

LIFE RECYCLO PROJECT



An environmentally friendly and innovative project

The Life RECYCLO project aims to **improve water resource management and reduce the amount of hazardous substances** released into the aquatic environment by introducing a waste water recycling process specifically for the laundry sector.

To meet this objective, the project involves developing an advanced oxidation treatment system to treat and recycle waste water from laundries.

Three prototypes are to be set up in three laundries in **France, Spain and Luxembourg**.

LIFE RECYCLO
RECYCLES
WASTEWATER



Key figures

- 6 partners
- 3 countries
- 3 prototypes in 3 laundries
- 1.5 million euros
- 2.5 years

Water conservation

The European laundry sector uses **42 million m³ of water every year**. This is a significant figure, especially considering that global warming is drastically affecting this precious resource.

The European Commission predicts that there will be a **50% increase in water shortages across Europe** by the year 2030. France, currently consumes around 148 litres per day per person. Once the water has been used, it is treated and returned to natural water sources. But it is rarely recycled. The recycling of waste water varies greatly around the world. In Europe, Spain reuses 8% of its water, Italy reuses 14%, **while France reuses less than 1%**.



LESS THAN
1% OF
FRESH WATER
ON THE EARTH

10 TO 20L
OF WATER PER KG
OF TEXTILE



Why target laundries?

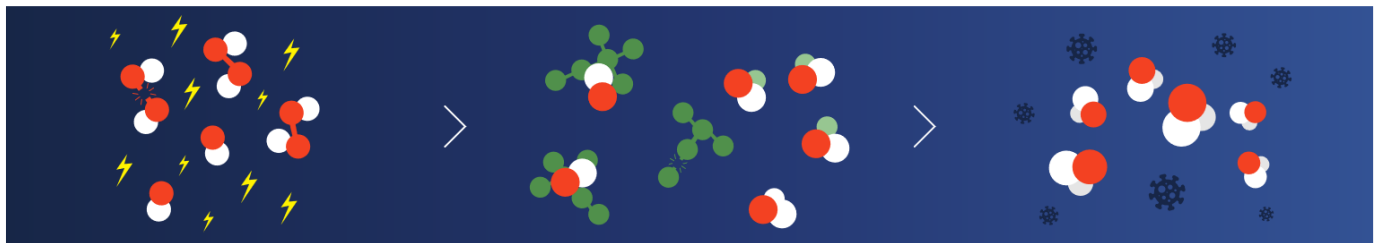
Today, there are approximately **11,000 laundries across Europe**. Their waste water usually ends up in the public sewage system and is seldom reused. Laundry washing leads to the emission of **micro-pollutants** such as phthalates (DEHP, DEP, etc.), phenols, heavy metals, solvents and surfactants. And waste water treatment plants are rarely equipped to deal with these particular molecules, which then end up being released into our natural environment. Even at low concentrations, these pollutants directly affect the aquatic environment, ecosystems and ultimately our health. A number of these substances are endocrine disruptors, carcinogens and mutagens.





An innovative process

The Life RECYCLO project involves treating micro-pollutants in laundry waste water so that it can be reused in the laundry process. The RECYCLO process uses a **state-of-the-art oxidation system**, which combines hydrogen peroxide and ultraviolet light. The UV light transforms the hydrogen peroxide into hydroxyl radicals, which then break down the pollutants. The UV rays also disinfect the water at the same time.



1. UV rays transform hydrogen peroxide into highly reactive hydroxyl radicals.

2. Hydroxyl radicals attack and break down pollutants.

3. UV rays disinfect water at the same time.

Our actions

- Set up the Life RECYCLO process at **three demonstration sites**: the Blanchisserie Saint-Jean, the Fundacio Max Xirgu (GRUPFRN) and KLIN SARL.
- Conduct **technical and analytical monitoring** of the impact of the RECYCLO process.
- Conduct a **survey** on how the laundry sector perceives and measures the social impact of waste water recycling.
- **Advertising and raising public awareness** about the project.



