

Combined Heat and Power (CHP) and Anaerobic Digestion

AC Energy are the Irish agent for 2G Germany, offering a range of Combined Heat and Power (CHP) engines with class leading electrical and thermal efficiencies. CHP involves the use of a turbine or reciprocating engine to simultaneously generate electricity and useful heat from a single fuel source, such as biogas.

The process of Anaerobic Digestion (AD) involves the breakdown of organic matter (feedstock) by bacteria and enzymes in an oxygen-free environment to produce biogas.

Feedstock is pumped into the AD and can include pig/cattle slurry and energy crops (e.g. grain, grass silage). The biogas produced is normally used on site to generate heat and electricity. Digestate can be separated into a liquid and fibrous fractions and returned to the land as a high value liquid fertiliser and the solid fibre used as a soil conditioner.



2G Avus 500c - Ballyrashane Creameries

- Generate energy from a readily available fuel source and improve farm profits.
- Extract value from each tonne of waste and still use the residue as valuable fertilizer.
- Feed excess electricity back to grid.
- Capture heat from electricity production for heating, cooling or steam generation.
- Protect yourself against further increases in electricity costs.
- Government scheme available for energy saving technology. Accelerated capital allowances of 100% of the capital expenditure incurred on such equipment can be claimed for the year in which the equipment is first provided and used.

AC Energy are the preferred supplier for several anaerobic digester manufacturers. We have extensive experience in installation, commissioning and maintenance of combined heat and power units running on biogas.

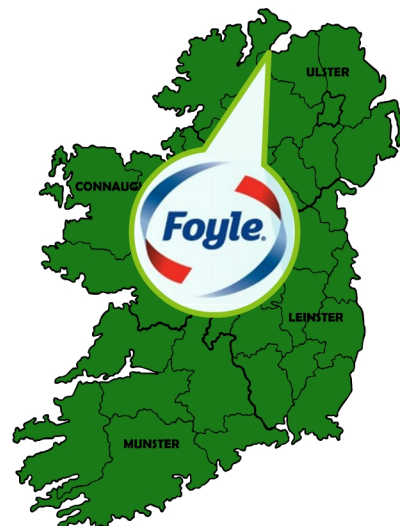
If you require technical information or wish to speak to us about any of our engines, please don't hesitate to get in touch. You can also see the full range of 2G combined heat and power units on our website.

Foyle Food Group

The Foyle Food Group is a family-run group of companies with a farming heritage dating back several generations. In 2014, Foyles awarded 2G the installation of an Avus 500 Plus combined heat and power unit on their Campsie anaerobic digestion site.

The food industry is an energy intensive sector and the ability to produce energy from waste made logical and financial sense, as well as reducing their carbon footprint and overall waste generation. The digester consumes all of the groups belly-grass, sludge waste and the feedstock is subsidised with grass, maize and grease-trap waste.

At full load the engine is fulfilling 75% of the electrical demand for the entire site. Thermal power is consumed by both the digestate pasteurisation process and heating of the digester to accelerate the production of biogas.



Avus 500 Plus CHP

This unit has been specifically developed by 2G to achieve optimum electrical output and excellent overall efficiency. Incorporating field proven technology designed to maintain maximum engine availability including software, control systems and automated remote diagnostics.



Gas type:	Biogas
Electrical Output:	550kW
Thermal Output:	543kW
Electrical Efficiency:	42.5%
Thermal Efficiency:	41.9%
Total Efficiency:	84.4%
Installation:	Container

Digestate

The pasteurisation process ensures that the digestate meets the PAS110 Quality Protocol Standard, an Anaerobic Digestion specification against which producers can verify that digestates meet exacting standards required for the production of an approved Bio-fertilizer to be spread to land. These standards are monitored and verified quarterly. The digester produces 30T of high quality bio-fertiliser per day which is removed from site by an external contractor.



2G Avus 500 Plus - Foyle Foods, Campsie

Feedstock

Typical feed recipe (per 10T load)	Biogas Yield (m3/t)
3T Bellygrass	102
3T Grass	330
3T Sludge	99
0.5T Maize	560
0.5T Greasetrap Waste	90