



Palm



SUSTAINABILITY REPORT 2022

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PREFACE

Since PALM was founded more than 150 years ago, we have been producing our paper from 100 % recycled materials. Whereas we used to use old rags, bast fibre hessian and waste paper to produce paper in the beginning, today our high-quality packaging and graphic papers are made exclusively from 100 % recycled waste paper. At our corrugated cardboard plants, we process the packaging papers to turn them into innovative and sustainable corrugated cardboard packaging. Our corrugated cardboard packaging provides protection for the transport of food, industrial goods, hygiene and pharmaceutical products, as well as many other products and keeps global supply chains functioning. After the corrugated cardboard packaging, newspapers and advertising brochures have been used, they return to us as a valuable raw material from which new paper is made. All PALM products are therefore part of a closed, sustainable recycling loop.

However, not only is it our business model and products that are particularly sustainable; the issue of sustainability is also firmly embedded in our DNA and determines our corporate strategy as well as our day-to-day actions. We have invested in the latest machine and power plant technology and pushed forward ground-breaking innovations to minimise our energy consumption and carbon footprint. Looking to the future, we will consistently continue to pursue our chosen course to achieve our sustainability strategy, first and foremost the decarbonisation of our plants, by means of a comprehensive programme of investments.

We look forward to continuing along the path towards climate neutrality together with our consumers, employees, suppliers and business partners. In this respect, our guiding principles represent the high, ethical responsibility towards nature as well as our social responsibility towards our employees and our society.

Yours

Dr Marina Palm & Dr Wolfgang Palm



Dr Wolfgang Palm und Dr Marina Palm

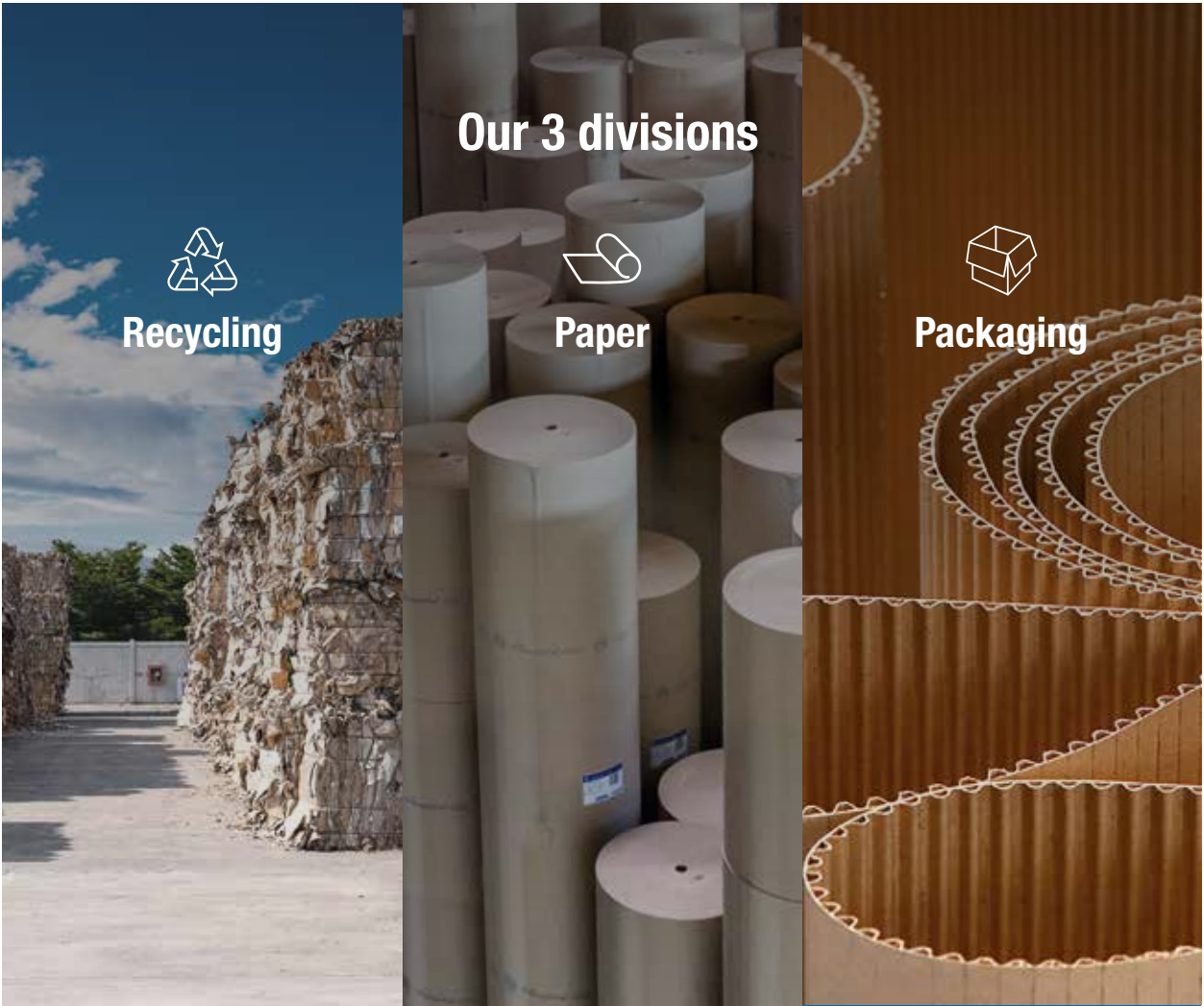
WHO WE ARE

“WE DO NOT THINK IN TERMS OF QUARTERS PER ANNUM; BUT IN GENERATIONS. FOR MORE THAN 150 YEARS.”

Sustainability is in the bloodline of the company history of PALM. The economical use of resources, a respect for nature and the long-term and hence sustainable success of the company have been a fixed part of PALM’s DNA for five generations.

Since its foundation in 1872, PALM has been a family owned and managed business, which has produced paper from 100 % recycled materials from the very beginning. Today PALM specialises in the production of corrugated base paper and graphic papers made of 100 % selected waste paper as well as in the manufacture of sustainable corrugated cardboard packaging.

PALM operates five paper mills in Germany, France and the United Kingdom. Waste paper is procured via the Palm Recycling companies in Germany and the United Kingdom. PALM also operates 29 corrugated cardboard plants in Germany, France, Italy, the Netherlands and in Switzerland.



PALM AT A GLANCE

- Headquarters: Aalen
- Paper
- Packaging
- Recycling

4,200 Employees
2.2 billion euros Turnover
700,000 tonnes Corrugated cardboard packaging

2.7 million
tonnes paper production

HOW WE WORK

“The PALM family business’s unequivocal strategy is to shape the future together with all customers, employees, suppliers and business partners in close, trusting cooperation.”

PALM is one of the leading companies in the European paper and packaging industry. The long-established company stands for close customer partnerships, reliability in support and service, superior product quality and innovative development of production processes.

Innovative technologies, forward thinking product developments, constant commitment to investment and outstanding product quality have been among PALM's obvious success factors for more than 150 years. Just as important is a principle that was conceived from the very beginning: customer focus that is lived day in, day out. A trusting relationship with our customers, characterised by openness, honesty and fairness, goes beyond being

a matter of course; it is absolutely a fundamental building block of our success.

This forms long-term partnerships, which offer our customers added value beyond the product and service quality: with PALM our customers can be confident of having a pioneer with ecologically sustainable paper and packaging by their side.

Sustainable products

Our papers have always been sustainable per se, as they are produced 100 % from selected waste paper. Our business model is also fundamentally sustainable, because our products – corrugated base paper, graphic papers and corrugated cardboard packaging – are fully recyclable. They are therefore part

of a resource-friendly circular economy. All our papers are certified according to the FSC and PEFC standards and our PALM newsprint paper made of 100 % waste paper has been awarded the “Blue Angel” environmental seal since 1989.



EU Ecolabel DE/011/114



www.blauer-engel.de/uz72

Sustainable production processes

Even the company's founder, Adolf PALM, was an extremely frugal person, for whom wasting material, labour and energy was a thorn in his side. According to his belief, a business could only be successful if it used all means smartly, efficiently and profitably over the long term. His definition of sustainability, motivated by commercial interests back then, goes hand in hand with the current understanding of sustainability. Being both economically effective in thought and action - through the careful use of resources and energy, the application of innovative technologies and production processes, and through sound commercial conduct - is not only PALM's economic footing, but also makes an important contribution to our ecological balance.

