

CASE STUDY F - PROJECT TURNER

Turning Up the Gas Without Losing Control

| £239,942 Saved | 23% + Biomethane | 2-3% + Methane Concentration | - 10-14% FOS/TAC |

OVERVIEW

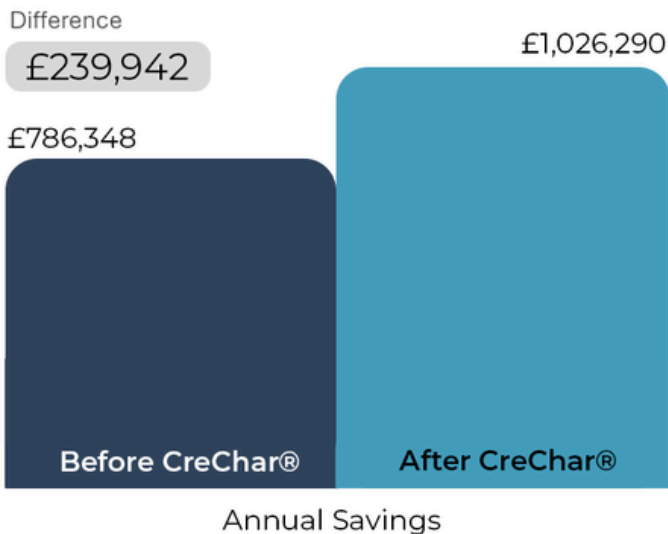
Site F operates a 4,000 m³ digester with 2 MW CHP capacity, processing crop waste, poultry litter, and dairy by-products.

To increase revenue, the operator raised feed rates and introduced lower-cost, more variable feedstocks, increasing the risk of process instability.

CreChar® facilitated stable operation under these intensified conditions, allowing the plant to increase biomethane production while maintaining control of the biological process.

KEY OUTCOMES

- 23% increase in total biomethane output
- 2-3% increase in methane concentration
- 10-14% reduction in FOS/TAC ratio
- Reduced reliance on chemical additives
- Improved feedstock economics and energy revenue
- Total annual savings driven by:
 - Feedstock optimisation
 - Reduced chemical additive usage
 - Energy revenue



ROI ASSUMPTIONS

Financial benefits delivered through, reduced feedstock costs, lower chemical additive usage and increased biomethane revenue.

ASSUMPTIONS

- Feedstock cost: £20 → £18 per fresh tonne
- Digestate disposal: £10/tonne
- Electricity + FiT income: £180/MWh
- 365 operating days
- Reduced trace elements and ferric usage
- Full CreChar pricing applied

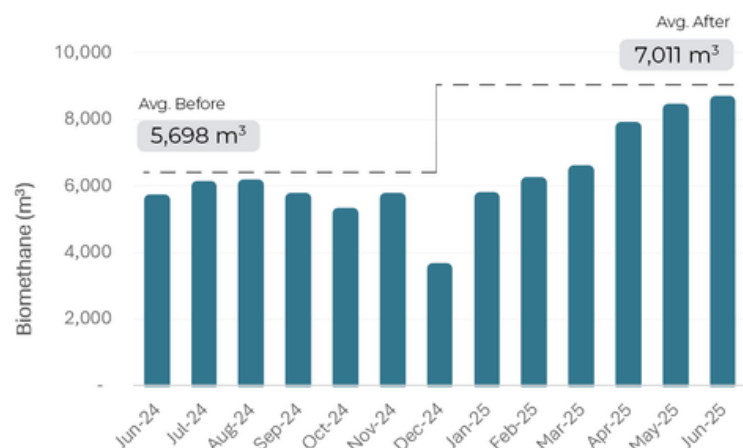
NOT INCLUDED IN CALCULATIONS

- CO₂ sequestration, carbon savings on sustainability report and heat generated from CHP units.

