

# KEY FIGURES



DURATION ●●●

## 48 Months

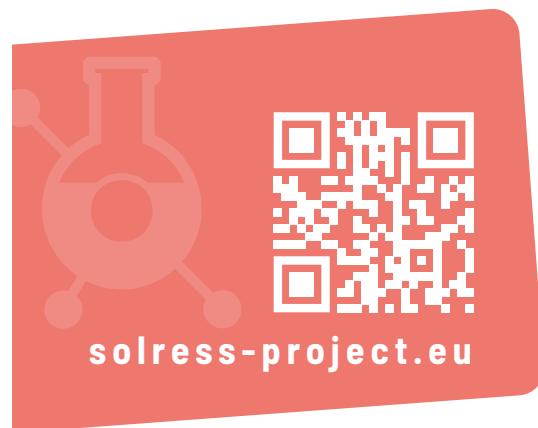
from September 2025 to August 2029

FUNDING FROM THE CIRCULAR BIO-BASED  
EUROPE JOINT UNDERTAKING ●●●

## €7 Millions

A MULTI STAKEHOLDERS PROJECT ●●●

## 17 Partners from 9 countries



[solress-project.eu](https://solress-project.eu)



@solress-project



[solress-project](https://www.youtube.com/solress-project)



Graphic design : [www.links-web.fr](http://www.links-web.fr)

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**Replace fossil-based solvents  
with safe and sustainable  
bio-based alternatives from  
second-generation sugars**

# WHAT WE DO

The SOLRESS project proposes an integrated biorefinery system to produce 5 industrial solvents (ethyl acetate, ethyl lactate, butyl acetate, 2-MeTHF and GVL) post-consumer coffee grounds and lignocellulosic feedstocks.

These bio-based solvents, designed to meet industrial purity standards, will be tested in major solvent-using sectors including paints and coatings, cosmetics, and industrial material processing. The goal is to replace fossil-based and hazardous solvents with safer, sustainable bio-based alternatives.

# OBJECTIVES

- Develop effective pretreatment processes for **coffee grounds** and **white birch chips** to recover **pure sugar** streams for fermentation processes.
- Optimize bioprocesses to convert **CO<sub>2</sub>** and **hydrolysates** into **organic acids** (lactic and acetic acid), improving sustainability and efficiency by integrating **electrochemical methods** for **acetic and lactic acid extraction**.
- Scale up **bioethanol** and **biobutanol** production from lignocellulosic feedstocks for bio-solvent synthesis including **CO<sub>2</sub> capture technologies**.
- Demonstrate esterification reactions and assess their effectiveness to **produce ester bio-based solvents from organic acids and alcohols**.
- Scale up **furfural production from hemicellulose** to produce other bio-based solvents and valuable by-products

# EXPECTED IMPACTS

## Scientific

- Use improved biotech and chemical processes to convert biomass into bio-based solvents, replacing fossil fuels and first-generation sugar-based solvents in certain applications.

## Environmental

- Propose sustainable alternatives to fossil-based and hazardous solvents, reducing waste, improving resource circularity, and lowering environmental and health risks. The project will transform over one tonne of wood and one tonne of coffee waste into 100 L of ester bio-based solvents and 50 L of furfural solvents, to be tested in industrial applications.

## Economical

- Promote the transition towards a zero-waste economy by recycling, within 10 years, 100,000 tonnes of coffee and wood waste annually to produce up to 50,000 tonnes of bio-based solvents

## Societal

- Support new jobs, growth and investment by generating, within 10 years, over €100 million in revenue and creating more than 300 jobs.
- Increase the social awareness and consumer acceptance towards more safe, sustainable, and circular Bio-based solvents.
- Significant contributions to objectives of the EU Green Deal, SDG Goals, Circular Economy Action Plan, EU Waste Directives, packaging regulations.

# APPLICATION FIELDS



Paints & Coatings



Cosmetics & Personal Care



Food & Beverages



Energy Sector



Chemical Industry



Pharmaceuticals



Building & Construction



# CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS

