



# TNV SUFFOLK

UK

## TNV THÖNI WET DIGESTION SEMI DRY

### Plant data

**Customer:**  
Agrigen Ltd. (UK)

### Plant data

**Commissioning:**  
2011 (500kW)  
2012 (ampliamento a 2,5 MW)  
2013 (ampliamento a 3,5 MW)

**Input:**  
maize silage  
agricultural by-products

**Digester:** Reinforced concrete  
2 x 3,000 m<sup>3</sup>  
2 x 4,000 m<sup>3</sup>



## PLANT AND PROCESS

The input material is stored in silage clamps. In order to prevent any premature degradation, the material is compressed and covered. This minimises the energy loss as well as odour emissions. A reception pit is provided as storage tank for the incoming liquid input material.

The feed pit also allows to receive solid input material that is mixed up with liquid feedstock to a pumpable substrate. This pit also serves to capture surface water and drainage water from the silage clamps which is continuously pumped into the digesters.

The feeding of the digesters is achieved by special Thöni feed hopper units for solid matters (consisting of a container module and an automated conveyor system). The loading of the container modules has to be done by a wheel loader.

The digesters are designed as round vessels made from reinforced concrete with a gas storage unit on top. Sufficient insulation and integrated heating systems ensure optimal conditions for the generation of biogas from the input feedstock. The homogenisation of the material in

the digesters is achieved by means of slow turning Thöni paddle mixers and by fast turning propeller mixers. The mixers also help to prevent the formation of floating layers and sedimentation, and at the same time they help the biogas to escape from the substrate.

After the digestion process a separator unit separates the digestion residue (digestate) into a solid and a liquid phase. The liquid part is pumped into the final storage unit and can be spread onto agricultural land as a high quality fertiliser. The remaining solids are almost odourless and also have very good fertilising properties.

Before the biogas passes to the two CHP units, it is treated in an external desulphurisation unit to clean it from H<sub>2</sub>S. After the biogas has been desulphurised, it is burnt in the cogeneration plants and thus converted into electrical and thermal energy. The electric power is fed into the local power grid, while the heat is partially utilised to maintain the digestion process and also used within a district heating network.