



Wales Centre of Excellence for Anaerobic Digestion  
Measure 3 Funding Case Study  
AWS Burdens Environmental Ltd. / All Waste Services Ltd.

As operators and suppliers of small scale anaerobic digestion plants, AWS Burdens Environmental Ltd. / All Waste Services Ltd. realised that keeping the capital, construction and commissioning costs of process vessels low was key to economic viability. At the same time, modular systems provide operators with the flexibility to add additional treatment capacity quickly and easily.

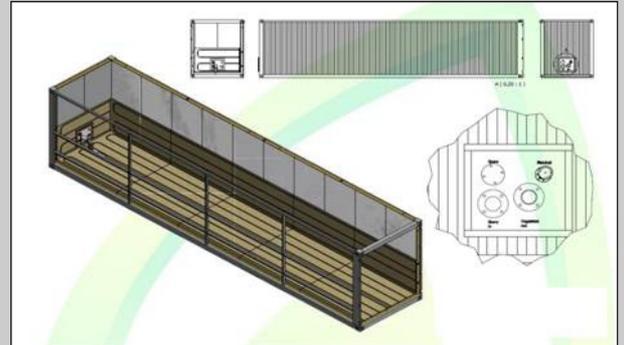


Fig. 1—Outline design of modular digester vessel



Fig. 2—Modular digester installed on site

With the help of EU ERDF funding, administered by the Wales Centre of Excellence for Anaerobic Digestion, the company was able to design and commission a low cost, modular anaerobic digestion vessel based around a reconditioned 12 m long, high cube shipping container. The vessel included internal lining, heating pipework, re-circulation and mixing, gas collection and monitoring and control capabilities to provide a low cost, modular digester that can be easily delivered and commissioned.

The company trialled the vessel at their own anaerobic digestion plant treating a mixture of commercial and municipal wastes. The vessel was integrated into a PLC based plant control system allowing automated monitoring and control of the heating, feeding and mixing systems. Following seeding and start up of the digestion process, the vessel was producing reliable quantities of biogas at 65% CH<sub>4</sub> with <300 ppm H<sub>2</sub>S. The company estimated that the vessel would be capable of treating around 500 t / year of substrate and, at the close of the project, was in the process of sourcing additional generation capacity to fully utilise the higher volumes of biogas being generated as a result of the process innovation, monitoring and control.



Fig. 3—Waste inlet / outlet, mixing lines and gas collection

The Wales Centre of Excellence for Anaerobic Digestion is supported by:

