, and the general public. In the past, activities that we have developed and implemented together with these partners have led to a number of new incentives for additional environmental commitment. We therefore believe that acting together will continue to make an important contribution towards improved environmental protection.

We harmonize ecology and economy.

Economy and environmental protection are not mutually exclusive. Instead, they complement and reinforce one another. We are convinced that outstanding environmental protection performance, regarded in the long term, will improve our chances against the competition. Our voluntary environmental protection activities are targeted specifically at those measures that are also economically sensible or which have a particularly positive impact on the protection of resources.

We review all steps in practice.

With a comprehensive environmental and safety management system, we coordinate and review our self-imposed goals. We use the system intensively to keep an eye on our performance and constantly continue to improve it.

Everything in view

Environmental aspects throughout our products' life cycles

What effects do our corporate processes have on the environment? In the context of the EMAS specifications, the approach to answering this question is set out clearly in advance:

+ Description of all relevant direct and indirect environmental aspects that lead to significant environmental impacts
+ Description of the procedure for defining the significance of the environmental aspects
+ Explanation of the impacts that the described environmental aspects have

To comply with these specifications, the Bischof+Klein environmental management officer has undertaken a comprehensive analysis together with the environmental officers at Bischof+Klein Lengerich and Konzell and the responsible member of the executive board. This analysis was focused on all direct and indirect environmental aspects throughout the life cycle of our products. The results form the basis for the activities and measures in the context of our environmental management system. The high significance of product-related impacts has been increasing consistently since the re-evaluation in 2019.

Determination and evaluation of environmental aspects

1 Recyclability of Bischof+Klein products
2 Raw materials – fossil
3 Raw materials – recyclates
4 Raw materials – renewable
5 Auxiliary materials
6 Energy – electricity/gas/oil
7 Water
8 Wastewater
9 Waste – hazardous/nonhazardous
10 Risk of (environmental) emergencies
11 Emissions – pollutants
12 Emissions – noise
13 Emissions – odor
14 Shocks
15 Radiation
16 Transportation/traffic
17 Effects on biodiversity
18 Product-related effects*
19 Effects/behavior of service providers/external companies (e.g., maintenance)
20 Recycling for raw material production

* Re. point 18: Product-related effects refer to: environmental impacts caused by product losses, recyclability of the empty packaging, environmental pollution caused by improper disposal of packaging waste (marine litter), etc.

Environmental aspects*

Process	Description	Significance
Product development and design (indirect) 	The development departments design the product, in close coordination with customers in some cases, to optimally protect the packaged product. Suitable raw materials are tested on laboratory systems, Bischof+Klein production lines, and customer lines (e.g., filling lines) in close coordination with suppliers.	Recyclability, fossil raw materials, recyclates, energy, waste, product-related effects
Raw material procurement (indirect) 	The central purchasing department procures raw materials in coordination with the sales, development, and production departments. The main raw materials are polyolefins, produced using crude oil constituents.	Fossil raw materials, recyclates, transportation/traffic
Extrusion – film production 	PE granules are melted and homogenized in an electrically heated extruder. After emerging from the nozzle, the plastic solidifies on water-cooled rollers or by means of air cooling. The melt can either be blown out in the form of a tube via annular nozzles (blown film extrusion) or cast in the form of a flat sheet via wide-slit nozzles (cast film extrusion – Lengerich only).	Recyclate, fossil raw materials, energy, noise emissions
Gravure and flexographic printing 	Printing of paper or plastic with up to ten solvent-based or water-based colors using gravure printing (Lengerich only) or flexographic printing. The energy required to dry the ink is provided by production/heating oil which is heated primarily by a heat recovery system or – if further energy is required – using gas- or oil-fired boilers. All printing presses are subject to mandatory approval according to the Federal Immission Control Act (BImSchG).	Fossil raw materials, energy, emissions, waste, risk of (environmental) emergencies
Lamination/ coating – production of laminates/surface protection films 	Depending on the intended purpose, material sheets are bonded using solvent-based, solvent-free, or water-based adhesives (adhesive lamination) or molten plastics (extrusion coating – Lengerich only) to manufacture holohedral laminates. The adhesive or surface protection films are manufactured via the holohedral application of a solvent- or water-based adhesive onto a plastic film. The lamination and coating lines are subject to mandatory approval according to the Federal Immission Control Act (BImSchG).	Fossil raw materials, energy, emissions, waste, risk of (environmental) emergencies

Process	Description	Significance
Conversion	Mono films and laminates in the form of material on reels are adapted to customer requirements by cutting or sawing, or are processed to produce single- or multi-ply sacks and bags. The material sheets are formed into packaging on special machines by means of sealing, lasering, or gluing.	Waste, energy
Warehouse	Raw materials, semi-finished, and finished products are stored in various warehouses at the plants. Solvent-based raw materials and other hazardous materials or hazardous waste are stocked in specially protected areas or tank farms. Storage tanks for liquefied gas are additionally located in both Lengerich and Konzell.	Risk of (environmental) emergencies
Air scrubbing	Solvent-contaminated exhaust air from the drying processes is cleaned in thermally-regenerative oxidizers. In Konzell, a concentration wheel (duplex system) ensures constant and optimized combustion conditions in the air scrubbing system. At both plants, part of the energy which is released is recovered and used to heat the production/heating oil or for heating buildings. The emission limit values of the underlying permits apply and are monitored using measuring technology.	Emissions, energy

Process	Description	Significance
Recycling system	Production of recyclates from mono film residues (Lengerich only).	Energy
Central supply facilities	Bischof+Klein operates gas- and oil-fired heating systems in Lengerich and oil-fired heating systems in Konzell, a central compressed air generation system at both plants as well as cooling circuits and humidification systems for machines and hall areas.	Energy, water, noise emissions
Transportation/traffic (indirect)	Service providers usually deliver raw, auxiliary, and process materials to the plants by truck. They use specific approaches defined away from residential areas to do this. Bischof+Klein uses industrial trucks with gas or electric motors for internal transportation between the production stages. Trucks are additionally used at Bischof+Klein Lengerich. Goods shipments are undertaken exclusively by haulage service providers. Due to poor local public transportation links, employees primarily use passenger cars to drive to work or – distance permitting – arrive by bicycle. Company cars are available for business trips. Use of local public transportation takes priority here as per the internal regulations.	Energy, emissions
Implementation of third-party services (indirect)	External companies and tradesmen perform servicing, maintenance, and construction work. Their employees are briefed on potential hazards and safety measures before starting work. This is confirmed by their signing a document. Bischof+Klein expects its contractors to provide well-trained personnel, something that is set down in the contract.	Effects of third-party services
Recycling/disposal of the products after use (indirect)	Once the end consumer has used it, Bischof+Klein packaging is sent for material or energy recycling via take-back and recycling systems (e.g., dual systems); this occurs in the majority of cases in Germany and is frequently the case in Europe. In some European countries and outside of Europe, packaging waste often ends up in landfill sites.	Recycling, product-related effects

This part belongs to Bischof+Klein SE & Co. KG.

This part belongs to Bischof+Klein Extrusion SE & Co. KG.

This part belongs to Bischof+Klein Holding SE & Co. KG.

* The production processes for manufacturing the packaging and films are described universally for Bischof+Klein SE & Co. KG at the Lengerich and Konzell sites and for Bischof+Klein Holding SE & Co. KG (administration and central departments).

Our performance

We optimize products and processes, focusing on the environment.

Environmental performance that shows possible solutions

We are leading the way in the sustainable protection of our environment: With our diverse environmental activities, we are transforming our responsibility as a producer of plastic packaging and technical films into specific measures – at both product and process level.

Worldwide pollution of the environment due to waste that has been disposed of improperly has been the subject of increased public scrutiny in recent years. Increasing volumes of waste consisting of materials such as glass, metal, paper, plastics, or laminates are leading to problems in the oceans and on land. Due to their use in cosmetics or as a result of tire wear, large quantities of microplastics are also entering the environment and, in a second step, the food chain. Plastic packaging is also part of the global waste problem – which Bischof+Klein is actively helping to solve with various ideas, measures, and services as well as extensive commitment. We evaluate our environmental performance according to the categories of “product responsibility” and “energy and emissions” and also according to the further aspects of water consumption, noise protection, traffic, and contingency planning. These are shown in the following, broken down into the areas of “products” and “processes.”

Environmental performance in the **product area**

Product responsibility: optimum material usage and recycling

Today, around 1.5% of the crude oil and natural gas consumed in Western Europe are used for the production of plastic packaging materials. This results not only in an enormous volume of materials but also in a huge responsibility to use these resources in an efficient and environmentally friendly manner. At Bischof+Klein, we therefore regard plastic as a valuable raw material rather than an expendable material. Based on this fundamental attitude, we are dedicated to handling plastics in a conscious, responsible manner. We are committed to ensuring that the circular economy in this sector is constantly being expanded and fostered – in order to use plastic with increasing efficiency and simultaneously minimize the resulting impacts on the environment. Bischof+Klein is also committed to the objective of sustainable product development at association level.

Advantage of flexibility

Flexible plastic packaging is consistently lighter and smaller than packaging manufactured from rigid or other flexible materials. This means that less raw materials are required for production and more packaging can be fitted in a transportation unit.

The Twister Plus®, a patented design for tissue products that significantly reduces (new) material consumption, is a prime example. The film thickness is now only around 25 µm with consistent ultimate tensile strength. This has enabled a 35% reduction in the amount of PE plastic used compared to commercially available consumer packaging. The weight, which is low in any case, is reduced by an additional 10% thanks to the newly developed handle shape.

