



# CHEMAREMA®

**Preparation is everything.**

The robust way to chemical recycling.

CHOOSE THE NUMBER ONE.

**EREMA®**  
PLASTIC RECYCLING SYSTEMS

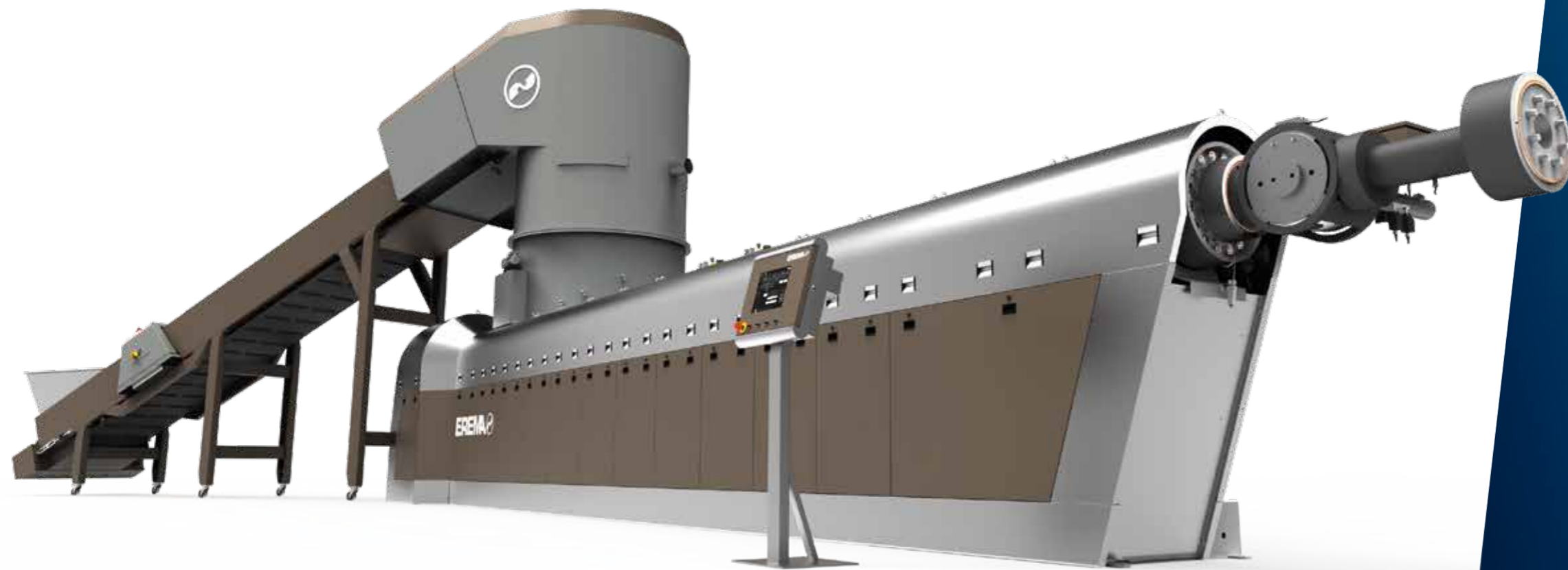
# CHEMAREMA®

**Energy efficient, high yield & robust.  
Because productivity counts.**

The new CHEMAREMA® series from EREMA defines the benchmark for performance when it comes to the efficient mechanical preparation of post consumer "waste" for chemical recycling. Particularly robust machines and technologies, the highest flexibility in terms of input material combined with consistently high melt stability and very low energy consumption throughout the entire process deliver no-compromise productivity, safety and cost effectiveness.

## **Energy-saving all-in-one technology concept**

Thanks to the high degree of technology integration, several essential process steps are integrated compactly in one plant, which would otherwise have to be solved using additional, upstream components. This saves costs both in investment and during operation and makes a significant contribution to energy and production efficiency. For example, the systems with the Preconditioning Unit include the process steps of pre-drying, compacting and agglomerating the material for extrusion.



