

THE MAGAZINE FOR PLASTICS RECYCLING & THE CIRCULAR ECONOMY

# Recycling

## NEWS

Issue 1 | 2018

**BUSINESS NEWS**

A look at the  
NPE show 2018

**INFOGRAPHICS**

CAREFORMANCE - We care  
about your performance

**PRODUCT WORLD**

EREMA Laserfilter  
goes PET

**The recycling chain**  
is linking up





## Editorial



### CIRCULAR ECONOMY: EASIER TOGETHER

Klaus Feichtinger  
EREMA Group CEO

Manfred Hackl  
EREMA Group CEO

The circular economy is the order of the day. And one of the big issues for the plastics and recycling industry of the future. In order for the circular economy to be successful on a widespread basis and to unleash its full potential we have to question a number of things and take a new approach. The future calls for innovative ideas and concepts – ones that span processes, companies and industries. But the good news is: we don't have to reinvent everything. Because we already have effective solutions, effective technologies and creative (recycled) products in many areas.

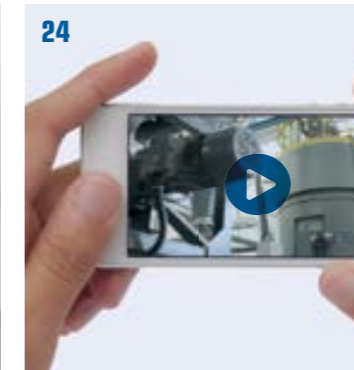
This is why we aim to bring the term "Circular Economy" to life with concrete contents at the EREMA Discovery Days 2018 from 27 to 29 June. We will put the spotlight on current best practice examples, lighthouse projects and technologies which are already taking effect and ensure genuine added value for the participating companies – the focus is on solutions for post-consumer and production waste recyclers and converters. Together with well-known experts we will also take a look at the coming years to identify possible requirements for you and the industry.

We are convinced that the circular economy is a trigger for cooperation and collaboration for those involved in the plastics industry. And this is why it is a pleasure for us to hold this event together with notable partners and key players in the plastics value chain. Pages 14 and 15 will give you a taste of what to expect at the EREMA Discovery Days 2018. Our tip: make sure you are part of it!

Our leading article "The Recycling Chain Is Linking Up" on pages 6 to 11 is also about the importance of collaboration. Read why we are of the opinion that communication and digitalisation play a key role and find out what answers EREMA has for you on the product and service front – both now and in the future.

Enjoy this exciting issue of Recycling News featuring informative market and product information and interesting customer stories. And: look forward to the EREMA Discovery Days at the end of June – please consider this to be your invitation from us!

EREMA Recycling News | Issue 1/2018 | Published by: EREMA Engineering Recycling Maschinen und Anlagen Ges.m.b.H. Printed: April 2018 | Picture credits: iStock, Buergofol, Carl Hanser Verlag / Kunststoffe, EREMA, K-PROFI, Land OÖ / Daniel Kauder, Lindner, Plastics Technology México, ThinkstockPhotos, Trioplast, WELA-Plast | Concept and design: NEUDESIGN GmbH | NB: All data provided in this magazine is consistent with the information available at the time of printing. Subject to technical modifications. The publisher accepts no liability for errors of content. English by wordworks.at



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## REBORN IN THE USA

> MORE VALUE ADDED THANKS TO EXPORTING RECYCLED PELLETS INSTEAD OF WASTE <

The potential of plastics recycling in the USA has never been as big as it is today.

The reason for this is the interplay of several factors: the significant reduction of post-consumer plastics waste imports by China, the growing circular economy movement and the ambitious targets of major brand article manufacturers and other producers to increase the amount of recyclate in their products.

If I had to describe the current situation of the plastics industry in the USA in just one word, 'dynamic' would probably be the most appropriate," says Martin Baumann, Vice President Sales of EREMA North

America. "Above all, China's no longer being an international customer for post-consumer waste plastic is a dramatic development. But since, unlike waste plastic, high-quality recycled pellets can still be exported to China, this

represents a potential opportunity for plastics recycling in the USA and Canada. This is why EREMA North America has added an INTAREMA® TVEplus® with Laserfilter to its Technical Centre for customer trials especially for the recycling of post-consumer materials with a high degree of contamination. This system typically processes film waste with paper labels from commercial waste or washed film from curbside waste to make film-grade pellets.

### ANTI-ODOUR TECHNOLOGY REFRESHER

"Plastics recycling is more an opportunity than an alternative with regard to sustainability and against the backdrop of increasing prices for landfilling. The focus of our technical developments lies quite clearly on increasing the quality of recyclates. It is precisely for this reason that we have developed the new ReFresher anti-odour technology which enables us to open up completely new application opportunities for plastics recycling," says Mike Horrocks, CEO EREMA North America.

Mike Horrocks and Martin Baumann in front of the INTAREMA® TVEplus® at the customer trial centre of EREMA North America.



## EREMA AT NPE 2018

> QUALITY IN PLASTICS RECYCLING IN GREATER DEMAND THAN EVER <

EREMA will be prioritising quality in every respect at booth W1249 at this year's NPE in Orlando from 7 to 11 May 2018.

Top process and quality standards guarantee the decisive edge in the recycling of clean production waste, with post-consumer material and in PET processing.

More and more producers of plastic products are counting on reducing their manufacturing costs through the recycling of clean production waste, as Martin Baumann explains: "Our sales in the recycling of clean production waste are constantly growing. We put this down largely to the increasing demand for high-quality film products and the associated expansion of production capacities," says Martin Baumann. An INTAREMA® 1108 T will be in action live at the booth, processing clean LDPE production waste direct and without pre-shredding to make high-quality recyclates.

Additionally, EREMA will be providing details on the world's first rPET Inline Preform system at its booth. SIPA, a leading manufacturer of PET packaging solutions from

Italy, joined forces with EREMA to develop a flexible, direct processing solution to make food-contact-compliant preforms from rPET flakes – in a continuous process. For PET processors the pioneering system has both economic and ecological benefits: energy savings, lower logistics and process costs and higher profitability. The Inline Preform system is in full line with the global trend of processing post-consumer PET flakes direct to make sheet, strapping or end products.

### POWERFUL FILTRATION

Trade fair attendees will receive information about the EREMA melt filters directly from

the EREMA business unit POWERFIL which will be represented at NPE for the first time. The proven filter systems are now also available as individual components for extrusion plants from other suppliers.

EREMA at NPE: Clean LDPE film waste will be processed live at the EREMA booth on an INTAREMA® 1108 T to make high-grade recyclates.





## THE RECYCLING CHAIN IS LINKING UP

> THE CYCLE CONCEPT IS DRIVING INTEGRATION AND NETWORKING <

The new German law on materials and the emerging EU circular economy law are not the only things behind changes in the branch: the plastics industry is becoming increasingly involved in the reuse of its materials as raw material.

First it was PET, now it is polyolefins: recycling material is given consideration for more products and by more companies. Nevertheless, it is still not possible to ensure the stability and quality of production across the entire supply chain. Regarding the chances for progress,

**Kunststoffe** magazine spoke to Klaus Feichtinger and Manfred Hackl, the EREMA Group CEOs.

**Is the plastics recycling branch facing an upheaval?**

**Klaus Feichtinger:** In my opinion, your question stops too short. Strictly speaking, it isn't just the recycling branch, but the entire plastics industry that is facing an upheaval. It's in the air everywhere, that the goal is an integrated cycle. And for that, it isn't enough for the recycling branch to reinvent itself. Instead, that has to begin with the product design and development stage and continue through the production phase. Inklings of this can already be felt. Everyone who makes moulded parts, packaging, or whatever has to learn to think in different dimensions. If you want to apply an increased contingent of recycled material, you will have to make adjustments, changes, and optimisation in order to achieve the same quality, performance, and economy.

**What is the reason for this development? Is the branch already reacting to the emerging circular economy package?**

**Manfred Hackl:** Not only do I see legislative requirements, but a change in awareness and commitments, such as the Ellen MacArthur







## » The key is communication among everyone along both the recycling chain and the entire plastics chain.

Klaus Feichtinger

Foundation. A new self-understanding is growing for working this way. Otherwise, plastics will have to face more social criticism than ever. It is gaining a firm hold in Europe now and among global manufacturers of brand name products. That is why, for example, many glues, printing inks, and labels have disappeared, thereby considerably simplifying the recycling process and improving recycling quality.

