



PSYTTALIA

Athens, Greece

FACTSHEET



Plant capacity and expected performance:

- 15,500 metric tonnes DS/year, 43 t DS/day
- Cambi TH of 50% of WAS/biological sludge
- Hydrolyzed sludge mixed with raw primary prior to AD
- One digestion line of 4 x 10,000 m³ digesters
- B6-4 CambiTHP®, treating all WAS from one digestion line
- Estimated 2.2 MW electricity + cogen steam to THP + biogas to dryer
- 20% overall WWTP energy savings
- 15-20% expected increase in biogas production.
- Reduced carbon emissions
- Final product >28% DS, from current 22% DS
- 35% reduction in drying requirement
- Financed on operating savings

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PSYTTALIA WWTP, GREECE

The Psyttalia WWTP is the main wastewater treatment plant in the greater Athens area, receiving an average wastewater flow of approximately 720,000 m³/d, equivalent to about 5 million people. Being one of the biggest WWTPs in Europe, its operation has already contributed significantly to the rectification of the Saronic Gulf and the improvement of the state of its ecosystem

The plant operator, Aktor (<http://www.aktor.gr/>), having just renewed their operating contract in early 2014, was required to reduce the energy footprint of the wastewater treatment works by more than 20%. They focused on improving the energy-intensive sludge treatment, using anaerobic digestion, dewatering and drying. After careful consideration Aktor decided for the Cambi sludge pre-treatment with thermal hydrolysis and steam explosion. Thus, in June 2014, under its renewed operating contract, Aktor awarded Cambi a contract for the installation of one line of Cambi's modular Thermal Hydrolysis THP B6 system at Psyttalia Island Wastewater Treatment Works, Athens, Greece. After less than one year of construction the plant is ready for sludge commissioning in June 2015.

Treating all WAS from one sludge digestion line already achieves the goal of 20% overall energy savings. The plant has the potential of further reducing the energy consumption by installing a second line of THP on the other 50% WAS sludge load.

CambiTHP® will initially treat only half the WAS sludge, or about 25% of the entire sludge production. The contract includes an option to build a second line at a later stage, to ultimately treat all the WAS sludge. The current system is capable of treating about 50 dry tonnes of sewage sludge per day. The Cambi Thermal Hydrolysis of WAS (biological sludge) only will be mixed with raw primary sludge and then digested in half of the eight existing digesters, each of 10,000 m³. The CambiTHP® will avoid building 2 new 10,000 m³ digesters and at the same time achieve an increase in sludge residence time of the existing digesters.

The benefits of the Cambi process are:

- Improved dewaterability from 22% dry solids to more than 28%
- Cake production before drying reduced from 295 tons to 207 tons per day
- Reduced energy consumption of existing drying plant from 10.3 t WE/h to 6.6 t WE/h.
- Increase biogas production by 15- 20%.
- Increased digester plant capacity and avoid building more digesters.
- Compact CambiTHP® pre-treatment plant (8 x 10 m)
- Cost savings from green electricity production
- Significant reduction of carbon footprint



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