

LIFE DIME: circular economy applied to the steel sector and metal surface finishing industries

LIFE DIME is an ambitious project developed by Condorchem Envitech and Eco-Techno, together with LIFE, a financial instrument managed by the EU that supports environmental projects for nature conservation and the fight against climate change throughout Europe.

LIFE DIME is one of more than 4,500 projects financed by LIFE and its main objective is to contribute to increasing the sustainability and efficiency of companies that engage in the pickling of metal surfaces and parts.

LIFE DIME provides enormous environmental and economic benefits to companies, as it permits the recovery of up to 98 % of hydrochloric acid and the recovery of zinc and ferrous sulphate dissolved in the spent pickling baths, in addition to reducing the volume of waste to be managed.

“LIFE DIME offers an innovative solution in the treatment of liquid waste generated in the steel industry and in surface treatments, in pickling processes and in intermediate processing phases: cold rolling and surface treatment processes such as hot-dip galvanising and zinc plating. This new solution makes it possible to obtain raw materials from liquid waste that can be reused in the industry and in other marketable products, in addition to generating considerable cost savings in external management and the purchase of raw materials”, explains Sergio Tuset, the CEO of Condorchem Envitech.

Main benefits of Life Dime

1. It permits an HCl recovery of up to 98 %.
2. Savings of up to € 60 / m³ in HCl at 35 % through spent acid bath recycling, significantly reducing their consumption.
3. Savings of € 289 / t associated with Zn recovery, as the ZnCl can be reused during the fluxing phase of the galvanising process.
4. No waste is generated, and other marketable products such as Fe₂SO₄·7H₂O or ZnCl₂ are obtained in addition to HCl. Condorchem Envitech had this to say: “According to a market study we have conducted, income from the sale of these products would range from € 120 / t for ferrous sulphate to more than € 800 / t for ZnCl”.
5. Savings in waste management; the drastic reduction in the purchase of hydrochloric acid and the sale of by-products permit a return on investment in less than two years.
6. Reduction in the consumption of natural resources and CO₂ emissions due to a reduction in transport required in the purchase of the raw material (hydrochloric acid) and the transportation of liquid waste (spent acids) to waste management companies.

Who stands to gain from this new technology?

LIFE DIME offers enormous opportunities to the steel sector and metal surface finishing industries, as it improves the competitiveness of the sector through the implementation of a circular economy model, i.e., a model that generates zero liquid discharge and reduces the use of raw materials through their reuse and recycling.