### Has “Design to Recycle” already reached people’s minds?

**Hackl:** Demand in plastics recycling has grown in general, but there is lots of homework to do within the branch. It does no good if there is recycling, and then the demand for regranulates is small. Regranulate has to be thought of as a secondary raw material.

### Are test balloons and prototypes still dominant, or are processors and brand owners finding economically attractive solutions?

**Hackl:** For PET, there is a large contingent of bottles with high recycling content. For polyolefins, too, there are many brand companies that meet all requirements with regranulates. Compared to the total amount, it is of course still minimal.

**Feichtinger:** As with all development projects, this one requires time and lighthouse projects. But more and more companies are repositioning themselves not only by taking over recycling companies, but specifically by demanding materials and components made from recycling material. There has

been cooperation across the entire value chain – from preparation to production – to learn the necessary adjustments. For the last two years, an enormous trend has come in motion that everyone in the plastics industry will profit from.

### In terms of costs or image? What are you referring to?

**Feichtinger:** Both. For materials like metals or paper, the circular economy is, no doubt, an absolute necessity. People don’t ask how much old metal is in their cars, or how much recycled gold is in their smartphones. The image of plastics will improve considerably once the circular economy works smoothly here, too.

### What was the key to such improvements?

**Feichtinger:** The key is communication among everyone along the recycling chain, on the one hand, and along the entire plastics chain, on the other. Recycling is not just an extrusion process like our core business, but also involves sorting or washing. All these technologies have to be tuned to each other. The results produced by a washing facility can have significance for extrusion. That is why the information stream is important for coordinating the components.

### How is your company reacting to such necessary coordination in the recycling chain?

**Hackl:** When we receive consumer orders, we take coordination with up- and downstream processes into consideration right from the start. We integrate our systems as well as possible into the existing processes. Since the K 2016, we have also been offering our re360 MES software solution, in which the entire processing chain can be imaged transparently – keyword smart factory. Besides this, in the future we will use our experience to advise our customers in every way, we will find overall solutions as a system integrator. A dedicated team will advise customers who desire tailored recycling solutions from the first idea up to system commissioning.

### Due to their increasing contingent, multilayer films are presenting a growing challenge to recycling. What kind of technological solutions do you see there?

**Feichtinger:** The most important approach is to avoid multilayer film wherever there is

an alternative. Of course, if the packaging’s functionality requires multi-layer films, there are enough proven technological ways of compounding and compatibilising that produce materials whose quality is sufficient for certain components. However, they aren’t used on a large technological scale – for any number of reasons, for example because the next processing step is not ready, receives inadequate amounts, or the process runs less problematically or more economically with new material. We have already had projects with compound material where everything from the technology to cost fitted, except that the required quantities could not be made available constantly. In that case, the injection mould was to be in use for two years. Over such a long period of time, however, the supply of material could not be guaranteed. We are often closer to technical than to logistic feasibility.

**Hackl:** That’s the classic case! Something that is a matter of course for new material manufacturers and gives the processor the required assurance cannot be assured by collectors, sorters, and recyclers at this time: for example, that the material will be available in constant quality over two years at a specified price. As long as this assurance does not exist in the supply chain, large brand owners will not base a product design on regranulate. I consider it a task for the industry as a whole to drive development in this direction.

### How can the industry network better to guarantee this supply chain?

**Hackl:** We are seeing signs and steps there, too, for example waste disposers developing towards recycling, that is, assuming all the tasks from disposal to sorting and all the way to recycling, or participate in company consortia that cover these links in the supply chain. Such projects are often driven via brand owners, since they require a reliable supply of 10 000, 50 000, or 100 000 tons per year.

## » That is what we mean by industrialising: spreading out higher quality.

Manfred Hackl



**How important for networking are initiatives like the recently initiated Ceflex where EREMA is already a member?**

**Feichtinger:** We have been participating for some time in PCEP (Polyolefin Circular Economy Platform) that was called to life by EuPC and PRE and we now have been invited to join Ceflex where the entire plastics materials chain for flexible packaging is represented. It is convenient, but not sustainable, to concentrate on one's own thinking. It is necessary to understand the up- and downstream processes in order to coordinate the processes with each other. The packaging industry has to know what can be done, and we need to know what they need. That's the only way to find a common denominator. From our side, we can bring in our knowledge from more than 400 recycling tests per year going back more than 30 years. We have already processed an enormous variety of materials and developed a certain feeling and understanding of how to generate precisely the outputs that a particular processor requires from varying inputs.

**Let's talk now about technological progress. What kind of developments are you planning?**

**Hackl:** To start with, I would like to emphasise that, for the first time, we were able to introduce so many new products at last year's K that we couldn't present them individually any longer, but bundled them as our Careformance package. Now our job is to put these innovations on the market one after another, for instance, the ReFresher for odour-optimised regranulate, or the re360 Manufacturing Execution System, where we are entering the market for the first time as a software supplier. As an afterthought, we presented two online analysis products and a Laserfilter for PET – a variety that hasn't been perceived in its entirety by the market.

**Feichtinger:** Even so, we naturally have our strategic next steps in the back of our heads. More and more, this will involve industrialisation and professionalisation: verifiability, automation, optimising. That means processes that run optimally, whether in terms of quality, machine or cost performance.

**What potentials exist there?**

**Feichtinger:** Self-optimising systems, for example, determine whether a machine is already running at the right level. By contrast with most other industries, we have a very wide spectrum of inputs. That's why it isn't always easy for the individual operator to recognise how he can run his machine optimally. How, for example, should he react to whatever variations in pollution that suddenly appear when he gets a new batch of input material?

**What conditions does that need to work?**

**Feichtinger:** It requires systems whose processing technology is sufficiently stable. Otherwise they are very hard to control, even using regulation technology. It is state of the art in the raw materials industry for materials to be processed reliably and repeatably. We have to transfer that to the recycling industry as well, even though we have to deal every year with materials that are more and more polluted. The materials that are easiest to recycle have always been recycled. The new material combinations are a challenge resulting from the increased use of plastic. At the same time, demand is rising for regranulate that can be used as replacement raw material. That increasingly leads to a balancing act. Consequently, the processes have to become more and more robust in order to squeeze the wider range of inputs into tighter tolerance ranges. That can't be done just by sorting, washing, or extruding, but only by everyone involved. If everybody pursues only his own goal, the overall solution will not be economical.

**Technically speaking, that means more networking toward Industry 4.0.**

**Feichtinger:** Precisely. That's why we introduced our re360 Manufacturing Execution System at the K show. Here it is not a matter of making individual facilities smarter, but of imaging the entire processing chain with just one software. That makes the entire process more transparent and also offers the opportunity to use this data to learn and optimise.

**Hackl:** Data like those managed by a MES can, at any point in time, be used to derive quality data or material information. It is then possible to make model calculations and establish connections that used to be inaccessible due to the lack of a database. By proceeding systematically, optimisation can succeed in the broad mass. That is what we mean by industrialising: spreading out higher quality.

**Feichtinger:** This networking is, to be sure, not yet determinable to all customers. Even so, we are convinced that the trend toward digitalisation will continue and develop in precisely this direction.

**How will the move to stronger industrialisation proceed in fact?**

**Feichtinger:** That depends on each individual case. For example, a process model for particular parameter ranges can be developed from a data base integrated in a control system. There it supports conventional regulation by improving precision. The customer doesn't notice anything – except that the machine works better. In the coming years, we will successively develop models from such mass data statistics for various machines.

**Will your customers be able to develop such processing models themselves?**

**Feichtinger:** Probably only large companies will be able to do that, the ones that to some extent evaluate and control their injection moulding machines systematically. That has not been widespread in the recycling industry. Many companies will learn this

know-how. The data from installation to evaluation will be made available to others as a service.

