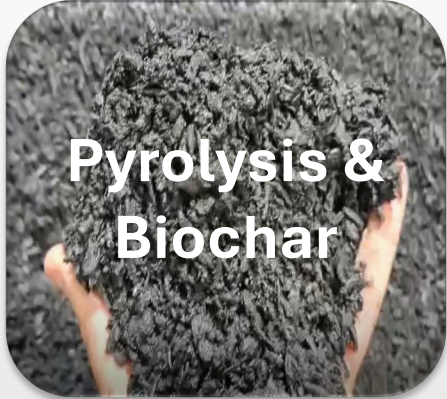




Area-Based
Insetting
Feasibility Study
Executive Summary

October 2026

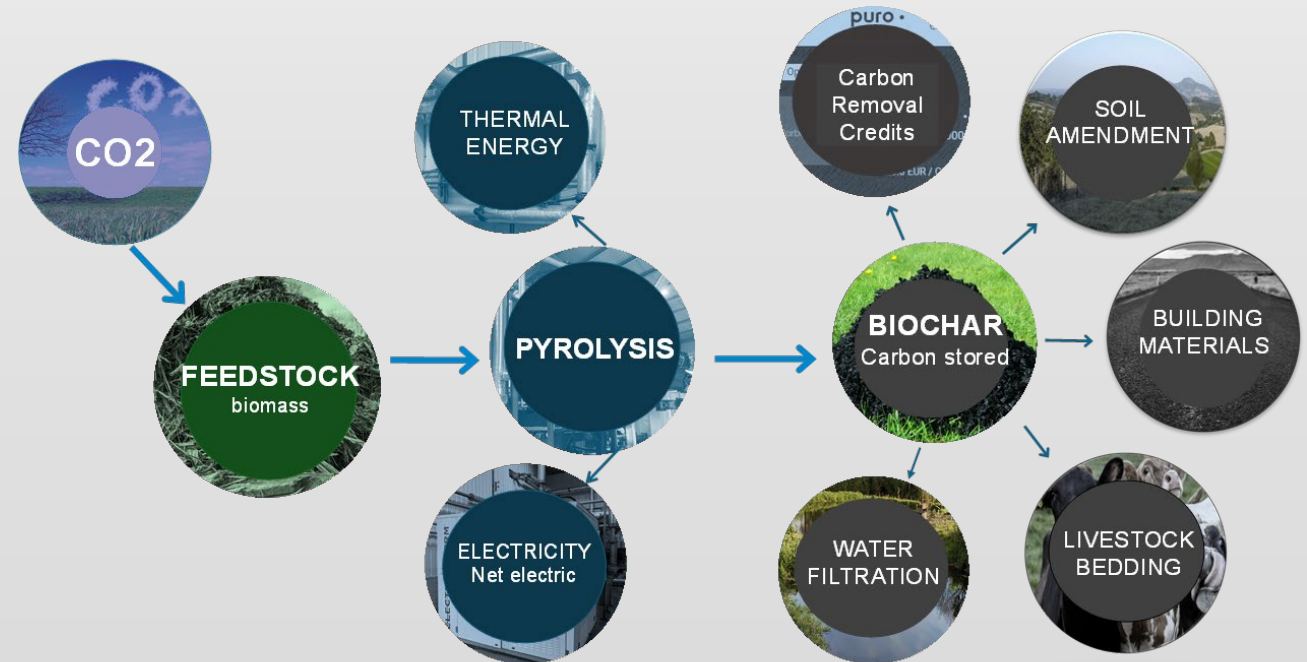


Pyrolysis for biochar transforms biomass into a valuable product, removes CO₂ from the atmosphere, and excess heat from production generates renewable energy. Local biomass for feedstock can support both a positive financial return and insetting targets.

Once verified* biochar can generate Removal Certificates for durably stored CO₂. Retiring certificates sourced within a defined area lets an organisation claim measurable, verifiable negative emissions against an insetting target.

Biochar is a product of pyrolysis: the thermal break-down of biomass (e.g. wood chips) in the absence of oxygen. Instead of compost or burning, it generates:

1. **Biochar** – A stable, high-carbon material
2. **Energy** – Renewable heat & power, burning gases released during pyrolysis
3. **Carbon removal credits** – CORCs. 1t of biochar locks away ~ 2.4t of CO₂



The Brief

Midlands Net Zero Hub (MNZH) wanted to test if **Area Based Insetting (ABI)** could enhance traditional offsetting by keeping benefits local within a Local Authority (LA).

Studies were undertaken in three LA areas on the potential of biochar as an ABI method. Walsall Council looked at a pooled platform for Carbon credits.

The findings are a collaboration between MNZH, Shropshire Council (SC), Klere Ltd and the relevant Local Authorities.

Walsall Council

Focus: Carbon credit trading for LAs to deliver financial & environmental benefits.

Leicestershire County Council

Birmingham City Council

Lincolnshire County Council

Focus: Identifying potential sites / feedstock in each county that could support a financially independent EBACC plant, contributing to ABI targets whilst delivering a positive financial return over 20+ years..

Biochar	730 t / p.a.
CORC	1,750 p.a.
Energy	8,600 MWth

Biochar	3,200 t / p.a.
CORC	8,000 p.a.
Energy	35,600 MWth

Biochar	33,600 t / p.a.
CORC	80,600 p.a.
Energy	336,000 MWth

Varying size of potential opportunities

Power from pyrolysis

This study identified an opportunity to establish a single pyrolysis plant at a council-owned farm. Re-purposing unused council property to produce **biochar**, generate carbon-negative **baseload electricity**, and trade high-quality carbon removal certificates (**CORCs**).

Opportunity

- The study examined suitable feedstocks, energy projections, biochar and CORC production.
- Scope covered technology, regulation & planning, risks, and business case using the Gov’t 5-case model.
- 9 sites assessed via site visits and a scored SWOT. A council-owned farm was one of the preferred locations, owned by LCC and with reasonable renovation costs.

Option (100% loan, 10 years)	Capital Cost £m	Net Income (20y) £m	NPV (20y) £m	ICR
Wholly Owned — Base Case	3.4	8.4	0.95	1.3

- Install single Woodtek C1000 size machine. Final selection subject to full evaluation and procurement.
- Annual output: 3.2k t of woodchip in → 720 t of biochar, ~1.75k CORCs, over 8.6k MWth heat.



Power from pyrolysis

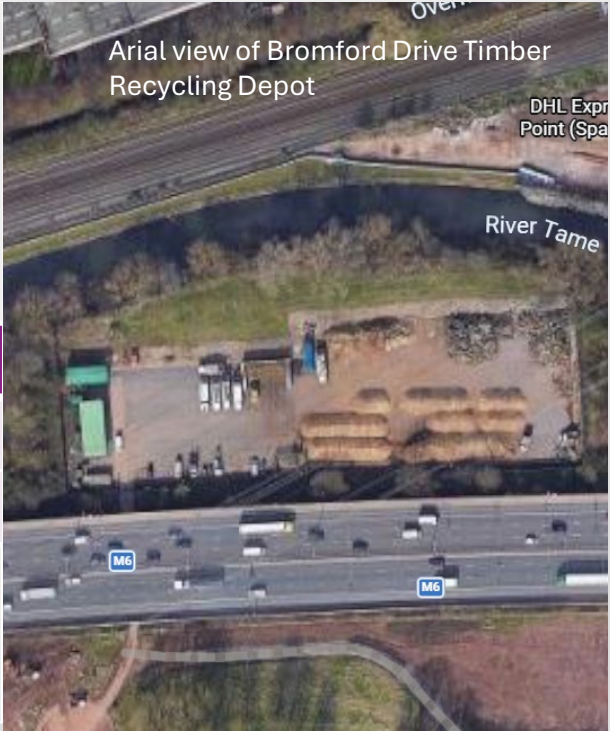
This study identified an opportunity to develop a site to house a quad plant plus storage and processing space. Infrastructure could be constructed directly to a proposed heat network ~1.3km from the site, or to surrounding consumers e.g., industrial, hotel, council owned residential areas.

Opportunity

- The study examined suitable feedstocks, energy projections, biochar and CORC production.
- Scope covered technology, regulation & planning, risks, and business case using the Gov’t 5-case model.
- Five sites assessed via site visits and a scored SWOT. One clear preferred location.
- Useful size, HGV access, M6 proximity, weighbridge, chipper and telehandler, and local offtake capacity

Option (100% loan, 10 years)	Capital Cost £m	Net Income (20y) £m	NPV (20y) £m	ICR
Wholly Owned — Base Case	16.1	127.2	51.8	3.7
Joint Venture — Base Case	11.7	127.2	20.3	2.5

- The site would need 4/5 buildings to be constructed on site to house a plant and storage, with the capacity of operating 4 Woodtek C1000 units / produce 6 MWth heat energy per hour.
- Annual output: 13k t of dry woodchip in → 3.2k t of biochar, ~8k CORCs, over 35k MWth heat.



Power from pyrolysis

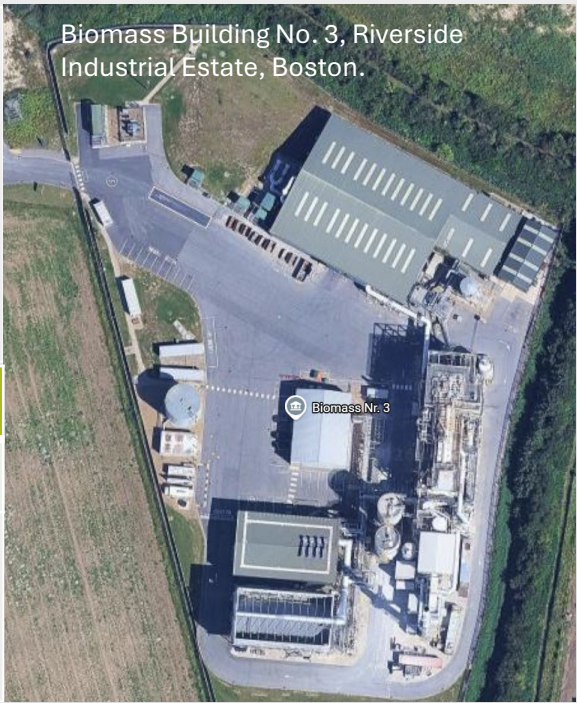
This study identified an opportunity to establish a **Carbon Negative Power Station in the UK**. Re-purposing a mothballed 12 MWe biomass power station will produce **biochar**, generate **baseload electricity**, and trade high-quality carbon removal certificates (**CORCs**).

Opportunity

- The study examined suitable feedstocks, energy projections, biochar and CORC production.
- Scope covered technology, regulation & planning, risks, and business case using the Gov't 5-case model.
- Nine sites assessed via site visits and a scored SWOT. One clear preferred location.
- An idle biomass gasification power station: built, permitted, operated from 2017 – 2022 with broad scope for re-use (turbine, grid connection, storage, weighbridge, control room).

Option (100% loan, 10 years)	Capital Cost £m	Net Income (20y) £m	NPV (20y) £m	ICR
Privately Owned — Base Case	53.8	322.4	91.4	2.7

- Install pyrolysis lines feeding the boiler and turbine — modelled as 7 Forged Innovation ZEDE6000 lines at ~42 MWth. Final technology selection subject to full evaluation and procurement.
- Annual output: 134k t of woodchip in → 33.6k t of biochar, ~80.6k CORCs, over 94k MWe grid export.



The regenerative power of the Biomass story

- Restoration of the plant in a deprived industrial area of the UK will bring local jobs, new skills in pyrolysis and produce significant quantities of soil-enhancing biochar.
- Boston is situated close to UK agricultural heartlands that are being affected by soil nutrient depletion. Working with the local farmers and agricultural colleges, biochar from the plant can be used to help soil regeneration.
- Bringing the site back into use prevents long-term dereliction of existing industrial infrastructure, bring investment and employment to an otherwise idle site.
- Boston ranks in the most deprived decile nationally (IMD decile 3). The project's operations & maintenance needs, alongside feedstock logistics and haulage, create 40+ skilled and semi-skilled local employment in an area, plus potential apprenticeship and technical training pathways.

Other Potential Benefits

- A medium data centre sited adjacent to the plant could be powered directly from carbon-negative generation, giving a data centre operator verifiably low-carbon power at the point of use.

The Boston opportunity is perhaps unique in the UK. A completed working power station standing idle, is a rare asset.

Set against this, permits have lapsed, planning consent must be obtained afresh, technology selection has not been completed, the condition of the existing plant is unverified, no partner terms exist and the capital estimate has not been market tested.

Next Steps: Secure a defined budget to mobilise a Design & Verification Phase to return in early 2027 with a Full Business Case, a selected technology, a planning and permitting strategy and negotiated partner terms, and willing investors.

At that point, the full investment decision can be taken. We hope that MNZH can be with on the next step of the journey.

Next Steps

- Private sector delivery is the preferred route; Carbon Negative Infrastructure Ltd set up to secure site for 6 months pending investment decision
- Commence a 4-month D&V Phase, circa £300k: technology evaluation and selection, Full Bus Case, Lifecycle assessment, pre-app planning and permitting, and legal and commercial structuring.
- Support from MNZH / GB Energy / Nat Wealth Fund / DESNZ could be critical to success.

Draft Milestones

Key Milestone	Additional Detail	Delivery Date
Complete feasibility review	This report	Sep-26
Decision on D&V Phase	Whether to proceed into D&V, funding contingent.	Oct-26
Set-up Phase 2 — D&V	Appraisal of technology, options & selection; Full bus case.	Jan-27
Investment Decision	Secure funding, Go / No Go decision.	Feb-27
Design & Planning	Full site design, build planning and permit. Technology dependent.	May-27
Build & Site Remediation	Complete build. Aim to commission early with one pyrolysis unit producing biochar before end-2027.	May-28
QA, Test & Commissioning	Final commissioning and test of multiple pyrolysis lines into the shared boiler.	Jun-28
Live	Fully operational.	Jul-28