

— ENGINEERING PERMANENCE

Turning biomass into permanence.

Kari Energy is a technology company that converts agricultural and forestry biomass, invasive species and organic residues into engineered carbon products and permanent carbon removal, using advanced pyrolysis and a fully auditable digital MRV system.

PARTNER WITH US →

OUR TECHNOLOGY

DESIGNED TO SUPPORT
VERIFICATION UNDER



ISOMETRIC



WHAT WE DO

FROM BIOMASS TO PERMANENCE



BIOMASS
SOURCING



PYROLYSIS
CONVERSION



CARBON
PRODUCTS



DIGITAL MRV
& VERIFICATION



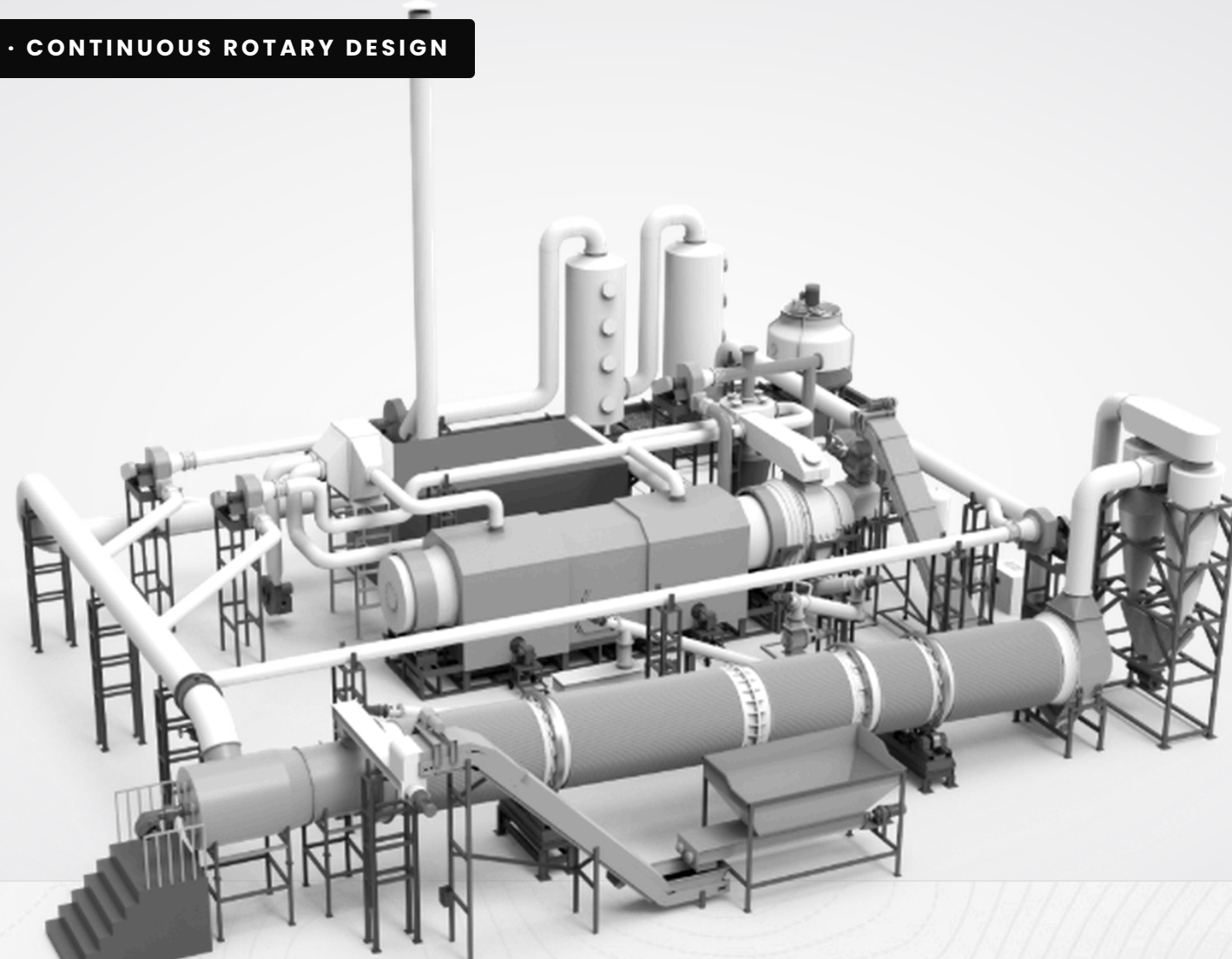
CARBON
REMOVAL

OUR TECHNOLOGY · 01

The Kari Pyrolysis Reactor

A continuous, oxygen-limited reactor that converts residual biomass into stable carbon. Gases released during conversion are burned to heat the reactor, and sensors record every batch from the first tonne.