**Does EREMA intend to offer such a service?**

**Hackl:** I would say we're on the best way there and are currently building a basis for new business models.

**Feichtinger:** Digitalisation is already being lived very strongly in other branches, where it is often the basis for entirely new ideas. Instead of welding machines, welding points can now be invoiced – if you have the sensors to ensure that the points were set in the proper quality. Data quality is of course decisive for its meaningful evaluation and further processing. We always start by testing our developments on our machine park in the EREMA Customer Centre so that we can ensure their use by the customer. The re360 Manufacturing Execution System, for example, has been successfully used in our facilities for approximately two years.

**In summary, you take recycling to be a kind of lever for implementing the concept of circular economy in the plastics field, following the example of the glass or paper industry. That means positive growth prospects for EREMA.**

**Hackl:** Of course, for mechanical engineers like us, but also for recyclers and producers, these developments represent new opportunities. But we can't sit back and wait for new orders and fail to adapt our technology to current challenges. The increased and, above all, stable quality of

recyclate will be decisive for exploiting the potential of recycling as well as possible in the sense of circular economy. And exactly that is our incentive: on the one hand, to present our already available recycling technologies and their use potential for the entire plastics industry. And on the other hand, to push digitalisation in plastics recycling in order to increase and thus strengthen the use of recyclate as a secondary raw material.







## CUTTING EDGE

> DOUBLE THE DEMAND FOR EDGE TRIM RECYCLING <

With the INTAREMA® K and its predecessor KAG, EREMA's portfolio has included a proven edge trim system for years – fully automatic, highly efficient and energy saving. The demand for this compact machine is currently increasing strongly, as more and more producers are intending to reduce their material costs by recycling clean production waste. Renowned OEM and end customers of EREMA such as Hosokawa Alpine or Coveris Flexibles Austria confirm the high reliability of the system.

In the 2017/18 financial year EREMA sold 40 INTAREMA® K recycling systems – twice as many compared to the previous year. According to Andreas Dirnberger, the fact that customers are concentrating more on the recycling of clean edge trim can be explained largely by the increasing demand for high-quality film products and the associated expansion of production capacities. The Business Development Manager at the EREMA Group says that the INTAREMA® K's road to success comes from its profitability: "The material alone accounts for around 80 per cent of the manufacturing costs of flexible packaging. If you consider the usual edge trim figure of around 10 per cent in blown film manufacturing, recycling is a must-have in terms of cost efficiency." The edge trim which accumulates in production can be transferred directly from the blown film plant – without pre-shredding – to make high-quality recyclates. And 100 per cent of these recyclates can then be put back into the production process. "Thanks to the INTAREMA® K the film manufacturer reduces both material and production costs considerably as a result," says Dirnberger, summing up. This is also substantiated by Manfred Goellner, Head of Process Engineering at Hosokawa Alpine, one of the largest producers of blown film plants in the world: "We expect a recycling system to work with absolute reliability and fully automatically. This is why we have a machine built by EREMA in use in our inhouse technical centre and also recommend that our customers count on the INTAREMA® K."

### PERFECT PAYBACK PERIOD

The INTAREMA® K is available to OEM customers such as Hosokawa Alpine as part of standardised system packages but there is also high demand for it among end customers. The Austrian company Coveris Flexibles Austria has been regarded as a specialist in film production for over 50 years. The company runs blow and cast extrusion lines,

printing and finishing machines and 20 recycling systems from EREMA in Kufstein, Austria. "We have been using fully automatic edge trim processing systems from EREMA for many years," says Ferdinand Mikesch, Head of Process, Engineering & Technology at Coveris: "Not least because the payback period for the compact systems is very short."



### INTAREMA® K – FULLY AUTOMATIC AND FLEXIBLE

The INTAREMA® K is ideal for the processing of a wide variety of clean plastic waste. PE mono or multilayer films, PE films with PP, PA, EVOH or EVA or also breathable films such as PE with calcium carbonate can be processed. A low mass temperature ensures very gentle processing of the polymer. Thanks to the interplay with integrated control the INTAREMA® K's preconditioning unit enables automatic adjustment to varying input quantities. In the event of brief material shortages the system switches to standby in the interest of maximum energy efficiency.



Andreas Dirnberger, Business Development Manager for Inhouse Recycling, in front of the compact INTAREMA® K edge trim machine.





## CIRCULAR ECONOMY EVENT

> EREMA DISCOVERY DAYS: CURRENT TECHNOLOGIES, FUTURE SOLUTIONS <

All eyes will be on the circular economy in Ansfelden from 27 to 29 July 2018. Together with key players from the industry, including well-known branded companies, EREMA will present state-of-the-art solutions for recyclers and converters of post-consumer and production waste. Attendees can expect a varied programme with top speakers, the latest technology and market information, machine demonstrations and an accompanying specialist exhibition.

The "circular economy" is one of the big issues for the plastics and recycling industry of the future. And this is why it is the title of EREMA's established event format Discovery Days, when the company will play host to prominent speakers and interested attendees at the venue in Ansfelden. "In order for the circular economy to be successful on a widespread basis and to unleash its full potential we have to question a number of things and take a new approach. The future calls for innovative ideas and concepts

– ones that span processes, companies and industries," says EREMA Group CEO Klaus Feichtinger. "The good news is: we don't have to reinvent everything. Because we already have effective solutions, strong technologies and creative recycled products in many areas," adds EREMA Group CEO Manfred Hackl.

### INFORMATION FOR RECYCLERS AND CONVERTERS

This is why the objective of the EREMA Discovery Days 2018 from 27 to 29 June

is to bring the term "Circular Economy" to life with concrete contents. The company will present current best practice examples, lighthouse projects and technologies which are already taking effect and ensure genuine added value for the participating companies. The focus will be on solutions for recyclers and converters of post-consumer and production waste. Besides taking a look at the current situation, prominent experts will analyse and discuss how the near future could look to identify possible requirements for the industry.

### MOTOR FOR COOPERATION

"We are convinced that the circular economy is a trigger for cooperation and collaboration for those involved in the plastics industry. And this is why it is a pleasure for us to hold this event together with notable partners and key players in the plastics value chain," says Manfred Hackl, referring to the event partners Borealis, ENGEL, Greiner Group, Henkel and Plastics Recyclers Europe. Attendees will be able to meet further industry companies at the specialist exhibition which will be held in parallel to the event. Machine demonstrations showing efficient recycling live in action will also take place on all three days.



# EREMA® DISCOVERY DAYS 2018

## DISCOVERY DAYS 2018 27 - 29 June 2018

### THE EREMA EVENT FOR PLASTICS RECYCLING AND THE CIRCULAR ECONOMY

#### TOPICS AND HIGHLIGHTS

- Live recycling: Machine demonstrations
- Parallel exhibition with key players from the plastics value chain

#### DAY 1: WEDNESDAY 27 JUNE 2018

- Innovative lighthouse projects and exciting end products made from recycle
- More throughput, more quality – how to get more out of your process: performance factors in post-consumer recycling
- From interface to interplay: how high-precision interaction of the individual recycling process steps improves your result
- Evening event "Circularity: A business imperative"

#### DAY 2: THURSDAY 28 JUNE 2018

- The circular economy – a trigger for collaboration and a motor in improving the image of the plastics industry
- The circular economy from the perspective of raw material producers, packaging manufacturers and branded companies
- Fit for recycling: innovations in injection moulding and toolmaking technology which make using recycled pellets even easier
- Added value through digitalisation: how the recycling value chain benefits from digital solutions and new services

#### DAY 3: FRIDAY 29 JUNE 2018

- Current best-practice examples in the recycling of production waste
- Save costs & resources and keep a check on quality – performance factors for the efficient recycling of production waste
- Stable processes, reduced labour requirements and less energy consumption thanks to a high degree of automation through high-performance control technology

Further information and registration  
EREMA Discovery Days 2018

[www.erema.com/en/discovery-days-2018](http://www.erema.com/en/discovery-days-2018)





# THAT'S CAREFORMANCE

by **EREMA®**

We care about your performance.

## 1000 X INNOVATION

**Solution competence through research & development:** 111 patent families with over 1000 patents are testimony to EREMA's innovation leadership. An in-sync team consisting of highly qualified specialists carries out research activities for new recycling systems continuously while perfecting existing systems.