So PALM has traditionally always used considerable investment resources to advance energy efficiency in the production of paper or corrugated cardboard packaging in the best possible way. This is done with technolo-

gical milestones as well as with many small, but significant measures overall.

These milestones include the latest generation of highly efficient Siemens gas turbines, which PALM is the first to use worldwide in the power plants at the three German paper mills.

Not only are the turbines extremely efficient, but they can be started up and shut down quickly as needed. They can therefore react flexibly to load fluctuations in the power grid. When there is not enough electricity available from wind power or solar plants in the public supply network, our gas turbines run at maximum capacity and feed the excess power into the grid. In a situation when there is too much electricity in the grid, our gas turbines shut down completely. We then get all the electricity we need from the grid and relieve it. In both cases we help maintain the stability of the network and make an important contribution to the success of

the energy transition. What is more, they are the first three Siemens gas turbines worldwide that run on climate-neutral, green hydrogen as soon as there are appropriate supply networks. PALM is proud to take a leading role on the path to carbon-neutral paper production.

PALM's innovative achievements in water management are also ground-breaking. When it comes to saving on water consumption, PALM has been a leader in the sector for decades; not least due to the pronounced multiple use of water in largely closed circuits. The same applies to our effluent treatment plant. As far back as the 1980s we were heavily involved, together with the scientific field, in developing and implementing ground-breaking solutions for cleaning our waste water. Even back then, the figures were well below the statutory requirements. That is still the case today.



The new PM 5 in Aalen with a width of 10.90 m is specialised in the production of lightweight corrugated base paper.



The modernised power plant of Papierfabrik Palm in Wörth with a new control room achieves - like the power plants in Aalen and Eltmann - a total efficiency of over 90 % through combined heat and power generation.

We also pay great attention to reducing our carbon footprint through smart products. In cooperation with our customers, for example, we optimise packaging solutions. Customised packaging designs allow for cutting waste to be avoided and dead space to be eliminated. Another important step is the use

of lightweight corrugated base papers. This permits lower material and energy consumption in production as well as in the ensuing transport and reduces CO₂ emissions along the entire value added chain. These papers with extremely low basis weight but high technological values are made possible by the world's

largest and most modern paper machine for corrugated base paper, PM 5, which we put into operation in a newly built paper mill at our headquarters in Aalen in 2021.

Sustainable jobs

Our employees are a main pillar of our success: in fact they are our most valuable asset. The fact that families already in their second or third generation work at our company and have stayed loyal to us for decades is no exception, but rather the norm at PALM. The fact that we see ourselves as a big family is not

a marketing slogan, but traditionally a reality. As is a togetherness based on partnership and responsibility. It also means that we offer our employees a wide range of professional development possibilities and equal opportunities in terms of diversity.

After all, our social commitment – at an ecological and community level – is also based on a sustainable model. The “Dr. Wilfried Palm Foundation” guarantees the targeted and long-term support of numerous projects from the areas of nature, culture and social issues.



The administration building at PALM's headquarters in Aalen.

WHY WE TAKE RULES SERIOUSLY

“Compliance is an ongoing process and the result of an organisation that meets its obligations.”

For PALM, compliance means two things: On the one hand we comply with statutory requirements and guidelines in all areas. In terms of environmental law, human and employee rights, data protection and the fight against corruption. On the other hand we adhere to ethical principles, voluntarily imposed rules that are derived from the PALM values and corporate culture.

We ensure compliance with due diligence obligations

PALM implements many measures to ensure compliance with legal regulations and voluntary commitments. These are regularly examined and adapted or enhanced if needed.

- The PALM paper mills and German PALM corrugated cardboard plants are certified according to EN ISO 9001 and thus sensitised to the issue of compliance. The implemented quality management system requires the assurance of requirements placed on products, services and internal processes.
- In its voluntary self-declaration (Code of Conduct), PALM adheres to the values and provisions of the Ten Principles of the UN Global Compact and supports

the Universal Declaration of Human Rights of the UNO and the Declaration on Fundamental Principles and Rights at Work of the International Labour Organization (ILO). Among other things, this organisation includes observing and protecting international human rights, the non-discriminatory equal treatment of all employees and the commitment that the working conditions do not endanger

health and safety at work. PALM also affirms the values of the FSC (Forest Stewardship Council) and the PEFC (Programme for the Endorsement of Forest Certification Schemes) to protect the forests.

- The VISTRA software is used at PALM to ensure legal conformity. VISTRA provides information on all relevant and

current laws in the areas of environment, occupational safety and energy. The departmental managers put new laws into practice quickly and consistently.

- Data protection officers ensure compliance with statutory provisions.

Recognise rule violations at an early stage

Despite the laws, guidelines and our codes of conduct, in every organisation there is a risk that people will consciously or unconsciously display unethical or illegal conduct. A culture of openness and responsibility is essential for us to prevent or to overcome such situations. To live up to this claim, we have implemented a whistle-blower protection system through

which employees, service providers, suppliers and other stakeholders can report misconduct and grievances within the company. The identity of the informants always remains confidential. The platform, which can be reached via a link on the PALM website, meets the EU whistle-blowing directive and the requirements of the German implementation act. This

also includes elaborate encryption, data protection and authentication solutions. Our whistle-blower protection system not only enables us to quickly identify internal grievances, but also those at external suppliers, and to take appropriate action immediately.

Sustainability starts with procurement

Sustainability measures have long since extended beyond the company itself and cover the entire supply chain. As an owner-managed family business with a long tradition, PALM has maintained trusting business relationships with a significant number of its suppliers for decades, whose reliability cannot be reflected in DIN standards. Nevertheless it is essential that we also strictly observe the compliance of minimum standards on a global scale regarding human and environmental rights in our supply chains.

PALM has implemented the following measures to safeguard a sustainable procurement process:

- Due to our EN ISO 9001 certification, our suppliers also must meet minimum criteria in the areas of quality, environment, work and food safety.

- The PALM plants regularly inspect and evaluate their suppliers to ensure compliance with all legal requirements and standardised norms. This is done via an IT-supported risk analysis that covers the entire pool of PALM suppliers and also includes querying and inspecting relevant certificates. Status and feedback meetings regularly take place. Any grievances or potential for improvements are addressed in direct talks with the supplier.

- The established whistle-blower protection system makes an important contribution to the timely detection and correction of violations of laws or regulations in our supply chain.

- The chemical additives needed for paper production pass through a multi-stage approval and release process before being ordered. During the approval they are checked for their environmental compatibility, food safety and possible hazards for the health of our employees.

If the reliability of supply permits, PALM would like to work with regional suppliers even more in future to minimise carbon emissions on transport routes.

When it comes to respecting human and labour rights and protecting the environment, PALM wants to be a pioneer along the entire supply chain and continue to exceed legal requirements out of conviction.

PALM Certificates

The implementation of numerous regulations guarantees that we work according to the requirements of our customers, suppliers and legislation. The highest priority is given to compliance with valid legal and safety regulations and the avoidance of environmental impacts.



Quality Management
ISO 9001



Environmental Management
ISO 14001



Health and Safety Management
ISO 45001



The mark of
responsible forestry
FSC®



EU Ecolabel DE/011/114



PEFC



Blue Angel



Carbon Footprint
ISO 14064 and ISO 14067



Energy Management
ISO 50001



Food Safety System FSSC 22000



ISEGA Clearance Certificate



Ecovadis



BRCGS



A list of all certificates granted for our plants can be found on our website:

Division Recycling



www.palm.de/en/recycling/certifications

Division Paper



www.palm.de/en/paper/certifications

Division Packaging



www.palm.de/en/packaging/certifications

HOW WE WORK SUSTAINABLY TO ACHIEVE IMPROVEMENTS

“PALM practices sustainability.”

Sustainability is a key part of our corporate strategy driven by the management. Strategies and processes are analysed and evaluated, involving the various business units and subsequently implemented and optimised at all levels of the company. After all, sustainability means a holistic approach and is therefore a task for everyone - within the company and beyond, along our entire supply chain and in the circular economy.

In the company, the sustainability department and all other departments ensure the implementation of our sustainability strategy with the involvement of all employees. This is focused on the one hand, on those aspects of sustainability that are of special importance to our customers, to us and to other

stakeholders, and on the other hand, on those aspects we can influence with our business activities. This prioritisation is based on the 17 Sustainable Development Goals (SDG), which were passed in 2015 by the United Nations General Assembly as part of the “2030 Agenda”.



