



## TTV - Thöni High Solids Anaerobic Digestion Shanghai Laogang (CN)

### Customer

**LIDA** Environmental Engineering

### Plant Data

Commissioning: 2020

Input: 82,125 t/a of organic waste

Digester: 2x TTV2250 (steel)



## Plant and process

In the course of the modern Chinese environmental programs, the “Shanghai Laogang Industry Park” was built in the well-known district of Pudong. With an area of around 4.1 million m<sup>2</sup>, it is one of the world’s largest and most modern waste treatment centres. Approximately 10,000 tons of municipal waste, about half of the megacity’s total waste volume, is handled and processed there every day.

For the anaerobic treatment of organic waste, the material is delivered and stored in a closed reception hall. The organic waste then enters a processing plant (consisting of a shredder, metal separator and screening plant), where contaminants such as stones, metals, plastics, etc. are removed.

The feeding of the digesters takes place via external mixer units in which the waste is homogenized. The substrate is subsequently fed into the digesters by means of a piston pump via a heat exchanger.

The anaerobic digestion takes place in two TTV Thöni plug flow digesters. In this process, the digested material is passed through the digesters by means of a “plug” – supported by a slowly rotating paddle-shaft’ – at a temperature of 55°C (thermophilic) or optionally at 43-45°C (mesophilic) – depending on the characteristics of the organic waste. The special design of the agitator reliably prevents the formation of sinking and floating layers and promotes a high and uniform gas yield. The temperature, the filling level in the digester, the gas production and the gas pressure are continuously monitored.

The remaining digestion residues are dried and then thermally processed in the adjacent energy recovery facility.

The biogas produced is purified and processed into electrical and thermal energy in combined heat and power plants. Part of the energy is used to operate the plant technology, while the surplus energy is fed into the local Shanghai power grid. The extracted thermal energy is used to supply the digester with process heat.

## Performance data

### Input:

82,125 t/a of organic waste

### Raw biogas:

10,000,000 Nm<sup>3</sup>/a

### Power yield:

23,000,000 kWh/a