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PVCUPCYCLING - CIRCULAR ECONOMY AND ZERO WASTE: "UPCYCLING" WASTE FROM ELECTRICAL SYSTEMS

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Abstract

A circular economy system will allow company to directly operate an effective re-cycling policy. Establishing a new "zero waste" impact scheme, in order to recover by-products from the production process, thus leading to an increased market price in comparison to their economic value, and by doing so with full respect of the blue and circular economy standards applied to the product. The main objective of the PVC upcycling project is to facilitate the transition of R.ED.EL.'s current production chain, from an economically linear model to a circular type. This is achieved through actions that aim to recycle PVC (polyvinyl chloride materials) from electrical cables ("de-manufacturing") to upcycling the same PVC into new products with a low environmental impact ("re-manufacturing"). While working from the de-manufacturing phase to the re-manufacturing phase, activating circular models with new PVC-MPS supply chains, and implementing experiments in specifically illustrated scenarios, it has also been possible to build a collaborative platform to exchange information. This process intercepts the eco-design phase thus realizing the possibility of intervention in the production of PVCupcycling prototypes.

The project won the regional competition of Calabria (EU funds-POR Calabria 14-20 axis I-action 1.2.2) and has received European funding for the "Promotion of Research and Innovation" thanks to the proposal of the following team: R.ED.EL., a media manufacturing company, in collaboration with ENEA, an Italian energy specialist research organization, UNICAL, a chemistry specialist organization based at the University of Calabria, PMopenlab, an innovative eco-design and additive manufacturing start-up. C.Nava is the technical-scientific team manager, a sustainability and design innovation research specialist.

Key words: circular economy, eco-design, smart manufacturing, upcycling, zero waste

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