The U-Pack® with divided carrying handle, which has won the German Packaging Award, is ideal for demanding dry products in the pet food, pet care, agriculture & horticulture, and food sectors as well as in additional markets. Numerous bag features enable high comfort during transportation and handling. In the new design, the handle is slitted in the middle and no longer has to be folded. The side gusset no longer gapes open and the concertina effect is eliminated entirely.

U-Pack® reduces pallet storage spaces by up to 20%.

The reduced material build-up means that a pallet can now be loaded with 20% more bags. With a conventional 10-kg format, approximately 2,000 units of the U-Pack® with divided carrying handle can be packed on a pallet (previously only 1,680). This leads to up to 20% fewer storage spaces and fewer truck loading meters along the supply chain and during transportation. The product protection and high recyclability offered by the U-Pack® remain unaffected by this change.

In the Industrial Packaging division, we were able to significantly reduce the amount of material used in the outer layer and the inflow strip for the PowFlex® ffs during the reporting year. Another plus: Thanks to process optimizations, resources in the printing department will be saved and the carbon footprint reduced in the future.

Fostering the circular economy

The likelihood of increasing statutory requirements such as those resulting from the draft version of the EU Packaging Regulation again led to a further rise in demand for a recyclate content and recyclable packaging in 2022.

Although Europe is not regarded as a significant, direct source of marine litter, Bischof+Klein is aware of its global responsibility as an important, local manufacturer of plastic packaging. Our customers' demand for sustainable products that are recyclable and/or manufactured with recycled materials has increased sharply. We are responding to this trend by developing recyclable packaging solutions and increasing our use of recyclate. We aim to have adapted over 70 % of our consumer packaging by 2024. We are therefore making a crucial contribution to the sustainable circular economy.

This includes the following current examples:

Successful with **new recipes**

With its new TacFlex® 900 series high-tech surface protection film, Bischof+Klein is offering an adhesive-free and recyclable film that meets every desire for demanding surface protection.

So far, adhesion values like those offered by this new development have only been possible with adhesive-coated films. A special recipe in the adhesion layer is now extending the range of uses of adhesive-free films.

The innovative films are deformable up to a maximum temperature of 180 degrees Celsius. They offer very good edge adhesion during mechanical processing and are also suitable for sensitive painted or unpainted surfaces as they are very low in specking.

Development of **recyclable laminates**

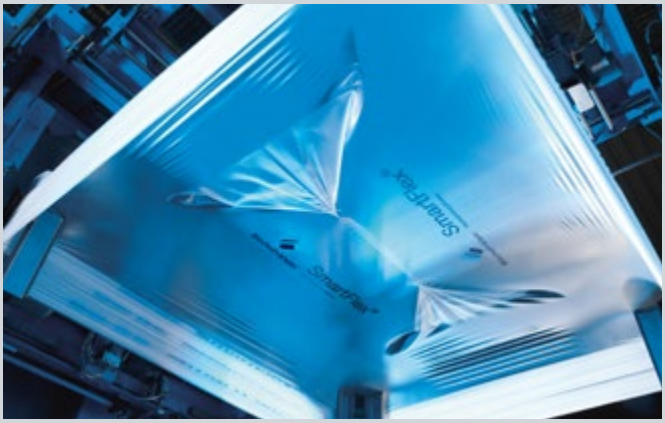
Bischof+Klein is offering a milestone on the road to fully-recyclable packaging solutions for a sustainable circular economy in the form of its high-volume stand up pouches (capacity of up to 3 l) based on mono PE. The challenge of developing a PE-based laminate that can cope with the same stresses as a polyester laminate was outstandingly overcome by the development team. This has laid the foundation for a new Bischof+Klein standard. The high-capacity stand up pouches can be printed using both the flexographic and the gravure printing methods and laminated without the use of solvents. They are suitable for all non-food sector products such as detergents and cleaning materials and technical oils, for instance.

Development **of flexible packaging made of recycled plastics**

Our research engineers are constantly working to extend our range of polyethylene packaging and film solutions containing recyclate. This is being done in both the consumer and the industrial sector. With intensive supplier qualification and specific material selection, the required product quality can usually be maintained even when the recyclate content is increased. The amount of recyclate used in Lengerich and Konzell together was increased to 3,941 t in 2022 (2,216 t in 2021). The Twister Plus® scores points in this respect as well. During the 2022 reporting year, we manufactured the Twister Plus® with up to 60 % PCR, thus replacing around 500 metric tonnes of new material with PCR.

One example from the industrial sector is the patented PowFlex®. The PowFlex® ffs film and the PowFlex® vs converted valve sack also offer sift-proof packaging for finely powdered products. The 100 % PE plastic packaging is recyclable by type and enables the use of up to 50 % recyclate. The PowFlex® solutions offer significantly better product protection compared to conventional paper packaging: Thanks to the use of PE and our patented ventilation systems, we are able to achieve vastly better moisture protection. The clever design of PowFlex® ffs enables full-surface printing on the front. The simplified sack handling reduces product loss.

