

Converting cost into contribution

By using an Accelerated Aerobic Biodigester from **BioNova**, food processors can turn waste disposal overheads into energy saving benefits or even income generation

One manufacturer of pasties, savoury slices and sausage rolls has made savings on its food waste disposal costs with the introduction of an Accelerated Aerobic Biodigester from BioNova.

Five tonnes of food waste per week that previously had to be collected, stored and paid for to be taken away is set to be utilised as a non-fossil fuel that will provide the hot water and heating at the company's factories in Cornwall.

Taking around 72 hours to reduce waste volumes by 75%, the BioNova BioDigester is saving the pasty maker around £22,500 pa on its food waste disposal costs.



Clean solution

Clive Tayton, managing director of BioNova, said: "Although our customer's food waste was being recycled off site rather than going to landfill, they still wanted to cut out the greenhouse gases of transporting waste. Our Accelerated Aerobic Biodigester is a very clean solution which means the recycling of waste can be achieved at source, which significantly reduces the carbon footprint."

He added: "The pasty manufacturer is also pushing ahead with the added benefit of utilising its food waste to reduce the company's fuel bills by feeding the mineral and energy-rich, end-product compound from the BioDigester to a biomass boiler, which will provide heating and hot water."

BioNova's Accelerated Aerobic Biodigester utilises bacteria, oxygen and heat to convert food waste into a nitrogen-rich material, using 1kW hour to process between 10kg to 15kg (at 6p per kW hour that's approximately £6 per tonne).

Another Biodigester has helped a bakery in the South West make savings of around £50k pa. Until recently, trucks would arrive twice per week at the bakery's two processing plants to take away around 20 tonnes of food waste.

Unwanted organic waste from the manufacture of pasties, pies and cakes – plus waste from the company's 12 retail outlets – would be sent by road to a waste-to-energy plant – at a removal cost approaching £4,000 per month.

But now, waste can be treated on-site, where it is reduced to 20-25% of its volume. Far from paying for it to be taken away, the resulting by-product generates income for the bakery; sold on at approximately £120 per tonne as fuel pellets for Biomass heating. The renewable energy quality of the waste is so good that the bakery is now looking to invest in its own energy-efficient biomass burners so that it can use its treated waste to power them. Of the resulting five tonnes of treated waste, approximately two tonnes is being earmarked for fuel, whilst the remaining three tonnes will be sold off as biofuel. The missing three quarters (15 tonnes) disappears as water vapour.

Vanishing costs

Aside from the existing food waste disposal costs, the bakery's gas bills are also more than £1,000 per month at each site – costs that will vanish with the move to self-waste fuelled biomass heating.



Food waste that used to cost money to take away can now be treated on-site, and can actually generate income by being sold as fuel pellets for biomass heating

The Accelerated Aerobic Biodigester is a very clean solution, which means the recycling of waste can be achieved at source, reducing carbon footprint

This turnaround is down to the odour-free digester, which when fed continuously, (the smallest unit requires a minimum of around 1,000 litres of organic material per week) utilises microbes developed for high temperatures to convert the waste to dry powder.

Tayton continued: "Waste from a bakery produces one of the best by-products for bio-fuel, but food processors can also expect to see their organic waste recycled into products such as pet food (usually dog biscuits), worth around £90 per tonne, or top-dressing/soil improver at approximately £50 per tonne."

Application possibilities

In addition to food processors, these Biodigesters have also been installed at fish and shellfish plants, as well as large staff canteens, including successful installations for a major UK furniture chain, motorway services provider and also at one of the UK's largest car manufacturing plants.

Apart from a very high liquid (>80%) or fat (>20%) content, BioNova units are suitable for virtually any organic waste application, including Category 1 & Category 2 animal waste. A pasteurising, aerobic process, microbes in the unit replenish to create the right conditions for the breaking down of waste to a potentially income-generating powder.

Tayton said: "At the bakery, our customer paid £2,000 for a trial, which we offered to refund against the final installation. However, the savings made during the trial period alone were in excess of £3,000, so not surprisingly they immediately saw the economic, as well as the environmental and health & safety benefits."

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