

Wastewater Treatment Plant Biosolids Case Study

KB BioEnergy in Akron, OH



Digester Reference

KB BioEnergy constructed a Phase I COCCUS®/EUCO® (“EUCO® Titan”) anaerobic digestion system in 2007 to process wastewater sewage sludge from the City of Akron, Ohio’s municipal treatment plant.

In 2013, a Phase II expansion was added which allows the digesters to now process 100% of the facility’s sewage sludge, generating additional renewable energy.

EUCO® Titan was built as a joint venture between the City of Akron and KB BioEnergy.

Benefits at a Glance

- Renewable electricity generation
- Pelletized fertilizer production
- Odor reduction
- Electricity purchasing savings
- Carbon footprint reduction

Phase I + Phase II EUCO® Titan Plant

- 3 EUCO® horizontal plug-flow digesters (combined capacity of 696,000 gallons)
- 3 COCCUS® complete-mix digesters (combined capacity of 1,900,000 gallons)
- 1 All-in-One (AIO) technical container with a Jenbacher Type 2 J208 GS combined heat and power unit
- 3 additional 600 kW MWM engines

Feedstock

- **Phase I:** 7,000 dry tons biosolids/year
- **Phase II:** 15,000 dry tons biosolids/year (solids content ~30%)

Power Production—Phase I (2007)

330 kW_{el} combined heat and power unit (CHP):

- 330 kW electrical capacity
- 395 kW thermal capacity

Average annual energy production:

- 2,890,800 kWh electrical
- 11,796 MMBTU thermal

Estimated energy from the CHP could:

- Provide electricity to 256 homes
- Heat 269 homes per year

Power Production—Phase II (2013)

Additional 1.8 MW_{el} capacity (one of the three 600 kW MWM engines is a back-up):

- 1.2 MW electrical (normal operation)
- 1.3 MW thermal (normal operation)

Additional average annual energy production:

- 10,530 MWH electrical
- 28,868 MMBTU thermal

Estimated added energy production could:

- Provide electricity to 932 homes
- Heat 878 homes per year

Financials

Phase I: \$7 million capital investment:

- City investment of \$835,000 funded by annual compost sales of \$250,000
- \$9.6 million federal renewable tax credit
- Remainder funded by KB BioEnergy

Phase II: \$32 million

About BIOFerm™

Based in Madison, Wisconsin, BIOFerm™ Energy Systems is a North American provider of turnkey gas processing and anaerobic digestion systems.

We additionally offer a spectrum of biogas services, such as: gas marketing, financing, project development, regulatory and financial oversight, power purchase agreement assistance, and consulting engineering.

Our company has experience from the installation of over 900 PSA systems (including ~90 Carbotech PSA gas processing plants) and over 450 anaerobic digestion facilities worldwide.