BIOMETHANE

Total biomethane output increased by 23% compared to the pre-trial baseline. Despite variability in feedstock composition, the plant achieved sustained gains in gas output, demonstrating improved biological efficiency.

- Avg. Before CreChar® - 5,698m³
- Avg. After CreChar® - 7,011m³
- Increase of 23%





METHANE CONCENTRATION

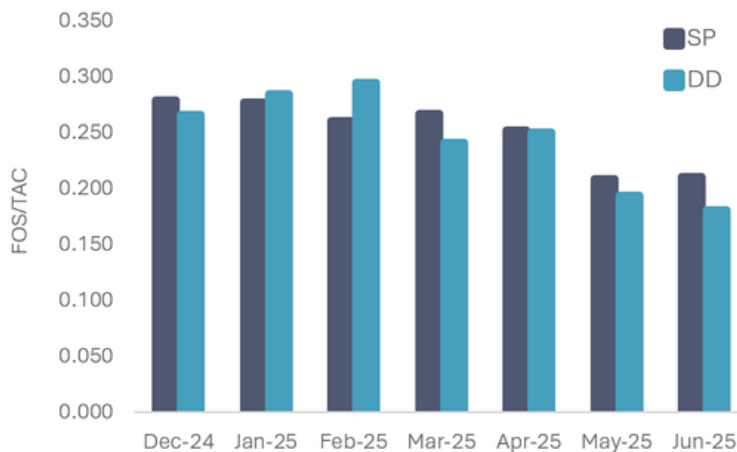
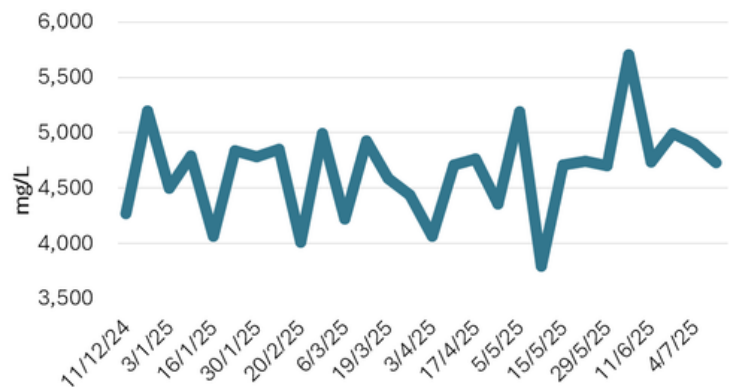
Methane concentration increased from a baseline of ~50% to consistently 52–53% during the trial period. This improvement contributed directly to higher biomethane yield and overall energy output.

- Avg. pre-trial = 50%
- Avg. during trial = 52-53%
- Increase of 2-3%

DIGESTER STABILITY

Ammonia concentrations remained stable between the 4,100-4,900 mg/L range throughout the trial despite high nitrogen loading from poultry litter and dairy inputs.

Under normal conditions, such fluctuations would be expected to cause inhibition and biological stress. This stability gave the operator confidence to push the system further and be more innovative with feedstock choices, knowing that the process could handle change.



FOS/TAC

The FOS/TAC ratio was consistently maintained within the optimal range (0.2–0.3), with a reduction of up to 14%.

This indicates a strong buffering capacity, reduced risk of acidification and enhanced microbial resilience. Overall, CreChar® enabled stable operation under more aggressive feeding conditions, increasing operator confidence to optimise feedstock strategy. Combined, this supports higher biogas production and improved revenue potential.

OUR APPROACH

We run large-scale trials for at least 6 months to capture true operational patterns and deliver reliable, proven results - using a structured process to maximise outputs and gather key performance data, with minimal operator input and full expert support.

Our team assesses operations and data throughout, filling gaps where needed.

CreChar® is supplied in 20 kg digestible bags and added daily with no disruption.

CRECHAR® TRIALS

To find out how CreChar® can support your Anaerobic Digestion plant please reach out to us at:

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