Sludge-to-energy process solves disposal problems in Poland

After one year in operation, the Cambi® Thermal Hydrolysis Process installation at the Kapusciska wastewater treatment plant in Bydgoszcz, Poland, significantly increased biogas production and reduced biosolids production, according to the plant operators.

Sludge volumes in Poland have been increasing rapidly since the early 1990s when the government began upgrading many of its wastewater treatment plants. The trend is expected to further increase volumes. The current annual output of 500,000 tons dry solids (tds) is expected to rise to 800,000 tds within five years and to double by 2015.

Until recently the preferred solution was to compost or burn the sludge; however more attention has been given towards anaerobic digestion including disintegration methods in order to increase biogas production, stabilize sludge, and minimize the amount of biosolids.

The Kapusciska wastewater treatment plant, located along the river Wisła, had existing anaerobic digesters. Due to the high secondary content of the mixed sludge the digestion and dewatering process was not very effective, and it was therefore decided to install sludge pretreatment equipment to upgrade the existing digestion plant. The Cambi Thermal Hydrolysis Process (THP) was the chosen technology that was installed in August 2005. The THP plant treats mixed primary and secondary sludge from the wastewater treatment plant in order to minimize volumes of dewatered cake and produce a biosolids product suitable for agriculture and re-cultivation purposes. It also enables the digestion plant to double the biomass loading, which is now at 10% dry solids into the digesters.

The Cambi Thermal Hydrolysis Process installation at the Kapusciska wastewater treatment plant reduced by half the quantity of final dewatered sludge cake at the Kapusciska wastewater treatment plant in Poland. Stefan Kawecki, Piotr Pastwa, and Harald Kleiven report.

In summary, the implementation of the Cambi technology at Kapusciska Pasteurizes and substantially reduces the volume of sludge for disposal, boosts digester capacity, significantly increases gas production, and produces electricity for sale and use at the wastewater treatment works. The plant is expected to receive green credits for its production of renewable electricity.

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