



Revalorisation of spent pickling acid baths for the recovery of secondary raw materials – REBADEC

PROJECT DESCRIPTION – ZL_2025_00835

Within the framework of the REBADEC project, several companies from the industrial and environmental sectors are developing innovative technological solutions aimed at the recovery of industrial waste, specifically spent pickling acid baths, with the objective of promoting circular economy principles and sustainability in industry.

The project focuses on researching and developing advanced technologies capable of transforming this hazardous waste into value-added products, such as reusable acids and metal salts, thereby helping to reduce environmental impact and the costs associated with waste management.

The project activities include the analysis and characterisation of the waste generated, the selection and validation of treatment technologies, and the development of processes based on innovative techniques such as electromembranes or evaporation/crystallisation. These solutions are designed to operate under complex conditions, ensuring process efficiency, safety and technical viability.

Systems are also being developed and validated to enable the recovery of acids, such as HCl, HNO₃, HF and H₂SO₄, and the production of chemical products of industrial interest, such as FeCl₂, ZnCl₂, FeSO₄ and FeF₃, facilitating their reuse in production processes and promoting the concept of zero discharge.

The participating entities are working on the development of prototypes, experimental trials and techno-economic analyses, with the aim of demonstrating the viability of the proposed solutions and their contribution to reducing waste and emissions, as well as improving industrial competitiveness.

In particular, LINERSA leads the development and validation of waste recovery technologies, contributing its expertise in the management of industrial streams, while TTI contributes from the steel sector through the generation and characterisation of pickling baths and the integration of the solutions into real industrial processes.

CONSORTIUM

Participants:

- Limpiezas del Nervión S.A. (Lead partner)
- TUBACEX TUBOS INOXIDABLES S.A. (Participant)

Basque Network of Science, Technology and Innovation (RVCTI) agents:

- TUBACEX INNOVACIÓN, S.L.
- FUNDACION TECNALIA RESEARCH & INNOVATION

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- **Total TTI budget:** €70,892.74

- **Duration:** 2025–2027

