

L'Oréal produces first plastic bottle made from carbon emissions



L'Oréal and its partners LanzaTech and Total are planning to work with other companies who want to use new sustainable plastics

French beauty group L'Oréal, together with its partners LanzaTech and Total, have premiered the world's first sustainable packaging made from captured and recycled carbon emissions.

The successful conversion process takes place in three steps. First, carbon recycling company LanzaTech captures industrial carbon emissions and converts them into ethanol using a unique biological process.

Second, energy company Total, thanks to an innovative dehydration process jointly developed with IFP Axens, converts the ethanol into ethylene before polymerizing it into polyethylene that has the same technical characteristics as its fossil counterpart.

Third, L'Oréal uses this polyethylene to produce packaging with the same quality and properties as conventional polyethylene.

This technological and industrial success proves that industrial carbon emissions can be used to produce plastic packaging, the companies said.

A world-first innovation

“This world first demonstrates the commitment of the three partners to the development of a sustainable circular economy for plastics and paves the way for new opportunities for the capture and re-use of industrial carbon emissions,” they added.

The partners intend to continue working together on scaling up the production and are planning to work with other companies who want to use these new sustainable plastics.

LanzaTech CEO Jennifer Holmgren said: “This partnership is based on a shared goal of creating a cleaner planet for everyone. We are grateful to both L’Oréal and Total for their commitment to reducing the carbon intensity of their activities. Together, we can reduce the carbon footprint of packaging by converting carbon emissions into useful products, making single-use carbon a thing of the past.”

Senior Vice President Polymers at Total, Valérie Goff, added: "This partnership is an excellent example of collaboration between industrial firms in developing the plastics of the future produced from recycled carbon and meets a strong demand from our customers. The development of this new pathway of valuing industrial carbon emissions also contributes to the Group's commitment to get to net zero in Europe by 2050."

Jacques Playe, L’Oréal Packaging & Development Director, said that “L’Oréal is constantly improving the environmental footprint of its packaging. With this innovation converting carbon emissions into polyethylene, we aim to develop a new sustainable packaging solution. We have the ambition to use this sustainable material in our bottle of shampoo and conditioner by 2024 and we hope other companies will join us in using this breakthrough innovation.”