



## TTV – High solids anaerobic digestion from Thöni Roppen (Austria)

### Customer

Abfallbeseitigungsverband Westtirol

### Plant data

Commissioning: 2001 (phase 1)

Commissioning: 2016 (phase 2)

Input: 27,000 t/a biowaste, green waste

Power el.: 640 kW



## Plant and Process

This plant, first commissioned in 2001 with an annual capacity of 10,000 tonnes, was enlarged without interruption to operation in 2015/2016 to an annual input of 27,000 tonnes.

On arrival at site, the input material is deposited in a deep bunker. The biowaste together with the green waste is then transported to the pre-treatment unit (consisting of a shredder, a metal separator and star screen) by means of a wheel loader where residuals such as plastics, stones, metal parts etc. are removed.

Afterwards the separated organic material is conveyed via belt conveyors to the storage unit. From there the biowaste goes - via a fully automated conveying unit - into a mixing unit (dosing device) which assures the homogenization of the material. Thereafter, the substrate is fed by means of piston pumps via heat exchangers into the digester.

In the entirely closed digester, microorganisms transform the latent energy of the organic material under anaerobic conditions (= exclusion of oxygen) into biogas. Residence time in the thermophilic digester is approx. 18 days.

At the end of the digestion process digestate is removed from the digester and pumped to the screw presses where it is dewatered. A proportion of the liquid is recirculated in the digestion process and used for humidifying the fresh input material. The remaining part of the liquid digestate is stored in tanks and used as fertilizer in agriculture. The solid fraction undergoes a further aerobic composting process in enclosed composting units.

The biogas produced during the digestion process is converted to thermal and electric power in a cogeneration unit (CHP). The electrical power goes to the public grid, whereas heat is used for the digester.

## Performance

**Input:**  
27,000 t/a biowaste, green waste

**Output:**  
**High quality fertilizer liquid:**  
12,000 t/a used in agriculture

**High quality fertilizer solid:**  
5,400 t/a

**Raw biogas:**  
3,500,000 m<sup>3</sup>/a

**Power production:**  
5,600,000 kWh/a

Corresponding to  
**annual power requirement of  
1,200 households**

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