## DWELL TIME 60 MINUTES

**INTAREMA® ReGrindPro® – the gentle way to success in regrind recycling. The longer dwell time of 60 minutes makes the difference!** It enables the regrind material to be optimally warmed through in the preconditioning unit and gentle melting in the extruder – the ideal basis for further processing to produce perfectly homogenised recycled pellets. For end products with top surface quality.

**50X  
WORLDWIDE**

**With EREMA you are choosing a partner who understands you.** A partner who speaks your language. And one who is always close to you. Throughout the world. Our subsidiaries and more than 50 national representatives in all 5 continents are ready to attend to your wishes personally and quickly.

## ODOUR DOWN QUALITY UP

**Odour-optimised premium recycled pellets directly from contaminated post-consumer material?** The interplay of the innovative ReFresher technology with the INTAREMA® TVEplus® machine makes it possible. This combination opens up completely new application and market opportunities for recycled plastics. In other words: innovative premium products in living space, automotive, design and lifestyle sectors.

## STAY FLAKE-SIBLE

**With the innovative VACUREMA® Inline Sheet and Inline Preform applications you stay flexible for sure:** from varying wall thicknesses, IV values and input materials such as PET bottle flakes, skeleton waste, edge trim or mixtures of them directly to the end product in stable, top quality. Food contact compliance included.

## SPARE PARTS: ORDER 24/7

**Whether it is wear parts such as cutting knives or long-lasting components such as motors –** in the EREMA spare parts webshop you will find the complete parts list for your individual machine. Choose from over 160,000 items and order easily with just a click. We keep many of the items in stock for you. This ensures that you have fast delivery times and maximum availability of your EREMA machine.  
<https://spareparts-online.erima.at>

## COST EFFICIENT

**Stable processes, reduced labour requirements and less energy consumption –** with the efficient in-house recycling solutions of EREMA, film producers not only save valuable resources but also money.





## QUALITY AT THE PRESS OF A BUTTON

The Trioplast Group is an international producer of agricultural plastics film with an annual turnover of around 400 million euros. As a major raw material client of polyethylene, the Swedish group sees its responsibility in the efficient use of resources, processes production and commercial waste on a total of around 30 EREMA recycling systems. At the French plant in Pouancé (located in the west coast area) the new technology investment QualityOn:MVR guarantees for the first time permanent quality control of the recycling process – directly on the machine.

**T**rioplast France produces agricultural plastics films in Pouancé. The LDPE and LLDPE production and post used waste is recycled on two EREMA 1514 TVEplus® machines. The regranulates are mainly used for wide sheet film production,

such as prints, contaminants or the degree of moisture through transport and frequent outdoor storage. Despite the considerably varying input material, the quality of the regranulates produced must be ensured at the end of the recycling process.

Additional material sources for the recycling process include production and commercial waste from Trioplast and from other European suppliers. The recycling process faces a number of challenges due to many various criteria

Trioplast equipped one of its EREMA 1514 TVEplus® machines with a new process for quality monitoring – QualityOn:MVR. Jérôme Klaeyle, Recycling Manager of Trioplast France, refers to QualityOn:MVR as an investment in the decisive lead. "Trioplast stands for high-quality film with our premium TRIOCARE brand. Thanks to QualityOn:MVR we achieve a previously unattained level of process reliability in recycling which we definitely consider to be a lead over other film producers. We already determine the quality of the recycle during

the recycling process, unlike others who don't do this until after."

### VARIABLE INPUT – STABLE OUTPUT

The QualityOn:MVR measuring unit is mounted directly on the recycling system and measures the MVR value in real time every couple of minutes – depending on the viscosity of the melt. The data is exported automatically according to the customer's wishes and can be called up at any time. A message is given for the user as soon as the

values measured leave the defined tolerance range and the user can then remove the material with nonconforming MVR values immediately from the current process.

Customers who recycle commercial waste benefit in particular from QualityOn:MVR measuring technology. Developed originally for the increased demands in post-consumer recycling, it is insensitive to contaminant particles from 100 to 1,000 µm – a clear advantage over online measuring systems with gear pump technology.



**» THANKS TO  
QUALITYON:MVR WE  
ACHIEVE A PREVIOUSLY  
UNATTAINED LEVEL  
OF PROCESS RELIABILITY  
IN RECYCLING.**

*Jérôme Klaeyle, Recycling Manager Trioplast France*

*The new QualityOn:MVR measuring unit is mounted directly on the recycling system and measures the MVR value in real time every couple of minutes – depending on the viscosity of the melt.*



## ABOUT TRIOPLAST

Founded in Sweden in 1965 the group has 1,250 employees working in ten production sites and sales companies in Sweden (7), Denmark (1) and France (2) and sales agencies in Germany, England, Finland and Norway. Typical film products can be found in the industrial, agricultural, food and also hygiene sectors. The Trioplast Group has a total of around 30 EREMA systems and one ISEC machine from PURE LOOP.





Best Practice  
Industrial Recycling

## MANY REQUIREMENTS, ONE SOLUTION

The Canadian recycler Enviroplast processes around 2,000 tonnes of LDPE and LLDPE film waste every month to make high-grade recyclates. When it came to the expansion of its production capacities the company decided in favour of an INTAREMA® 2021 TVEplus®. Stable output quality despite varying degrees of input material print and a capacity of up to 2,700 kg/hour were convincing arguments for the EREMA customer. The next step is to add post-consumer recycling to its portfolio.



*In spring 2018 Enviroplast will receive an INTAREMA® 2021 TVEplus®. With an output of up to 2,700 kg/hour production capacity can be increased 85 per cent thanks to the INTAREMA®.*



Enviroplast is located in Montreal, Quebec, and has been recycling film waste for over 25 years. The company purchases excess PE production material from film producers in Canada and the USA which is sent to the Enviroplast headquarters for processing. As the recycler procures the plastic from a number of sources there is a mixture of different films to be processed at the end of the day. These range from unprinted to heavily printed, from uncontaminated to slightly contaminated – the film quality varies. Additionally, there can

*In future, Enviroplast will add post-consumer recycling to its portfolio. For this the company will use a Lindner washing plant with a capacity of 1,000 to 1,500 kg/hour followed by an INTAREMA® 1512 TVEplus® including Laserfilter.*

be up to four per cent moisture, depending on how the scrap film is stored. Enviroplast previously used four single-screw extruders to process the different types of production waste to PE recyclates which in turn were sold to international film manufacturers. The increasing demand prompted the recycler to expand its production capacities early in 2018 by adding an INTAREMA® 2021 TVEplus® including partial surface backflush filter system. "Our recycling technology requirements were set in stone: the system has to process films between 25 and 500 microns, be insensitive to different degrees of print and have high throughput. At the same time the system needs to be stable in terms of output and guarantee consistently high quality for the recyclates. With EREMA we have found a partner who also gives top

priority to quality," says Mathieu Séguin, CEO of Enviroplast, summing up. With an output of up to 2,700 kg/hour production capacity can be increased 85 per cent thanks to the INTAREMA®.

**» WITH EREMA WE HAVE FOUND A PARTNER WHO ALSO GIVES TOP PRIORITY TO QUALITY.**

*Mathieu Séguin, CEO of Enviroplast*

### USING THE POTENTIAL OF POST-CONSUMER RECYCLING

The reduction of post-consumer plastics waste imports by China and the growing

circular economy movement increase the potential of plastics recycling in the USA and Canada. Against the backdrop of increasing prices for landfilling, the cost effectiveness of recycling is of greater interest to recyclers and producers. Further to this, Enviroplast would like to expand its portfolio and process post-consumer materials in the future, too, besides industrial waste. "Post-consumer recycling technology does indeed face other challenges, but we remain loyal to our principle of producing quality recycled pellets here as well," confirms Mathieu Séguin. The plan is to increase capacity at the production facility in Montreal from summer 2018 by adding a Lindner washing plant followed by an INTAREMA® 1512 TVEplus® including Laserfilter.





