Why Archemax?

Until now, AD units have been large installations requiring substantial volumes of feedstock making them uneconomic and impractical for most UK farms.

Now, with Archemax, farmers, food producers, brewers and creameries (to name but a few) can profit from their own organic waste by converting it to renewable heat and electricity for use on-site or for export, with valuable fertiliser as a final by-product.

At the heart of Archemax is a series of innovations that dramatically increase the speed and efficiency of the AD process with systems that are about 30% of the size of a comparable mesophilic system and up to 20% more effective in releasing the energy value of the feedstock.

A typical 100kWe Archemax system would fall within the 465m² GPDO threshold, or could be housed in an existing building.

The flexible, cost-effective solution for maximising value from organic wastes

High yields • High speed processing • Compact footprint • From 30kW – 250kW

Livestock Farm • Mixed Farm • Arable Farm • Agri-Business • Industrial
Archemax® delivers...

Archemax® is a high-throughput, multi-stage, thermophilic AD system. For the first time, smaller farms can benefit from on-site AD, maximising the value from their organic waste material.

Its key features include:

- **Thermophilic operation** – The microbes that best operate within this temperature range of 50°C – 70°C consume the feedstock at least twice as fast as mesophilic microbes.
- **Very high microbial population** – The reactors maintain an extremely large and vigorous microbial community.
- **Optimised loading rates** – the use of innovative sensor combinations and adaptive software ensure that the reactors are always loaded at the optimum level for maximum possible outputs whilst maintaining stable operation.
- **Fast hydrolysis** – the Archemax process provides extremely fast and aggressive decomposition of the input feedstocks. This is particularly important for complex inputs such as maize, grass, silage and wholecrop wheat.
- **Remote monitoring and optimisation** – Each Archemax AD system is controlled from NGB’s HD SSO via sophisticated IT systems, requiring minimum operator input.
- **Wide range of units available** – from 30kW to 250kW.

...highest performance

% improvement compared to conventional AD

- 50%
- 30%
- 20%
- 10%
- 0%

**Improved feedstock digestion rates**

**...higher yields**

times faster

- 10x
- 6x
- 4x
- 2x
- 1x

**Improved feedstock yields**

...re-use of existing buildings

Case Study: Wheeldon Off-Road Centre, Devon

Wheeldon Off-Road Centre, at Halwell, near Totnes in South Devon, is the UK’s only all-weather off-road adventure centre for moto-cross riders. At its heart is a purpose-built 30,000 square foot indoor arena, providing some of the best off-road riding and training facilities in the country.

Operating throughout the year, the Centre has a high energy demand, particularly for lighting. In addition, the Wheeldon complex also has five good-sized holiday cottages and an indoor heated swimming pool, all of which are in use throughout the year.

The Centre has a total annual energy demand of around 120,000 kWh, forty evenly split month on month. The operators were keen to find a cost-effective, renewable solution that could replace the bulk of the base-load from the grid-connected supply.

With wind and PV solar ruled out due to a combination of planning constraints and a consistent winter load when solar is at its least effective, an AD unit looked like the most sensible way forward, especially when a plentiful supply of slurry could readily be sourced locally from neighbouring farms.

Andrew Savory, Owner takes up the story:

"The compact nature of the 18kW Archemax unit meant that we could use one of our existing empty barns to house the AD plant."

"It also meant that we had minimal planning requirement and no visual impact. Everything is sited within the barn and this reinforces our commitment to green tourism in Devon."

"Also, our core business is running the Off-Road Centre and the holiday cottages – we just don’t have the time to become AD plant operators and we wanted a system that would run itself."

"With Archemax that’s what we’ve got. All the controls are managed by NGB remotely. We only have to fill up the hopper once a day and we’ve even reminded by text when we need to do so."

"The final benefit - and this one is really important – is that we are addressing our security of supply issues and means that in the long term we are much more energy independent," he continued.

"Having explored a number of different AD options, the Archemax solution proposed by NGB offered the most benefits.”