HUB PLANT · CONTINUOUS ROTARY DESIGN

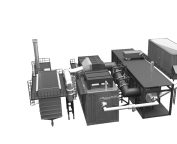


PROCESS	Continuous slow pyrolysis in a rotary reactor
TEMPERATURE	450–700 °C for biochar, 250–350 °C for biocoal
HEAT SOURCE	Pyrolysis gas recovered and burned as process heat
FEEDSTOCK	Crop residues, agroforestry and forestry residues, invasive species, processing waste
OUTPUTS	Biochar, biocoal and surplus process heat
MONITORING	Temperature, residence time, mass and energy logged for every batch



Hub plant

Mills, processing clusters and industrial sites



Modular unit

FPO hubs, villages and forest-fringe sites

HOW THE REACTOR WORKS

Biomass intake



Sizing & drying



Pyrolysis



Gas recovery & heat



Cooling

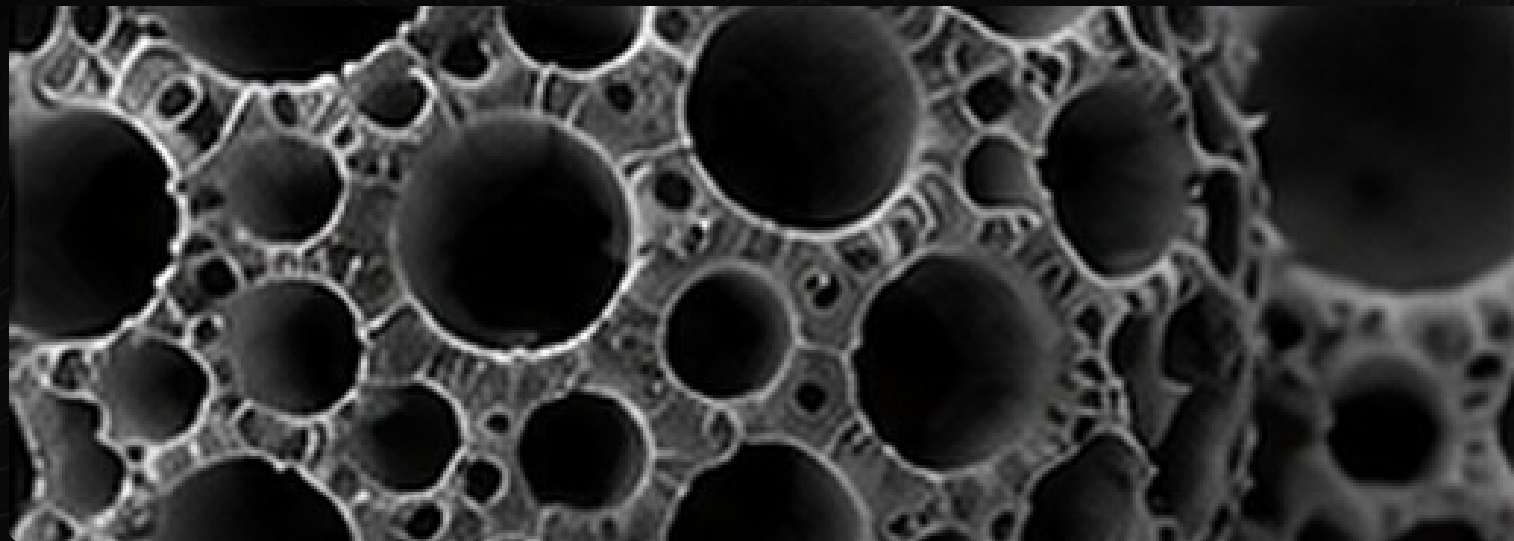
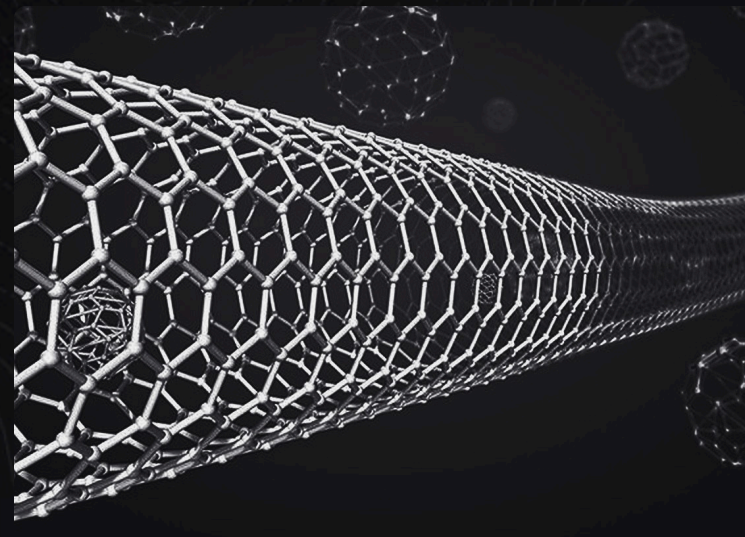


