

PLASTICE

HORIZON-CL4-2021-TWIN-
TRANSITION-01-17

PLASTICE

Full Title: New technologies to integrate PLASTIC waste in the Circular Economy

Aim:

The overall objective of the PLASTICE project is to demonstrate innovative and sustainable routes to close the plastic production loop.

To dramatically increase the amount of plastics being valorized into new feedstocks, innovative approaches beyond mechanical recycling must be devised. By implementing cutting-edge technologies along the whole recycling value chain and by valorising plastics that are not being separated, the PLASTICE project will valorize a wide range of unsorted plastic and textile waste. By preserving the performance of the valorisation process against feedstock variations and by protecting the products' quality for their subsequent usage in industrial applications, the goal is to close the loop.

Concept:

Three different routes for plastic valorisation will be developed and implemented in real demonstration sites, covering different types of post-consumer waste mixes and obtaining sustainable feedstock for the latter production of new plastics and other high-added-value products of industrial interest: - Route 1: microwave-assisted pyrolysis + hydrothermal liquefaction? - Route 2: gasification + syngas conversion? - Route 3: enzymatic hydrolysis and fermentation? PLASTICE ambition is to change the current paradigm of the plastic value chain to make it more integrated and circular, valorising waste products as a valuable asset for chemical industries. PLASTICE processes will decrease greenhouse gasses (GHG) emissions compared to current recycling processes. Also, there is a reduction in terms of GHG emissions because of the resources use optimization via the

valorisation routes demonstrated. Our technologies avoid the GHG emissions derived from the oil processing for the traditional products replaced. Expected outcomes of the project include: - Reduction of landfilled material – waste resources - Replacement of fossil feedstock - Increased energy efficiency - Increased economic benefit - Smart and digitalised plastic value chains - New knowledge about the recycling of mixed plastic streams - Improved policies for plastic recycling - Circular-by-design value chains

Start date:

01/06/2022

End date:

31/05/2027