THREADING-CO_2

THE PROJECT

Threading-CO_2 aims to scale-up and demonstrate its first-of-its-kind technology producing high-quality commercially viable sustainable PET textile products from CO_2 waste streams at industrial scale (TRL7) using a circular manufacturing approach and running on renewable energy sources. The overall outcome of the Threading-CO_2 project is a 70% GHG emissions reduction compared to existing PET manufacturing processes. Threading-CO_2 will enable the creation of a European value chain for sustainable PET textiles, from feedstock to final textile products in the clothing, automotive and sports/outdoor industries.

ABOUT THE PROJECT

STARTED ON
1 January 2023

DURATION
48 months

COORDINATOR
FAIRBRICS SAS

OBJECTIVES

Threading-CO_2 addresses one of the greatest global challenges, the climate change caused by excessive GHG emissions into the atmosphere. The overall objective is to significantly reduce the carbon footprint of the textile industry by demonstrating and bringing to the market high-quality polyester textile products from the valorization of CO_2 waste streams through a circular manufacturing approach.

Threading-CO_2 will:

- Pursue the scale-up of a first-of-its-kind technology producing PET textiles from CO2 waste streams from lab scale (TRL5) to pilot line scale (TRL6) to finally reach demo plant scale (TRL7) using a circular manufacturing approach and running on renewable energy sources.
- Decrease GHG emissions and environmental impact of current manufacturing technology and polyester products.
- Ensure homogeneity, purity and quality of the Threading-CO_2 process to guarantee applicability in industrial-scale polymerisation and spinning plants for at least three different application areas.
- Ensure the environmental, social and economic sustainability of the Threading-CO_2 technology at industrial scale in line with the EU Process4Planet through Sustainable Carbon Cycles Strategy.
- Co-develop learning and training resources for professionals and students to develop competences and skills related to valorisation and recycling of CO_2 in a circular manufacturing approach for the process industries.
- Optimise project dissemination, exploitation, stakeholder analysis and engagement activities to ensure market uptake for Threading-CO_2 polyester and to raise awareness of greener polyester textiles as economically viable and sustainable alternatives to conventional fuel-based polyester.

AMBITIONS

1. Demonstration of the valorisation of CO_2 waste streams into low carbon circular polyester at industrial scale.
2. Production of high-quality commercially viable sustainable CO_2 based textile products capable of meeting market demands.
3. Drastically reduce GHG emissions and environmental footprint of polyester manufacturing process.
4. Creation of a European value chain for sustainable PET.

GO TO THE WEBSITE

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