

CASE STUDY A - PROJECT CALDER

Adapting to a Post-Subsidy Future

| £215,408 Saved | -14% Feedstock | 27% + CH₄ Biomethane Yield | -2.8% Ammonia |

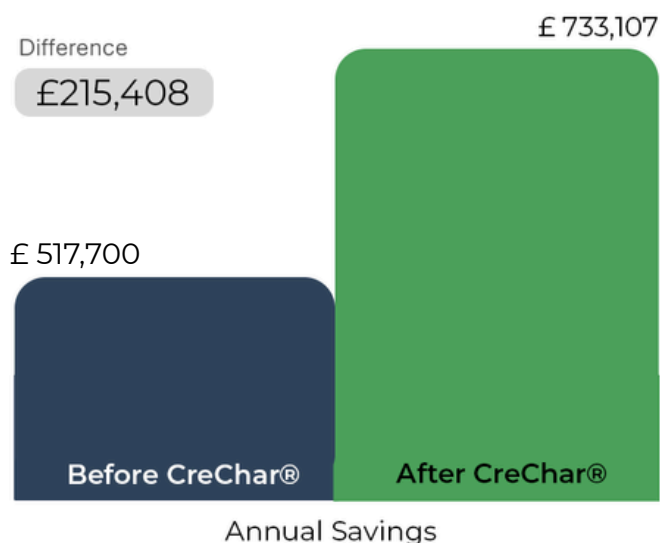
OVERVIEW

This 7,000 m³ AD facility produces 1.5 MWe via two CHP units. With declining subsidy support, the operator transitioned from energy crops to lower-cost industrial residues, increasing process risk.

CreChar® enabled this transition by stabilising the digestion process while maintaining performance.

KEY OUTCOMES

- 14% reduction in feedstock input (DM basis)
- 27% increase in biomethane yield (m³/t DM)
- Reduced reliance on chemical additives
- Improved feedstock cost efficiency
- Energy revenue (FiT + RHI): £180/MWh
- Total cost savings driven by:
 - Feedstock optimisation and cost reduction
 - Lower digestate disposal volumes
 - Reduced chemical additives and maintenance
 - Improved energy value per unit of gas



ROI ASSUMPTIONS

- Feedstock cost: down from £20 to £13/fresh tonne
- Digestate disposal: £10/tonne
- Electricity tariff: £180/MWh
- Operating days: 365 days/year
- Ferric removal
- 1 year CreChar® supply

