



CE-SPIRE-10-2018

## **MultiCycle**

Full Title: Advanced and sustainable recycling processes and value chains for plastic-based multi-materials

### Aim:

Plastics bring unprecedented value in terms of convenience, versatility of design and lightweight to European consumers as well as increasingly advanced performances even in high end applications. But only 31% of plastic packaging are currently recycled due to infra-developed technologies or to their unsatisfactory economic viability. This is in fact aggravated by considering plastics as commodity where their economic value is linked to a single use, often not taking into account the potentially generated end of life hurdles. In line with the just released Plastic Strategy for Europe, the time has come to stop the depletion, landfilling and incineration and shift to a Circular Model in the plastic sector improving the recycling rate but also the value of secondary raw materials from plastic recycling.

### Concept:

As such, with an overarching mission to maximise the valorisation of our finite plastic resources, based on the CreaSolv process patented by the partner FRAUNHOFER, which will be upscaled and digitised, MultiCycle will deliver an industrial recycling pilot plant for thermoplastic-based multi-materials. This is a solvent based selective extraction process which allows recovering pure plastics in mixed wastes but also fibres without downgrading. The later compounding of recovered materials will also be optimised in terms of process and formulation. Our economically and environmentally sustainable MultiCycle process will be demonstrated in 2 main large volume sectors (as providers of waste to recycle and end users of the recycled materials): -Multilayer packaging but also flexible films that cannot be recycled cost effectively to

date and altogether account for around 50% of plastic packaging, i.e. ca. 10 millions tons/year in EU. -Fibre reinforced thermoplastic composites for the automotive sector from which plastics constitute around 16% of End-of-Life Vehicles weight, i.e. ca. 1 million tons/year in EU.

Start date:

01/11/2018

End date:

31/10/2021