An additional highlight from the industrial sector is the use of recyclate in SmartFlex® stretch hood films. These pallet protection films can be manufactured with up to 30 % recycled material. The high elasticity and sealing performance requirements are met in full.



Renewable raw materials as an opportunity

Growth in the use of granules based on renewable raw materials proved sluggish in 2022 as well, but remains an option for the future. Following various tests, polyethylene based on sugar cane appears to have the greatest potential, at least in technical terms. The advantage of this material is that it can be sent for material recycling after use via the existing take-back and recycling systems. However, it must generally be noted in the environmental balance of renewable raw materials that their cultivation may compete with that of foodstuffs and feeds.

This is also the case for biologically degradable, renewable raw materials such as starch or polylactic acid (PLA), which can also be processed to produce packaging materials at Bischof+Klein. Take-back and recycling systems are still lacking. The material may even disrupt the existing recycling processes; in combination with the high prices of the raw materials, this often causes customers to shy away from using them intensively.

Environmental performance in the **process area**

Sparing resources through raw material cycles

Using resources sparingly, recycling residual materials wherever possible, avoiding emissions, saving energy: This is the principle according to which we structure production processes and the world of work at Bischof+Klein.

Material cycles at both Bischof+Klein Lengerich and Konzell are closed thanks to the distillation of printing ink and solvent waste. The solvent recovered in this way is primarily used for cleaning machines and parts. In the reporting year, 3.3 % of requirements in Lengerich (2021: 3.8 %) and 21.3 % in Konzell (2021: 21.8 %) were met with recovered solvent. Natural gas was also saved in Lengerich by injecting recovered solvent into the air scrubbing system.

We record nonhazardous production waste separately in a collection system encompassing 28 material groups so that they can be recycled properly. This detailed recording enables a high recycling rate of over 98 % in Lengerich and 96 % in Konzell. In Lengerich, parts of the polyethylene production waste are processed internally to produce recyclate and then sold on the secondary raw materials market. We exclusively forward hazardous waste to certified specialist disposal companies according to the statutory requirements. The rate of material recycling during the reporting year was 72.1 % in Lengerich (2021: 72.5 %) and 85.7 % in Konzell (2021: 86.4 %).

+ The recording of non-hazardous production waste in a collection system encompassing 28 material groups enables proper recycling

Under consideration of the German Commercial Waste Ordinance that was amended in May 2022, the separation rate in Lengerich was approximately 83 % and 92.3 % in Konzell according to the expert report. From May 2022 onwards, the residual waste from Lengerich was accordingly sent to an approved pretreatment plant.

Recycling of Bischof+Klein waste in 2022

Bischof+Klein Lengerich in %

Material recycling	72.1
Energy recycling	25.9
Disposal	2.0

Bischof+Klein Konzell in %

Material recycling	85.7
Energy recycling	10.5
Disposal	3.8

Cleanliness and care as a prerequisite

We motivate our employees to carefully separate waste, use resources efficiently, and protect the environment:

+ Participation in the association initiative “zero pellet loss”
+ Technical measures that prevent granules used in production from entering the environment
+ Bischof+Klein again organized a clean-up day in 2022. Garbage in the public area around the plant premises was collected by the trainees and employees. The neighboring local senior high school was once again recruited to take part in the campaign. Its pupils collected waste in the area surrounding the school and on the paths leading to Bischof+Klein. A presentation on the topic of “marine litter” was also held by Bischof+Klein.

Diverse measures for reducing energy consumption

Each reduction in energy consumption makes a valuable contribution to climate protection. Processed centrally by the energy officers at the plants and our energy teams, and with the support of external service providers and institutions, our focus still remains set on:

+ Optimizing the use of cold and cooling water
+ Increasing the heat recovered from the air scrubbers
+ Using recovered heat as energy for drying or for generating low temperatures
+ Extending combined, plant-wide networks

Energy consumption throughout the company and the related emissions are being continuously reduced by means of ongoing process optimizations and various efficiency activities.

Bischof+Klein had set itself an energy saving target of 12,869 MWh (electricity, gas, power gas, and oil) within five years up to 2021 for Lengerich and Konzell, and also met this target. The effects of all individual measures were and still are continuously recorded. The original target was increased by 20 % to 15,443 MWh for 2022, the sixth year. A saving of 17,915 MWh was actually achieved at the end of 2022. The savings achieved from 2017 to 2022 therefore added up to an impressive 65,130 MWh. Based on consumption of around 848,598 MWh, this amounts to a reduction of 7.7 %.

Among others, the following energy efficiency measures were implemented in 2022:

+ Lengerich: The telephone switchboard and the repro department were connected to the administration heating system. Two gas boiler systems were taken out of operation. The annual energy saving will amount to around 200 MWh.
+ Lengerich: Measuring technology is being used to systematically trace and eliminate compressed air leaks. Compressed air losses of around 417 MWh were avoided during the reporting year.
+ Lengerich: In plant 1, the chillers in the central cooling system were replaced with more energy-efficient systems. An annual saving of around 1,800 MWh is anticipated.
+ Konzell: 58 MWh of energy were saved by further optimizing the hall cooling system.
+ Konzell: 100 % green electricity were also used in 2022.

