



RECYCLEYE

VALORPLAST



PRESS RELEASE

## AI-powered plastic sorting project led by Recycleye, Valorplast, and TotalEnergies delivers world first towards food-grade polypropylene mechanical recycling

**Brussels, November 21, 2023** – Collaborative research project OMNI directed by Recycleye, Valorplast, and TotalEnergies to enhance the circularity of polypropylene (PP) food packaging led to ground-breaking results. The new technology based on Artificial Intelligence (AI) and computer vision, coupled with an efficient decontamination process, provides a high-performing marketable solution to tackle the challenge of mechanically recycling polypropylene for food-contact applications.

Project OMNI is an innovative project aiming to leverage AI and Machine Learning for the identification and separation of food-grade PP from household post-consumer wastes. It is one of the 7 projects successfully selected in October 2020 by Citeo, a mission-led company reducing the environmental impacts of household packaging and paper, in the framework of a call for projects.

After 18 months of research, Project OMNI led to an alternative to digital and physical marking solutions which require system-wide packaging changes. In a demonstration unit, Recycleye built and trained an AI model based on wastes collected from 5 locations across France supplied and characterized by Valorplast. The AI and robotic sorting achieved a successful pick rate of 50% of the food-grade material, with >95% purity. This sorting activity produced material used for further decontamination on a semi-industrial pilot based on off-the-shelf mechanical recycling technologies. TotalEnergies then leveraged its polymer expertise to produce odorless, clean rPP suitable for high-end packaging applications.

The novel developed process has demonstrated the efficient decontamination of food-grade PP waste sorted by AI and computer vision and opens new opportunities for circularity of polypropylene packaging.

**Nathalie Brunelle, Senior Vice President, Polymers at TotalEnergies**, said: *“This project not only demonstrates how cutting-edge technology can improve material circularity, but also paves the way for a wider range of accessible applications for recycled polymers to serve our customers. It provides a concrete response to the challenge of managing end-of-life plastics, and fully supports our ambition of reaching 1 million tons of circular polymers”.*

**Victor Dewulf, CEO of Recycleye** added *“We are extremely excited to see this successful application of our robust AI-powered sorting technology at a semi-industrial scale. This application opens the possibility of creating new markets for recycled plastics materials; ultimately changing the economics of recycling”.*

*“Being able to recycle food-grade PP is a key factor in the establishment of a circular economy for PP packaging. AI is a promising route for achieving this objective”* commented **Alban Cotard, Sales Quality and Development Manager at Valorplast**.



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### **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 reach 1 million tons of circular polymers.

### **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 Recycleye**

Recycleye is a ground-breaking technology company bringing advanced machine learning, computer vision and robotics to the global waste management industry. Our proven Recycleye Vision and Robotics solutions lower the cost of sorting, increase plant performance, enable data-driven strategic decision making and deliver transparency, traceability and efficiency. Installed in locations across Europe and the United States, our clients rely on us to add value to their sorting operations through increased purity and outputs.

### **About Valorplast**

VALORPLAST acts to build a sustainable, profitable, and transparent household plastic packaging recycling sector. Our company therefore has the following missions:

- to organize the take-back guarantee of the flows of plastics packaging collected and sorted by local authorities,
- sustainably develop recycling by identifying high added value outlets for all plastic packaging,
- promote the eco-design of plastic packaging in order to ensure their recyclability.

In 2022, Valorplast managed the recycling of 184,152 tonnes of plastic waste, including 172,335 tonnes of household plastic packaging. These were 100% recycled in neighboring Europe, 3/4 of which in France. Embodying the take-back guarantee, Valorplast was in contract with 58% of local authorities in France last year.

[www.valorplast.com](http://www.valorplast.com)

## About Citeo

Citeo was created in 1992 by consumer goods and distribution companies in order to reduce environmental impact of household packaging and graphic paper, and developed eco-design, collection, sorting and recycling services. To respond to ecological emergencies and accelerate required changes, Citeo pursues 5 social and environmental objectives : reduce the environmental impact of Citeo's customers' products, by embedding a circular economy and eco-design in their practices and strategies, creating conditions to build solutions for today and tomorrow that combine environmental and economic performance, provide consumers with the means to reduce the impact their consumption has on the environment, co-build and promote Citeo's solutions and positions, from local to international levels, cultivate the commitment of Citeo's teams as part of its purpose.

Since the creation of Citeo, the consumer goods and distribution companies have invested about 13 billions euros to develop eco-design, to install and finance selective collection and to create recycling channels with the public and local authorities, and industrial operators.

Today, 72% of household packaging and 62% of graphic papers are recycled thanks to the act of sorting by the French people, which has become the first eco-citizen act.

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## Cautionary Note

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This press release and associated photographs can be downloaded from [www.polymers.totalenergies.com](http://www.polymers.totalenergies.com) and [www.PressReleaseFinder.com](http://www.PressReleaseFinder.com).