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LIFE NEW 4 CARTRIDGES

A zero-waste solution to reuse and recycling printer cartridges: a reduction of environmental impact changing paradigm.

THE PROJECT

The **LIFE NEW4CARTRIDGES** project's purpose is to reduce cartridge waste, developing a semi-automatized regeneration system for ink cartridges which could be replicable and scalable.

The final objectives are to provide innovative solutions for both the upcycling of exhausted reusable cartridges and the recycling of cartridges that are no longer suitable for reuse, thus pursuing a zero-waste strategy and to encourage changes in consumers' attitudes, inspiring more environmentally responsible behaviors and stimulate European investments in innovative eco-friendly technologies.

PROBLEMS TARGETED

1. Environmental impact of European ink cartridge market (370 milions units sold per year and a cartridge reuse rate around only 20%):

- **wastage of limited natural resources**. Each cartridge contains on average 30 g of plastic and 1 g of metals;
- **release of hazardous and toxic chemicals in the environment;**
- release of **volatile organic compounds and heavy metals that can pollute the air;**
- **a significant global warming potential impact** considering that each new cartridge use cycle is responsible for around 0.48kgCO2eq.

2. Overcome the two main barriers to the reuse of cartridges:

- the **scalability of regeneration procedures;**
- the **OEM's discouragement of the regeneration** of cartridges.

PROPOSED SOLUTION

The **LIFE NEW4CARTRIDGES** project will provide solutions for both the upcycling of exhausted reusable cartridges and the recycling of cartridges no longer suitable for reuse.

Project leader Eco Store, an Italian SME specialising in printer consumables, will develop a semi-automated ink cartridge regeneration process to replace the currently manual workflow, enabling the same cartridge to be reused up to 10 times instead of the current 3 times limit. The project's team will implement a new cleaning procedure for used cartridges, recycle end-of-life cartridges using an innovative technology to obtain high-quality secondary raw materials.

OBJECTIVES

REUSE
OF EACH
CARTRIDGE
UP TO
10 TIMES

OPTIMIZATION OF
CLEANING PROCESS
TO **ELIMINATE**
INK RESIDUES
FROM CARTRIDGE
WITHOUT USING
CHEMICALS

RECYCLE
OF CARTRIDGES
NO LONGER REUSABLE
TO PRODUCE
HIGH-QUALITY
SECONDARY
RAW MATERIAL

EXPECTED IMPACTS

Reduction of landfilling or incineration and saving of natural resources thanks to the regeneration of at least 120.000 cartridges.

Savings in terms of CO2 emissions, non-renewable natural resources and energy.

93% reduction of water volumes used for cleaning thanks to the new cleaning procedure which use an innovative technology.

A PARADIGM CHANGES

This project will provide evidence of a sustainable and cost-effective approach to overturn the paradigm adopted by OEMs.

LIFE NEW4CARTRIDGES will raise society and consumers awareness and foster discussion at policy level about a more sustainable paradigm, trying to encourage changes in consumer's attitudes, to inspire more environmentally responsible behaviour and to stimulate European investments in innovative eco-friendly technologies.