CASE STUDY



Adocrom

Minimization of final waste disposal resulting from wastewater treatment processes in the tanning industry

The Challenge

More than **1,000 tonnes of chromium-containing waste per year** from the Igualada tanning industry are currently landfilled, resulting in the loss of valuable chromium resources that could otherwise be recovered and reintroduced into the **tanning value chain.**

At the same time, **Tradebe Igualada** (Intraval) treats around **600 m^3/day** of chromium-bearing wastewater from nearby tanneries. Chromium not captured during recovery processes accumulates in the biological sludge, which is transferred to Tradebe Jorba (ProIntraval), where approximately **11,000 tonnes** per year undergo bio-stabilisation before final disposal.

The **presence of chromium severely restricts the recovery potential** of these sludges, causing significant volumes of potentially valuable material to be disposed of rather than valorised, and limiting circular economy opportunities.

The Solution

The proposed solution aims to develop and **demonstrate innovative pathways** for the **recovery and valorisation of chromium-containing wastes** and sludges generated by the tannery wastewater treatment sector. The project focuses on **recovering chromium from both physico-chemical and biological sludge streams,** enabling its reuse as a secondary raw material within nearby tanning operations and reducing dependence on virgin chromium-based products.

In addition, **chromium removal would unlock new valorisation** opportunities for treated biological sludges. Following bio-stabilisation, the material could potentially be converted into up to **6,500 tonnes** per year of compost-like soil amendment products, subject to compliance with Royal Decree 506/2013 on fertiliser products. Alternatively, the project will assess the feasibility of producing up to **3,700 tonnes per year of Solid Recovered Fuel (SRF/RDF)** through sludge drying and energy recovery processes.

By **recovering strategic raw materials** and creating new outlets for treated sludges, the project aims to **reduce landfill** disposal, increase resource efficiency, and strengthen circular economy practices within the tanning sector.

Benefits

The proposed solution delivers significant **environmental, economic and circular economy benefits** by **reducing landfill disposal** and recovering valuable resources currently lost in wastewater and sludge management.

The project promotes a **closed-loop model for the tanning industry** by recovering chromium from treatment residues and converting it into products such as chromium sulphate for reuse by local tanneries, reducing the use of virgin raw materials. Chromium removal also enables the valorisation of treated sludges through the production of soil amendment products or **Solid Recovered Fuel (SRF/RDF).**

Overall, the **project supports a more sustainable and resource-efficient tanning** sector by combining waste reduction, raw material recovery, industrial symbiosis and circular economy principles in a single integrated solution.

Author and job title: Joan Triquell, Development Engineer

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Crew members: Tradebe's Technical Department together with the Tradebe Igualada and Tradebe Jorba teams

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