At Palm Paper in King's Lynn, the production of graphic papers is also based entirely on selected and sorted waste paper. Since 2019, a separate sorting plant for mixed paper has been in operation on the mill premises.

PALM’s sustainability goals

As part of a materiality analysis, we have defined which of the SDG fields of action have the highest priority for us and which goals we want to achieve.

Base year: 2022

Key action area	Goal	Measured variable	2035	2045
	Reduction of CO ₂ emissions (Scope 1 and 2)	Paper: CO ₂ emissions per tonne of paper	-30 %	-90 %
		Packaging: CO ₂ emissions per 1,000 m ² of corrugated cardboard	-30 %	-90 %
	Reduction of water consumption	Amount of fresh water per tonne of paper	-15 %	-30 %
	Reduction of basis weight through optimised packaging solutions	Average basis weight in g/m ²	-3 %	-6 %
 	Reduction of reportable workplace accidents	Reportable workplace accidents per year	No workplace accidents	
	Trainee rate above industry level	Percentage of trainees in the overall workforce	Above industry level	

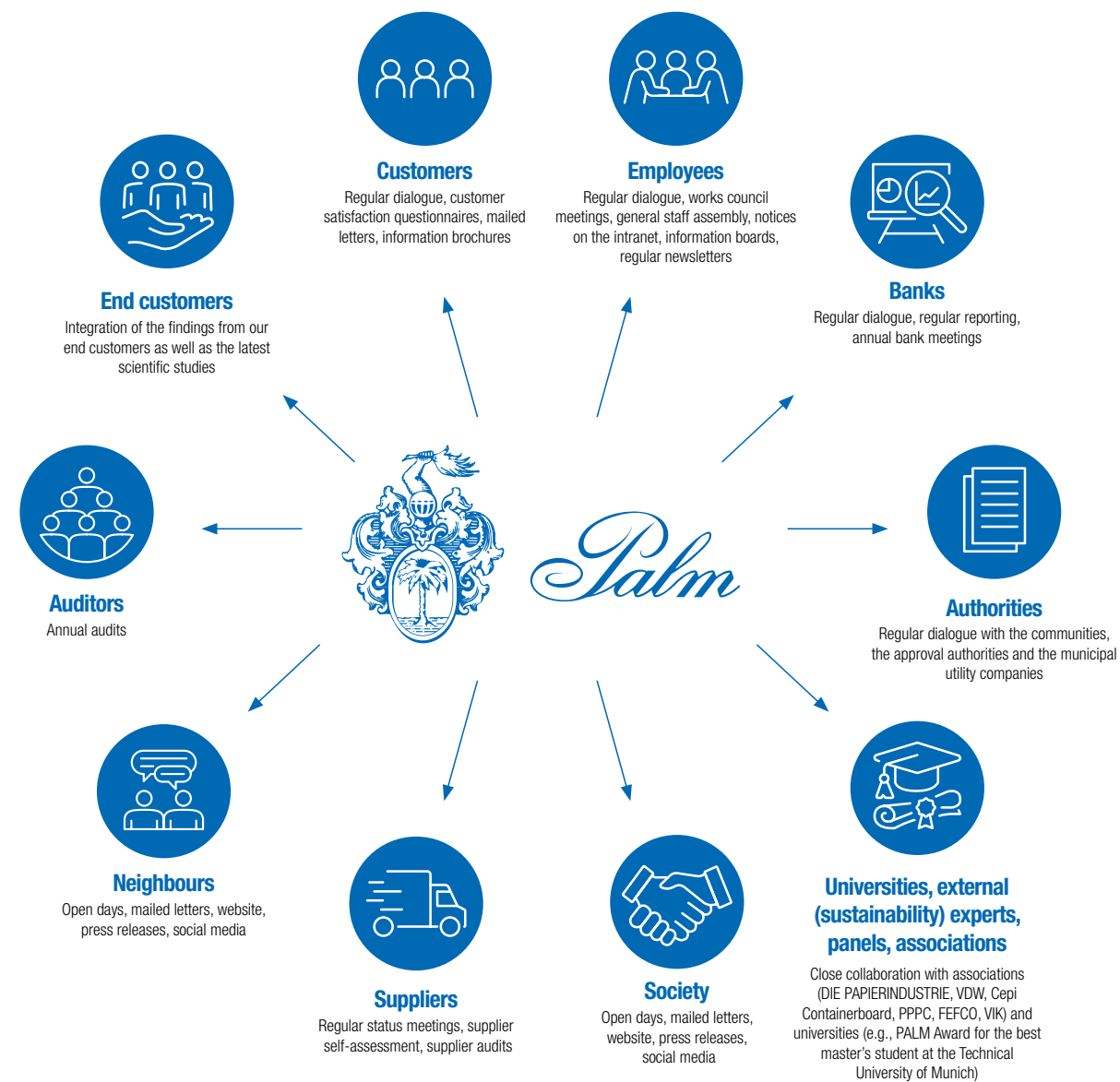
Traditionally, paper production requires significant amounts of energy and water in addition to our raw material, waste paper. That is why we have always emphasised the importance of using resources and energy sparingly and efficiently. That is why PALM invests huge sums in state-of-the-art paper machines and technology, in the latest, highly efficient power plant engineering and in resource-friendly corrugated cardboard plants and converting machines.

Additionally, we are continuously working on other gradual improvements in the key action areas.

However: PALM is not alone, nor a company that is completely detached from other concerns. This is why it is only natural for us to involve all stakeholders in the further development and implementation of our sustainability strategy. They too have interests in and expectations of us, which

we take very seriously. We work with a network of “interested parties”, which we check every year and adapt if needed, working together across locations. During this process, the requirements and expectations of all our stakeholders – those affected by our business activities and those with an interest in us – are recorded and assessed.

Collaboration with our stakeholders



Through the close interaction and exchange with our stakeholders, we continuously record a variety of key figures and performance indicators. This data is part of the reporting and auditing of our management systems and is used to steer the company. This is why we place the highest demands on the reliability, consistency and comparability of the data. This allows us to be constantly on top of what is happening and to act proactively when needed.

HOW WE CARE FOR THE ENVIRONMENT

**“OUR PAPER IS
MADE OF 100 %
WASTE PAPER.”**

Protecting the environment and reducing climate-damaging greenhouse gases have become some of the greatest challenges facing humanity. In this respect, paper production is one of the industries that are energy and water intensive. It is precisely for this reason that PALM lives up to its special responsibility of firmly establishing environmental and climate protection in all its business fields with ongoing, ground-breaking innovations and investments.

At the United Nations world climate conference in Paris in December 2015, 197 countries agreed on an equally ambitious and necessary target: By 2100, global warming should be limited to 1.5 °C compared to the pre-industrial age. This target can only be achieved if all governments, companies and individuals make their contribution.

PALM is doing this by conviction following a long tradition and with a variety of measures. Having always worked with secondary raw materials, we have every right to say: Since 1872 we only use recycled materials in paper production. Furthermore, the careful use of resources, the efficient use of energy, looking after nature and protecting the environment are firmly embedded in our DNA. Consequently, our firm commitment to the climate goals of the Paris Agreement is an obligation, incentive and daily practice in equal measure.



We receive our waste paper from municipalities as well as from trade, commerce and industry.

