ANAEROBIC DIGESTION

Creating energy revenues from waste

Colsen

water, energy & environment

ANAEROBIC DIGESTION

Application

Using anaerobic digestion, biogas is produced from organic waste streams with a high dry matter content, including industrial organic waste products, wastewater treatment sludge and manure.

The combination of various waste streams can increase the biogas production and is called co-digestion. The base substrate in co-digestion is often manure or sludge, to which substrates, that produce more biogas, are added. However for some applications and business cases it can be of added value to have mono-digestion, using only one particular substrate. Colsen is specialized in mono-digestion of:

- Municipal wastewater sludge
- Manure

References

Colsen has representative full scale plants in municipal, industrial and agricultural applications. Capacities of those plants range from 20 tons per day to 1000 tons per day of feed, producing between 0.5MW and 10MW of renewable energy per plant!

- **STP Ajman (UAE),**
  Municipal STP sludge digestion
- **Asturias (ES),**
  Manure digestion
- **Pizzoli – San Pietro (IT)**
  Potato processing industry

Process

The anaerobic digestion process takes place in two different ranges of temperature, i.e. from 30-40 °C (mesophilic range) and from 50-55 °C (thermophilic range).

Colsen is an international expert on Thermophilic Anaerobic Digestion (TAD). Thermophilic digestion increases the plant's performance significantly without compromising on robustness, operating effort and safety! TAD increases biogas production in more compact installations. The higher operating temperature has a pasteurization effect. Therefor post-digestion solids can be considered as Class A quality (cfr. US EPA). As a result of the higher performance, more nutrients are available for post-digestion nutrient recovery. Nitrogen can be recovered by AMFER® and phosphorus can be recovered by U-PHOS®.

Thermophilic anaerobic digestion is complementary with the unique mixing and heating device of Colsen: DIGESTMIX®. This allows for stable and efficient operation of the digester and guarantees 100% uptime of the biogas production (even during periodic maintenance).

Result

- Higher biogas production
- More nutrient recovery potential
- Pasteurisation producing Class A biosolids
- 100% uptime
- Safe, robust and easy-to-operate

Moreover, thermophilic sludge digestion is an efficient way to achieve an energy-neutral or even energy-positive sewage treatment plant.

Colsen
water, energy & environment

e-mail: info@colsen.nl
Tel.: +31 (0)114 - 311 548
Kreekzoom 3 · 4561 GX · Hulst
the Netherlands

www.colsen.nl