PRESS RELEASE

New circular construction source unveiled in Spain

RBF pilot installed to recover cellulose-rich sludge for construction materials at Besòs Tordera Wastewater Treatment Plant

Barcelona, 16 December 2025 — ACCIONA Agua, in collaboration with the ICARUS project, has begun the **installation of a Rotating Belt Filter (RBF) pilot unit** at the Sant Celoni Wastewater Treatment Plant (WWTP) aiming to recover cellulose-rich sludge from urban wastewater.

The RBF technology is designed to separate and recover cellulose fibres, in the case of the WWTPs, mainly originating from toilet paper, which makes up a large share of the organic matter entering wastewater systems. To put it in perspective, an estimated **81 rolls of toilet paper are consumed per person per year** in Catalonia alone, this would be enough to **wrap the Earth more than 350 times.**

> "By turning what was once considered waste into a high-value material, we are contributing to both resource efficiency and environmental protection. The RBF pilot will demonstrate how wastewater treatment can play a direct role in supporting the circular economy."
>
> – **Mireia Marcé Escalé from the innovation Department at ACCIONA AGUA**

Through the RBF pilot, a cellulosic sludge will be recovered and subsequently treated to obtain cellulosic fibres. Once extracted, these fibres will be, recycled for use in construction materials, such as composites or fibre-reinforced products. This approach not only reduces the amount of sludge that needs to be managed but also ensures that the recovered material is sterilised and free from contaminants, preventing their transfer into the environment. If successful, the results could have a significant impact on the construction industry, which currently accounts for **50% of raw material extraction** in the EU.

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Notes to Editor

The commissioning of the RBF pilot will be accompanied by a dedicated press release at launch. A potential consortium visit to the Sant Celoni WWTP in June 2026, currently under discussion, may also offer journalists and partners the opportunity to see the technology first-hand.

The pilot is part of the ICARUS project, which develops and tests innovative technologies to recover and reuse critical materials from industrial and municipal waste streams. In addition to the RBF installation, ICARUS partners will also conduct comprehensive analyses of contaminants and metals in the sludge to ensure the highest environmental and safety standards.

About ICARUS

ICARUS aims to provide technological support to energy-intensive and construction industries for the transition to more sustainable and digital processes in a business model for successful market implementation.

ICARUS will upcycle waste material resources of most selected process industries to achieve circular and sustainable process industries overcoming their final application in construction sector. This project will accelerate the process industry uptake and contribute towards the developed education and skills activities and outcomes in this area as well as linking all value chain from industrial players recyclers, public authorities, and standardisation actors.

Image Bank

A selection of high-resolution images is available to accompany this release. Editors are welcome to select any of the available images for use in coverage, with appropriate credit.

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Rotating Belt Filter (RBF) pilot unit at the Sant Celoni Wastewater Treatment Plant (WWTP). Photo: Carla Vazquez Gomara / ACCIONA Agua

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