Best Practice  
Post Industrial Recycling

## LABEL ABLE

> EREMA LASERFILTER REMOVES EVEN SEVERE CONTAMINANTS <

If it becomes increasingly difficult for recyclers to procure clean plastic waste in the marketplace – as is currently the case in Mexico – there is a strategy which pays off: concentrate on more heavily contaminated waste and invest in a technology which also turns this type of material into top-grade pellets. Arpema Plásticos is highly successful with this approach and uses EREMA machine technology in combination with the Laserfilter to handle it. This solution even removes difficult contaminants such as paper labels effectively from the melt.

**A**rpema Plásticos processes industrial plastic and production waste to make new raw material at three plants located in Lerma, Mexico. The company produces 12,000 tonnes of recycled pellets every year and the plan is to increase the amount to 18,000 tonnes in the future. Arpema Plásticos specialises in the production of polypropylene with varying viscosity for extrusion and injection moulding. The

product portfolio also includes high- and low-density polyethylene for injection moulding and blow-moulded applications and polystyrenes (GPPS, MIPS, HIPS).

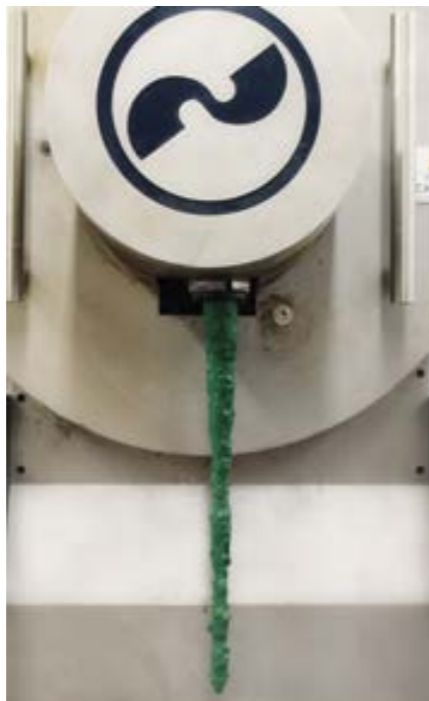
### HIGH-PERFORMANCE: EREMA LASERFILTER

Managing Director Pedro Arnauda, who founded Arpema Plásticos in 2010, decided at the beginning to buy new machines

with basic technology from Asia which were sufficient for the beginning. Soon, however, it became necessary to purchase more advanced machines. "The technology makes the difference. You can only enter more demanding branches of industry and increase profit if you have top technology." This is why Arpema Plásticos put its first EREMA recycling system into operation at the end of 2011. The subsequent rapidly



Plastics with impurities such as paper labels go directly into the recycling system.



The EREMA Laserfilter has a continuous self-cleaning system which removes contaminants from the melt.



The traceability of the materials plays a considerable part in building customer trust.

» Without the Laserfilter we would need an army of workers to remove every label individually. Now we can feed the machine directly with this waste.

Pedro Arnauda



Pedro Arnauda, Managing Director and founder of Arpema Plásticos, in front of his new INTAREMA® 1310 TVEplus®.

growing production volume soon made it necessary to purchase two further machines. The latest investment is an INTAREMA® with integrated EREMA Laserfilter. This combined technology now offers the recycler completely new opportunities as it is not only possible to work with just clean materials, you can also process waste from the post-consumer sector – such as pallet packaging, i.e. stretch films with barcode stickers. "Without the Laserfilter we would need an army of workers to remove every label individually. Now we can feed this waste directly into the machine and produce pellets for carrier bags and piping," Arnauda explains. Unlike in the past, certain nonwoven materials which contain cellulose can likewise be processed.

As Jan Stöger – sales manager at EREMA for Mexico and Latin America – says, the Laserfilter is ideal for the processing of plastics with a high degree of contaminants in the

form of wood, paper and aluminium. With conventional systems these impurities block the screens and filters of a recycling plant and lead to poorer process and product quality. With the Laserfilter, on the other hand, the contaminated plastic melt flows through parallel screen discs. A scraper disc rotates between the screen discs which removes the impurities filtered out from the screen and transfers them immediately to the discharge system. "The impurities filtered out of the melt are discharged from production continuously and without interruption. Another benefit is that only an extremely small part of the melt volume is lost in the process," underlines Stöger.

### AUTOMOTIVE INDUSTRY AS A CUSTOMER

The customers of Arpema Plásticos are major well-known companies and intensive users of raw materials who make a conscious

decision in favour of recycled pellets for reasons of social responsibility, environmental ideals and economic considerations. The pellets produced are supplied to the automotive and packaging industries, used in rotomoulding and processed to make plastic boxes and pallets for the beverage industry. They are also used to make strapping. Most of the customers are located in Mexico and the company exports to Guatemala and the USA. Arnauda concludes: "The demand in our domestic market is now so high that we would be able to sell our entire production volume in Mexico. Part of it, however, is exported for strategic reasons."



Abridged article from  
Plastics Technology México,  
by María Natalia Ortega  
<https://www.pt-mexico.com>





Watch The Movie  
PET Recycling

## FLEXIBILITY COUNTS

> RPET SHEET: POSSIBLE TO PROCESS VARIOUS INPUT MATERIALS <

In this new EREMA video the Dutch PET sheet producer Snelcore shows how they take advantage of the benefits of the VACUREMA® Inline Sheet system. Thanks to the flexible technology the company can process not only post-consumer PET flakes but also flake mixtures with edge trim, skeleton waste and virgin material to make food contact grade rPET. The direct connection of a downstream SML unit with the VACUREMA® system produces high-quality rPET sheet for thermoforming in a single step.

**W**e decided in favour of EREMA again as we are satisfied with the machines. Our people are familiar with them, they know the system – it works," says Cor Van Randwijk, summing up the latest decision to invest in the VACUREMA® system. Van Randwijk is Commercial Manager at 4PET Extrusions

in the Netherlands, a group of companies which also includes the well-known PET sheet producer Snelcore in Arnhem. The company has placed its trust in the proven VACUREMA® technology since 2002. In this short video he emphasises the high quality of the service provided by EREMA, in particular the benefit of the online service

which connects the extruders at Snelcore directly with EREMA.

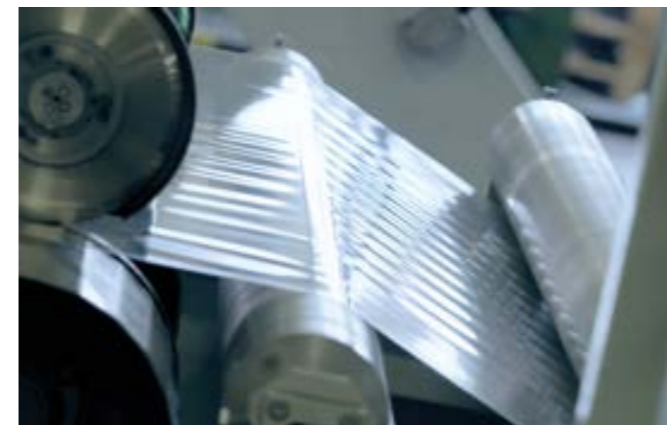
### MATERIAL FLEXIBILITY BONUS

Primarily washed PET bottle flakes are processed as input material for the rPET sheet which comes from various collection points. The company also counts on mixtures of these flakes, however, with PET production waste. This includes, on the one hand, material which accumulates internally such as edge trim and, on the other hand, skeleton waste from the thermoforming process which is returned to Snelcore by customers. Material combinations with virgin material are also used. Snelcore particularly appreciates the fact that VACUREMA® technology enables them to process PET mixtures with varying wall thicknesses and turn them into a stable and homogeneous melt. Van Randwijk adds: "It works brilliantly with EREMA!"

*Various VACUREMA® Basic systems have been in operation at Snelcore in the Netherlands – a PET sheet producer which belongs to 4PET Extrusions – for a number of years.*



Snelcore uses primarily post-consumer bottle flakes (pictured left) to produce food contact grade rPET thermoforming sheet (bottom left). Thanks to the high flexibility of the VACUREMA® technology, however, waste edge trim (pictured right), skeleton waste or virgin material can also be admixed.



Snelcore's customers use the rPET sheet supplied to produce high-quality food packaging (bottom right) in the thermoforming process.