Circular economy – the foundation of our business model

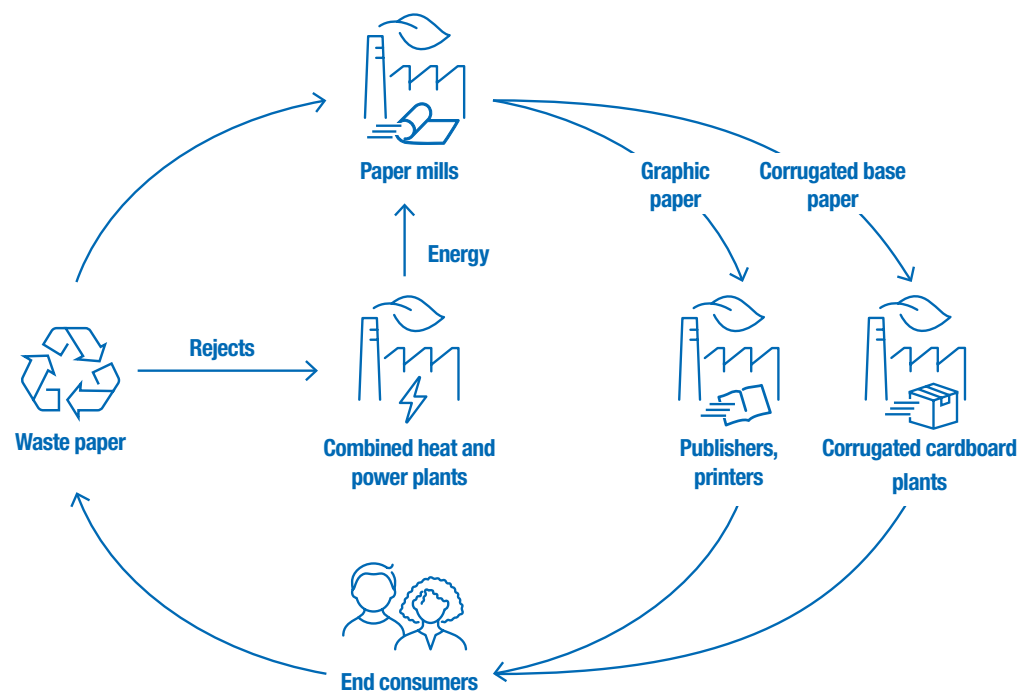
All PALM papers – corrugated base paper and graphic paper – are produced from 100 % waste paper. PALM was one of the world's first manufacturers to make enormous development efforts in the 1980s to develop high-quality papers such as newsprint from 100 % waste paper. Naturally, our products can be completely recycled.

We get our selected waste paper from commercial and municipal collections, but also directly from the retail sector, trade and industry. Thereby we keep transport routes short and hence the CO₂ emissions as low as possible. In southern and central Germany, for example, 20 regional waste paper sorting centres serve as delivery points for household collection goods under contract with us. The waste paper is used in the best possible way by separating

brown fibres from white fibres and using them specifically in our paper mills for the production of corrugated base papers or graphic papers. Not all waste paper is the same. The quality of the waste paper plays a major role, not only in our packaging papers, but especially in our graphic papers. We engage in activities wherever the circumstances require it. For example, in 2019 we put a specially developed waste paper sorting facility into operation at our paper mill for graphic papers in King's Lynn, United Kingdom, which guarantees an outstanding raw material quality. This ensures that we live up to our claim of supplying our customers with particularly high-quality papers. Our consumers use the graphic papers from our paper mills in Eltmann and King's Lynn to produce newspapers and advertising brochures which, after delivery to

the end consumers, come back to our mills through the recycling process as a valuable raw material.

The production of corrugated base paper from 100 % waste paper in Aalen, Wörth and Descartes is the starting point for a perfect material cycle, which finally closes again in the paper mills via the packaging produced in corrugated board plants and designated household waste paper bins. The fact that corrugated cardboard waste from our corrugated cardboard plants finds a sustainable use returning as a valuable raw material in our paper mills, contributes to the completion of the reusable material cycle.



View into the warehouse of our Eurowell corrugated board plant. Eurowell is part of our corrugated board centre in Wörth together with Europack.

Actually, corrugated cardboard packaging will make an even greater contribution towards environmental protection in the future. The Gesellschaft für Verpackungsmarktforschung (GVM), a

packaging market research association, showed in a study in 2019 that around a fifth of all plastic packaging can be substituted by corrugated cardboard, which in Germany, Austria and

Switzerland alone equates to an annual saving on plastic of more than 825,000 tonnes. For the plastic used in frozen packaging, the GVM also sees a potential reduction of 65 %.



Delivery of the new gas turbine at Papierfabrik Palm in Eltmann. PALM is the first company in the world to use the latest generation of gas turbines in three of its power plants – already today they are able to run on up to 75 % green hydrogen.

Climate protection starts with our own energy management

We have the aim of steadily increasing the energy efficiency of our plants and in this way consistently reducing our carbon footprint. We were one of the first companies in our industry to establish the Energy Management System (EMS) certified under EN ISO 50001 at all our plants back in 2012.

Since 2019, the TÜV Süd annually approves our carbon footprint calculations according to ISO 14064 (Corporate Carbon Footprint) and ISO 14067 (Product Carbon Footprint).

Our management system creates transparency and incentives for the use of energy efficiency measures and promotes communication and dialogue between all those involved. We operate very modern gas turbine power plants in all five paper mills. Since 2019 we have invested over 200 million euros in the new construction and modernisation of our power plants at the German paper mill sites in Aalen, Eltmann and Würth. The world's latest generation of gas turbines, the Siemens SGT-800, operates in each mill with an energy efficiency of more than 90 %.

The turbines can already be operated with up to 75 % green hydrogen, whilst from 2030 it should be possible for them to run on 100 % green hydrogen. They also meet the requirement for power plant flexibility, i.e. they can react to fluctuations in the grid by flexibly ramping up and down.

They are able to supply electricity into the grid – even when feeding all the power the paper mill needs, the PALM power plant in Aalen can also supply the majority of households in the Ostalbkreis with electricity. Conversely, the turbines can be shut down if enough electricity from renewable energies is available from the grid. Their high flexibility and efficiency therefore make an important contribution to the integration of renewable energies in the electricity mix.

Our Waste-to-Energy power plant with two fluidised bed boilers at the Würth site is another important element for our efficient energy management. There, the residual materials produced during paper production are thermally processed to generate clean energy. The thermal conversion of residual materials works in ideal symbiosis with paper production: The steam generated by thermal conversion supplies the paper machine. This means that our thermal waste conversion has an enormously high degree of energy efficiency compared to conventional waste recycling systems. Thanks to the Waste-to-Energy power plant, we have been able to reduce our use of fossil fuels at the Würth site to a minimum.

Over and above this, we implement measures that reduce the consumption of energy in the production process. One of the major innovative measures includes the OptiDry drying unit, which we installed in 2021 in our new paper machine PM 5 in Aalen. This has two significant benefits for the environment: The innovative drying method used requires much less energy than the conventional method with steam-heated drying cylinders and it allows the production of particularly light-weight corrugated base paper.



Savings of up to 9,800 tonnes of CO₂ through the OptiDry

Average annual CO₂ footprint of 1,324 EU citizens

With high strength properties, the “PALM Ultralight Corrugated Case Material” (ulCCM) produced with a basis weight of 60 g/m² leads to much lighter types of packaging. That saves weight and thereby CO₂ along the entire logistics chain – from PM 5 to the corrugated cardboard plant and all the way to the packaging end consumer. At an annual production

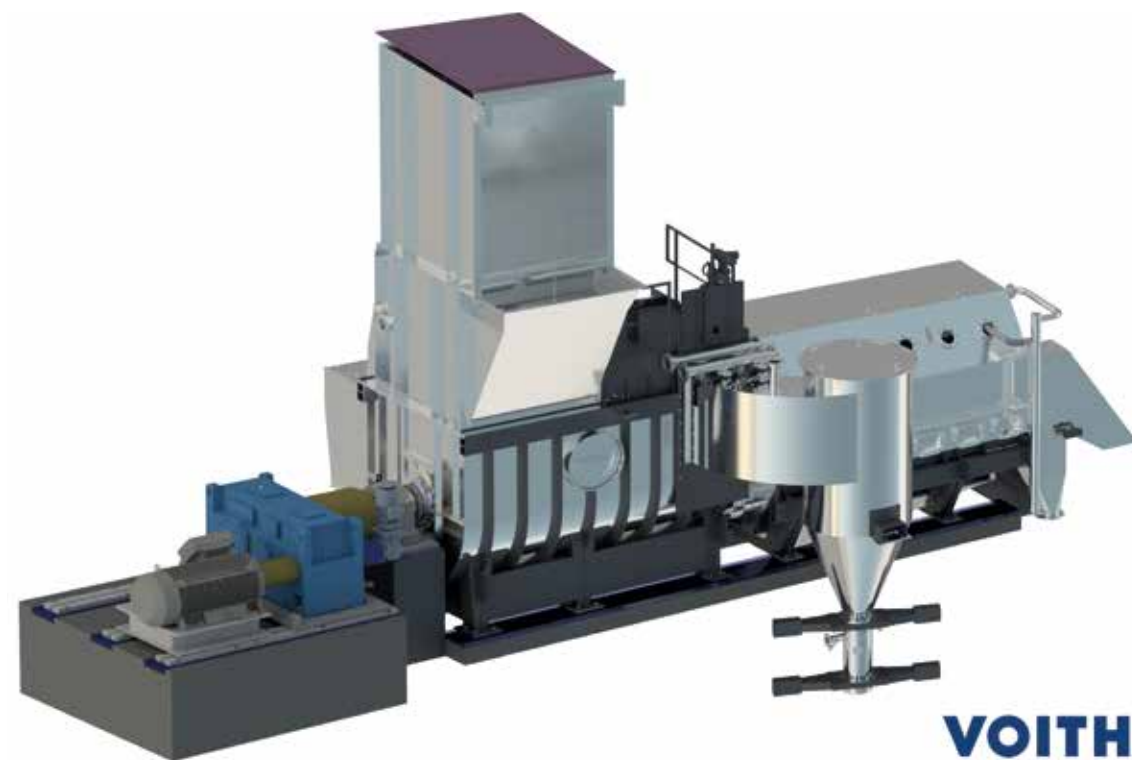
A world first on the new PM 5 in Aalen is also the “Green Pulping Concept”. The pilot plant at our mill in Aalen offers three benefits in terms of environmental protection: Due to the shortened pulping process, more than 30 % less energy is consumed in the stock preparation - i.e. dissolving the waste paper by adding water. The improved fibre yield resulting from the high pulp density

