

NETZSCH progressing cavity pumps installed by GWE Biogas

ANAEROBICALLY DIGESTING food waste to produce electricity presents particular challenges for process equipment, especially pumps.

At the front end of the process, where food waste is received and de-packaged, liquids can contain a high percentage of abrasive solids including both organic and inorganic matter. This can lead to high levels of mechanical wear in equipment and often requires that solids are macerated prior to pumping.

Further into the process, where food waste often needs to be pasteurised, high temperatures can lower the pH level of liquids to a point where corrosion and degradation in normal pump materials can occur. Even at the end of the biogas process the digestate sludge can be abrasive, it still contains organic solids which can cause wear to pumps and associated equipment.

Correct design and selection of pumps is therefore critical to the longevity and

operational reliability of a biogas plant. GWE Biogas' state of the art Sandhill site near Driffield is a £10 million investment in anaerobic digestion and takes food waste from many sources to produce electricity.

After much consideration NETZSCH NEMO® progressing cavity pumps and grinders were selected for numerous applications throughout the process including:

- Liquid waste transfer in the reception hall
- Pasteuriser feed and discharge
- Digester feed
- Digestate feed to centrifuges
- Chemical dosing

These applications include liquids which are abrasive, liquids which are corrosive and liquids with high temperatures. NETZSCH engineers carefully selected the correct pumps in terms of the pump speeds, materials and component design to minimise the wear effects of the liquids and to give the operational reliability GWE demanded.

A feature which was particularly attractive to

GWE was the NETZSCH adjustable stator mechanism. This allows operators to adjust the tolerance along the seal line between the rotor and stator, thereby significantly increasing the lifetime of the stator. Also the NETZSCH NEMO® pin joint design, with oil lubrication for longer life and special joint seal to guard against acid attack, was a feature GWE appreciated.

Additionally GWE were convinced that NETZSCH Pumps Ltd, the UK operation of NETZSCH Pumps & Systems global business unit, could support their installation correctly. NETZSCH Pumps Ltd has a network of seven fully trained and audited service partners across the UK. Spare parts are held in stock at the NETZSCH Walsall operation to support the major NETZSCH pump and macerator installations in the UK AD market.

GWE started treating food waste at their Sandhill plant in late 2010 and the NETZSCH equipment has been faultlessly running since the start and will continue to do so.