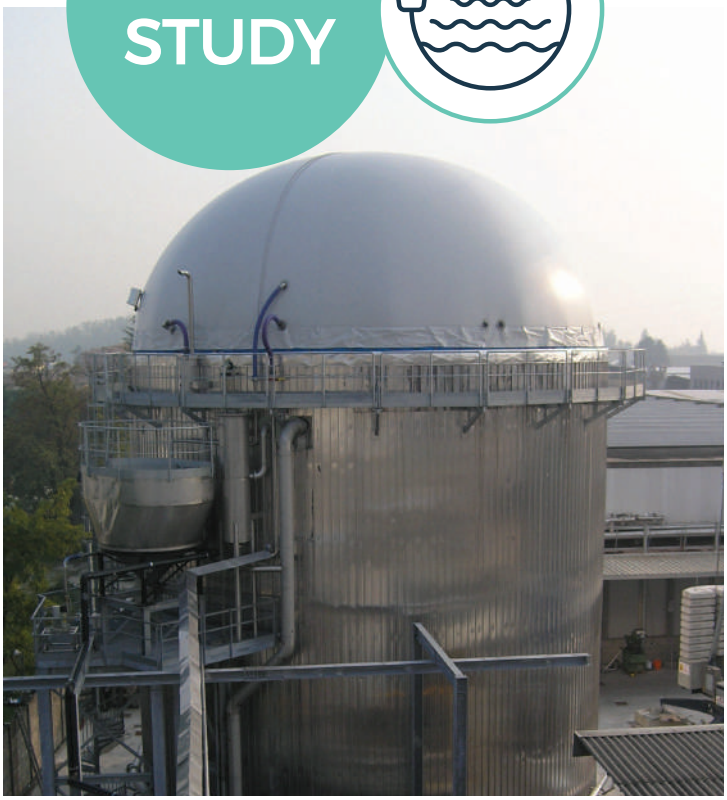
CASE STUDY



Wastewater and Waste-to-Energy Plant for a Candid Fruit Manufacturing Company

- **Project**: Vitalfood-Italcanditi
- **Location**: Bergamo, Italy (www.italcanditi.it)
- **Solution type**: Wastewater and Waste-to-Energy
- **Technology used**: External Forced Circulation (EFC) Reactor/Aerobic Treatment

Background

In 1963, Angelo Goffi founded Italcanditi, a candied fruit and marron glacés manufacturer.
The company diversified and expanded over the years, and in 2002, Vitalfood-Italcanditi was created. It has since become a European leader in the production of glazed chestnuts, candies, jams, and other ingredients for the food, bakery, and dairy industries.

Challenges

The company sought to double production and simultaneously cut costs. To accomplish this, Italcanditi needed to boost its wastewater treatment capabilities. They installed a system to purify large quantities of wastewater and generate biogas, making a profit by selling the energy they produced. Based on the success of an earlier project,

Italcanditi chose Fluence to install and operate a new system for turning waste into biogas. A main challenge, however, was building and activating the plant during the normal operation of the factory, making sure production was not affected by the construction of the plant. The small space available for the new WWTP created another challenge.

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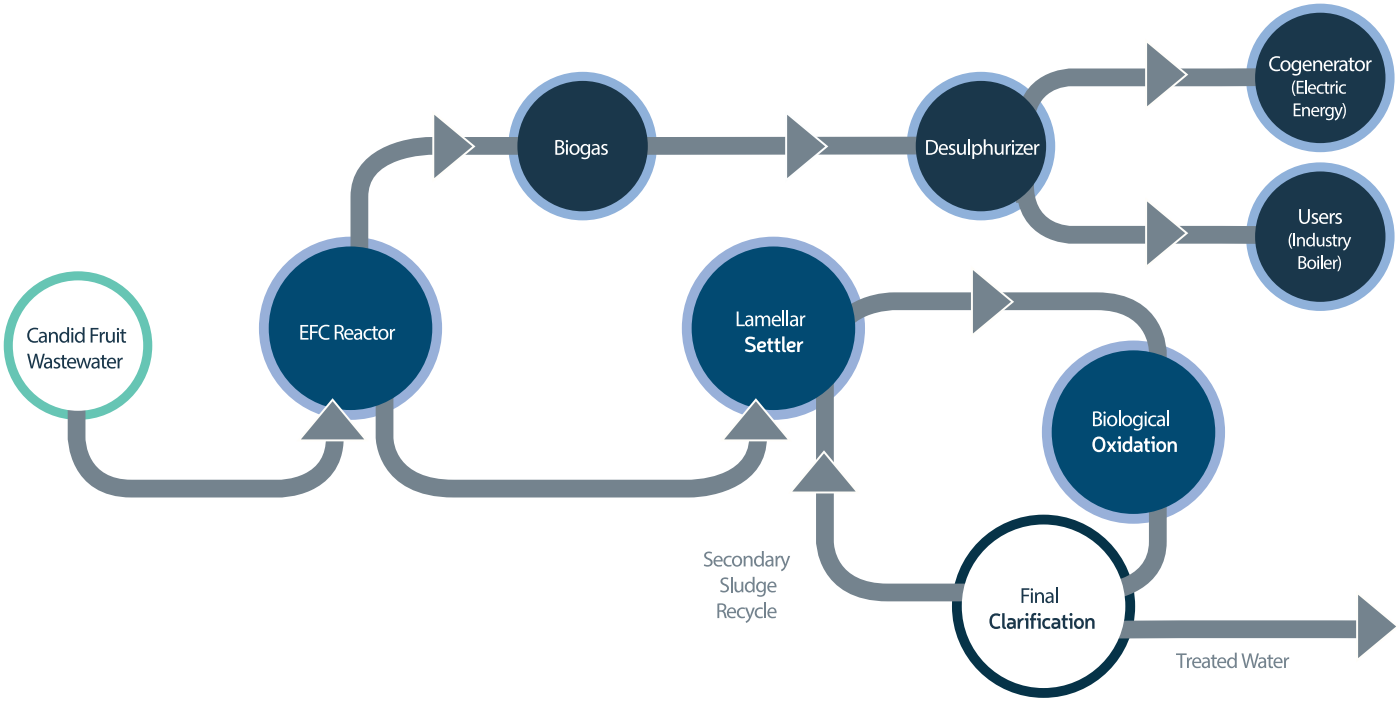
Solution

To handle these necessities, Fluence provided a custom design. The wastewater entering the system first undergoes an anaerobic pre-treatment through an EFC reactor, generating biogas. A cogeneration system turns the biogas into electrical and thermal energy, which is fed back into the plant, reducing energy costs. Finally, the remaining wastes are treated by an aerobic stage, supported by biological oxidation and final clarification. The output is water that is clean, reusable, and safe for the environment.

Fluence's tailored and customized solution provided optimal results for the customer with long-lasting benefits. Three years after start-up, Fluence continues to provide an efficient and sustainable solution for energy production while helping to reduce Italcanditi's wastewater treatment costs. The system is not only beneficial for the environment, but it also provides revenue for Italcanditi.

Process Flow



Results

The result is a flow rate of 1,200 m3/d or 50 m3/h. COD is measured at 12,000 mg/L. Biogas production is 4,800 m3/d and electricity generation is about 14 MWh/d.

Italcanditi saves about $400,000 each year with Fluence's anaerobic digester, approximately 35-40% more compared to the previous treat-ment plant.

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Value from Water