Investments that reduce emissions

In order to move closer to our vision of solvent-free operations, we are continuing to gradually switch our production processes over to solvent-free printing ink and adhesive systems. Bischof+Klein is working towards minimizing diffuse VOC emissions when using solvents.

+ During the reporting year, the thermally-regenerative air scrubbing systems fell significantly below the legally specified emission limit value for carbon (daily average of C_{total} 20 mg/m³).
+ The number of water, electricity, and other media meters fitted at Bischof+Klein Lengerich was further increased in 2022. The initial network of 470 measuring points will be successively extended to 640 up to 2023.

As a further measure to reduce greenhouse gases throughout the company, Bischof+Klein introduced a bonus/malus system for the use of company cars back in 2011. The funds generated from the malus payments are donated to the "I Plant A Tree" organization. From 2011 to 2022, Bischof+Klein has financed the planting of a total of 13,340 trees in this way. Since 2020, Bischof+Klein has additionally been combining its Christmas greetings with a tree planting campaign. This digital Christmas card campaign again proved very popular in 2022. With an additional 322 trees for this action, Bischof+Klein has achieved the planting of a total of 14,073 trees and has so far bound 805 metric tonnes of CO_2.

Further environmental aspects

Water consumption: Water consumption in Lengerich increased moderately by 1,355 m³ or 5 % to 28,272 m³ in 2022 compared to the previous year. This was in-line with expectations following extensive optimizations in the area of the adiabatic hall climate control system in 2021. A very respectable reduction of around 22,000 m³ or 44 % compared to 2020 still remains.

Water consumption in Konzell fell significantly by 5,244 m³ or 26 % to 14,686 m³ compared to the previous year. This was primarily due to shutting down cooling towers.

The water required for production and the social areas at both plants is obtained exclusively from the local utility companies. Around 47 % of the water consumed in Lengerich and 37 % of that used in Konzell evaporate during air humidification in the plant halls or in the cooling processes. It is therefore returned, uncontaminated, to the natural water cycle.

Noise protection: As Bischof+Klein Lengerich is located in the immediate vicinity of a residential area, protecting residents from disturbances caused by noise is of particular importance here. Bischof+Klein is working continuously on a systematic noise baffling concept for which specialists are identifying noise emissions and their sources – for both new and existing equipment. There were no complaints from residents concerning noise in 2022.

Nor were any complaints about noise received in Konzell in 2022.

Traffic: The new packing facility with an automatic transport bridge into the LSL (Logistik Service Lengerich) finished goods warehouse entered operation from November 2021 onwards. With reference to full production capacity, up to 4,800 truck journeys between the production department and LSL were forgone in 2022.

Contingency plan: Bischof+Klein stores and processes numerous combustible materials, which necessitates corresponding contingency planning for emergencies

Fire alarm sensors, for instance, supply information to central hazard alarm systems and support comprehensive monitoring.

Universal sprinkler systems and gas extinguishing systems in relevant production and storage areas extinguish fires early on and therefore ensure a high level of fire safety.

Sewer shut-off systems and inlet covers plus absorptive materials at various points throughout the plant premises serve to protect the environment from escaping, water-endangering fluids. Our contingency concept and a constant standby team include well-trained employees and specialists from critical areas throughout the company. An extensive emergency folder containing checklists, contact persons, and overview plans is available.

In Lengerich, this information is made available to the standby team employees via the intranet, and also via the "Bischof+Klein to go" cellphone app since 2020. In 2022, hydrant function and performance tests, evacuation exercises, and emergency training courses were conducted in Lengerich and the evacuation alarm was tested throughout Bischof+Klein Lengerich. The annual fire department inspection was conducted with the entire Lengerich fire house and delegations from the Federal Agency for Technical Relief (THW) and the German Red Cross.

Transparency down to the last detail

We bear responsibility for our actions as a company. We therefore consistently monitor and document the parameters of material areas in which Bischof+Klein impacts on the environment.

Each year, we collate all quantitatively measurable environmental effects at our plants in the Bischof+Klein input / output statement. This serves as the basis for assessing our environmental performance. The statement is compiled using data from process data recording, meter and invoicing data as well as weighing slips. Direct greenhouse gas and pollutant emissions are determined using emission factors from the GEMIS database (version 5.0) on the basis of consumption figure measurements. Values based on the electricity mix which is supplied are available to us from our electricity suppliers for indirect greenhouse gas emissions. The key figures which are determined are evaluated in absolute terms and with reference to the location in comparison with the previous year in the context of the management review. Comparison of these core indicators in accordance with EMAS Regulation 1221/2009 (EMAS III) only enables limited conclusions to be drawn due to constantly changing product structures and conversion levels at Bischof+Klein. Direct comparison of the core indicators with companies in the same or other industries is not possible due to divergent production processes and techniques.

