Mix to the max at Yorkshire Water's major new Energy & Recycling Facility

At Yorkshire Water's new £50M Huddersfield Energy and Recycling Facility (E&RF), the digester mixing system from Whitchurch-based Landia is ensuring that total gas production can reach its anticipated 22,192Nm³/d (normal cubic meter/day).

Designed, constructed and commissioned by J. Murphy & Sons Ltd (JMS), the Huddersfield E&RF is an integral part of Yorkshire Water's long-term bio-resources upper quartile efficiency strategy.

Externally mounted on each of the two 7,306m³ concrete digesters, that contain thickened sewage sludge of up to 8 percent dry solids (DS), the Landia mixing system makes future servicing easy because there are no moving parts inside the tanks.

Benefitting from the Landia chopper pump, which together with venturi nozzles ensures that the digesters are comprehensively mixed to maximise gas production, the mixing system is low on energy consumption and also reduces health and safety issues such as working from height.

A spokesperson for Yorkshire Water commented, "We are very proud of our new Huddersfield Energy and Recycling Facility, which is comfortably meeting all its performance targets. This impressive new facility will play a big part in helping us achieve net zero carbon by 2030".

John Smith, Project Director for J. Murphy & Sons, added: "Huddersfield E&RF shows the quality of the process engineering expertise that we can deliver for complex water and wastewater design and construction. We understand that a good digester mixing system is very important to the success of an AD plant, so are pleased to see that our decision to choose Landia is paying benefits".

Created as a regional sludge treatment facility to receive indigenous and imported sludge in both liquid and cake forms, Huddersfield E&RF has enabled Yorkshire Water to treat all of its sludge by anaerobic digestion.

The sludge load to the digesters is 24,000tDS/annum (total dry solids) or 65.753tDS of sludge per day, including up to a maximum of 11.880tDS per day of imported liquid sludge and 25.831tDS per day sludge cake respectively.

Two CHP engines produce peak electrical output of 2390 kWh and a thermal output of 2404 kWh.

Written by Chris French