# CHEMAREMA®

The robust way to chemical recycling.



## Mechanical processing post consumer materials for chemical recycling - robust, reliable, continuous and energy efficient

- **Suitable for particularly demanding materials:** High moisture (4 to 10 %), heavily contaminated, low bulk density (from 25 kg/m<sup>3</sup>)



Contamination



Shape



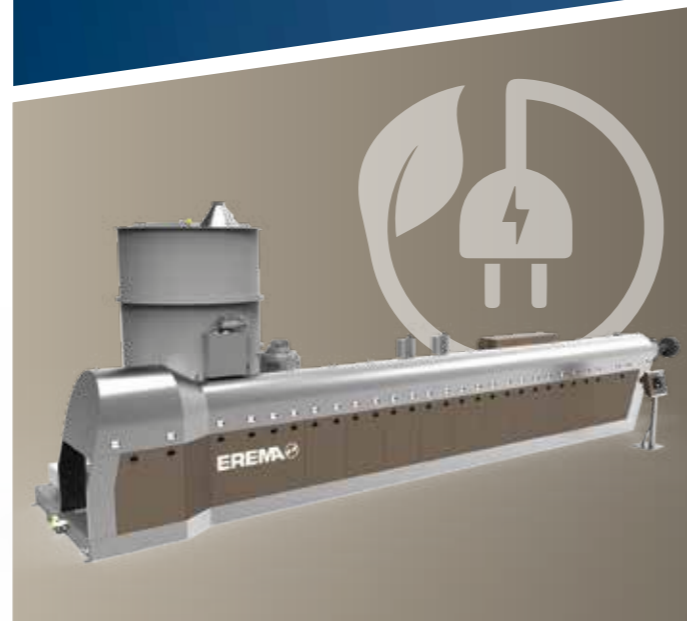
Moisture

- **High flexibility** for a wide selection of mixed **input materials** with consistent **output stability** for continuous melt quality
- **High productivity:** throughputs of up to 5,000 kg/h (polyolefins) are possible



## Energy-saving all-in-one technology concept

- **"All in one heat"** - from the Preconditioning Unit to the tip of the extruder: energy-efficient **material preparation in a single stage**
- **No additional upstream processes or equipment needed for pre-drying, compacting or agglomerating:** Big savings in heating and cooling energy without these process steps



## Robust process, robust technology

- The robust machine that has been proven 1,000 times in the field and consists of a **Preconditioning Unit with Counter Current Technology and a robust single-screw extruder** delivers stable processing of a wide variety of post consumer feedstocks with a wide process window
- High-quality, especially robust components for **greater safety, longer service life and less maintenance** - such as fully armoured core components, including new extruder screw armour technology
- **Top quality components from 3 S included**  
The key extrusion components are manufactured in Austria by the EREMA Group subsidiary 3 S to meet the toughest specifications.

3 S

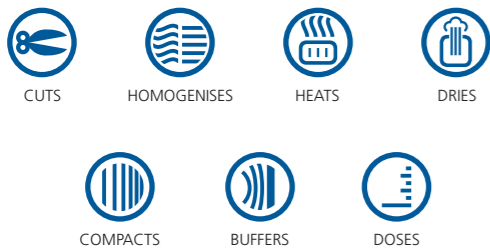


## Low Total Costs of Ownership (TCO)

- **All-in-one technology concept** saves a great deal on **investment and energy costs**
- **Maximum machine availability**
- **Low maintenance costs** thanks to robust design and predictive maintenance capabilities
- **Low floor space requirements**

# 1 Preconditioning Unit: Ideal material preparation

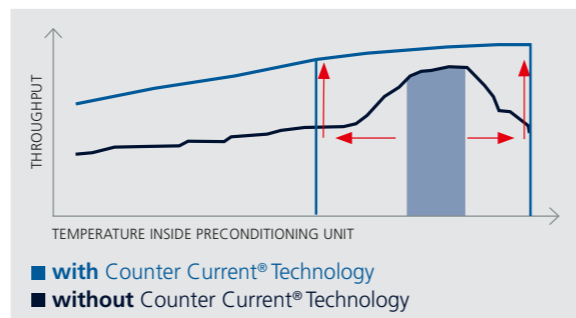
Cutting, homogenizing, heating, drying (input material with up to 10% moisture), compacting buffering and dosing - in a single working step. The patented Preconditioning Unit featuring dynamic control prepares the material in the best possible way for the extruder, to which it is directly connected at a tangent.