Input

	Lengerich			Konzell		
	2020	2021	**2022**	2020	2021	**2022**
Raw materials (such as granules, paper, aluminum, printing inks, adhesives, solvents, etc.) [t] [1]	**63,012**	**63,726**	**58,505**	**48,489**	**46,053**	**48,147**
Of which non-renewable raw materials [t]	59,583	60,505	54,786	47,500	43,769	44,163
Spec. raw material use [t/t]	1.35	1.30	1.33	1.24	1.29	1.36
Transportation packaging material [t]	**6,944**	**6,849**	**6,755**	**4,393**	**4,407**	**4,401**
Water [m³]	**50,195**	**26,917**	**28,272**	**22,165**	**19,930**	**14,686**
Spec. total water consumption [m³/t]	1.00	0.51	0.59	0.56	0.56	0.41
Energy [MWh]	**88,649**	**86,456**	**82,412**	**42,957**	**44,036**	**40,350**
Of which electricity [MWh]	53,362	53,004	55,773	38,411	37,671	36,589
Of which gas/oil/power gas [MWh]	35,287	33,452	26,639	4,545	6,364	3,761
Spec. total energy consumption [MWh/t]	1.77	1.64	1.73	1.09	1.24	1.13
Volume of renewable energy [MWh]	23,159	24,996	35,137	38,411	37,671	36,589
Percentage of renewable energy in total energy consumption [%]	26	29	43	89	86	91
Area usage						
Total area usage [m²]	**206,122**	**206,220**	**206,220**	**118,863**	**118,863**	**118,863**
Of which percentage of paved areas [%]	68	68	68	58	58	58
Of which percentage of semi-natural areas at the site (meadows, ponds, woods) [%]	32	32	32	42	42	42

Output

	Lengerich			Konzell		
	2020	2021	2022	2020	2021	2022
Finished product [t] (incl. recyclate)[2]	**50,038**	**52,685**	**47,612**	**39,235**	**35,580**	**35,563**
Non-hazardous waste [t] (plastics/plastic laminates, paper, other waste such as wood, metals, industrial waste, etc.)	**9,451**	**9,489**	**8,773**	**8,585**	**8,405**	**8,476**
Spec. occurrence of nonhazardous waste [t/t]	0.20	0.20	0.20	0.22	0.24	0.24
Hazardous waste [t] (printing ink and adhesive residues, distillation sludges, absorptive materials, used lyes, rinsing water, processing emulsions, oil separator contents, used oil, lead batteries, spray cans, contaminated packaging, insulating material)	**1,038**	**844**	**758**	**910**	**828**	**809**
Spec. occurrence of waste (hazardous waste) [t/t]	0.02	0.02	0.02	0.02	0.02	0.02
Total waste [t][3]	**10,489**	**10,333**	**9,531**	**9,495**	**9,222**	**9,250**
Of which composting [t]	17	33	24	23	16	2
Of which reuse [t]	1	1	7	0	0	0
Of which recycling [t]	6,454	6,007	5,304	7,945	7,765	7,838
Of which recovery [t]	117	14	7	114	180	75
Of which thermal recycling [t]	2,678	3,399	3,387	1,038	927	971
Of which other recycling [t]	540	410	544	2	8	14
Of which combustion (disposal) [t]	229	184	202	368	324	340
Of which other disposal [t][4]	451	283	55	5	2	9
Of which depositing [t]	2	2	1	0	0	1
Wastewater [m³][5]	**24,610**	**20,296**	**13,995**	**11,074**	**10,618**	**8,883**
Emissions [t]						
Total greenhouse gas emissions CO_2 eq [t][6]	**34,292**	**31,963**	**27,164**	**5,522**	**5,100**	**4,688**
Of which from combustion processes (primary energy, solvents from air scrubbing, plant traffic) [t]	15,331	15,105	13,723	5,510	5,084	4,582
Of which due to use of electricity (indirect) [t]	18,784	16,696	13,385	0	0	0
Of which from refrigerant losses [t][7]	178	162	56	12	16	106
Spec. total greenhouse gas emissions [t/t]	0.69	0.61	0.57	0.14	0.14	0.13
Total pollutant emissions into the air [t]	**119**	**186**	**76**	**177**	**277**	**278**
Of which VOC [t][8]	106	170	49	176	275	277
Of which carbon monoxide (CO) [t]	7.5	10.9	22.2	0.2	0.3	0.2
Of which nitrogen oxides (NO_x) [t]	5.0	5.0	4.4	0.6	0.9	0.5
Of which sulfur dioxide (SO_2) [t]	0.3	0.2	0.1	0.5	0.9	0.5
Of which particulates [t]	0.01	0.01	0.00	0.01	0.02	0.01
Spec. total pollutant emissions into the air [t/t]	0.002	0.004	0.002	0.005	0.008	0.008

1 Incl. recyclate.

2 In addition to packaging materials and films, the regranulates produced from film residues are also contained in the finished product.

