WASTE TO ENERGY

Waste-to-Energy Solutions for an Italian Poultry Company

Established in 1969 in San Vittore di Cesena (FC), the Amadori Group stands as a prominent figure in the Italian agri-food industry. Specializing in poultry, it owns roughly 30% of the country's poultry meat market share.

Scope

In San Vittore di Cesena, Amadori operated a wastewater treatment plant that had proven inadequate to meet future demands stemming from increased industrial output. There was a pressing need to reduce environmental impact and waste disposal costs, without disrupting ongoing production at the slaughterhouse.

Results

- 6100 m^3/d methane energy produced from anaerobic digestion (approximately 1000 kWh)
- Effluent quality requirements met
- Reduction in waste disposal costs
- Fertilizer production
- Reduced environmental impact
- No slaughterhouse production disruptions

Solution

To tackle these challenges seamlessly, Fluence orchestrated a meticulous overhaul of the wastewater treatment facility. This involved integrating an anaerobic digestion system, including a CSTR digester, alongside the remodeling and adaptation of existing aerobic and nitro-denitro components. The outdated belt press was replaced with a high-efficiency centrifugal system to separate solid and liquid digestate fractions. Additionally, a 1 MWh cogeneration system was implemented to convert biogas into electricity.

- **Pre-treatment via the DAF system**
- **Anaerobic digestion with biogas production, yielding electrical and thermal energy through cogeneration**
- **Dehydration of digestate by centrifuge**
- **Nitro-denitro system**
- **Final clarification**

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