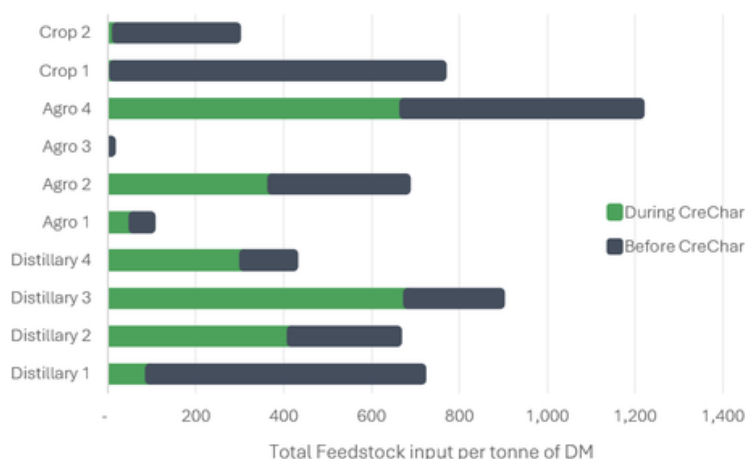
NOT INCLUDED IN CALCULATIONS

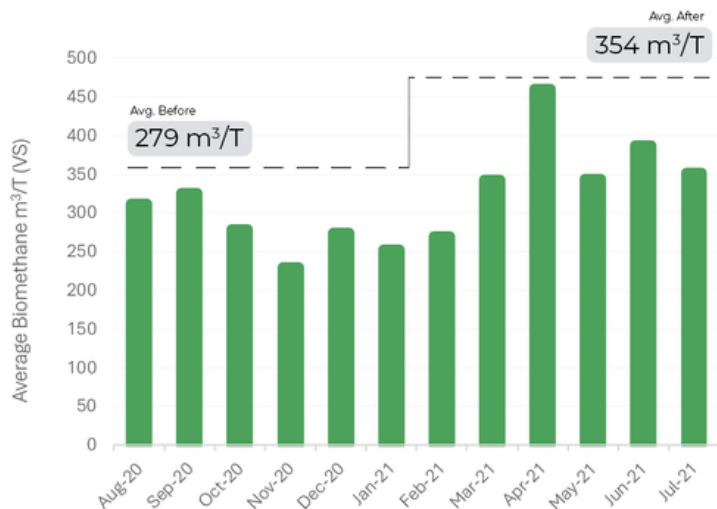
CO₂ sequestration benefits, carbon reporting / sustainability credits and heat recovery value from CHP

FEEDSTOCK

The plant replaced crop-based feedstocks with industrial by-products, reducing costs while increasing feedstock variability. CreChar® helped maintain process performance despite increased complexity in the feedstock mix.

- 14% reduction in feedstock input (DM basis)





BIOMETHANE

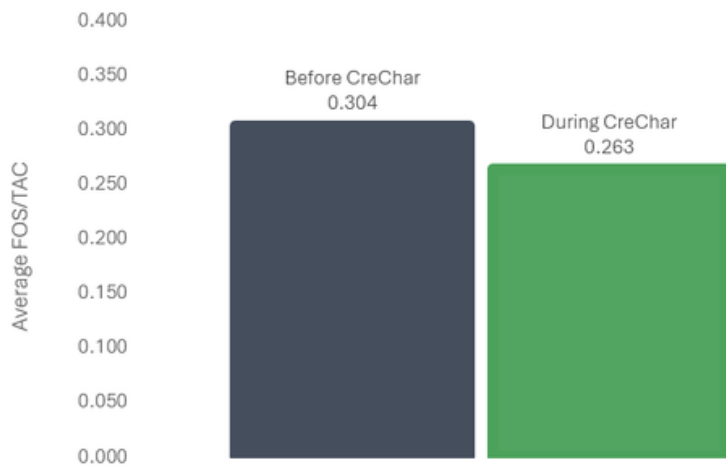
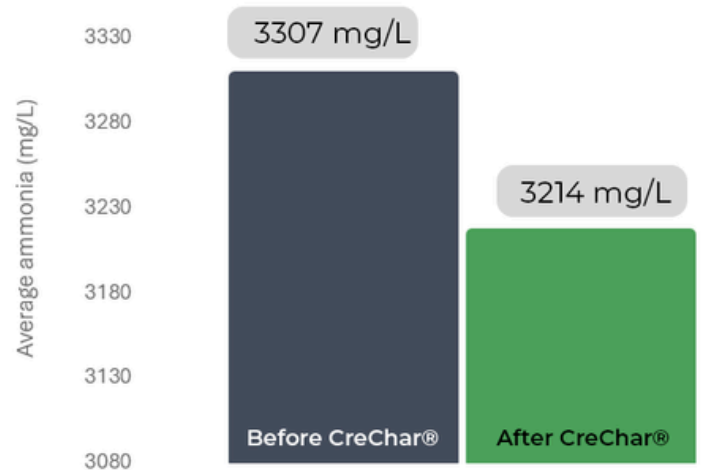
The data confirms the success of CreChar® in enhancing the transition to a more complex biomass blend, which directly correlates with an increase in the daily biomethane yield production. The plant achieved, on average, a 27% increase compared to the pre-trial baseline. This demonstrates improved biological efficiency under a more variable feedstock regime.

- **Biomethane increase of 27%**

AMMONIA & PROCESS STABILITY

Ammonia concentrations decreased from 3,307 mg/L to 3,214 mg/L indicating improved process conditions.

- **Ammonia reduction 2.8%**



FOS/TAC

The FOS/TAC ratio decreased by 13.5% (0.304 → 0.263), indicating improved buffering capacity and a reduced risk of instability.

As a result, the digester could be fed at higher rates, supporting increased biomethane production and improved revenue potential.

These improvements enabled a controlled transition to lower-cost feedstocks without compromising performance.

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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