3 All types of waste for which Bischof+Klein is defined as the waste producer are recorded.

4 Other disposal: chemical/physical treatment, fermentation, soil treatment.

5 Indirect routing to the communal sewage works.

6 No additional greenhouse gases such as methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFC), partly fluorinated chlorinated hydrocarbons (HCFC), nitrogen trifluoride (NF_3), or sulfur hexafluoride (SF_6) are emitted as a result of our production processes.

7 Emissions of fluorinated refrigerants (pursuant to the German Chemicals Climate Protection Ordinance (ChemKlimaschutzV)) from cooling and refrigeration systems.

8 More precise data basis at Bischof+Klein Lengerich from 2021; direct comparison of the VOC emissions with the data from the previous years is not possible.

Our sustainability program

We put environmental protection and sustainability on our agenda.

Our **sustainability program**

The fifth sustainability program from Bischof+Klein contains the economic, ecological, and social objectives and measures for the company's individual divisions and departments for the 2023-2025 period. These have been defined based on the company's strategic goals.

The fourth sustainability program for the 2020-2022 period was concluded during the reporting year. It encompassed 49 objectives and measures. 31 of these objectives were successfully completed during this three-year period. 15 objectives had not yet been completed at the end of 2022. These were taken over into the 2023-2025 campaign. Three objectives could not be achieved and were not taken over into the new program.

The new 2023-2025 sustainability program is set to start with 35 objectives and associated measures. The implementation status will be evaluated once a year in the management review by the executive board.

The following lists show an excerpt from the areas of ecology and the environment.

Ecological objectives
Bischof+Klein Lengerich

Aspect	Objective	Measure	Date	Responsible	Status	Remark
Waste	Reduction of adhesive and printing ink waste containing solvents by 20%*	Installation of an additional distillery for solvent-based adhesives and printing inks	2024	Supply technology		
Energy	Increase in the percentage of regenerative energy to > 90%	Use of "green" electricity	2025	Purchasing		
	Reduction of gas consumption for heat generation in one hall area by 30%*	Removal of decentralized gas-fired heating units and connection to central heating systems	2023	Building and estate management	In progress	
		Renewal of heating technology	2025	Building and estate management		
	Reduction of the electricity consumption of some systems for generating low temperatures by 15%*	Use of available thermal energy for generating low temperatures	2023	Supply technology	In progress	
	Reduction of the natural gas needed for an air scrubbing system by 20%*	Establishment of a solvent injection system	2024	Supply technology		
Emissions	Reduction of solvent pollution in some areas of production by reducing the percentage of recirculated air to 0%	Replacement of the existing ventilation technology	2023	Supply technology	In progress	
Recyclate	Internal production and processing of defined recyclates from returned material > 50 t/a	Establishment of a reusable material cycle for segregating suitable film raw materials, production of recyclate, development of a recipe, and processing	2024	Sales/innovation/ production	In progress	
Product	Development of a sustainable stand up pouch as an option for all applications	Optimization of the mechanical properties of sustainably produced films	2023	Sales/innovation		
Raw materials/ waste	Reduction of label printing in production by 10%**	Needs-based label printing close to the point of use and associated reduction of walking distances	2024	SCM/production	In progress	

* Base year 2022 ** Base year 2021

Ecological objectives
Bischof+Klein Konzell

Aspect	Objective	Measure	Date	Responsible	Status	Remark
Energy	Reduction of oil consumption in the training center by 80%*	Installation of a heat pump in combination with a PV system	2025	Technology		
	Reduction of electricity consumption for cooling in some areas of production by 20%*	Use of adiabatic cooling instead of compression cooling while improving the air quality at the same time	2024	Technology	In progress	
	Reduction of fossil energy source consumption by 10%*	Optimization of heat recovery and the use of centralized/ decentralized heat supply, etc.	2024	Technology		
	Purchasing regionally generated electricity	Power purchase agreement (PPA), ideally with the neighborhood, to stabilize prices and support decarbonization	2025	Purchasing		
Product	Switch of a further five customers in the hygiene market to 60% PCR*	Development of a film for all applications with a PCR content of 60%	2023	Sales/innovation	In progress	

* Base year 2022 ** Base year 2021

Glossary

Regulations and standards

BImSchG
Federal Immission Control Act: act protecting against harmful environmental impacts caused by air pollution, noise, shocks, and similar processes.

BRC/IoP
The BRC/IoP hygiene standard for assuring the quality of packaging materials is the result of cooperation between the British Retail Consortium (BRC) and the Institute of Packaging (IoP). It is aimed at manufacturers of foodstuff packaging and is certified by accredited institutions.

ChemKlimaSchutzV
German Chemicals Climate Protection Ordinance: ordinance for the protection of the climate from changes due to the entrainment of certain fluorinated greenhouse gases.

