



Anaergia



Case Study:

Glenfarg, Scotland

Anaerobic Digestion of Municipal and Commercial Source Separated Organics

Turnkey anaerobic digestion facility producing 800kW from 16,000 tonnes per year of commercial and residential food waste

Energy Generation from food waste

Project Goal

TEG Environmental Ltd is the owner and operator of the 16,000 tonne per year anaerobic digestion facility provided by Anaergia in 2011. Prior to the installation and commission of the 800kW anaerobic digestion facility at the Binn Farm in Perthshire Scotland, TEG composted over 40,000 tonnes per year of organic wastes.

UTS Biogas, a wholly owned subsidiary of Anaergia, was selected to deliver an anaerobic digestion system that integrated with the existing TEG composting facility. The key driver for the the anaerobic digestion system was to increase profitability of their operations by generating renewable energy for sale to the national grid and through the sale of fertilizer generated from pasteurizing digestate.



Digestate Holding Tank

Inputs

Quantity	16,000 TPY
Substrates	Green Bin Waste Bakery Waste Grocer Waste

Renewable Outputs

Renewable Energy	800 kW
Renewable Heat	800 kW
Fertilizer	14,000 TPY

Process Description

Pre-Treatment

Food waste is received at the TEG facility in a live bin and transferred to a hammer mill through an auger system. The contaminant free organic slurry exiting the hammer mill is transferred into a storage pit until it is fed directly into the primary fermenter for digestion.

Anaerobic Digestion

The organic slurry is fed into the 1,500m³ primary digester at roughly 20% total solids and then into the 1,500m³ secondary digester. A recirculation loop transfers material exiting the secondary fermenter at 8% total solids back into the primary digester to maintain an average of 14% total solids. In-tank desulphurization is used to ensure a high quality biogas for energy generation.

Renewable Energy Generation

Biogas that is collected from the digesters is cooled and sent through a carbon filter to polish the biogas prior to being utilized as fuel for the onsite combined heat and power system. The electricity generated is sold to the local grid while the heat recovered is used for substrate heating and to maintain the temperature of the digesters.

Fertilizer Generation

The digestate exiting the secondary digester is dewatered, pasteurized and transferred to the TEG facility where it is composted and sold as fertilizer to local farms. The liquid stream is pumped to a holding tank where it is held until it is sold to local farms as a liquid fertilizer.

