



PRESS RELEASE

TotalEnergies, Windmüller & Hölscher and Mitsubishi Chemical Group's collaboration led to High Barrier Recyclable packaging contributing to materials circularity

Brussels/Lengerich/Düsseldorf, October 28, 2022 – TotalEnergies, Windmüller & Hölscher and Mitsubishi Chemical Group announce today the successful proof of concept of a fully recyclable High Barrier Stand-up Pouch suitable for food-grade applications.

The partners have developed a fully recyclable high barrier packaging, to replace multimaterial structures (like e.g., metalized BoPP/PE or metallized BoPET/PE), in line with brand owners' commitments to 100% recyclable packaging by 2025. Composed of 98% polyethylene and less than 2% EVOH, required for barrier properties, the new solution exhibits identical performances without any compromise on recyclability, allowing to enter available recycling streams and thus contributing to address the challenge of plastics end-of-life.

It consists of a Machine Direction Orientation (MDO) film and a sealing film, laminated together by Dettmer Verpackungen GmbH & Co. KG. The machine manufacturer B&B Verpackungstechnik GmbH then transformed this structure into a Stand-Up Pouch that could be used for demanding applications, such as coffee packaging. The MDO-PE film recipe, composed of TotalEnergies Supertough[®], and unique Lumicene[®] high density PE together with Mitsubishi Chemical Group's Soarnol[®], was running on an Varex[®]II equipment at the Windmüller & Hölscher EXPO for four days during the 2022 K show and was successfully welcomed by attendees.

"The replacement of non-recyclable multi-material packaging is key to ensure the circularity of plastic materials, bringing more qualitative items on the market to be used as feedstock for the recycling industry. We are committed to accelerate in the circular economy by integrating eco-design principles into our product development process, in line with our ambition of producing 30% recycled and bio polymers by 2030" said **Olivier Greiner, Vice President, Polymers Europe & Orient at TotalEnergies.**

"With this product study, we are very pleased to showcase another missing piece in the puzzle towards a true circular economy. Our leading knowledge and cutting-edge technology for the production of barrier and MDO-PE films as well as the excellent co-operation between all partners have made this possible." said **Dr. Jonas Schmidt, Head of Product Management of Windmüller & Hölscher.**

"We are happy to participate in this joint project, offering an innovative and sustainable packaging to the industry. Thanks to the combination of chosen barrier materials, together with excellent machine technology, the needs of high water-vapor-, oxygen- and aroma-barrier are achieved. Furthermore, the structure can be declared by definition as mono-layer solution, and it is also fully mechanically recyclable", explained **Domenico De Angelis, General Manager Sales Soarnol, P&C MMA Business Group EMEA of Mitsubishi Chemical Group.**



About TotalEnergies and Polymers

TotalEnergies develops, produces and commercializes polymers — polyethylene, polypropylene, polystyrene, their recycled equivalents and biopolymers — that can be incorporated in the plastics manufacturing process. Lighter than many alternative materials, they help reduce the carbon footprint of end-use applications through enhanced energy efficiency. TotalEnergies' polymers experts in Europe, Asia and the United States of America are working alongside all the professionals in the value chain, including plastic manufacturers, research centers, waste collection and sorting companies, and their customers to accelerate in the circular economy. The Company is developing different plastic recycling processes and using renewable raw materials, with the ambition to commercialize 30% circular polymers by 2030.

About TotalEnergies

TotalEnergies is a global multi-energy company that produces and markets energies: oil and biofuels, natural gas and green gases, renewables and electricity. Our more than 100,000 employees are committed to energy that is ever more affordable, cleaner, more reliable and accessible to as many people as possible. Active in more than 130 countries, TotalEnergies puts sustainable development in all its dimensions at the heart of its projects and operations to contribute to the well-being of people.

About Windmüller & Hölscher

Windmüller & Hölscher, a family-owned company, is world leader for machinery and systems for the manufacturing and converting of flexible packaging. The product portfolio includes high-performance machines for film extrusion, printing and converting. As a global company W&H offers its clients everything from a single source: from expert consultation and engineering to the delivery of high-quality machines and complete packaging production lines. Approximately 3,200 employees create optimal solutions for the individual production tasks of flexible packaging producers – bringing the corporate philosophy “Passion for innovation“ to life. Machines by Windmüller & Hölscher are in use in over 130 countries and by more than 5,000 customers. In 2021 the Windmüller & Hölscher Group with its headquarters in Lengerich, Germany reached sales of approximately 969 Mio. EUR.

About the Mitsubishi Chemical Group

The Mitsubishi Chemical Group is a specialty materials company that operates in four business fields: Performance Products, Chemicals, Industrial Gases, and Health Care. Around 70,000 employees around the world support people's daily lives and global businesses by providing advanced chemistry-based solutions in the electronics, healthcare & life science, as well as other selected markets. Mitsubishi Chemical Group Corporation is listed on the Tokyo Stock Exchange Prime Market, with consolidated sales revenue of 3,976.9 billion yen in the fiscal year ended March 31, 2022.

For further information, please visit our website: www.mitsubishichem-hd.co.jp/english.

For further information on Soarnol™, please visit: www.soarnol.com/eng.

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