EMAS III
Eco-Management and Audit Scheme: general designation of Regulation (EC) No. 1221/2009 of the European Parliament and of the Council dated November 25, 2009 pertaining to the voluntary participation of organizations in a community environmental management and corporate environmental auditing system in combination with Regulation (EU) No. 2017/1505 and Regulation (EU) No. 2018/2016.

German Commercial Waste Ordinance
Ordinance on the management of commercial urban waste and certain types of construction and demolition waste.

LFGB
The German Food and Feed Code (LFGB) is the umbrella law of German food law. Its purpose is to ensure the protection of consumers by preventing or averting a danger to human health. It encompasses all production and processing stages along the food value chain and also applies to animal feed and cosmetics in addition to food and consumer goods.

TA Luft (German Clean Air Act)
Technical Instructions on Air Quality Control: First General Administrative Regulation Pertaining to the Federal Immission Control Act. The Technical Instructions serve to protect the general public and the neighborhood against the harmful effects of air pollution. Among other items, they contain calculation regulations for significant air pollutants and establish uniform Federal requirements for systems which require approval according to the Ordinance on Installations Requiring a Permit.

VOC Ordinance
Ordinance for limiting volatile organic compound emissions when using organic solvents in certain systems – 31st BImSchV.

Miscellaneous

Binding obligations
The term binding obligations includes legal obligations and other requirements that may arise, for instance, from the requirements of the company's stakeholders.

Carbon footprint
The CO_2 footprint is a measure of greenhouse gas emissions (measured as CO_2 equivalents) and is caused directly and indirectly by an activity or occurs over the life cycle of a product.

Convenience
Consumer friendliness.

Demographics
Development of populations and their structures.

Emissions
Solid, liquid, or gaseous substances as well as noise, heat, and radiation that are emitted into the environment.

FDA
The U.S. Food and Drug Administration (FDA) is the United States food monitoring and drug authority.

GEMIS
The Global Emission Model for Integrated Systems (GEMIS) is a computer model with integrated database for analyzing energy and material flows. The model performs a life cycle analysis for various processes and scenarios and provides key data for pollutant and greenhouse gas emissions, among others.

Context of the organization
The context of the organization within the meaning of the EMAS or ISO 14001:2015 includes relevant internal and external topics (e.g., environmental conditions or events, political, economic, or social factors) that influence the continuous improvement of the environmental management system. These influencing factors have to be systematically recorded and evaluated.

Stakeholder
Groups or individual persons who are extensively affected by the activities, products, and/or services of the company or who are themselves able to extensively influence the management of the company.

Environmental aspects (direct/indirect)
Environmental aspects are all activities, services, and products which emanate from a company and which have a significant impact on the environment. Direct aspects can be directly influenced by the company; indirect aspects can only be controlled to a limited extent.

Environmental impact
Environmental changes which are the result of a company's activity, product, and/or service.

Environmental performance
The measurable results of the management of an organization's environmental aspects by this organization.

Validation
Declaration of validity by a registered environmental expert.

VOC
Volatile Organic Compounds: volatile organic carbon compounds (e.g., organic solvents).

Environmental expert's **declaration**

regarding the appraisal and validation activities

On behalf of the KPMG Cert GmbH environmental expert organization, registration number DE-V-0328, the undersigned, Georg Hartmann, EMAS environmental expert with registration number DE-V-0245, in cooperation with Dr. Ulrich Wilcke, EMAS environmental expert with registration number DE-V-0297, accredited or registered for the area of NACE code 22.22 (manufacture of plastic packing goods), confirms that he has appraised whether the plants or the entire organizations, as specified in the environmental statement of the organizations Bischof+Klein SE & Co. KG, Bischof+Klein Extrusion SE & Co. KG, and Bischof+Klein Holding SE & Co. KG, registration number DE-156-00009, meet all of the requirements of Regulation (EC) No. 1221/2009 of the European Parliament and of the Council dated November 25, 2009 pertaining to the voluntary participation of organizations in a community environmental management and corporate environmental auditing system (EMAS) in combination with Regulation (EU) No. 2017/1505 and Regulation (EU) No. 2018/2016.

On signing this declaration, it is confirmed that:

+ The appraisal and validation have been carried out in full compliance with the requirements of Regulation (EC) No. 1221/2009 in combination with Regulation (EU) No. 2017/1505 and Regulation (EU) No. 2018/2016.
+ The result of the appraisal and validation confirms that there is no evidence of nonadherence to the applicable environmental regulations.
+ The data and information contained in the environmental statement for the organization provide a reliable, credible, and truthful portrayal of all of the organization's activities within the scope specified in the environmental statement.

This statement cannot be equated to EMAS registration. EMAS registration can only be carried out by a competent body pursuant to Regulation (EC) No. 1221/2009 in combination with Regulation (EU) No. 2017/1505 and Regulation (EU) No. 2018/2016. This statement may not be used as an independent basis for public information.

Lengerich,

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