

# Serving up Food-Factory Waste for Anaerobic Digestion

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*Packaged waste food from factory in Dolavs*

At its new £5m anaerobic digestion (AD) plant in South Wales, InSource Energy projects director, Justin Strutt needed suitable containers for handling factory food waste. Already in use at the food factory were plastic pallet boxes made by **Dolav** (UK). He inspected them to see if they would meet requirements. "Our Dolavs are turned upside down on rotating forks to be emptied

so we liked the strength of their sturdy, integral one-piece runner and ordered the 3-runner, Ace 1000 plastic pallet boxes from Dolav Direct UK," said Justin Strutt. He confirmed the new Dolavs are already hard at work doing exactly as planned and added, "We did look at another cheaper pallet box but its runners were made separately, riveted in place and just not strong enough."

The AD plant is complete with de-packaging and pasteurisation equipment. The de-packaging equipment is fed with packaged food in Dolavs and the separated waste food is pasteurised before being fed into the digester. The retrieved packaging will be recycled as part of the food factory's 2015 zero landfill target.

The new AD plant was developed by InSource Energy who partnered with Premier Foods' RF Brookes ready-meal facility at Rogerstone, near Newport.

Its sole purpose is to deliver on-site AD to treat manufacturing food waste and help power the factory. The plant will provide significant savings in waste disposal and energy bills and reduce carbon emissions by around 8,500 tonnes per year.



*Packaged waste food taken in Dolav to depacking equipment*

It is believed to be the first AD example in Wales of a factory being partially powered by its own waste.

With the capacity to process up to 18,000 tonnes of unavoidable organic waste each year, the plant will generate 1.4 million cubic meters of methane-rich biogas with a thermal calorific value of 8.4MWh. The biogas is converted via a combined heat and power engine (CHP) into electricity and heat which are used in the RF Brookes manufacturing process. It will be enough energy to displace ten percent of the factory's fossil-fuel load. The other main AD process output is nutrient-rich digestate. It will be de-watered and supplied to a local farm as a PAS110 compliant organic fertiliser.

Dolav Direct UK sales and marketing managing, Maria Plastow said, "We developed the hygienic Dolav Ace box pallet in food-grade plastic specifically for handling food and food waste throughout food processing so we are delighted Insource Energy selected it for its excellent new AD facility. For other AD plants we have now added options including lids which seal and lock, castors which allow stacking and drain taps for liquids."

## At a Glance Statistics

- InSource Energy Design, build, operate, finance
- Premier Foods Built within site boundary, provide waste, purchase heat and power
- Capacity 18,000tpa
- Feedstock Food wastes and effluent sludge
- Process Wet AD with depacking and pasteurisation
- Electrical output 300kW (net)
- Heat Output 400kW (net)
- Digestate PAS 110 compliant to local arable farms



*The new £5m InSource / Premier Foods / R F Brookes AD plant, Rogerstone, Wales*