



Boosting AD Efficiency with LSM Peristaltic Pump Grit and Rag Forwarding Pump

Overview

A major UK WASC needed a more efficient solution for managing grit and rag accumulation in their anaerobic digesters. The Bio-resources team plays a key role in renewable energy and biosolids recovery, but digester fouling was impacting throughput and driving up maintenance costs.

Challenge

Routine de-gritting required vacuum tanker support — a slow, resource-heavy process involving batch transfer of sludge to an onsite wash plant. Despite the vac loader's impressive suction capacity (200kWh, >90% vacuum efficiency), its batch-mode operation created a mismatch with the continuous flow requirement of the washplant's dewatering screen, causing idle time and bottlenecks. Blockages in the vac line were also time-consuming to resolve manually.

Solution

Atlantic Pumps proposed the LSM-150 peristaltic pump — well-suited to thick, gritty, rag-laden sludge. A trial system was installed to continuously transfer sludge from digester to wash plant at controlled rates. The final setup included:

- LSM-150 with quick-connect Bauer fittings
- VFD inverter drive for adjustable flow
- Mobility features for use across multiple tanks

This eliminated reliance on vac trucks and enabled on-demand, consistent feed to the wash plant.



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Results

- Throughput increased from the previous rate of 50m³/h to 130m³/h — fully utilising the wash plant capacity
- Single operator can manage the process; less than half the time needed per clean-out
- Faster tank turnover, improving AD uptime
- Handles solids up to 100mm, minimising blockages
- No spinning parts for rag and fibre to wrap around
- Blockage-resistant pump, and simple overload recovery via reverse function

The LSM-150's 18kW motor delivers 130m³/h at up to 10 bar, and optional vacuum assist supports suction lifts up to 8m. Low maintenance, high uptime, and energy efficiency make it an attractive asset addition for multiple duties, including digester clean-outs.

Following successful trials at some of the company's other STWs, they are partnering with Atlantic Pumps in AMP8 to integrate similar solutions in their resilience and efficiency upgrades across the network.



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