also contributes to a lower usage of waste paper. And finally, the high fibre yield significantly reduces water consumption: the annual amount of water saved is around 2.5 million m³. This equates to the water consumption of approximately 60,000 people. Designed for a production of 500 tonnes a day, up to 3,600 tonnes of CO₂ can be saved every year thanks to this world first with its innovative waste paper pulping concept. The “Green Pulping Concept” was also funded by the Federal Environment Ministry in 2021 as part of the Environmental Innovation Programme.

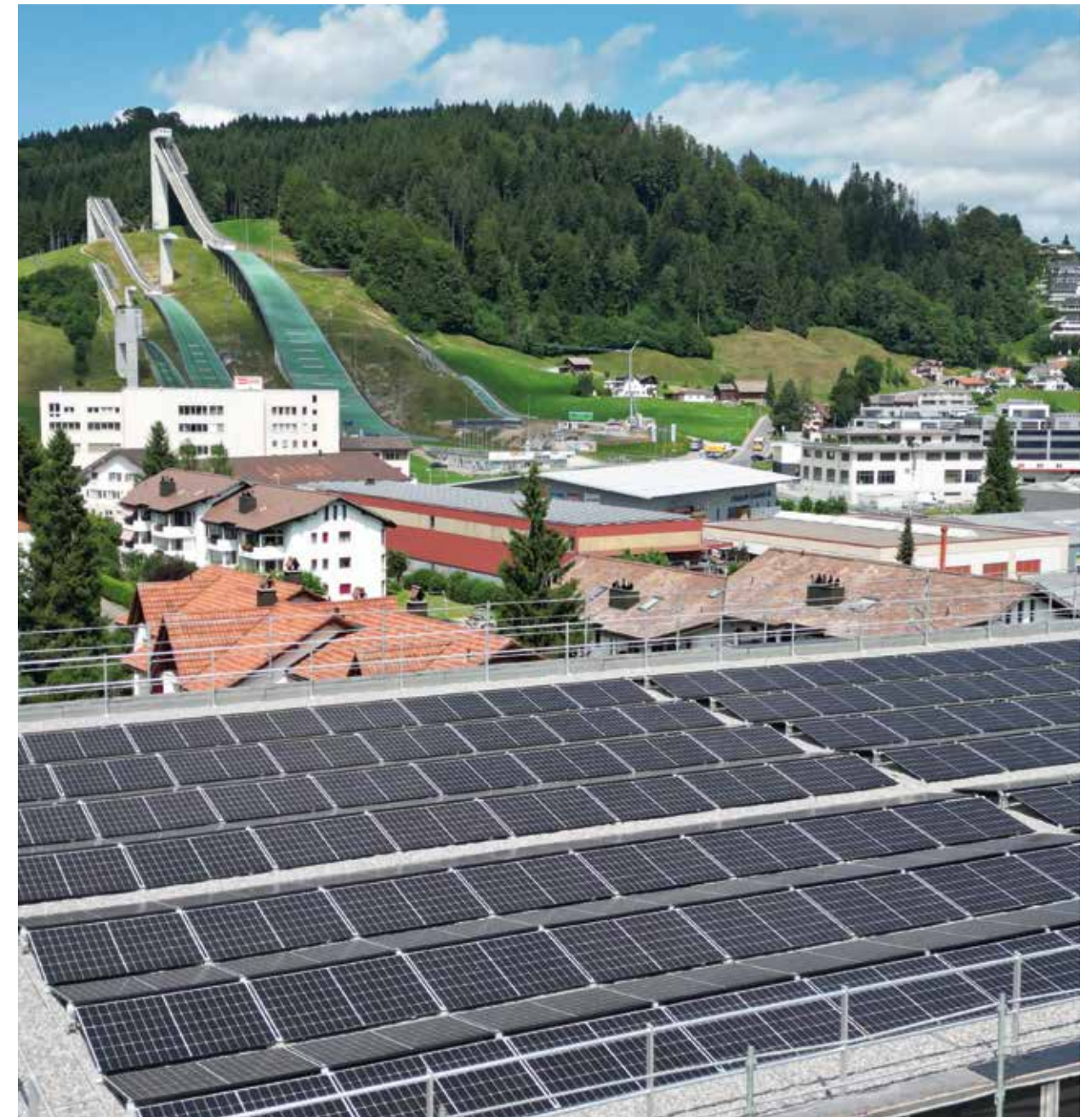


Savings of 2.5 million m³ water through the Green Pulping Concept

Annual consumption of 60,000 citizens



PALM and Voith performed pioneering work with the development of the “Green Pulping Concept”, which saves more than 30 % of the energy required in the stock preparation and is implemented in our new paper mill in Aalen.



WellPack in Einsiedeln covers 80 % of its electricity requirements for production via its photovoltaic system.

Another world first is found in the Wörth plant: a cleaner system for in the stock preparation developed in cooperation with Voith. Significantly less energy is consumed due to the improved fibre yield as a result of the cleaner system. PALM thereby saves up to 1,700 tonnes of CO₂ a year.

Corrugated cardboard production basically requires far less energy than the production of paper. Yet here, too, we implement identified potential for energy savings in a targeted manner. For example in our WellPack plant in Einsiedeln, Switzerland: The plant has installed new air compressors with 53 % less energy consumption. These compressors feed the residual

heat to the heating circuit. Moreover, a photovoltaic system was installed on the roof of a new building, which covers 80 % of the electricity demand for production. The remaining electricity comes at least 50 % from hydropower. All in all, these measures make it possible that most of WellPack's electricity consumption is climate-neutral.



Our PALM corrugated cardboard plants cover almost 50 % of their electricity demand from self-generated green electricity.



The Kocher river intake in Aalen to the PALM paper mill.

Saving water means protecting the environment

Water plays a significant part in paper production, as it is needed along the entire production process. Paper made of recycled secondary fibres, as is solely produced by PALM, has a natural advantage in this respect over paper made from virgin fibres: Only around a third of the amount of water is needed for the production – and about half the energy.

PALM has always endeavoured to keep its fresh water consumption as low as possible. This is possible through the use of special technology for the treatment of the circulated water; this water can be

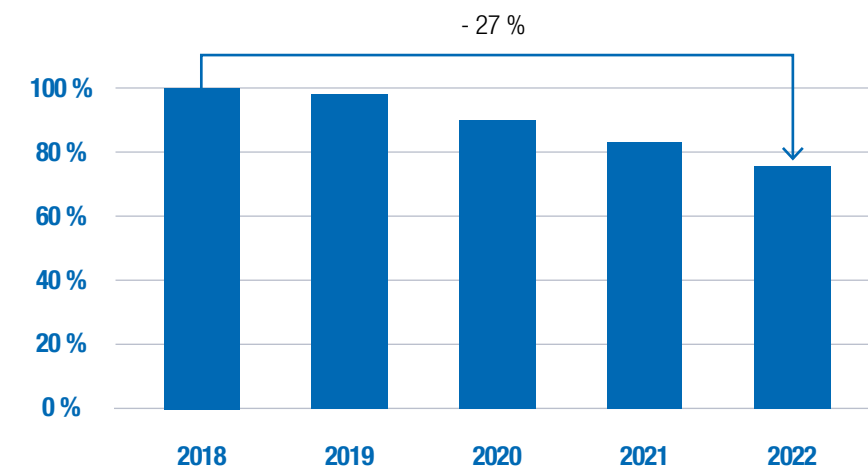
re-used in the process in several cycles as a substitute for fresh water. Also part of the purified waste water is fed back into the process to save both fresh water and heat energy.

