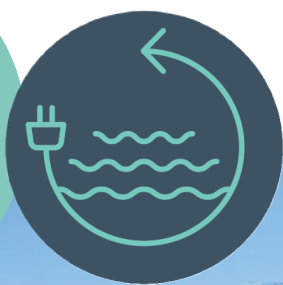


**WASTE  
TO  
ENERGY**



## **Turning waste into a resource with cost-effective and sustainable technologies**

At Fluence, we have more than 30 years of experience in the design, construction, and operation of waste-to-energy plants for a wide range of industrial and municipal clients.

Our proprietary anaerobic treatment technologies process wastewater and sludge to produce biogas, which can be used to produce electricity and thermal energy, or which can be purified to produce biomethane for injection into the grid.

## Anaerobic Digestion with Concentrated Sludge



Complete mixed process with anaerobic biomass recirculation, which allows biomass concentration increase and a reduction of digester volume. Suitable for streams with COD > 40 000 mg/L.

### Applications

- Dairy industry
- Confectionery industry

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## Anaerobic Digestion CSTR (Completely Stirred Tank Reactor)

Suitable for sludge (primary or secondary) or wastewater with high solids contents and organic load. Typically the COD of the incoming mixture is >150 000 mg/L.

### Applications

- Meat and fish industry
- Pig and cattle farms



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## Granular Sludge Anaerobic Digestion EFC



Digester in which a particular "granular" anaerobic sludge grows. Used directly on wastewater, as long as they have soluble COD (sugars, starches, etc.), with COD > 2000 mg/L.

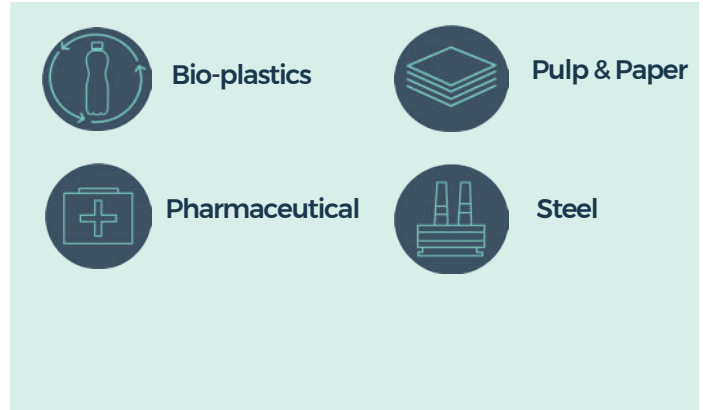
### Applications

- Soft drinks production
- Confectionery production industry
- Breweries
- Papermills

## Food & Beverage



## Other Industries



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## Why choose Waste-to-Energy Technology?

- On-site production of energy
- Production of high-quality, treated effluents
- Reduction of sludge volume by up to 90%
- Production of a high-quality digestate
- Reduction of greenhouse-gas emissions
- 100% reliability, and low operation and maintenance requirements

## Why choose Fluence digesters?

- No pre-acidification stage
- No off gases and no odor treatment needed
- Small footprint
- Suitable for only liquid by-products
- Perfect integration with existing wastewater treatment plant



## CASE STUDY

"Dolcissimo" is a traditional Italian confectionary producer, located in Northern Italy. Dolcissimo began research to design and build an enhanced wastewater treatment plant that also produced biogas.

To treat the wastewater containing high concentrations of both soluble COD (essentially sugars) and fats., Fluence installed two digesters: an EFC rapid digester to reduce the concentrations of COD and nitrogen and a CSTR reactor to reduce solid sludge content and produce additional biogas.



## Biogas Desulfurization

Desulfurization is a fundamental process that utilizes biogas in co-generators and boilers. Fluence's desulfurizer is simple, reliable and has low operating costs, since it requires less chemical products compared to a classic caustic soda absorber and desulfurizers working with ferric chloride solutions. The only chemical used is soda, and it is used in a lower quantity than the consumption of a similar soda absorber.

The Fluence solution allows for the decrease in quantity of hydrogen sulfide to below 100-150 ppm.



## About Fluence

Fluence is a leader in the decentralized water, wastewater and reuse treatment markets, setting the industry pace with its Smart Products Solutions, including Aspiral™, NIROBOX™ and SUBRE. Fluence offers an integrated range of services across the complete water cycle, from early stage evaluation, through design and delivery to ongoing support and optimization of water related assets, as well as Build Own Operate Transfer (BOOT) and other Project finance options.

With established operations in North America, South America, the Middle East, Europe and China, Fluence has experience operating in over 70 countries worldwide and enables businesses and communities worldwide to maximize their water resources.