Open house on 22 June 2018 in the Netherlands

**BREAKING NEWS!**

## RPET PELLETS FROM POST-CONSUMER THERMOFORMING WASTE

4PET Extrusions and EREMA will present to you the world's first plant which can produce high-quality, food contact grade rPET pellets from thermoforming packaging. The pellets produced using VACUREMA® Prime technology can then be used again in the thermoforming process. For more information and to register for the open house event on 22 June 2018 contact: Claudia Legawiec, c.legawiec@erema-group.com



You can find the full 4PET Extrusions film on EREMA's YouTube channel:  
<https://www.youtube.com/watch?v=1NUDAg0PRTw>







# FULL-RANGE SUPPLIER FOR REFRIGERATED DISPLAY CASES

> BUERGOFOL: BENEFITS IN THE USE OF RECYCLED PET <

CEO Gregor Schleicher together with Kurt Stark, Director Business Development, explained why the German film manufacturer Buergofol GmbH primarily uses recycled material to produce PET films and which machine technology they use for it to the industry magazine K-PROFI at its location in Ingolstadt.

**W**e are the only full-range supplier in Europe for refrigerated display case items," emphasises Gregor Schleicher, and continues: "We extrude APET films and combine these with shrink or skin films and especially peel, seal and reclose top films. The top films are also mostly printed and laminated. Here we are the only film manufacturer who produces its own laminate films for PET itself. The company produces around 25,000 t/a of rigid APET film in thicknesses ranging from 150 to 900 µm with widths up to 1,600 mm on three flat film

lines in total. 97% of all film produced is used in direct food contact, for meat, fish, cheese and poultry, for example. Buergofol has a clear focus on commodity products and supplies its customers with wound film with a variety of thicknesses and product specifications in quantities up to 1.5 t. And the company does it very successfully. "We could sell more than we produce right now. This is why we are investing in new lines," says Kurt Stark, describing the current situation and naming the future goal: "We would like to ramp up our production capacities in both the cast and blown film sectors by around 50 per cent in each segment over the coming years."

### EREMA AND SML: TOP AFTER-SALES SERVICE

"One of our specialities is the manufacturing of 3-layer PET film with a middle layer made

of post-consumer material," explains CEO Gregor Schleicher. The company decided to invest in a VACUREMA® Basic Inline Sheet system in connection with this a good eight years ago and combine it with a cast film part from SML. "And we have no regrets." On the contrary. The second complete system of this kind went into operation at the end of 2017 as they not only find the process and the end product convincing, they are also extremely satisfied with the service.

"The two mechanical engineering companies from Austria set the standard, especially when it comes to after-sales service," says Gregor Schleicher with praise, "it is seldom the case with others that we experience service that is so good." Like the existing line, the new one has an overall capacity of up to 2,200 kg/h and produces films with a net width of 1,300 to 2,200 mm. Depending on the application, the new line also processes virgin material in addition to mainly post-consumer material, i.e. washed bottle flakes from the single-use and reusable deposit system.

*Efficient PET recycling at Buergofol: the film manufacturer uses VACUREMA® Basic Inline Sheet technology (pictured) from EREMA with SML equipment downstream.*

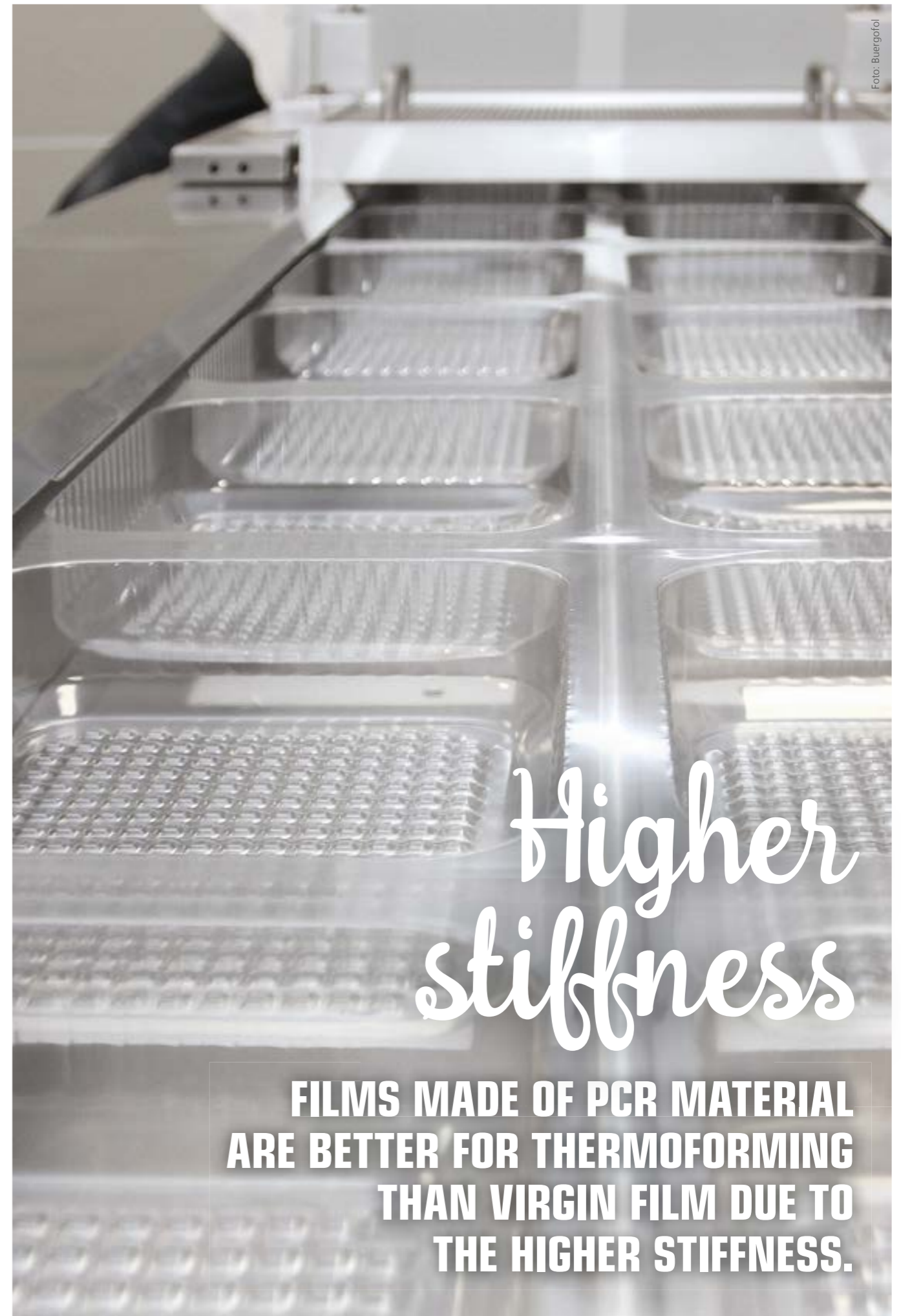
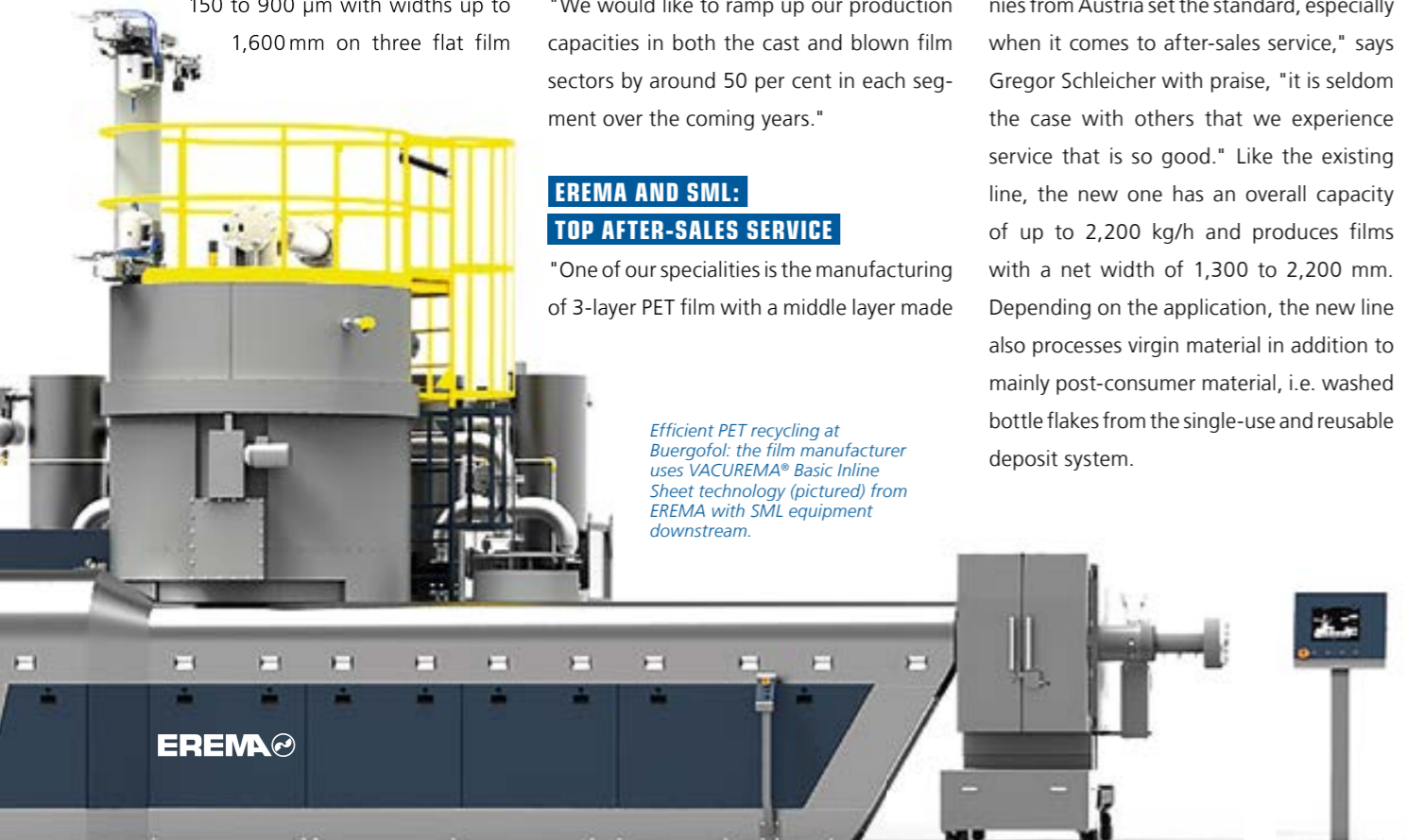


Foto: Buergofol



In reply to the question why Buergofol produces film from PCR materials, Gregor Schleicher has a straight answer: "Sustainability is of course a very important topic for us, but this is just one of the reasons why we process PCR material with this plant technology. It enables us to process inhouse scrap such as edge trim in a direct way, which also has a positive impact on sustainability. Moreover, films made of PCR have a clear advantage: they are somewhat stiffer than films made from pure virgin material which, on the one hand, makes for better thermoformability and, on the other hand, allows you to keep the films a little thinner." A 220 µm film made of recycled post-consumer material, for example, is roughly on a par with a 260 µm film made of virgin material.

#### REACTOR WITH VARIOUS TASKS

To process the bottle flakes, material mixtures are produced first in large silos and scrap inhouse materials are also added. "Some of our customers also mix the recycling material with up to 30 per cent virgin material," explains Christoph Wöss, Business Development Manager - Application Bottle at EREMA. The mixture then goes from the silo via a vacuum conveyor first into a sluice. Here the pressure is already reduced from atmospheric pressure to a first vacuum stage. The material then goes into the reactor where it stays for around 1 to 2 hours. Christoph Wöss: "The dwell time in this application is crucial, especially for the approval of the material by EFSA for food contact use, because besides moisture removal, decontamination in particular has to take place. Wöss explains the processes inside the reactor in more detail. To begin with the material is heated up to a temperature of around 190°C by friction alone. Three processes occur while heating takes place. Firstly, there is crystallisation, which ensures that the flakes do not stick to each other

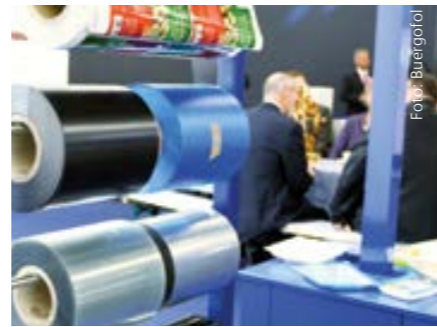


The plastics processor produces 15,000 t/a of flexible films with 3 to 14 layers itself on a total of eight blown film extrusion lines.

in the further processing. Then there is moisture removal. "The outside moisture of PCR material is between 0.3 and 1 per cent. This evaporates at the temperature inside the reactor within seconds or a few minutes. The inside moisture of the PET at around 0.2 to 0.3% is likewise removed, thus ensuring that hydrolysis cannot occur and the chain length of the polymer molecules is not shortened. "Finally there is the third process of decontamination. Contaminants are likewise discharged as a result of the high temperature and removed reliably by the vacuum which is applied." In conclusion, Christoph Wöss mentions another benefit of the reactor: "Bottles have become increasingly thinner especially just recently, due to ecological and economical reasons, meaning that the bulk density of the flakes is decreasing more and more. This, in turn, is bad for the extruder later on." In the heat there is a bulk density increase of around 250 kg/m<sup>3</sup> to 500 kg/m<sup>3</sup>. The material leaves the reactor after about two hours and is fed into a single-screw extruder with a diameter of 212 mm.

#### SINGLE-SCREW EXTRUDER HAS BENEFITS

The single-screw extruder now handles the task of melting the prepared material at a temperature of around 280°C and conveying it through a piston filter which retains the solid contaminants and into the flat sheet die. "This



The film manufacturer has a clear focus on commodity films for refrigerated display cases but still has a few specialities to offer its customers.

complete process has a multitude of benefits, especially for the processing of secondary raw materials," says a convinced Gregor Schleicher. "The flakes are completely freed from moisture and contaminants at relatively moderate temperatures and are clean when they enter the single-screw extruder. Here they are only exposed to the high temperatures very briefly due to the pre-cleaning, which has a positive impact on material properties. He is of the opinion that this system is better compared to the multiple screw systems without preparation. This solution is also good in terms of energy, as shown by research projects at the SKZ institute. "The specific electricity consumption of the EREMA solution is lowest in comparison to alternative systems." After the flat sheet die the PET film is cooled down in the SML calender and laminated directly inline if required. "We work with thermolamination, so without additional adhesive," emphasises Kurt Stark. Buergofol attaches great importance in general to inline thermolamination, which is not very common for PET film. "We have designed our inline laminating stations and integrated them in the systems as a whole ourselves so far." SML has now directly integrated the laminating station in the new plant which is again a combination of an EREMA recycling system and an SML cast part. "The machine technology has moved on," says the delighted film manufacturer.



Buergofol CEO Gregor Schleicher.



Kurt Stark, Director Business Development at Buergofol.



Text: Karin Regel, Editor K-PROFI (abridged article)

Photos: K-Profi



## LASERFILTER GOES PET

> STRONG FILTER PERFORMANCE FOR PET INLINE APPLICATION <

The situation a good year after the product launch is encouraging: the PET Laserfilter has already been sold a number of times in the inline sheet, strapping and pelletising sectors.

More and more processors find the smooth handling of PET melts with degrees of contamination over one per cent, stable pressure consistency and particularly long screen service life convincing.



Robert Obermayr in front of the EREMA Laserfilter for PET.

