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MGG

MÜLLER-GUTTENBRUNN GROUP

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Dear readers!

‘Well-intentioned’ does not always mean ‘well done’. Unfortunately, this saying often rings true when it comes to new laws, ordinances and regulations in the recycling industry. A prime example is the ‘railway obligation’ initiated by the Ministry of the Environment. Recycling transports by lorry over 100 km are to be increasingly shifted to rail. So far, so good. A noble intention.

But how does it work in practice? For every truck transport of recycling material over 100 km, a request must be made in advance to see if the railways can take on the journey. If they can't, the transport company gets a special permit to carry out the transport by truck after all.

The absurd thing about this is that to date, around 98% of our requests have been rejected by the railways. This means that only 2% of transports have been shifted to rail, often due to a lack of infrastructure. For us recyclers, the rail requirement means massive bureaucratic effort, a lack of planning security and, in effect, a distortion of competition. At Müller-Guttenbrunn, we have had rail connections at our plants for a long time, yet we still operate around 30 lorries, whose logistics have now become much more laborious.

This can sometimes lead to some rather curious situations: for example, there are routes where the railway handles transport in one direction, but the return journey with different goods has to be carried out by lorry. This means that the empty lorry travels almost parallel to the transporting train, which is economically inefficient and completely absurd from an environmental point of view.

These issues must be regulated by the market and not by politics. I am convinced that the good idea will work if rail is more attractive than road. I therefore hope that the current discussions between chamber representatives and the ministry will be positive and that practicable and economically sensible solutions will be found to achieve the hoped-for CO2 savings.

Until then, you can find out what's happening in the world of the Müller-Guttenbrunn Group in this year's edition of Spectrum. Enjoy reading!

Yours sincerely,
Mag. Christian Müller-Guttenbrunn
CEO

Photovoltaic recycling: The future starts now

PV modules make an important contribution to reducing CO_2 emissions. But what happens to the modules when they reach the end of their service life, or when operators switch to more powerful panels earlier? With the expansion of solar energy, the number of disused photovoltaic modules is also increasing, and with it the need for sustainable recycling and reuse solutions. This is a task to which the Müller-Guttenbrunn Group is intensively committed – with established processes, ongoing technology development and research partners at home and abroad.

The energy transition is in full swing. Photovoltaic systems are on everyone's lips and have experienced a real boom in recent years, fuelled by high energy costs and the desire for a 'power plant on your own roof'. The fact that the topic of recycling and reuse of PV modules is becoming increasingly important is also confirmed by the figures: in Austria, installed PV capacity has risen sharply. In 2010, the total capacity of all systems in operation was 98.5 megawatts peak (MWp), in 2015 it was already 937 MWp, in 2020 it was 2,043 MWp and in 2023 it will be 6,395 MWp – an increase of almost 6,500 per cent in 13 years. Even though annual growth has declined slightly recently (2023: 2,603 MWp, 2024: 2,225 MWp; 1,300 to 1,500 MWp are expected for 2025), the total installed capacity continues to grow.

Considering the typical service life of PV modules, which is around 20 to 25 years, it is clear that a sharp increase in returns can be expected soon. This is not only due to age. Many systems are replaced prematurely because new modules deliver more power and replacement is economically viable. However, owners and operators often only ask themselves what to do with old panels when the modules are no longer functional or no longer profitable. Who will take them back? Are there any costs involved? And why can't they simply be handed in at a recycling centre?

Legal framework: responsibility that often gets stuck in everyday life

In principle, extended producer responsibility applies: manufacturers or distributors must ensure that PV modules are disposed of properly or – much more sustainably – recycled properly. In practice, however, after 20 years on the roof, it is often no longer possible to trace who the original distributor was. In addition, used PV modules are legally considered commercial equipment and therefore do not have to be accepted by municipal collection points. This means that the responsibility often lies with the owners, and many do not know what to do with their old modules.

MGG offers reliable collection for large and small quantities. Anyone who wants or needs to dispose of their old PV modules today can hand them in at MGG Metrec in Amstetten. Due to their complex composition – around 73% glass, 12% plastic, 10% aluminium, 3% silicon and 2% other metals – a moderate disposal fee is charged. In return, the company guarantees sustainable and professional processing.

PV recycling at MGG: established, but only the beginning

For the Müller-Guttenbrunn Group, one thing is clear: recycling is not only a legal requirement, but also a central component of the circular economy. That is why the development team has already established a functioning solution for recycling PV modules, certified by CENELEC and available directly at locations in Amstetten. Specified recycling quotas and processing guidelines must be adhered to. Strict limits apply to the removal of pollutants, including cadmium, selenium and lead. These limits ensure that only silicon-based modules are processed. Thin-film modules, on the other hand, are classified as hazardous waste by law and must be treated in separate processes.

'As the Müller-Guttenbrunn Group, we do not want to miss out on this important material flow. That is why we are working intensively on sustainable solutions for processing old modules in a resource-efficient manner. After all, PV modules are a valuable material flow of the future,' emphasises Maximilian Müller-Guttenbrunn. At the same time, it is clear that the current recycling ap-

Maximilian Müller-Guttenbrunn sees PV recycling as a major market of the future: 'PV modules typically have a service life of 20 to 25 years. However, many are replaced earlier because more powerful modules come onto the market and replacement often makes economic sense.'

proach has not yet reached the end of its development. The goal remains to separate the individual components even better in order to be well positioned for significantly larger quantities in the future.

The key technical question: recovering glass in the highest purity

The largest material component of a module is the glass plate, which accounts for around 73% of its mass. When large quantities of old modules accumulate in the future, this glass must be recovered in very high purity so that it can ideally be reused in PV module production. But this is precisely where one of the biggest challenges lies: the glass plate is bonded to a backing foil and other components, such as silicon. This bonding must be broken down in such a way that the separation and subsequent recycling can be converted into an economically viable process.

The status quo shows how much has already been achieved – and how much still needs to be done. Currently, MGG Metran in Kematen an der Ybbs separates the aluminium frame (around 10% of the total material) and plastic parts on the back from the composite glass pane. In the process, the modules are first shredded and crushed. The non-ferrous metals are then extracted in the Group's facilities. The metals are returned to the material cycle in smelting plants. At the same time, MGG is examining and testing various material recycling options for the glass fractions. 'However, this procedure can only be a temporary solution at best: the large return flow in the coming years will require solutions that

Anyone wishing to dispose of old PV modules – regardless of whether in large or small quantities – can bring them to MGG Metrec at Industriestraße 12 in Amstetten. The Müller-Guttenbrunn Group guarantees sustainable and professional processing.

completely and efficiently separate coatings and adhesives – so that waste glass can be turned back into high-quality recycled material,' explains Daniel Forstner.

Research and cooperation: Apollo and PVReValue

In order to put the issue on a broad footing, the Müller-Guttenbrunn Group is intensively involved in national and international research projects and is simultaneously driving forward internal developments. In the Horizon project 'Apollo', an international consortium is pooling its expertise under the leadership of experts from the Fraunhofer Institute in Halle an der Saale. The vision: a circular economy through the high-quality recycling of all PV materials. The aim is to significantly increase material recovery through innovative processes, from sorting and extraction to refinement, reuse and traceability.

Work is also being done in Austria on the future of PV recycling: with 'PVReValue', the Austrian Research Promotion Agency (FFG) has funded a project coordinated by the Montanuniversität Leoben. MGG is involved as a project partner in order to further develop multi-stage composite separation and the combination of other processing methods. High quality begins with input characterisation: modules are selectively charged, and output qualities are modelled and adjusted. The aim is to produce high-quality, recyclable secondary raw materials as the basis for a functioning circular economy.

Reuse instead of recycling: a second life for PV modules

In addition to traditional recycling, Müller-Guttenbrunn is thinking one step ahead and focusing on reuse. Many decommissioned modules are still technically functional. However, they are replaced because new systems are more efficient or because plants are being modernised. Together with the Amstetten-based start-up 2ndcycle, in which MGG has a stake, the company is therefore pursuing a reuse-first approach: modules are automatically tested and, if technically possible, given a second life cycle.

In a test line developed by 2ndcycle, modules are analysed fully automatically and tested at laboratory level: cleaning and (partly AI-supported) visual inspection, flash test for STC performance testing, electroluminescence, insulation testing and wet leakage testing,

UV fluorescence, spectrometry, type plate recognition, dark characteristic curve measurement, bypass diode test, module measurement, UID assignment, database entry and classification. The end result is a test report for each individual PV module. If all criteria are met, the module can be put back on the market as a 'new' product – in line with the principle of resource conservation.

In addition, 2ndcycle also offers integrated recycling processes for non-reusable modules and, with the SolarBox, a logistics solution for safe and efficient transport. The Müller-Guttenbrunn Group is contributing its many years of expertise in recycling technology and material flow management to this partnership in order to actively help shape the development of a closed recycling chain. The main question currently open with regard to the reuse approach is that of economic viability. The actual size of the market for tested used modules is still being examined. However, the potential is clearly recognisable.

Why transitional solutions are not enough

Although there are currently sales channels for glass and mixed fractions from PV recycling, these are often still transitional solutions and are not dimensioned for the large returns expected in the coming years. It is crucial that the glass is of a quality that allows for high-quality reuse. This requires separation steps that remove coatings, film residues and adhesives in such a way that the glass fraction is as clean as possible at the end. Only then can the largest mass fraction of a module become a secondary raw material that is also in demand industrially. It is precisely at this interface between technical feasibility and economic scaling that Müller-Guttenbrunn's development work comes into play.

What operators should already be considering today

Anyone who wants to recycle or reuse modules should store and transport them in as undamaged a condition as possible. Breakage, moisture ingress or improper dismantling make subsequent testing and processing more difficult – especially if reuse is being considered. If in doubt, it is worth contacting a specialist partner at an early stage to coordinate collection, logistics and recycling. This turns the disposal issue into a plannable process. And that is exactly what the industry is working hard to achieve.

Looking ahead: Prepared for the material flow of the future

Daniel Forstner, responsible for research into PV recycling at MGG Metran, sums up the challenge: "The goal must be to turn old photovoltaic panels into new photovoltaic panels. However, the industry is still a long way from achieving this, not least because most of the manufacturing takes place in China, which means that economic conditions also play a role. At the same time, cheap goods flooding the market can hamper recycling efforts. Economic considerations will determine the direction recycling and reuse take in the future."

Nevertheless, it is clear to those responsible at the Müller-Guttenbrunn Group that the volume of end-of-life PV modules will increase. They want to be prepared for this with existing processes, ongoing technology development, research collaborations and a forward-looking reuse approach. Or, as Maximilian Müller-Guttenbrunn sums it up: 'We are thinking ahead and focusing on a holistic solution for one of the most important material flows of the coming decades.'

The aim must be to produce new photovoltaic panels from old ones. Or to ensure that systems can be reused.

Expertise, flexibility and job satisfaction

Harald Fehringer has been Production Manager at MGG Metrec since November 2024. In this role, he is not only responsible for his team, but is also in charge of a wide range of technical equipment, including two shredder systems. Anyone who thinks this makes him nervous is wrong! He quickly masters his new position with calm and prudence.

Mr. Fehringer, you have only recently taken over responsibility for production management at Metrec. How did this come about?
Harald Fehringer: Yes, that's right, I've been working for the Müller-Guttenbrunn Group for a long time, but I've only been in production management for a few months. In 2024, the company management decided to create a second position in Production Management, as the workload had been steadily increasing over the previous years. I applied for the position and was able to beat the other applicants at the hearing. I took up my new position in November last year. Unfortunately, my colleague recently left the company, which is why I am currently also responsible for his agendas.

That doesn't sound like a zero-eight-fifteen situation. Especially considering that you were not yet fully trained.
Harald Fehringer: The situation really isn't easy. However, I benefit from the fact that I've been working here at Metrec since 2001 and – if you exclude operating the two shredder systems – I've been through all the stations here on the site. I drove the loader for almost 15 years and can still operate every machine today if circumstances require it. And yet there were and still are many things that I had to learn and acquire, especially at the administrative level.

How did you approach this challenging task? Your teacher was no longer available.
Harald Fehringer: With calm and prudence. There's no point in rushing around, it only makes things worse. Here at Metrec, we are in the fortunate position of having a great team structure. Colleagues like Michael Grimm and Manuel Riedl, to name but a few, have become something like mentors to me. They – and many other colleagues – are there to help and advise me. This enables me to acquire the necessary expertise quickly and unbureaucratically.

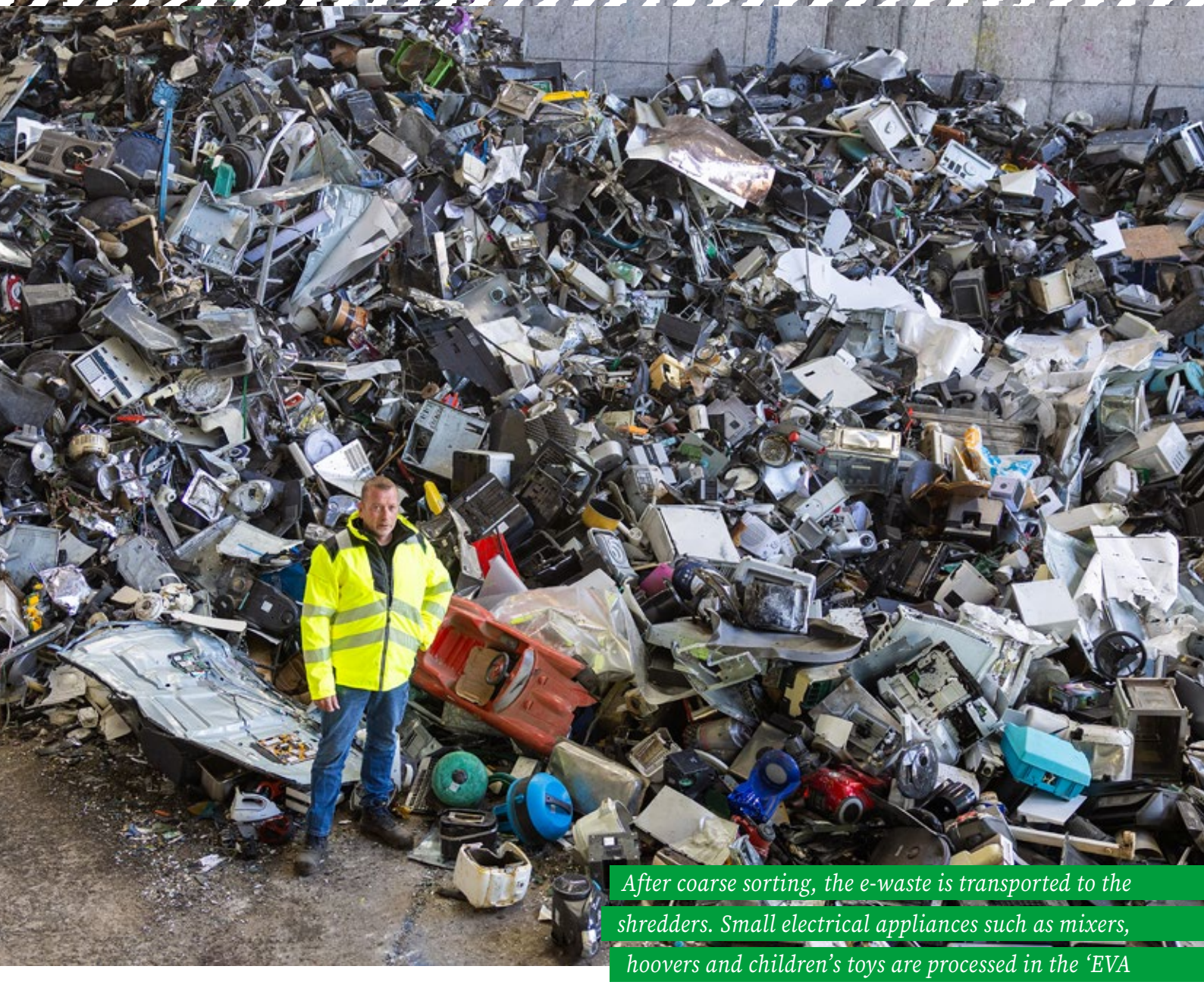
You have piqued our curiosity: What does a typical working day look like for you?
Harald Fehringer: I start by organising the employees and defining the daily schedule. I'm responsible for a team of around 30 people: loader drivers, excavator drivers, sorters, machine operators and shredder drivers. I then liaise with Amstetten station. Most of the communication takes place by e-mail. The weighing results of the transported material from the previous day are passed on and the number of wagons we need at the plant the next day is announced.

Then I go out into the yard, do my rounds and check that everything is OK. My colleagues can reach me on my mobile phone at any time and contact me if anything out of the ordinary happens.

When everything is running smoothly on site, I discuss with the management: how much of which material is currently available, what is coming in, what can be sold. We are in constant dialogue, including about changes to the daily schedule. It is not uncommon for things that have just been finalised to have to be discarded and rescheduled. For example, a special, unplanned delivery of materials can sometimes make us all 'sweat'. It is then up to me to act quickly and take the necessary steps to get the situation under control again.

While we're on the subject of materials: what route does the scrap take here on the site?
Harald Fehringer: Scrap is delivered by lorry or rail wagon. The loads are weighed and the delivered goods are inspected and assessed. If the material does not correspond to the quality, this is reflected in the price. The excavators carry out a rough sorting of the load. Heavy iron parts are sorted out, crushed in the shears if necessary and loaded for resale. Mixed scrap goes straight to the shredder and is shredded. The iron it contains is sorted out by a magnet and sold directly. The remaining material is taken to Metran for further processing. Cars are processed manually in the first step. Sorters dismantle tyres by hand and drain all fluids. They can then also be shredded in the shredder. The residual fraction is sent for incineration.

What happens to electronic waste? Is it also processed in the large shredder?
Harald Fehringer: Only large electrical appliances such as washing machines go into the large shredder. The majority of electrical appliances to be scrapped are much smaller and can be processed in the EVA shredder. Small electrical appliances such as mixers, hoovers, children's toys and much more should be delivered without batteries. Sorters go through the material anyway and remove any rechargeable batteries and batteries that are still present in the appliances and secure them in the boxes provided. If rechargeable batteries or batteries get into the shredder anyway, this can lead to deflagrations or even fires in the system. A sophistica-



After coarse sorting, the e-waste is transported to the shredders. Small electrical appliances such as mixers, hoovers and children's toys are processed in the 'EVA shredder' into two different coarse fractions.

ted monitoring and alarm system as well as an extinguishing system prevent the occurrence of fires in such exceptional cases.

The shredded material comes out of the shredder in two different fractions – one coarse and one fine – and is transported to Metran in Kematen an der Ybbs for further processing. The residual fraction is sent for incineration.

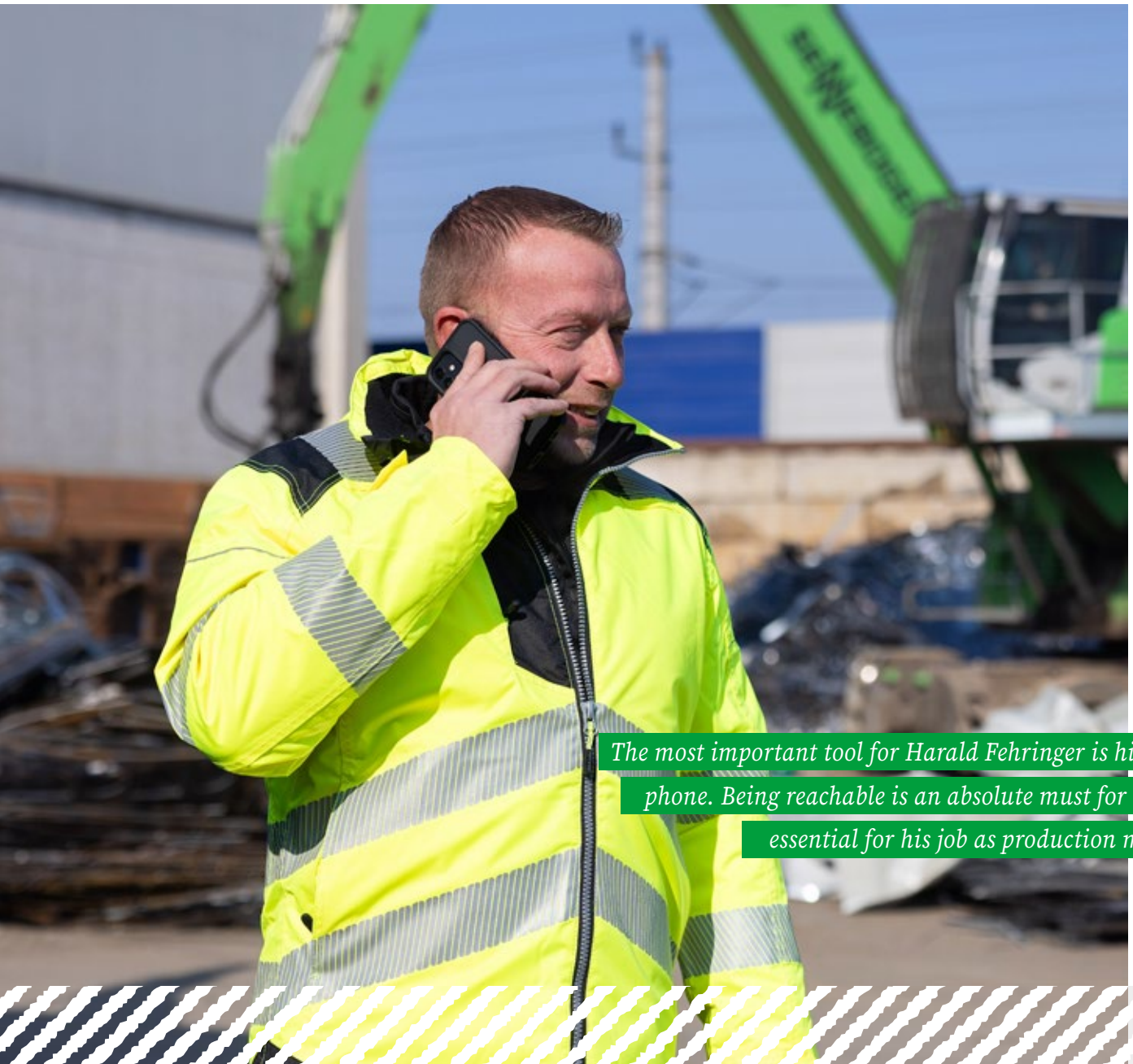
Who takes care of the maintenance of the shredders and what happens if a shredder breaks down?
Harald Fehringer: Maintaining the systems is part of the morning routine. The shredders, which are shut down at the end of the working day, are started up and inspected. Fitters check the machines to make sure they are working properly, replace wearing parts if necessary and repair anything that has broken. This takes about an hour. If major repairs or maintenance work is required, a shredder may have to be taken out of service for several days or weeks. If this happens unscheduled, intervention is required.

How long can scrap be temporarily stored on the site without being further processed in the shredder plants?
Harald Fehringer: With the large shredder, we can temporarily store delivered material for a week without processing it. After that, deliveries have to be stopped. The

e-waste for the smaller EVA shredder has to be stored in the hall, protected from the weather. Here, our capacity limit is reached after just two days. If a plant is unscheduled and does not run for a longer period of time, it is up to the management to decide how to proceed.

What qualifications do you need for your job and what do you particularly like about your work?
Harald Fehringer: When I started at Müller-Guttenbrunn in 2001, you had to have learnt a metalworking trade. I am a car body fitter. You learn everything else you need to work here on the site from your colleagues. There is no apprenticeship. I learnt everything from scratch. In my current position, you also have to be able to deal well with your employees. Each person is individual and you have to be able to empathise with the people you are responsible for. This is another new challenge for me, which I don't find difficult and which I am happy to take on. In general, I can say that I am in the fortunate position of being able to pursue an activity that fulfils me and that I enjoy. It's the sum of the whole, the variety, that makes my work so special.

How do you see the Müller-Guttenbrunn Group in general as an employer?
Harald Fehringer: We have a perfect environment here. We cultivate a respectful 'you', the team spirit and helpfulness among colleagues is great. I enjoy going to work and look forward to seeing everyone again after two weeks' holiday. The fact that everything is going so well is certainly also due to the fact that the company is managed well and prudently by the Müller-Guttenbrunn family and the employees are not just 'a number'.



The most important tool for Harald Fehringer is his mobile phone. Being reachable is an absolute must for him and essential for his job as production manager.

Harald Fehringer's area of responsibility includes ensuring that the systems run smoothly. With his many years of experience and a great team at his side, he is ideally equipped for the challenges that his job entails.

Last but not least, we are interested in Harald Fehringer as a private individual. Would you like to tell us a little about yourself?

Harald Fehringer: I am 45 years old and live with my wife and our two children in Mauer near Amstetten. My daughter is almost grown up at the age of 20, while my son is only five and keeps us on our toes. I spend most of my free time with my family. I'm a member of the Hausmening fire brigade, but I don't currently go on any missions. I also spend a lot of time looking after our house and garden. However, I have to say that I don't have 'green fingers' and am therefore more responsible for repairs.

Harald Fehringer – a man in demand with a limited time window

We would have liked to talk to Harald Fehringer for longer, but his phone rang several times during the interview. He calmly typed a few messages in response or signalled to the caller with a brief 'I'll get back to you in a minute' that he would take care of it. But now he is signalling to us that his presence is required on site. Without rushing, he takes us to the exit and bids us a friendly farewell. Thank you very much for the conversation!

MGG Polymers production reaches **a new level of quality**

The multi-year investment programme of plastics recycling company MGG Polymers is entering the next round. Following the commissioning of the new logistics centre last year, a fifth compounding plant is now set to raise both the quality and quantity of production to a new level.

MGG Polymers has been carrying out a comprehensive restructuring of the plant for several years in order to expand production capacities and optimise the material flow on the company premises. The plant in Kematen an der Ybbs has been reorganised so that raw material delivery, processing and dispatch are linear. This increases efficiency throughout the entire production process. By investing in modern technologies, the focus is clearly on the future viability of the site.

A new, fifth compounding plant was decided as a strategically important investment to enable higher production volumes and at the same time fulfil the increasing quality requirements of the market. The investment of millions of euros is particularly noteworthy at a time when many European plastics recyclers have postponed their investments due to economic difficulties.

The ‘K5’ compounding plant – a technical masterpiece.

The new system complements the four existing production lines. While the previous compounding lines enable ‘formulations’ of up to five individual components, the new line can precisely dose up to ten different individual components. The ‘K5’ consists of two extruders. The first melts and filters the raw material, while the second adds the additives to achieve the specific material properties required by the customer. This separation ensures greater precision and is intended to further improve the quality of the end product.

In order to utilise the limited factory space efficiently, the two extruders of the K5 were built high up to save space, using the ‘double-decker principle’ so to speak. The material flow follows the force of gravity in order to maximise energy efficiency.

The new, fifth compounding plant extends over three floors and represents a major technological advance for the Müller-Guttenbrunn Group company.

Comprehensive training of the entire technical staff ensures a smooth production process. K5 – the answer to the increasing quality demands of the recycling market.

„We were looking for a long time for a system that works at a higher level than the systems we already operate“, explains Günther Höggerl, Managing Director of MGG Polymers. „The system layout of the K5 now gives us the opportunity to produce qualities above what is ‚state of the art`“.

Post-Consumer-plastics and their current market situation.

What Höggerl is referring to: With the new system, Polymers is now able to produce high-quality ABS or PCABS grades with a wide range of material specifications. Thanks to the option of adding several additives such as UV stabilisers or similar to the plastics mentioned, the system can produce tailor-made post-consumer recycled plastics (PCR) for specific customer applications – for example for the outdoor sector, household appliances, but also for the automotive sector.

The European plastics recycling market is currently under great pressure, particularly due to cheap plastic imports from Asia. The fact that new plastics from the Far East are often cheaper than recycled plastic from Europe is forcing recycling companies to optimise their strategies. However, while many companies are having to cut back production or even close down, MGG Polymers is consciously focussing on high quality and modern technologies. The aim is to stand out from the competition and take a leading position in the production of high-quality recycled plastics in Europe. Günther Höggerl is convinced that the forthcoming regulations on the mandatory use of high-quality recycled plastics will make it possible to produce sustainably and economically viable plastics recyclers in Europe in the future.

Harmonising demand and raw material management.

One logistical challenge is to harmonise customer requests for regular deliveries of special PCR plastics with the uneven composition of the incoming material. Production and warehouse planning at Polymers therefore requires a forward-looking approach in close coordination between raw material procurement and customer orders. In addition, plastics that are produced

in the course of capacity increases but cannot be sold to the same extent must be stored temporarily. With all these logistical challenges, the additional production and storage capacities that have now been created help to guarantee Polymers customers the right delivery quantities at the right time.

The K5 project: After three years of planning, in March 2025 it was time to go!

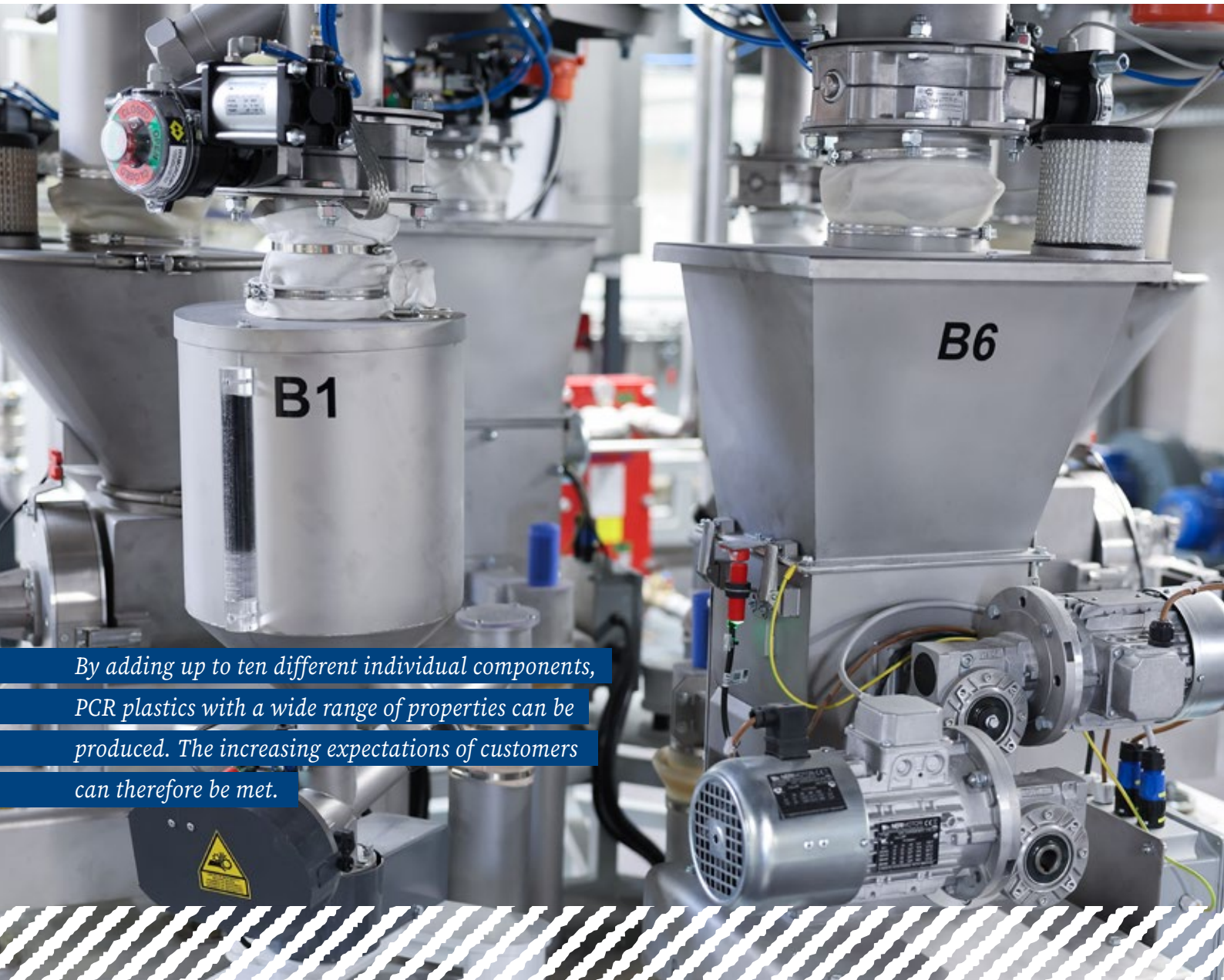
MGG Polymers was already considering the purchase of a fifth compounding system at the end of 2021 and had evaluated various manufacturers by the end of 2022. In the first quarter of 2023, the decision was made in favour of a system from a renowned Italian family company that has decades of extensive experience in the construction of similar system plants.