Our water management system is one of the most modern around and works at the limits of what is technically feasible. Using the latest technology, for example an ultrafiltration plant for cleaning the circulated water, allowed us to half the specific fresh water usage for the new PM 5 in Aalen compared to the old mill. The new paper machine produces around twice as

much corrugated base paper a year as its three predecessors combined – whilst requiring the same amount of fresh water.

Not only in terms of fresh water usage, but also with regards to the specific volume of waste water, it has been possible to continuously achieve improvements. By using the latest waste water treatment technology and the optimised flow of circulating water, in five years the specific volume of waste water used in our paper mills for corrugated base paper has been reduced by 27 %.

Reduction of the specific waste water volume of all PALM corrugated base paper mills



Corrugated cardboard production is not particularly water intensive compared to paper production. Nevertheless, PALM keeps working to identify and implement further potential savings in water consumption. At Nestler Wellpappe, for example, this was accomplished by installing a closed air cooling system at the corrugators.

From 2016 to 2021, these measures reduced the annual consumption of water significantly from around 86,000 m³ to 35,000 m³. Many of our corrugated cardboard production plants also use preservatives to process ink water, so it can be used in glue production.



At the Aalen mill, production capacity has more than doubled – whilst consuming the same amount of fresh water.



As part of the new construction of the Papierfabrik Palm in Aalen, the new effluent treatment plant went into operation in 2020.

PALM SUSTAINABILITY AWARDS

For the new PM 5 at the Aalen mill, in 2021 PALM was included by the tenth KONGRESS BW for resource efficiency and the circular economy in the initiative “100 companies for resource efficiency” in Baden-Württemberg as one of the best examples.



In the “Best environmental protection” category, PALM was pleased to be nominated for the German environmental management prize for outstanding achievements in climate and environmental protection for the construction of the ultra-modern PM 5 in Aalen in 2021.

The East Württemberg Innovation Prize awarded PALM the title of “Top performer in the region” in 2022 for the “PALM Ultralight Corrugated Case Material” (ulCCM) produced on PM 5 in Aalen and the associated reduction of the carbon footprint along the entire value added chain from paper and packaging through to recycling.



The lightweight corrugated base paper produced in Aalen with a basis weight as low as 60 g/m² was given 3rd place at the Baden-Württemberg environmental technology awards in the category “Material efficiency” in 2021.



Paper reels and our own residual materials are transported via the rail system in Aalen.

Responsible waste management

Although PALM reuses the residuals from production wherever possible, small amounts of waste remain, for instance as metal or plastic particles such as adhesive tape and staples, which are found in the waste paper and are mechanically separated in the pulper when the waste paper is broken up and dissolved. In the production of graphic papers, printing ink is also removed from the waste paper in a multi-stage deinking process, resulting in deinking sludge. This has to be disposed of in a professional and environmentally friendly manner, just like the biological sludge that accumulates during the treatment of waste water in our effluent treatment plants.

The waste materials produced in the German paper mills are predominantly thermally converted in our Waste-to-Energy power plant in Wörth. The remaining waste is disposed of without exception via certified waste disposal companies, which demonstrably adhere to the directives under the Ordinance on Specialised Waste Management Companies. This ensures the transparency of the disposal process and its seamless documentation, as well as the proper plant equipment, the qualification of the personnel and the expertise of the waste management company. The RESY symbol confirms that the products are 100 % recyclable and are guaranteed to find their way to being reused.

For years, the RESY Organisation for Wertstoffentsorgung GmbH has committed to ensure transport and outer packaging made of paper and cardboard is completely recycled responsibly in established recycling cycles.



CO₂-optimised transport logistics

PALM took a big step to minimise the CO₂ emissions caused in the logistics chain when constructing the new paper mill in Aalen. A new rail siding with two tracks for paper and residual waste transports was built in the heart of the mill – between the paper machine hall and the paper reel warehouse – in cooperation with long-standing logistics partner DB Cargo at a cost of four million euros. Since then, a growing share of the transportation has been handled by rail. Goods trains create around 80 % less CO₂ emissions than trucks. The track system in Aalen means up to 8,000 trips a year by truck are replaced, saving 3,100 tonnes of CO₂. Europack Wörth has developed recyclable ReelDocks to load paper reels measuring up to 3.35 metres efficiently and save costs.

These are used, for example, to deliver paper reels from Aalen to the corrugated cardboard plant in Wörth three times a week by rail. For loading and transporting residual materials, innovative Mobiler vehicles are used, which are loaded and unloaded in the Aalen and Wörth plants. PALM is continuously working on further increasing the rate of rail transport. In the paper mills in Eltmann and Wörth – where a new rail system for trains was also set up - PALM has been handling a significant part of the transports by rail with its proven partner DB Cargo for decades. This way, we make not only an important contribution to reducing our carbon footprint, but also send out an exemplary signal far beyond our own company.



The amount of paper reels transport by rail is continually growing.



There is still plenty of potential to save on CO₂ in the truck transportation – PALM continuously works on converting its fleet to jumbo and long trucks, which have approx. 10 % more capacity than standard trucks.

Modern fleet

When it comes to using trucks, we opt for low-emission solutions. We organise the supply of raw materials so that our paper mills are supplied over short distances with locally sourced waste paper. Our framework agreements with our logistics partners also require the use of trucks that meet the highest emission standards. In cooperation with our logistic partners, we plan truck routes to minimise the number of empty kilometres, for example by assigning combined waste paper and paper routes. This means in practice: As soon as a supplier of waste paper has dropped off its load at the PALM receiving department, it can load reels of paper just a few metres away and transport them to the nearest corrugated cardboard plant for processing. Finally we assume our responsibility towards the drivers by keeping their waiting times as short as possible. There are also recreation and shower rooms at their disposal. At our corrugated cardboard plants, we are also continuously improving the climate footprint in our logistics.

For example, Wellpappe Alzenau has partly converted its own fleet to jumbo and long trucks. Due to the increased capacity of the jumbo and long trucks, we could significantly reduce the number of required journeys and the resulting CO₂ emissions. Electric trucks already purchased by Wellpappe Alzenau also make an important contribution to the further reduction of CO₂ emissions in the logistics chain. Car pooling is also successfully promoted at the Wörth corrugated cardboard centre, and at PilloPak in the Netherlands, a flexible price strategy favours fully loaded trucks. For scheduling routes, innovative tools such as telematics systems and GPS-controlled guidance systems are increasingly used at many of our corrugated cardboard plants. Empty runs or trucks that are not fully loaded are avoided as much as possible, partly by optimising the loading space, such as adjusting the pallet heights.

Active nature protection and biodiversity

In the construction of the new paper mill in Aalen, sustainability aspects such as land usage, nature conservation and biodiversity were considered extensively during the planning phase. Not a single square meter of additional space was needed for the footprint of the new mill. On the contrary: The new buildings were set out on the existing plot in such a way that they could be erected at the same time as the old buildings were demolished. Not only did this allow continued production with only minimal interruptions to operations, but also the reorganisation of the infrastructure optimised the layout of the new mill keeping the

footprint to a minimum. Therefore, the remaining mill premises could be intensively landscaped and provided with green spaces. More than 100 newly planted trees, around 650 bushes, including wild bushes, around 8,000 ground cover plants and shrubs as well as an area of 25,000 m² covered with landscaped lawns not only create a mill with a look of the countryside, but also help to remove CO₂ and improve air quality whilst providing a habitat for numerous insects and wildlife. The same applies to the circa 15,000 m² roof of the new paper reel warehouse, which is covered with grass.

It also acts like a natural air conditioning unit, which partly compensates for temperature differences between the outside and inside: In summer it keeps heat off, whilst in winter it acts as heat insulation. Depending on the weather, 3 - 10 % less heat escapes from the green roof than is the case for a gravel-topped design, thereby making an effective contribution to energy savings. Last but not least, by storing rainwater and delaying its discharge, the green roof takes the pressure off the drainage system – especially during heavy downpours.