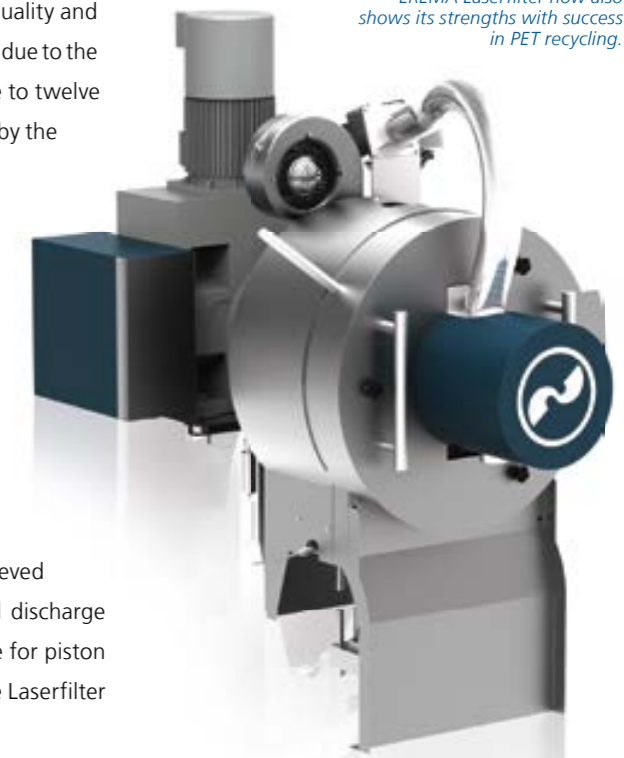


The PET Laserfilter is the right answer even in the case of heavy contamination.

After more than twenty years of the EREMA Laserfilter being used in polyolefin recycling it was modified accordingly for the PET sector and presented just over a year ago. The Laserfilter is now being used more and more rather than the piston filter particularly in the direct processing of PET flakes to make semi-finished or end products. Robert Obermayr, head of the EREMA business unit POWERFIL, attributes this to the higher process stability through constant pressure operation. Whereas the maximum level of contamination which can be handled by a piston filter lies between 0.05 to 0.1 per cent, the Laserfilter processes input material with a degree of contamination of over 1 per cent. "With regard to the increasing contamination in post-consumer materials this means greater flexibility with the input materials," says Obermayr.

#### LONG SCREEN SERVICE LIFE

Customers also appreciate the quality and process benefits of the Laserfilter due to the long screen service life from five to twelve weeks. The daily screen change by the operator which is necessary with a piston screen changer is no longer required and this drastically reduces the risk of operating error. Another benefit of the Laserfilter is that the flow-oriented working principle avoids the formation of 'black spots'. The user also benefits from the lower melt losses which is achieved thanks to the newly developed discharge unit. Whereas the normal figure for piston filters is 1 to 2 per cent, with the Laserfilter it is just a fraction of this.



After more than twenty years of use in the polyolefin sector the modified EREMA Laserfilter now also shows its strengths with success in PET recycling.



NEW DEMONSTRATION PLANT LAUNCH:

**AMUT AND EREMA HOLD PET OPEN HOUSE**

AMUT and EREMA are holding an Open House from 28 to 31 May 2018 to present a sophisticated "Bottle to Packaging" process and show that the desired closed material loop in the PET sector is already reality. The post-consumer flakes are processed in the new demonstration facility in Novara, Italy – a direct combination of VACUREMA® technology



EREMA PET experts Michael Buchberger and Christoph Wöss in front of the VACUREMA® in the production hall at EREMA. The newly developed EREMA PET Laserfilter (right) processes input material with a degree of contamination of over one per cent without any difficulty and discharges the filtered particles continuously.

and the AMUT Inline Sheet plant – in a single process to make food contact grade thermoforming sheet. "Energy savings, IV preservation, lower logistics and process costs lead to higher profitability and are unbeatable arguments which are driving the trend towards direct food grade PET processing," says AMUT President Piergianni Milani. This rPET sheet will be used at the Plast Milan exhibition – which is being held at the same time – to make thermoformed trays for the food sector. Interested producers will be able to process their own input material on the demonstration system in future to make plastic rolls. They can then test the samples later in their own thermoforming production to check the quality.

NEW MACHINE FOR WELA-PLAST

**Thumbs up!**

You can see by the looks on the faces of the WELA-Plast GmbH team how pleased they were about the arrival of their new recycling machine. Electronics engineer Günther Möhlmann, works manager Frank Beneke, production manager Sergej Fendel and mechanical fitter Frank Dierken were there to receive the INTAREMA® 1714 TVEplus® with Laserfilter. "Many thanks indeed for the technical support and for fulfilling our wishes so quickly," says a delighted Thomas Wichelmann, managing director of WELA-Plast located in Goldenstedt, Germany, talking about EREMA's

customer-oriented service. You can find more photos of this start-up and lots of other interesting information about the exciting world of EREMA on Facebook at: [www.facebook.com/eremagmbh/](http://www.facebook.com/eremagmbh/)



MANFRED HACKL

**PLASTICS CLUSTER ADVISORY BOARD SPOKESMAN**

EREMA Group CEO Manfred Hackl is the new advisory board spokesman of the Plastics Cluster of the Upper Austrian business agency Business Upper Austria. With around 400 companies whose total turnover amounts to some 17 billion euros the Plastics Cluster is the largest cluster initiative in Austria.



Deputy provincial governor of Upper Austria Michael Strugl with the new advisory board spokesman of the Plastics Cluster, Manfred Hackl (CEO EREMA Group) and Cluster manager Wolfgang Bohmayr.

The focus of the work in the Cluster is on the initiation, support and promotion of innovation projects. "The twelve industry representatives of the advisory board support the Cluster in its strategic orientation. With Manfred Hackl as the advisory board spokesman of the Plastics Cluster we will benefit from the expertise of a forward thinker of the industry," says a delighted deputy provincial governor Michael Strugl. The circular economy is one of the main topics for Hackl: "This is a major opportunity to improve the image of plastic. However, its success depends on the interplay of everyone involved – from waste plastic collection and recycling technology up to the reuse in processing," emphasises Hackl.

[www.kunststoff-cluster.at](http://www.kunststoff-cluster.at)

EREMA GROUP 12% UP

**€150 M TURNOVER BARRIER BROKEN**

The 2017/18 fiscal year has been a very successful one for the EREMA Group. With double-digit growth of 12% the companies integrated in the Group once again achieved record turnover with consolidated sales reaching €155m for the first time. The plastics recycling machine manufacturer EREMA GmbH with its well known brands INTAREMA®, VACUREMA® and COREMA® increased its turnover by around 18% compared to the previous fiscal year, generating sales of €144m. The positive development was achieved across all applications – Post Consumer, In-house and Bottle – and geographical markets. The growth in turnover of PureLoop GmbH, founded in 2015, is more than 30%. The company, which specialises in shredder/extruder technology, was able to increase its revenues thanks to a notable increase in sales of the ISEC evo recycling machines within just a few years to €6m. The other subsidiaries of the EREMA Group – 3S GmbH which focuses on the fabrication of core components for the extrusion



The employees of the companies which belong to the EREMA Group together achieved a record turnover of over €150m in the 2017/18 financial year.

and oilfield industry and used machine specialists UMAC GmbH – likewise recorded a positive development. Both companies were able to increase their turnover.

FROM PIONEER TO GLOBAL MARKET LEADER. EREMA CELEBRATES:

**35th company anniversary**

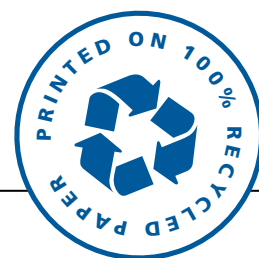


Founded in 1983 as a pioneer in the industry, EREMA quickly developed into the global number one in plastics recycling machines and system components. Today, over 5,000 EREMA systems are in use around the world. In total, they produce more than 14 million tonnes of plastic pellets every year. A team of qualified specialists carries out research activities for new recycling systems all the time while perfecting existing systems. 111 patent families with over 1,000 patents are testimony to EREMA's innovative strength. EREMA CEO Manfred Hackl, who

himself has been with EREMA since 1995: "It's wonderful to see how the company has developed so dynamically since it was founded in 1983 – from zero back then to sales of over 140 million euros today. Besides our employees it is of course our customers who play a key role. I would like to take this opportunity to say thank you. Not only to those who have placed their trust in us for years – in some cases decades – but also to those new ones who are convinced by the performance of our machines and system on a daily basis."

Over three decades separate these two photographs. At the top, one of the first EREMA recycling machines built at the beginning of the 1980s. Below it, a current INTAREMA® 2021 TVEplus® featuring a high efficiency triple Laserfilter.





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