# 2 Innovative Counter Current technology enables optimised intake performance across an extended temperature range.

With patented Counter Current technology, the Preconditioning Unit and extruder work more efficiently than ever before. The result: the extruder processes more material in a shorter time.

- **More productivity:** Increased throughputs with the same size of machine
- **Wider process window for high-stability processing:** Improved material feed ensures consistently high output over a significantly wider temperature range
- **Higher flexibility** and reliability with a variety of materials (film, flakes, regrind, pellets, agglomerates as well as mixtures of film and agglomerates)



# 3 Short extrusion: Minimum residence time for abrasive material

Thanks to the PCU preheating the material, it reaches the required melt temperature faster in the extruder. This shortens the extrusion process, the melting time - and as a result the residence time - for abrasive material in the extruder: a major advantage in terms of the service life of the screw and extruder components.

# 4 QualityOn:Polyscan (RAMAN spectroscopy)

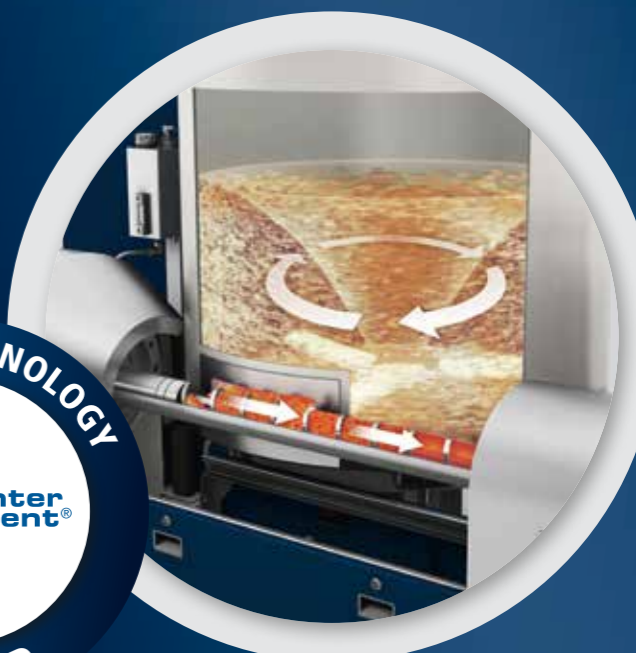
Online measurement of feedstock composition of the input material in real-time directly at the Preconditioning Unit (PCU). Material information is recorded at defined intervals using RAMAN spectroscopy. The patented concept enables early detection and response to variations in the composition of the input material - **for more stability and more consistent processing.**

# 5 Single screw extruder: compact, robust, energy-efficient

- **Technology proven 1,000 times** for post consumer waste
- **Pressure increase up to 300 bar**
- **New PredictOn:Drive predictive maintenance** Monitoring the main drive train using the latest measurement and sensor technology - increases machine availability and minimises downtimes
- Energy input primarily from mechanical friction and cutting



