



## How Utebo WWTP Increased Biogas Production by Up to 40% Without Additional Sludge Feed



### Background & Challenge

Utebo WWTP, operated by Cadagua, is a **municipal wastewater treatment plant** designed for 70,000 population equivalent, equipped with anaerobic digestion and energy recovery. The site includes a **4,000 m<sup>3</sup> digester**, making **biogas production** a key component of plant performance.

The objective was to **increase biogas production** and energy recovery from existing sludge streams, without increasing feed volume.

The challenge was to improve digestion efficiency while maintaining process stability and avoiding additional load on the digestion infrastructure.

### Orege's Solution & Service

Orege deployed its **SLG-based conditioning** solution upstream of digestion to enhance sludge quality and increase the biodegradable fraction available for biogas production. The solution was integrated into the existing sludge line, ensuring continuous operation without disrupting plant processes.

Beyond equipment, Orege provided a **service-driven approach** focused on optimizing digestion performance under real operating conditions. By improving sludge conditioning and maintaining operational flexibility, the solution enabled the plant to **maximize energy recovery** from existing sludge streams while preserving process stability.





## Results and Benefits

Orege's solution delivered a significant increase in **biogas production**, with gains of ranging from **+30% to + 40%**, without any additional sludge feed.

This demonstrates a clear improvement in digestion efficiency and **energy recovery** from existing sludge streams.

At the same time, the process improved sludge quality, with **thickened sludge concentrations** increasing from around 5.2–5.7% to 6% dry solids, enhancing feed consistency to the digester.

The solution also contributed to **lower power consumption**, supporting overall operating cost reduction.

Overall, the project confirmed that **optimizing sludge conditioning** upstream of digestion can simultaneously increase energy production, improve process efficiency, and reduce operating costs, while maintaining stable plant operation.

**Orege enabled Utebo WWTP to unlock the full potential of its sludge, increasing biogas production and improving digestion performance.**