Installation then began at the Polymers site in Kematen an der Ybbs in summer 2024 and the first test runs were carried out in December 2024. Pre-series production has now started.

Positive future prospects.

„The new, fifth compounding plant represents a major technological advance for the company and is a key component of the long-term 2030 growth strategy“, Günther Höggerl summarises. „It significantly increases our capacities and offers more flexibility thanks to the numerous possibilities that arise in the field of additives. K5 is our answer to the increasing quality demands of the market.“

Despite – or perhaps because of – the extreme challenges currently facing the market, this investment in a fifth compounding plant is strategically necessary for MGG Polymers, which is part of the Müller-Guttenbrunn Group, in order to remain competitive in the long term.



By adding up to ten different individual components, PCR plastics with a wide range of properties can be produced. The increasing expectations of customers can therefore be met.

In collaboration with a local installation company and the Austrian heat pump manufacturer IDM, the decision was made in favour of an air-driven heat pump, as there is no groundwater available at the site.

Out of oil:
heating with heat pumps and waste heat!

MGG Metran focussed on energy efficiency and sustainability when renovating the heating system. Instead of the outdated oil-fired boiler, a modern system that works entirely without fossil fuels now provides environmentally friendly heat. A further step towards energy independence.

Until a few months ago, Metran in Kematen an der Ybbs was heated with a 170 kW oil boiler and two old air-water heat pumps. As the components were no longer state of the art and had recently become very prone to faults, the decision was made to replace the ageing systems. A suitable concept was developed in collaboration with the installation company Gebetsberger from Mauer near Amstetten and the Austrian heat pump manufacturer IDM. As there is no groundwater available at the site, the decision was made in favour of an air-driven heat pump with an output of 30 kW.

Waste heat and infrared for significantly lower energy consumption.

A central component of the modernised energy concept is the use of waste heat from compressors. This is utilised directly via heat exchangers to heat Hall 1 and fed into the water circulation system. This further reduces the electricity consumption of the heat pump, as it only needs to be switched on as a supplement. For additional heating of the workstations in the halls, the old electric fan heaters have been replaced by modern infrared heating panels, which provide locally focussed heat. Of course, the offices will also be heated with this new system in future. Surplus heat will be used to heat water. In summer, the heat pump will be used for cooling.

30 kW heat pump replaces 170 kW oil boiler. Photovoltaic electricity ensures self-sufficiency.

„Thanks to the conversion and modernisation, we are now able to heat Hall 1 using significantly less energy“, reports Gunther Panowitz, Managing Director of MGG Metran. „And that also makes economic sense. Because we assume that the production costs will be amortised in around five years.“

The photovoltaic systems on all possible company roofs also ensure that the electricity requirements for heating, cooling or charging electric vehicles can be largely covered by internal power generation. In summer in particular, the photovoltaic surfaces supply a lot of energy, which is fed into the production facilities.

Efficiency, sustainability and economy combined.

„The new heat pump in combination with the utilisation of waste heat and the photovoltaic systems makes us efficient and environmentally friendly all year round. We have managed to reduce CO2 in a resource-saving way and achieve a high level of comfort despite reducing costs. A successful investment in the future!“ says a delighted Gunther Panowitz.

Internal tours at Müller-Guttenbrunn:
Three locations – one mission

Internal tours brought the employees of the Müller-Guttenbrunn Group closer together, in the truest sense of the word. The three plants in Amstetten and Kematen/Ybbs opened their doors to their own staff. The aim was to once again focus on the shared mission, which only works thanks to the precise interaction between the three plants.

Autumn was all about understanding. The management team organised four days of internal tours in Amstetten and Kematen/Ybbs. The aim was to experience first-hand what colleagues at the other sites do on a daily basis and how the individual steps along the joint value chain interlock.

The tours began with a presentation of the Müller-Guttenbrunn family and the history of the company. The processes that take place at the individual locations and the products that result from them were also discussed.

Three companies, one material flow

During the subsequent tours, it became clear that the three companies work hand in hand and complement each other along the process chain. This results in the desired depth of recycling, from the arrival of a wide variety of old appliances and metal fractions to mechanical processing and sorting to the high-quality recovery of metals and plastics. The internal tours showed how material flows are coordinated across site boundaries and which quality and safety standards set the pace.

During the tours of the plants, the processes were explained directly and clearly on site. There was plenty of opportunity to ask questions, which the visitors were happy to take advantage of. There was often amazement at how one or the other process actually works. '... without ever having seen it in concrete terms, I actually imagined it differently ... simpler somehow,' was a statement that was heard frequently. The respect and admiration for what our colleagues do was palpable.

Recycling is teamwork

Internal tours of the plant were initiated to convey and deepen understanding of each other's tasks and roles. This created greater transparency for specific requirements at critical interfaces. A better understanding of the processes within the company should lead to less friction in the future and thus less loss of time and quality. Because recycling is teamwork – both technically and organisationally. The aim of the tours was also to show that the common mission can be more successful if there is a greater understanding of the work of colleagues. It is also a personal benefit for the employees of the Müller-Guttenbrunn Group to know and understand what happens before and after their own work steps. Understanding of processes that were often unclear in the past has been improved, which will have a positive effect on further internal cooperation.

With the internal company tours, the Müller-Guttenbrunn Group made good use of the time invested to highlight its shared mission and once again emphasise that the company only functions as a team.

The employees of the Müller-Guttenbrunn Group were impressed by the explanations about the impressive shredder facilities.

Thanks to the team:
barbecue to mark the end of summer

At the end of August, the staff at Metall Recycling Mü-Gu GmbH in Amstetten saw out the summer with a relaxed barbecue afternoon. What has become a fixture in recent years once again proved its worth: informal get-together, good conversation and a visible sign of appreciation across all departments.

Managing Director Michael Grimm initiated the event to highlight the tireless dedication and strong teamwork of all employees. The celebration was his personal 'thank you' to his team. It was a moment when performance was not measured in key figures, but celebrated. REC Operations Manager Michael Grimm reminded everyone that behind every success are people who take responsibility and show commitment. Supporting each other and tackling tasks with enthusiasm.

The cuisine and atmosphere provided the perfect backdrop: the aroma of freshly grilled chicken filled the air, accompanied by plenty of vegetables and crispy chips. With a cool drink in hand and cheerful laughter around the table, the atmosphere couldn't have been better. Many took the opportunity to engage in conversation in a relaxed atmosphere, deepen contacts or get to know new colleagues better.

More than just a barbecue

Moments like these are particularly important in times of high pressure. They create space for interaction, strengthen team spirit and clearly demonstrate what the Müller-Guttenbrunn Group stands for: future prospects, reliability and a culture in which performance is recognised.

The barbecue was more than just a cosy end to the summer. It was a bonding event within the team that made identification with the company tangible. The appreciation shown motivates us for upcoming projects and shows that good cooperation goes far beyond processes. It begins with respectful interaction, open exchange and sincere interest in others.

With this positive momentum, the workforce is starting the autumn well-fortified, well-connected and with the certainty that joint successes are not a matter of course, but the result of commitment and team spirit. That is exactly what this afternoon stood for. And that is exactly what makes us look forward to the next tasks.

MGG Kart-Trophy 2025: Team spirit in the fast lane

On 14 June, the time had come again: the asphalt of the Blindenmarkt karting track was glowing as the employees of the Müller-Guttenbrunn Group competed in the Kart Trophy 2025. Around 40 participants from the sites in Amstetten and Kematen an der Ybbs, as well as colleagues from the German subsidiary MER and the branch in Hungary, took part in this long-standing favourite company event with plenty of action, adrenaline and fun.

As the sun rose higher and the temperatures reached summery levels, the tension on the track also increased. No-one gave the other anything away and the fight was on until the last lap. Victory ultimately went to the Metrec team with Siegfried Kamleitner, Reinhard Steinberger and Josef Üblacker. They demonstrated not only their driving skills but also their tactical skilfulness to take the lead. The winners were honoured by the CEO of the Müller-Guttenbrunn Group, Christian Müller-Guttenbrunn, in person. He not only honoured the winners, but also thanked everyone who had taken part in this company event and made the day a very special one.

After the race, the social part of the day began seamlessly. Over lunch together, prepared in the outdoor kitchen at the race track, participants and spectators reviewed the race, discussed and analysed lap times and laughed about the odd mishap. It was an exuberant, relaxed conclusion that showed what the day was all about: togetherness, enthusiasm and team spirit – across locations and national borders.

Sustainable mobility at Müller-Guttenbrunn:
Employees use the ‘firmenradl’ offer

A successful model on two wheels – environmentally friendly, healthy and economically attractive. The Müller-Guttenbrunn Group is committed to ecological responsibility and actively promotes sustainable forms of mobility. By participating in the Austria-wide ‘firmenradl’ initiative, the company offers its employees the opportunity to lease high-quality e-bikes at particularly favourable conditions – uncomplicated, tax-privileged and without any additional administrative work for the users.

A good example of the successful implementation of this initiative is Andreas Schartmüller, an employee at MGG Metran in Kematen an der Ybbs. Since leasing an e-bike, not only has his journey to work changed fundamentally, but also his everyday life. He now covers his daily commute of around 20 kilometres by bike – and has already covered over 2,600 kilometres since October last year. He also prefers travelling on two wheels in his private life.

„An e-bike of this quality often costs over 4,000 euros. The attractive leasing model as part of “firmenradl” makes this investment feasible for many employees,“ emphasises Gunther Panowitz, Managing Director at MGG Metran and himself a committed e-bike user. ‘The bicycle has long since become a real alternative for many colleagues – especially in the warmer months.’

Around 60 employees at the Amstetten and Kematen an der Ybbs sites are already taking advantage of the programme. The increasing demand clearly shows that the model is convincing. Leasing is organised directly by the employer in cooperation with regional specialist dealers. The monthly leasing instalment is deducted via a tax-privileged salary conversion. There are no additional costs for employers or employees.
In order to create optimal conditions for bicycle use, special infrastructure has been set up at the company locations. This includes covered bicycle parking spaces with charging facilities for e-bikes and integrated compressors for tyre pressure monitoring. This makes the switch to cycling not only ecologically sensible, but also convenient.

The personal environment also benefits: Inspired by her husband’s enthusiasm, Mrs. Schartmüller has also purchased an e-bike. Together they enjoy the new form of mobility, both on everyday journeys and when travelling, where the bikes are always with them.

‘As a teenager, I quickly gave up on bicycles and preferred motorbikes,’ says Andreas Schartmüller with a grin. ‘Today, I enjoy every ride and would never have thought that I would cover so many kilometres without emissions.’

Mr. Schartmüller relies on modern technology to ensure he arrives at his destination safe and dry: ‘A precise weather app is my constant companion, so I can plan my journeys perfectly.’

After work, more and more employees can be seen travelling home with a helmet and bike, including Managing Director Gunther Panowitz, who regularly pedals home himself. For many, the day does not end with the shortest route home, but often with a deliberate diversions – for the joy of exercise and fresh air.

Well equipped is a matter of course for the enthusiastic cyclists. In addition to the helmet, the sophisticated technology of their weather app is indispensable for them.

Freshly cooked instead of an empty stomach: MGG Metrec ensures smart lunch breaks

After office staff in Amstetten had already been enjoying the option of a hot lunch menu for some time, the offer was extended to the entire workforce in July 2025. This means that all Metrec employees can now use the service.

How it works

There are several menus to choose from every day, which can be ordered in advance. The meals are served on porcelain plates with covers and delivered in insulated polystyrene boxes, and a specially purchased oven keeps them warm on site.

More than just catering

At Müller-Guttenbrunn, well-being in the workplace is not just lip service. 'It is important to me that every employee has the opportunity to enjoy a warm, balanced meal during their working day,' explains Managing Director Christian Müller-Guttenbrunn. 'I am delighted that we have been able to establish this alternative to a factory canteen.' The cooperation with Gasthof Teufel in St. Georgen am Ybbsfelde combines regional cuisine with efficient organisation.

Fair contribution, big impact

The model is also attractive from an economic point of view: the Müller-Guttenbrunn Group covers part of the costs. 'I would like to point out here – with a wink, mind you! – that with the generous support of the company management, we even beat Karl Nehammer's much-discussed "Chancellor's menu",' says Christian Müller-Guttenbrunn, delighted that his staff are happy to take advantage of the offer.

Ice hockey action and team spirit

On 12 December 2024, the Müller-Guttenbrunn Group's ice hockey match took place for the second time at the Amstetten ice rink, organised by Daniel Forstner and Alexandra Müller-Guttenbrunn.

Two teams, made up of employees from the Austrian subsidiaries Metrec, Metran and Polymers, played an exciting match on the ice. Even though both sides showed great commitment and ambition, the focus was on teamwork. The spectators – including several managing directors of the Müller-Guttenbrunn Group – watched the game from the heated club room and cheered on the teams. After an exciting match characterised by team spirit, the final score was 3:2. Some players were left with sore muscles, but fortunately no one was injured.

A special highlight of this MGG team event was the participation of legendary Amstettner Wölfe goalkeeper Rudi Huber, who, at over 70 years of age, cut an impressive figure in goal.

After the game, the evening came to a pleasant close with good food.

A **competent all-rounder** who loves variety

Thomas Katzengruber is the all-rounder at Metran. Not only does the company benefit from his versatility, but also he himself, because the variety in his day-to-day work is exactly what he was looking for.

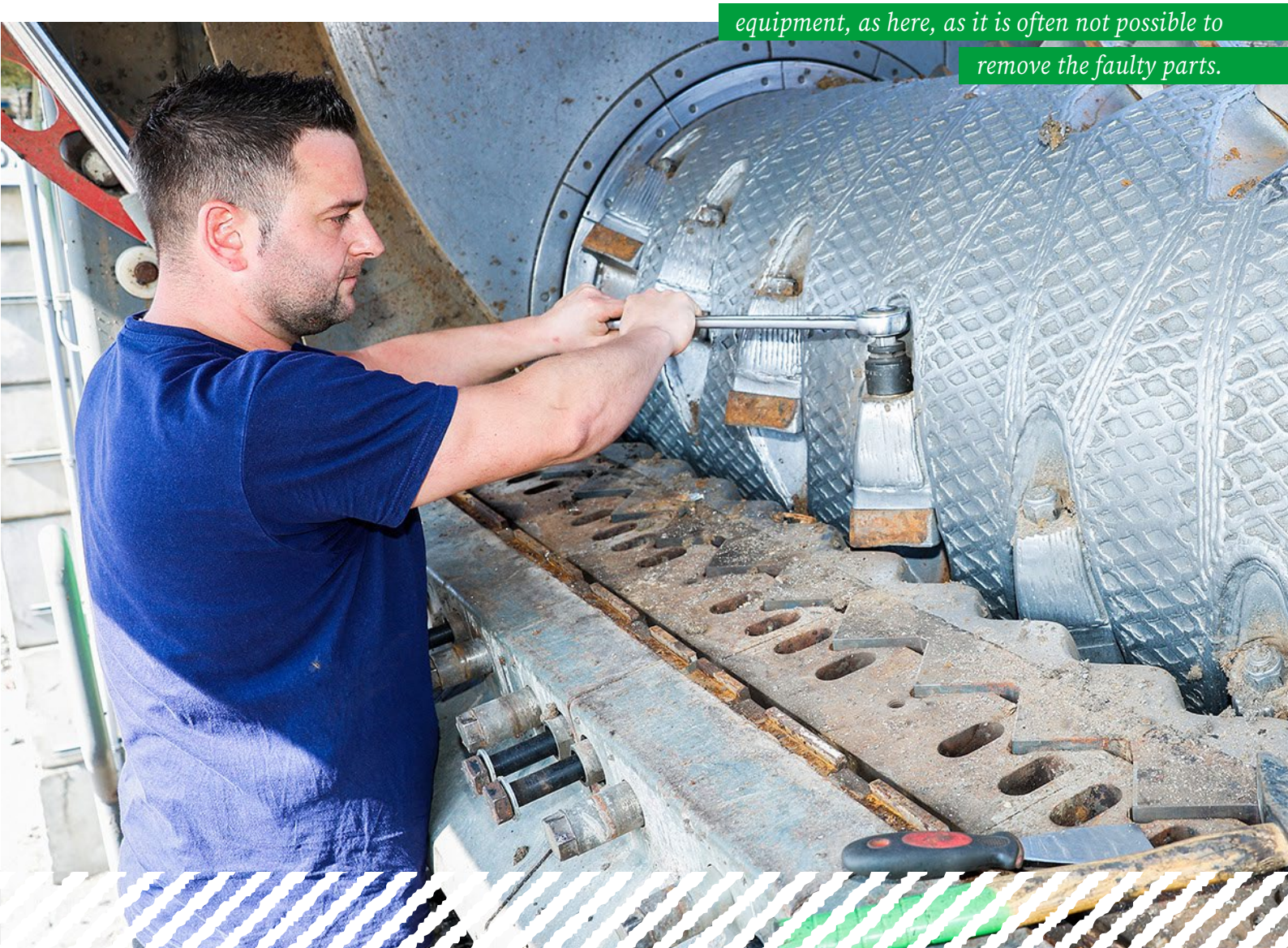
Mr. Katzengruber, you have been working for the Müller-Guttenbrunn Group, or more precisely Metran, since 2022. What made you decide to apply for a job here?
Thomas Katzengruber: I learnt from an acquaintance that Metran was looking for someone who was versatile. Someone who can drive lorries and loaders, knows their way around the workshop and can weld. Exactly what I like to do. I took a look at the homepage and realised that it suited me. Not only the type of work, but also the subject of 'recycling'.

