

New technologies and new test centre for recycling fibres and textiles**EREMA Group focuses research and development on circular economy for PET fibres**

The textile industry is the third largest consumer of plastics. While growth rates in the production of fibres and textiles are high, the circular economy has hardly become established in this segment. The EREMA Group is now intensifying development of recycling solutions for this application with their new fibres and textiles business unit. Currently, the focus is on PET fibre materials from fibre production and subsequent processing steps. Technologies for recycling mixed fibre textiles from textile collection sources are to follow in a follow-up project phase.

"With EREMA's VACUREMA® and INTAREMA® technology and PURE LOOP's ISEC evo technology, our company group already has an extensive range of machines for fibre and PET recycling applications. For ecologically and economically sound recycling, however, new technological solutions are needed to use the recycled fibres in higher-value end applications and to achieve a functioning circular economy," explains Wolfgang Hermann, Business Development Manager Application Fibres & Textiles, EREMA Group GmbH. The initial focus will be on PET, regarded as a key material for the production of synthetic fibres. The aim is to find recycling solutions that allow PET fibre materials to be prepared for reuse in PET fibre production processes. This is a significant step for the circular economy because PET fibres in textiles account for about two-thirds of the total volume of PET. Packaging applications account for only one-third of the PET material stream.

In this development work, the EREMA Group can build on existing know-how. Proven recycling technologies have been combined with a new IV optimiser. "This extends the residence time of the PET melt, which is particularly necessary in fibre recycling to efficiently remove spinning oils. Our recycling process also increases the IV value of the PET melt after extrusion back to the specific level that is essential for production of the fibre," explains Hermann. The quality of the rPET produced using this method is so high that it can be used to manufacture ultra-fine fibres up to

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2 dtex with an rPET content of 100 percent. Waste PET fibre from production processes can therefore be further processed into rPET filament fibre, carpet yarn and staple fibre.

Fibre test centre with plant to test customers' materials

In order to accelerate development work, EREMA opened its own fibre test centre a few months ago, where a cross-company team is working on recycling solutions for fibre-to-fibre applications. The centre also operates a fully equipped and variable industrial-scale recycling plant. It includes the peripheral technology required for fibre materials and is available for trials using customers' material streams.



Photo: Fibre waste from filament fibre production was recycled into high-quality pellets in EREMA's fibre test centre. Using filament technology, a 3 dtex fibre was spun, which was processed into knitted fabric for clothing or technical textiles. (photo: EREMA)

EREMA Group Another life for plastic. Because we care.

Based in Ansfelden near Linz in Austria, EREMA Group is the world's leading manufacturer of plastics recycling solutions. With their companies EREMA, 3S, PURE LOOP, UMAC, PLASMAC, KEYCYCLE and PLASTICPRENEUR, they cover the entire spectrum of mechanical plastics recycling - from planning and engineering through to developing and manufacturing recycling technologies as well as producing system components and trading previously owned systems. These recycling solutions are currently operating in 108 countries worldwide and recycle approximately 19.5 million tonnes of plastic every year.

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