# 6 Melt transfer to the customer's chemical recycling system

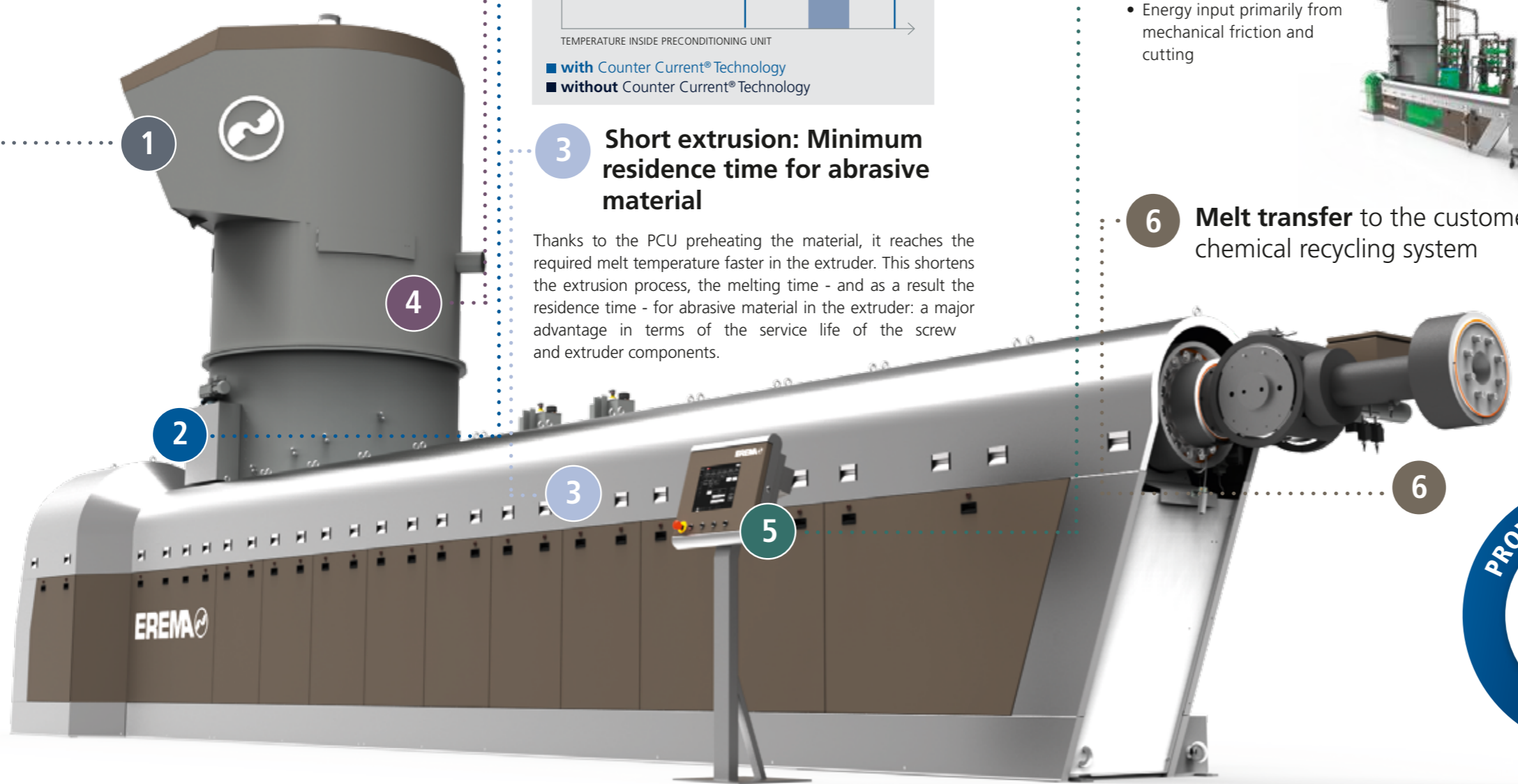


## The right CHEMAREMA® system for the specific application

Input material streams in chemical recycling vary widely in terms of polymer type, material shape and level of contamination. Thanks to its broad technology portfolio, the CHEMAREMA® series offers custom-built solutions to meet this challenge. This means that the extrusion systems are precisely designed to meet the requirements of each input stream - incorporating a high degree of flexibility to allow for any variations that occur in the material being fed into the system.

In addition to the single-screw melt system with Preconditioning Unit (PCU), the following systems are available:

- **Shredder-extruder combinations**
- **Vacuum assisted extrusion solutions**
- **Cascade solutions with single or twin screw extruder**



**Headquarters & Production Facilities**

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