The new paper mill in Aalen not only sets standards in terms of technology and energy efficiency, but also with a condensed layout, its biodiversity, sustainable and overall conception it is designed for the best possible protection of nature.

WHY WE CONSIDER OURSELVES PART OF SOCIETY

“Everything that we are is thanks to the people who find not only a job, but a working home at PALM.”

Our employees have always been a part of the company family for us and a critical factor for the success of PALM. In this tradition we have a very strong sense of responsibility towards our employees, their wellbeing and further development. This responsibility is reflected, among other things, in our extremely high staff loyalty and above-average employee satisfaction.

Perhaps the most important basis for the satisfaction of our employees is the job security. Working in the family-run business of PALM means having a secure job – often for an entire working life. For example, seven employees at the Aalen, Eitmann and Würth locations were able to celebrate 40 years of service in 2022, seventeen their 25th and twenty their 10th

anniversary. PALM has a long and valued tradition of honouring employees with a milestone work anniversary at a small annual celebration and presenting them with a gift. Thanks to our healthy growth, new jobs are constantly being created or – as with the new construction of our paper mill in Aalen – secured in the long term.

Occupational health and safety

PALM also provides its employees with peace of mind when it comes to health and safety at the workplace. The health of our workforce is an important matter to us and a key part of our responsibility for the people working at our company. Elaborate occupational safety management systems certified under EN ISO 45001 contribute to the health and safety of our employees in our paper mills and corrugated cardboard plants. The implemented occupational safety management systems identify sources of errors and safety risks and

thus help to minimise these. Not only are statutory requirements thereby fulfilled, but moreover the numbers of workplace accidents are significantly reduced and possible hazardous factors to health are identified early and eliminated. Every day PALM makes tremendous efforts to not only comply with the high requirements stipulated by the DIN EN ISO 45001 standard such as safety instructions, noise protection measurements or the provision of the latest protective equipment, but also to exceed these. Our specially trained experts

for occupational safety and our safety officers play an important role in this respect as well as our company doctors. We have also significantly improved occupational safety and largely eliminated physical strain due to a high level of automation on our equipment. Besides, ensuring health and safety in the workplace also requires the involvement of each employee. Employees can make suggestions for improvement – whether in the area of occupational safety, environmental protection or quality – at any time within the framework of PALM's internal suggestion system and are rewarded accordingly. We also contribute to the safety of our employees - and their visitors – for example by instructing third-party contractors on site not only within the framework of the statutory requirements. In fact, we closely monitor and document the safety instructions with an in-house developed software program.

Outside the workplace, the 'cycle to work' scheme also promotes health protection – and at the same time climate protection. In Aalen we have installed lockers in the covered bicycle stands, where the batteries used on e-bikes can be charged and are well protected and free of cost. The scheme is intended to motivate employees to opt for a healthy living bicycle. This is something that we already offer at many PALM sites and are continuously developing and expanding. The provision of water dispensers also serves to protect health. As well as many site-specific measures, such as the financial support of gym memberships or workshops on the topic of "healthy leadership", as well as training days, running groups, health and bike classes. At the Aalen site, under the motto "PALM goes SPORT", there is the opportunity to get moving regularly after work in a running or cycling group together with colleagues. In addition, a basketball hoop and table tennis in an outdoor area invite you to join in sporting activities.

Training and development

Well-trained specialists who are passionate about what they do and who are motivated are the ultimate success factor, especially in times of rapid technological and social change. PALM's success cannot be summed up in strategy plans. It is created in the daily activities of each of our 4,200 employees. To this end, our employees have received excellent training and further education. We counteract the often lamented shortage of skilled workers in the most effective way: by training them ourselves.

In our paper mills and the administration offices, four apprenticeships are on offer, whilst the corrugated cardboard plants train eight job profiles.

We also consider inspiring students at a young age to pursue a career in our sustainable industry to be an important task. This is why we regularly organise factory tours for school classes, make work placements possible for school students and take part in trade fairs and events, for example at the student climate summit in Germersheim to inform young people about our sustainable products and apprenticeships.

PALM currently gives 170 apprentices the opportunity to obtain a vocational qualification. They benefit in this respect from intensive support from experienced trainers and that we generally offer to take them on in a permanent employment contract after their training. Because we prefer to fill upcoming vacancies with our own employees, this gives attractive development and career opportunities to the former apprentices.

Paper

Apprenticeships (m/f/d)

Paper technologist
Industrial clerk
Electronics technician
Industrial mechanic

Degree programs (m/f/d)

Paper engineer
Business management studies alongside vocational training
Business informatics dual study course

Packaging

Apprenticeships (m/f/d)

Packing technologist / packaging mechanic
Industrial clerk
Machine and plant operator specialising in paper processing
Specialist for warehouse logistics
Freight forwarding and logistics manager
Mechatronics technician
Electronics technician for operating technology

Degree programs (m/f/d)

Bachelor of Sustainable Science and Technology
Operational resource management
Business engineering
Business informatics dual study course



The graduates of the Palm Performance Programme 2022/2023.

“I started my career with PALM in 2010 as a mechanic and was soon given the opportunity to study for my Masters in Paper Technology at Munich University. This was an amazing opportunity offered by Palm Paper and once complete they supported me through my transition into the production side of the business. I have since worked my way up to De-Inking Plant Superintendent and in 2018 took part in the 2 year “Palm Performance Program” along with colleagues from the other Palm Mills. This was a great learning, development and networking opportunity from which I graduated in 2020. Since then I have also taken on responsibility of the Paper Separation Plant here at Palm and the company continues to support and develop my career.”

- Ian Stafford-Allen
De-Inking Plant Superintendent



The same applies to those coming through the academic route. In the paper mills we offer dual study courses for paper processing as well as business informatics, in addition we also offer a degree in business administration. The corrugated cardboard plants offer a Bachelor of Sustainable Science and Technology degree programme with a focus on packaging technology, operational resource management, industrial engineering and business informatics.

We are constantly in talks with potential top performers and managers and together we develop prospects for their professional future at PALM. For this purpose we set up the PALM ACADEMY in 2017. Immediately after completing their studies, the graduates can enter the two-year PALM Career Booster Programme. It comprises three theoretical training modules and two projects each lasting six months, one at a German mill and one at a PALM mill abroad. Those who have ambitions of and the abilities for a position in the top management can go on to take part in the PALM Performance Programme. Besides working through two project topics, the training covers four theoretical modules.

Under the umbrella of the PALM ACADEMY, there are also regular leadership and management seminars, sales training courses, specialist packaging training courses, seminars on specialised commercial knowledge or general topics for the further development of our employees.

With the PALM ACADEMY, we make a contribution that is very much appreciated and gladly embraced by the employees so that they can pursue a career at PALM in a structured and systematic manner that corresponds to their ambitions and abilities. This also includes financial support for our employees to continue their professional training, for example to become a technician, master craftsman, specialist or business economist.

There is also an active exchange with several universities. PALM regularly awards work placements and bachelor's as well as master's theses to those studying. Due to a close connection with the Munich University of Applied Sciences, PALM awards the PALM AWARD to the best graduate in the paper technology master's course since this course was founded.

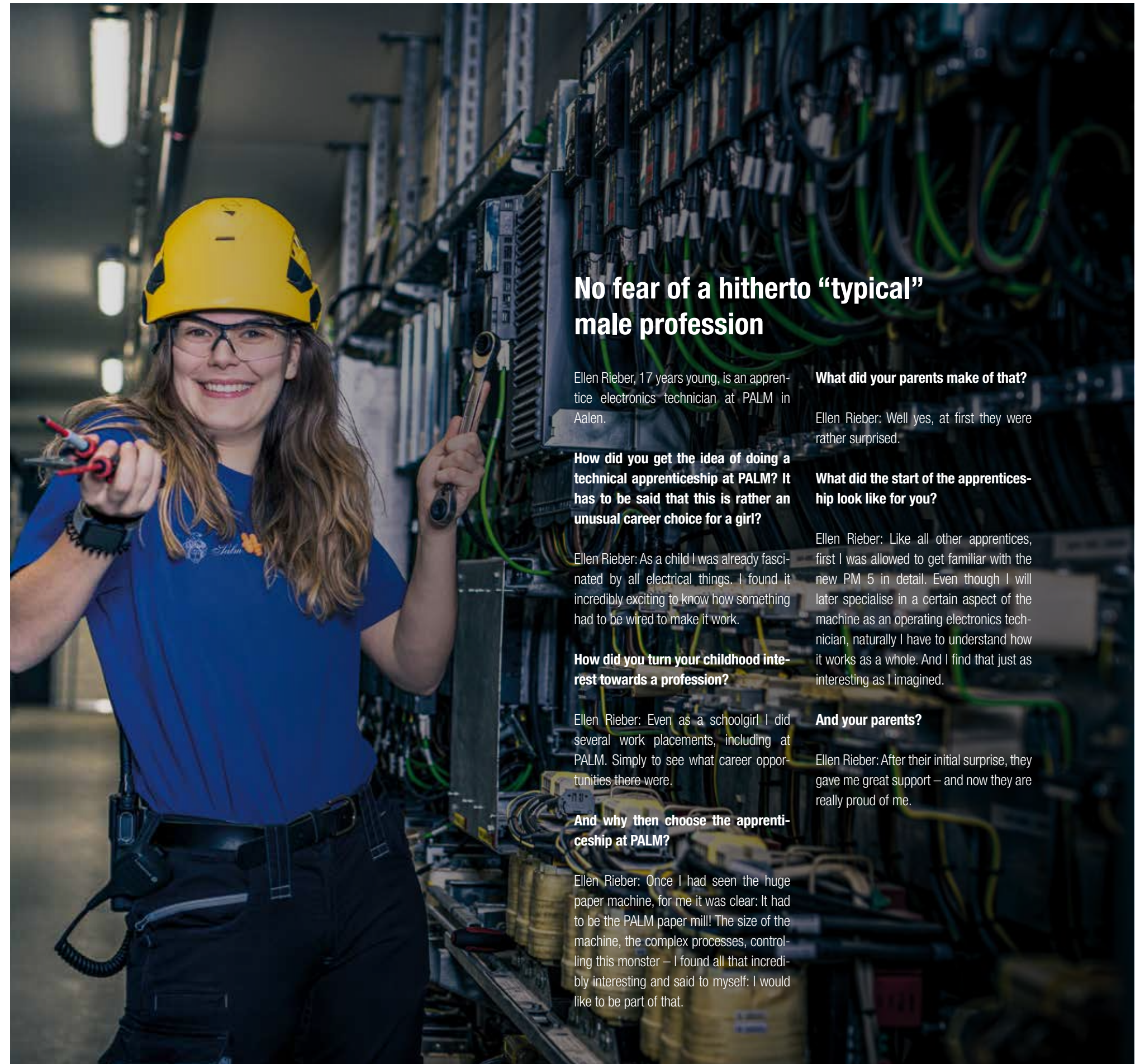
Diversity and equal opportunities

We are expressly committed to treating all people working at PALM equally – regardless of their gender, sexual orientation, religion or origin. In our self-declaration we have defined codes of conduct, in which we undertake to eliminate discrimination both in the application and recruiting process as well as during employment. This also includes giving male and female employees the same employment opportunities and treating them as absolute equals.

Our explicit targets include acquiring more female employees for technical professions. We are aware that due to traditional structures in the paper and packaging industry, the percentage of women in production is still comparatively low. We want to change this, for example by offering internships to women in order to get them interested in training that goes beyond the usual gender stereotypes before they choose a career. In the meantime, two women are completing an apprenticeship with PALM at the German paper mills, one as an electrical engineer and the other as a mechanic. They encourage others – with our support – to opt for professional training in a domain that has so far tended to be male.

Our corrugated cardboard plants also provide further examples of diversity and more equal opportunities: Some work orders there are preferentially awarded to people with disabilities or prisoners' workshops as part of an "extended workbench". Besides, some plants employ people who would hardly have a chance to be hired elsewhere because of their distance from the labour market.

We consider it important to listen to the concerns and worries of our employees at all times. In this respect, the works councils at the PALM plants are a great means of support. The collaboration takes place in a trusting and constructive manner. Employees can also raise their concerns anonymously through our whistleblower protection system and special grievance mailboxes.



No fear of a hitherto “typical” male profession

Ellen Rieber, 17 years young, is an apprentice electronics technician at PALM in Aalen.

What did your parents make of that?

Ellen Rieber: Well yes, at first they were rather surprised.

How did you get the idea of doing a technical apprenticeship at PALM? It has to be said that this is rather an unusual career choice for a girl?

Ellen Rieber: As a child I was already fascinated by all electrical things. I found it incredibly exciting to know how something had to be wired to make it work.

What did the start of the apprenticeship look like for you?

Ellen Rieber: Like all other apprentices, first I was allowed to get familiar with the new PM 5 in detail. Even though I will later specialise in a certain aspect of the machine as an operating electronics technician, naturally I have to understand how it works as a whole. And I find that just as interesting as I imagined.

How did you turn your childhood interest towards a profession?

Ellen Rieber: Even as a schoolgirl I did several work placements, including at PALM. Simply to see what career opportunities there were.

And your parents?

Ellen Rieber: After their initial surprise, they gave me great support – and now they are really proud of me.

And why then choose the apprenticeship at PALM?

Ellen Rieber: Once I had seen the huge paper machine, for me it was clear: It had to be the PALM paper mill! The size of the machine, the complex processes, controlling this monster – I found all that incredibly interesting and said to myself: I would like to be part of that.

Social commitment

Our commitment to the common good at our locations and to being useful to the people in the particular region, over and above providing secure jobs, is as old as the company PALM. Especially in the fields of culture, education, sport and social projects, we are a reliable partner and sponsor by tradition.

In Aalen and the surrounding area, we have combined and coordinated our charitable work since 2002 in the “Dr. Wilfried Palm Foundation”. Between 2008 and 2021 it made a decisive contribution to the investigation, protection and restoration of the medieval Kocherburg ruined castle not far from our headquarters.



Organ concert at a PALM event in Aalen's Kulturbahnhof. The organ of the renowned organ builder Allgeyer was restored with donations of PALM and moved to the Kulturbahnhof in Aalen.



01 Numerous PALM corrugated cardboard plants provide boxes free of charge for packaging aid deliveries to Ukraine.

02 The skill trail for mountain bikers at the “Christophorus Family Campus” is gently embedded in its natural surroundings.

03 Our corrugated cardboard plant WellPack in Einsiedeln, Switzerland, supported the construction of a pump track.

04 Even company founder Adolf Palm supported excavations at Kocherburg. PALM has made a big contribution to the new splendour of the popular day trip destination.

Funds from the “Dr. Wilfried Palm Foundation” also went towards the restoration of an organ which is more than 200 years old in the St. Johann Church in Aalen in 2012, and the relocation of an organ from a church in Aalen's Hüttfeld, which was condemned to demolition, to the newly emerging Aalen Kulturbahnhof KubAA in 2018.

A win for everyone, old and young, families, amateur and professional sportspeople, is the “Christophorus Family Campus”, the construction and implementation of which PALM made possible during the 2022 anniversary year as a thank you for the 150 years of continuous support from the local community nearby the Aalen paper mill. The core element of the campus is a skill trail – an exercise and training route – for mountain bikers. There they practise their sport at different levels of difficulty without harming the forests or sensitive nature. The commitment to the common good is by no means limited to our headquarters in Aalen. Numerous other PALM locations let society participate in their success by giving something back. In Switzerland, WellPack has also appreciably helped finance a bike park.

And for us it is a matter of principle that we help in emergency situations and disasters with donations in kind. Packaging in particular is very important in these cases to provide fast and safe

transport of clothing, food, medical aids and items of daily use to the crisis areas. PALM provided large quantities of free of charge packaging after the flood disaster in Ahrtal in 2021, after the start of the Russian attack on Ukraine and after the devastating earthquake in Turkey and Syria at the beginning of 2023.

Last but not least: Many corrugated cardboard plants support children, schools and clubs supplying corrugated cardboard as handicraft material or also by making direct donations. At some sites, PALM plants also assume their social responsibility by organising or taking part in events.

Listing everything that we do as a company would go beyond the scope. However, the various commitments at our sites has one thing in common: PALM sees itself everywhere as part of the regional society, as a pioneer not only of technical innovations and substantial contributions to climate and environmental protection, but also as an economically sound and therefore strong driving force when it comes to helping people in need, giving people something back or changing our society sustainably for the better.

GRI Index

PALM has reported the information cited in this GRI content index for the period from January 1, 2022 to December 31, 2022 with reference to the GRI Standards.

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Note For reasons of better readability, we refrain from using gendering. All references to persons apply equally to all genders.





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