

An aerial photograph of a biogas plant. The facility includes several large, cylindrical storage tanks, some with conical roofs, and a large rectangular area covered with a dark, tarp-like material, likely for fermentation. The plant is situated in a rural area with green fields and some trees. The image is overlaid with a semi-transparent dark green filter.

References

Biogas plant projects

Tongeren, Belgium

- One of the largest biogas projects in Belgium.
- EUCO® Titan plant
 - Semi-dry anaerobic digestion system, with semi-dry digesters EUCO® and wet post-digesters COCCUS®
- Biogas plant size: 2.8 MW_{el}
 - Biogas utilization: electricity production and its injection into the electricity grid.
 - Heat utilization: digestate drying and digesters heating.
 - Digestate utilization: high-quality, low odour and environmentally friendly fertilizer for agriculture.
- Provides 6,500 households with energy
- CO₂ emissions savings: 10,000 t/year
- Feedstocks 40,000 t/year:
 - 48% OFMSW & glycerin
 - 52% energy crops
- Start: 2012



Hünxe, Germany

- EUCO® Titan plant
 - Semi-dry anaerobic digestion system, with semi-dry digesters EUCO® and wet post-digesters COCCUS®
- Biogas plant size: 3.1 MW_{el}
 - Biogas utilization: electricity production and its injection into the electricity grid.
 - Heat utilization: digesters and hygienization unit heating.
- Feedstocks 75,000 t/year:
 - 76 % agricultural feedstocks
 - 17 % by-products from food industry
 - 7 % OFMSW
- Start: 2006



Pieve d'Olmi, Italy

- 3 x EUCO[®] Titan plants
 - Semi-dry anaerobic digestion system, with semi-dry digesters EUCO[®] and wet post-digesters COCCUS[®]
- Biogas plant size: 2 x 972 kW_{el} + 1 x 999 kW_{el}
 - Biogas utilization: electricity production and its injection into the electricity grid.
 - Heat utilization: digesters heating.
- Feedstock:
 - 56% energy crops (corn and triticale silage)
 - 24% pig slurry
 - 11% whey
 - 9% other by-products from agri-food industry
- Start: 2009–2010



Schwandorf, Germany

- One of the largest biomethane plants in Europe.
- EUCO® Titan plant
 - Semi-dry anaerobic digestion system, with semi-dry digesters EUCO® and wet post-digesters COCCUS®
 - PSA upgrading units, total capacity 2000 m³/h
- Biomethane plant size: 11.4 MW_{gas}
 - Biomethane utilization: injection into the natural gas grid.
- Production of biomethane: approx. 8,900,000 Nm³/year
 - Corresponds to an energy content of approx. 95 GWh/a
 - Corresponds to the electricity consumption of approx. 8,850 households and the heat consumption of approx. 2,000 households
- Feedstocks:
 - 90% energy crops (corn silage, grass silage, mixed cereal silage, corn grains)
 - 10% cattle manure
- Start: 2008



Kirchhain-Stausebach, Germany

- This project is a solution to fluctuating feedstock quantities and qualities.
- Hybrid plant – synergy and efficiency
 - both dry and wet anaerobic digestion systems
 - PSA upgrading unit, capacity 750 m³/h
- Biomethane plant size: 4 MW_{gas}
 - Biomethane utilization: injection into the natural gas grid.
- Production of biomethane: 3,000,000 Nm³/year
 - Corresponds to an energy content of approx. 30 GWh/a
 - Corresponds to the heating energy consumption of approx. 2,200 households
- Feedstocks 45,000 t/year:
 - 67% OFMSW
 - 33% energy crops
- Start: 2014



Fulda, Germany

- Biogas upgrading plant also processes the biogas produced by a neighbouring plant.
- COCCUS® Titan plant:
 - wet anaerobic digestion systems
 - PSA upgrading unit, capacity 1000 m³/h
- Biomethane plant size: 2.7 MW_{gas}
 - Biomethane utilization: injection into the natural gas grid.
 - Digestate utilization: liquid fractions are used as a soil conditioner, solid fractions are sent to a composting plant.
- Production of biomethane: 4,800,000 Nm³/year
 - Corresponds to an energy content of approx. 48 GWh/a
 - Corresponds to the heating energy consumption of approx. 3,000 households
- Feedstocks 63,000 t/year:
 - 65% OFMSW
 - 35% cattle slurry
- Start: 2012





References

Biogas upgrading unit projects

Wrams, Sweden

- Proprietor: E.ON Gas Sverige AB
- Commissioned into service: 10/2006
- Plant type: BUP500
- Raw biogas source: food waste, slaughterhouse waste
- Raw biogas: 500 Nm³/h
- Biomethane: 324 Nm³/h
- Scheduled maintenance: twice annually



Wüstring/Oldenburger, Germany

- Proprietor: EWE AG
- Commissioned into service: 08/2009
- Plant type: BUP1200
- Raw biogas source: renewable raw materials
- Raw biogas: 1200 Nm³/h
- Biomethane: 635 Nm³/h
- Scheduled maintenance: twice annually



Schwandorf, Germany

- Proprietor: Feldgas GmbH & Co. KG (E.ON)
- Commissioned into service: 01/2008
- Plant type: 2 x BUP1000
- Raw biogas source: renewable raw materials
- Raw biogas: 2000 Nm³/h
- Biomethane: 1087 Nm³/h
- Scheduled maintenance: twice annually



Geneva, Switzerland

- Proprietor: ACRONA Systems AG, Aarau
- Commissioned into service: 2013
- Plant type: BUP350
- Raw biogas source: purification plant gas
- Raw biogas: 350 Nm³/h
- Biomethane: 214 Nm³/h
- Scheduled maintenance: twice annually





References

Biodiesel plant projects

Calgren Renewable Fuels, California

“The traditional processing of free fatty acid feedstocks, we think, is inefficient,” says Lyle Schlyer, president of Calgren Renewable Fuels in Pixley, California.

“Acid catalyzed esterification followed by base catalyzed transesterification, and there’s drying steps between due to the water produced. Yuck. We think what RPS is doing is much more elegant.” [Link](#)

Main feedstock: Distillers corn oil (DCO), FFA 12 %



Source: www.biodieselmagazine.com

Attis Innovations, New York



Source: www.biofuelsdigest.com

“One step forward is to put that corn oil towards a co-located biodiesel plant – one that runs efficiently and financially effectively at, presumably, smaller-than-worldscale volumes. After all, an 80 million gallon ethanol plant generates around 3 million gallons of corn oil, even at good efficiency.

How to get the opex down? First, shifting to lower-cost feedstocks such as corn oil, and working around the difficulties and costs of working with oils that have high free fatty acid levels, like corn oil, using RPS supercritical biodiesel tech.” [Link](#)