Our objectives

Reduction of water consumption

To recycle at least **50% to 80%** of wastewater produced by laundries.

Emitting zero pollution

- To eliminate **more than 90%** of emerging pollutants from laundry effluents (Phthalates, PAHs, AOX, PFOS...).
- To valorize **100%** of sludge produced by RECYCLO process in low environmental impact routes.



UP TO
80%
OF WASTEWATER
RECYCLED



100%
OF THE SLUDGE
PRODUCED
IS VALORIZED



MORE THAN
90% OF
MICROPOLLUTANTS
REMOVED

Developing an economically reliable and eco-friendly process

- To make **water reuse accessible** to small and medium laundries.
- To task the RECYCLO technology from **TRL 5 to 7** (Technology Readiness Level).
- To reduce laundries' water bills by **30%**.
- To promote the **local economy** by using local suppliers.
- To get **ETV label**.

Anticipating European regulations on reuse and micropollutant discharge

- To prepare market uptake of this process.
- To develop a mobile skid to replicate effluent recycling on **other industrial sectors**.
- To test the removal efficiency on other **emerging pollutants**. (ex: microplastics).

Promoting good water management practices

- To create contents to support decision making of industrials and policymakers.
- **To raise awareness** to the public and industry.
- **To disseminate** results to different stakeholders in other sectors.
- To establish a **network** around this project.

Who we are ?

The Life RECYCLO project is led by the TreeWater company and 5 partners:

Blanchisserie Saint-Jean, Bagard, France: Laundry and beneficiary of the RECYCLO process.

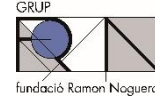
Fundacio Max Xirgu (GRUPFRN), Girona, Spain: Laundry and beneficiary of the RECYCLO process.

KLIN SARL, Foetz, Luxembourg: Laundry and beneficiary of the RECYCLO process.

Université de Lyon – Pop’Sciences: Around Pop’Sciences, the Université de Lyon, an academic site of excellence, promotes the meeting between research and society. It is in charge of communicating and promoting the Life RECYCLO project.

Catalan Institute for Water Research (ICRA): Institute in analytical science in charge of the innovative analysis method development for hazardous substances.

tree+water.
LAUNDRY & RECYCLING

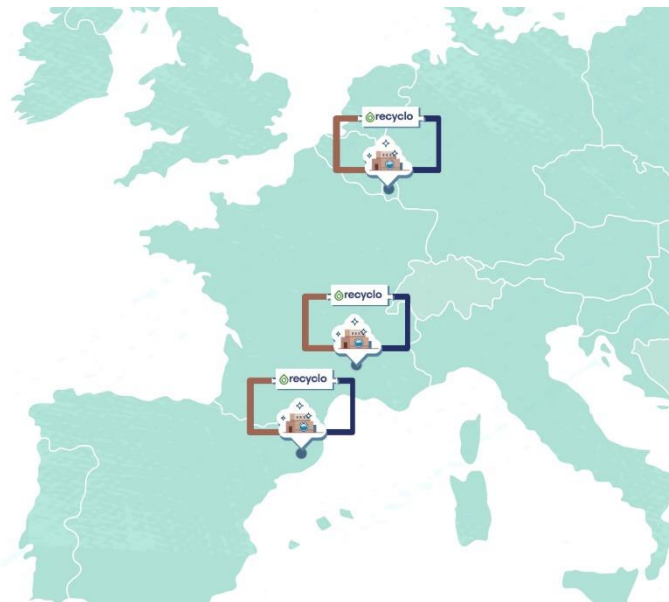


Where ?

France, Spain and Luxembourg

recycl+
by treewater

6 PARTNERS
3 PROTOTYPES
IN 3 COUNTRIES



When ?

From September 2021 to February 2024



55% funded by Europe

The project is part of the European Commission's **LIFE program**, which funds initiatives in the fields of the environment and climate.



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