What exactly fascinated you so much?
Thomas Katzengruber: The idea that you can use intelligent processes to recover pure materials from material that at first glance no longer has any value – that really impresses me. And it still fascinates me when I stand at the plant and see how efficiently everything works.

How did you join the company?
Thomas Katzengruber: I went on a tour with my boss beforehand. He showed me everything and explained exactly what my tasks would be. That was very convincing and I applied straight away. I was accepted shortly afterwards.

Let's take a look at your background: what did you originally learn?
Thomas Katzengruber: I graduated from the three-year agricultural college in Gießhübl and am a trained agricultural labourer. After leaving school, I worked for many years in an agricultural products trade. Among other things, I trained as a master pest controller and got my lorry licence there.

Many repairs have to be carried out directly on the equipment, as here, as it is often not possible to remove the faulty parts.



What ultimately made you decide to change jobs?
Thomas Katzengruber: I wanted to develop myself further, which would not have been possible in my old job. So I looked around for something new that would challenge me more, and I found it here.

What does a typical working day – if you have one at all – look like?
Thomas Katzengruber: Despite all the variety, there are fixed points. Right at the start of my working day, I clarify with the production management how much plastic is due for transport. I then take the material to MGG Polymers by lorry, have the loads weighed and coordinate where the material is to be unloaded on site. Then I work in the metalworking shop or do metalwork on the systems. Or I help load the railway wagons, depending on what's needed. I was looking for this variety, it never gets boring. You have to be flexible in my job. That's exactly what I like.

Did you acquire your locksmithing skills during your training?
Thomas Katzengruber: I run a part-time farm together with my wife. You learn a lot there, including welding. That was recognised here. I support my colleagues in the metalworking shop, take care of repairs, weld and repair components. We work as a team on more complex tasks. We work well together.

How does the collaboration with colleagues work in general?
Thomas Katzengruber: There are two fitters on duty per shift. I work exclusively on the day shift, supporting my colleagues and stepping in where necessary. My varied tasks mean that I deal with almost everyone on a regular basis – on the site and in the office. It works well and is fun. The team spirit is extremely strong.

Speaking of working together: How would you describe the working atmosphere?
Thomas Katzengruber: Very positive. We meet as equals, there is trust and respect. I get on well with everyone, which is an important factor for me.
What do you generally appreciate about your employer?
Thomas Katzengruber: Working together as equals and the mutual appreciation. The company management really cares about the employees. Joint activities such as excursions, theatre visits, the annual Kart Trophy or participation in running events strengthen the team spirit and are fun.

How do you practise sustainability at home?
Thomas Katzengruber: In agriculture, we live a circular economy: feed, fertiliser, use of resources. There is hardly any waste, but when waste is produced, we make sure it is separated properly. This is important to us and

works well. I already had contact with the Müller-Guttenbrunn Group at school. An excursion took us to MGG Polymers. The company with its philosophy and everything that goes with it really fascinated me and still impresses me today.

You mentioned that you also run a farm. How do you reconcile this with your work at Metran?
Thomas Katzengruber: My working hours here actually make it easy to combine it. That was also important to me. In my old job, it was difficult to get time off at short notice when something urgent came up on the farm. It's different at Metran. I get the freedom I need. In return, I'm happy to step in when additional labour is needed. It's a fair give and take. My work as a farmer is appreciated here.

Of course we are also interested in the private Thomas Katzengruber. Would you like to tell us a little about yourself?
Thomas Katzengruber: I am married, have a two-year-old son and live with my family in Kematen an der Ybbs. In 2024, my wife and I took over my parents' farm. We share the agricultural work. We make sure to process and sell our produce regionally. I generally spend a lot of time with my family; at the moment, for example, we like to cycle along the Ybbs and Url rivers and enjoy nature. I combine the useful with the necessary: What

grows in which fields? What about the crops and vegetation? Are there any pest infestations?

My voluntary work with the fire brigade is also important to me. This brings me full circle to my job: fire protection is a top priority at the Müller-Guttenbrunn Group. Nevertheless, fires can still break out. I have also been on duty with my fire brigade colleagues when there was a fire at Metran. Thanks to the exemplary precautions that Müller-Guttenbrunn attaches great importance to, such fires can be extinguished quickly – and without causing major damage.

Let's take a brief look into the future: how do you think the recycling industry will develop?
Thomas Katzengruber: Recycling, reutilisation and the circular economy are becoming increasingly important in society. Awareness of the need to minimise our impact on the environment and use resources sparingly is essential for our future. I therefore believe that we will not run out of work. In addition, the Müller-Guttenbrunn Group is constantly researching and working on new, innovative processes and technologies. I am convinced that I will experience many new things here.

One final question: What does your work at Metran mean to you?
Thomas Katzengruber: A lot. I am proud to be part of this company. The work is meaningful, varied and technically challenging. The working atmosphere is excellent and the topic of recycling is very important to me personally and socially. I feel I have arrived here.
Thank you very much for the interview!

The work that is part of his field of activity is varied. That's exactly what Thomas Katzengruber loves about his job.

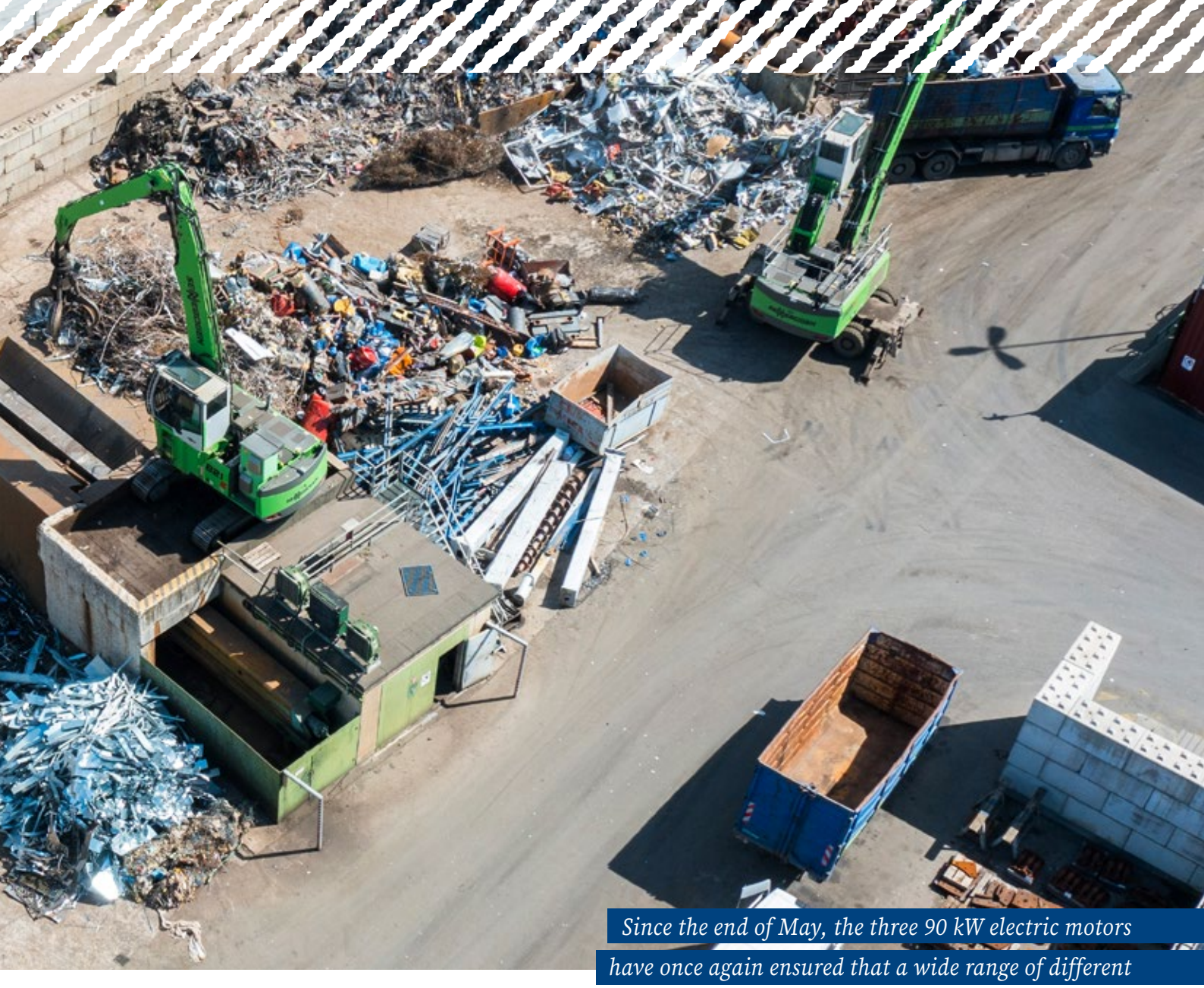
General overhaul of the **Henschel Shears**

