

Annex 1 - Technical specifications on the INCIRCULAR open call topics**«Solutions to improve the circularity of plastics»**

The open call invites innovative project ideas assigned for two key sub-topics:

- **Process Technology Solutions** for up-grading of plastic recycling line for industrial side-streams/residues.
- **Digital Solutions** for digitalisation systems and advanced AI solutions.

Your innovative ideas should address one or both thematic areas outlined in the Open Call. When evaluating the received applications against the criterion “Relevance”, particular attention will be given to the Coherence of the proposed project with the INCIRCULAR vision and supplementing the value chain that we are building through the INCIRCULAR project. For clear understanding of the subtopics of this open call, we provide a broader explanation of the expected impacts with this Annex.

Sub-Topic 1 (Process Technology Solutions) - Prototype of an add-on system to improve the collection, sorting, crushing and/or shredding processes for plastic waste materials of mono or multi-material composition. Automatic conveyers, metal detectors for in-line control and/or NIR/ Spectral imaging for easier sorting procedures between plastic types of streams and for assuring a relative clean stream are of special interest. Proposed solutions are expected to innovate the recycling line equipment or renovate/upgrade the machine hardware (blades, sieves, mills, etc.), improve recycled material output and particularly the homogeneous mixing of special additives into polymer matrices, enable the automatic dosing of fibers, additives, powder, etc., allow the in-line process control for eliminating the material thermal degradation, and similar. Experience of applicants in mechanical recycling of polymers and composites will be considered as an added value.

Sub-Topic 2 (Digital Solutions) – This sub-topic addresses the innovative solutions on material screening, in particular advanced devices or software modules for efficient waste sorting, machine vision, input/output control etc. The innovation is sought also on digitalisation of recycling processes where AI technology can be of great support, also smart digitalised mould or extrusion/injection processing line. Proposed solutions are expected to introduce the automation of final parts quality control (e.g., scan box), on-site installation, online data transfer, replication to other production lines or sectors at GORENJE Factory.

In the context of this open call, different levels of implementations of the technology will be acceptable. You may propose a feasibility study or a proof of concept or the complete implementation in real conditions, depending on your solution and the budget of the project (60 000 €).