

CONCEPT

The LIFE Waste2Coag project aims to demonstrate an innovative and resource-efficient technology solution for brine and metal waste valorisation to produce sustainable coagulants for wastewater treatment. The technology is based on electrolysis (ELS) and the coagulants produced can be applied in-situ for pollutant removal at both wastewater treatment plants and industrial plants.

Industrial scrap metallic wastes, generated by the metal industry, and brines, produced in desalination plants and industrial plants, will be valorised. Therefore, the project creates synergies between desalination plants, industrial plants and wastewater treatment plants, promoting a circular economy model.

Duration: October 2021-July 2024 (34 months)
Budget: €1,564,295 (55% EU funding)



Disclaimer: The contents of this publication are the sole responsibility of LIFE Waste2Coag and do not necessarily reflect the opinion of the European Union.

PROJECT PARTNERS

The success of the 34 months project will be ensured by a multidisciplinary and international consortium integrated by 5 partners based in Spain, Netherlands and Belgium



For more information, visit our website

www.lifewaste2coag.com

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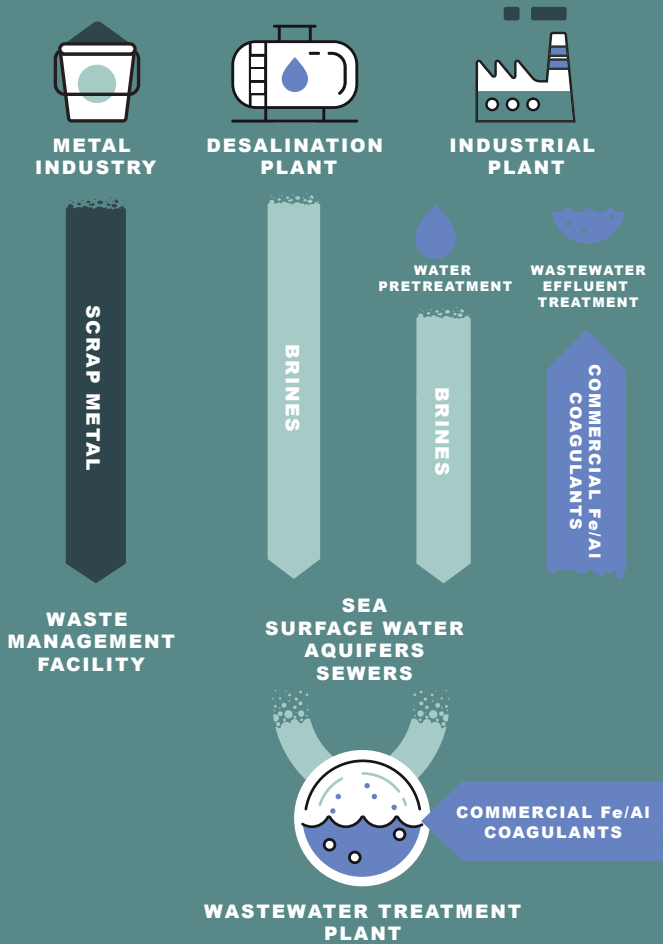
WASTE2COAG

Brine and Metal Wastes Valorisation
to Produce Coagulants for Wastewater
Treatment



The LIFE Waste2Coag project has received funding from the LIFE programme of the European Union under the Grant Agreement no LIFE20 ENV/ES/000430

CURRENT APPROACH (LINEAR)

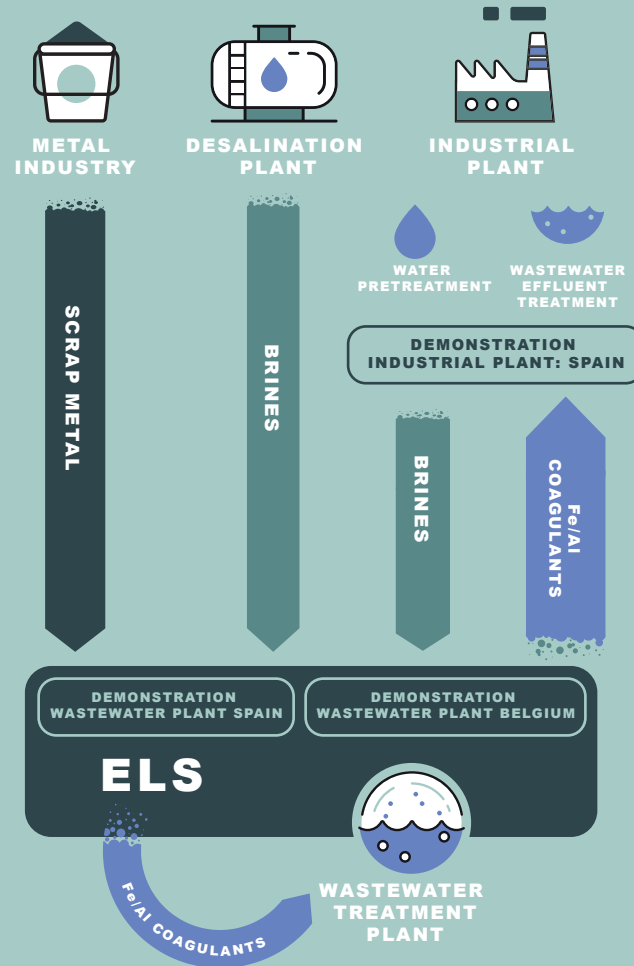


BRINES NEED TO BE DISPOSED OF IN THE ENVIRONMENT

SCRAP METALS NEED TO BE MANAGED AS WASTE

COAGULANTS ARE PURCHASED COMMERCIALY

WASTE2COAG APPROACH (CIRCULAR)



BRINES ARE VALORISED

SCRAP METALS ARE VALORISED

COAGULANTS ARE GENERATED BY THE ELS PROCESS AND REUSED IN DOMESTIC AND INDUSTRIAL WASTEWATER TREATMENT

OUTCOMES



Electrolytic system (ELS) to produce Fe and Al-based coagulants with an estimated maximum capacity of 60 m³/day



Production of coagulants with concentrations of 400-2,000 mg Fe/L and 250-700 mg Al/L and comparison of their efficiency against commercial coagulants



Valorisation of 0.4-2 kg Fe and 0.25-0.7 kg Al/m³ brines treated (5,000 m³ brines valorization during project)



Decrease in more than 50% current coagulant treatment costs per m³ of treated wastewater (€0.6-3 and €0.5-1.5 saved per m³ of brine processed for Fe and Al-based coagulants respectively)



Energy consumption of up to 9 kWh/kg of metal in the produced coagulants



80% reduction of CO₂ emissions by direct use of scrap metal as raw material to produce the electrodes used in the ELS (recycling steel and Al wastes saves up to 75-95% of the non-renewable primary resources to produce commercial electrodes)



Socio-economic and environmental feasibility analysis of the ELS through Life Cycle Costing (LCC), Life Cycle Assessment (LCA) and Social Life Cycle Assessment (S-LCA)



Dissemination, communication and transfer strategy of the project results for their wider implementation and replication in different sectors (e.g. tanning, food industry)