After more than ten years in daily use at MGG Metrec in Amstetten, the time had come: the powerful Thyssen Henschel scrap shears (built in 2004), one of the central systems at Metrec, underwent a general overhaul.

In close cooperation with Metrec's internal maintenance department and an experienced external partner from Germany, the system was completely dismantled, cleaned and re-plated in spring 2025. The focus was not on replacing entire components, but rather on the targeted repair of the wear plates that protect central components such as the tamper and blade carriage. The shears are lined with numerous wear plates, which only have a limited service life. Most of them are worn out after around ten years. The system was therefore completely dismantled. All the wear plates were checked, the base material was rewelded and the shears were repaired. The entire maintenance was successfully completed within just four weeks and the Henschel shears were able to go back into operation at the end of May.

„A project straight out of the textbook!"

For Metrec Managing Director Michael Grimm, it's a project straight out of a textbook: „You have to know: There is no fixed maintenance schedule for a shear like this – maintenance is carried out flexibly, depending on the actual wear and tear. The entire maintenance project worked perfectly. I would like to thank all my colleagues who were involved in the realisation – from planning and dismantling to the final recommissioning. The overhauled shears are now back in operation eight hours a day and are making a significant contribution to the smooth processing of our scrap types."



Since the end of May, the three 90 kW electric motors have once again ensured that a wide range of different types of steps can be shredded.

The fact that everything went according to plan is also due to the experience of the Metrec team. This is because similar maintenance work was carried out on the same system ten years ago. Thanks to the experience gained back then, the current project was implemented quickly and smoothly.

The Henschel Shear – a centrepiece at Metrec.

Modern scrap processing is hardly conceivable without powerful machines. One of the key technologies in this area is the so-called Henschel shears. These are large hydraulic shears that have been specially developed for cutting scrap metal. It is named after the long-established Henschel company, which was a leader in the development of such machines for a long time.
The Henschel shear is a stationary hydraulic scrap shear with a high cutting force. It is used for shredding large, solid metal parts – including railway tracks, beams, pipes, sheet steel and more. The metal is not milled or sawn, but mechanically separated by pure shear forces. This enables large quantities of scrap metal to be processed quickly, efficiently and economically.

Three 90 kW electric motors enable an electro-hydraulic cutting pressure of 1,000 tonnes, allowing the shears at Metrec to process a wide variety of scrap types made of construction steel on a daily basis. Material thicknesses from three to four millimetres are efficiently shredded by this system – everything else is handled by the other systems at Metrec's.

A veteran from the very beginning

Manfred Bierbaumer has been working at MGG Polymers for almost 20 years and knows the company like the back of his hand. Over time, he has got to know every machine and accumulated a wealth of knowledge. Today, he knows them all, can be deployed anywhere and is happy to share his wealth of experience with the entire team.

Mr Bierbaumer, you started working at MGG Polymers in 2006. What was it like back then, when the plant was still in its infancy?
Manfred Bierbaumer: It was an exciting and inspiring time. When I started here, Kematen an der Ybbs was still in its early stages. Of course, there were already plants in operation, but there was still a lot missing. Research was carried out, trials were conducted, ideas were rejected and we started all over again. Processes were further developed, plants and machines were optimised or newly purchased. Over the years, MGG Polymers has developed into what it is today: an innovative, modern company with its sights set firmly on the future.

That sounds like an exciting professional environment in which you work.
That's right. I don't want to dwell too much on the past, but when you consider that when I started out, 25 tonnes of WEEE material were processed per day, and today we are at around 150 tonnes, it is impressive what has happened over the past two decades. The fact that I have not only witnessed this development, but also helped to shape it, makes me proud and has greatly strengthened my loyalty to the company.

How did you come to join the company?
I am a trained metalworker and was working for a company that was commissioned to do the metalwork for the construction of the Polymers plant. That's how I first came here and found everything very exciting. There was a spirit of optimism in the air, and everyone was highly motivated. It seemed like something completely new was emerging. I was fascinated by this and began to think about changing jobs. Shift work instead of long hours on assembly was also a factor for me. In short: they were looking for staff, I applied and was ultimately hired.

Was your training decisive?
When I first started here at Polymers, the processes were not as well established as they are today, so it was often necessary to intervene or carry out repairs during operation. It was therefore advantageous to have an electrician or a metalworker on every shift. This meant that many issues could be resolved immediately and without significant loss of time.

One of Manfred Bierbaumer's tasks is to monitor the equipment. A breakdown can have serious consequences for production.

What have you done in the years since you started working for the company?
I started in the so-called 'wet area', which is the first station where the raw material arrives in the hall. Over the years, I have worked my way forward – following the material flow, so to speak – and learned to operate each piece of equipment. The processes were further optimised. The goal was – and still is – to extract more and more usable plastics from the raw materials delivered. From the very beginning, we all had to continuously develop our skills in order to keep pace with new machines and technical adaptations. I was a shift supervisor for eight years, and before that I was a deputy shift supervisor for ten years. During my shift, I was responsible for a team of 14 people and the smooth operation of the plants. In the course of an internal restructuring in autumn 2025, I moved from my position back to 'normal' shift work. Since I often filled in for colleagues who were sick or on holiday during my time as shift supervisor, the transition was not difficult for me.

What makes working at MGG Polymers so special for you?
In order to stay ahead in the plastics recycling industry, continuous development and optimisation are essential. This is not limited to processes and equipment. We as people are also challenged to keep moving forward, to develop and to progress. That is what makes my job so fascinating. When I drive to work, I never know what to expect. Every day is different, every day is a challenge. And I am happy to take on that challenge.

What makes MGG stand out as an employer?
The Müller-Guttenbrunn Group offers its employees security, stability and future prospects. And I think it's great to work in a family-run company. At joint, in-house activities – I'm a big fan of the Kart Trophy – there are always opportunities to exchange a few words with the boss, Christian Müller-Guttenbrunn, in person. But even outside of celebrations, the appreciation you receive is very great.

Finally, let's get to know Manfred Bierbaumer a little better on a personal level.
I'd be delighted! I am 51 years old, married and the father of two daughters (aged 10 and 13) and a son (aged 15). I live with my family in Stephanshart. In my spare time, I breed rabbits, am active in the small animal breeders' association, am commander of the Austrian Comradeship Association and am a passionate fisherman. Of course, I also make sure to spend plenty of time with my wife and children. Together, we explore our local area by bike or go stand-up paddleboarding on the Danube. In summer, we like to travel south to the sea. During these holidays together, I can pursue another passion of mine, sightseeing. As you can see, even outside of work, standing still is not my thing!

Thank you very much for the interview!

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