Biochar & biocoal

— OUR TECHNOLOGY · 02

The Kari Nano Carbon Refinery

Biochar from our reactors is refined into high-performance carbon materials. Each stage engineers the carbon's pores, surface chemistry and structure for a specific industrial use.



1

Grading & purification

Biochar is sized, washed and checked for consistency.

2

Activation

Steam activation at 800–950 °C opens a fine pore network.

3

Functionalization

Surface chemistry and heteroatom doping are tuned to each use.

4

Nano-structuring

Graphitic and nano-scale carbons are formed for advanced materials.

5

Characterization

Surface area, iodine number, XRD and SEM confirm every grade.

REFINERY OUTPUTS

Activated carbon

Functionalized carbon

Nano carbon

Catalyst supports

Battery-grade hard carbon

OUR PRODUCTS

Carbon products, **made to specification**

Five carbon grades from one platform, each tested in the laboratory and shipped with the record of the batch it came from.



01 —

Biochar

H/C_{org} below 0.7, tested for carbon, PAH and metals

- Soil and agriculture
- Compost and growing media
- Construction materials



02 —

Biocoal

Graded by calorific value, fixed carbon and ash

- Industrial boilers and kilns
- Co-firing with coal
- Captive heat and power

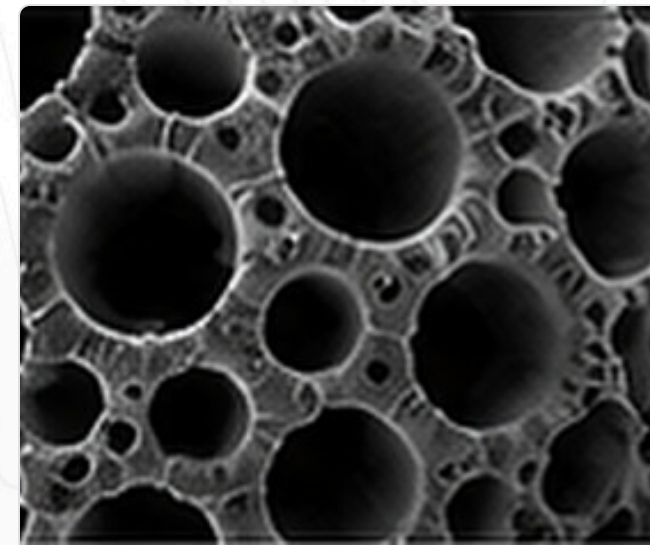


03 —

Activated carbon

Graded by iodine number and BET surface area

- Water treatment
- Air and gas purification
- Food and pharmaceuticals

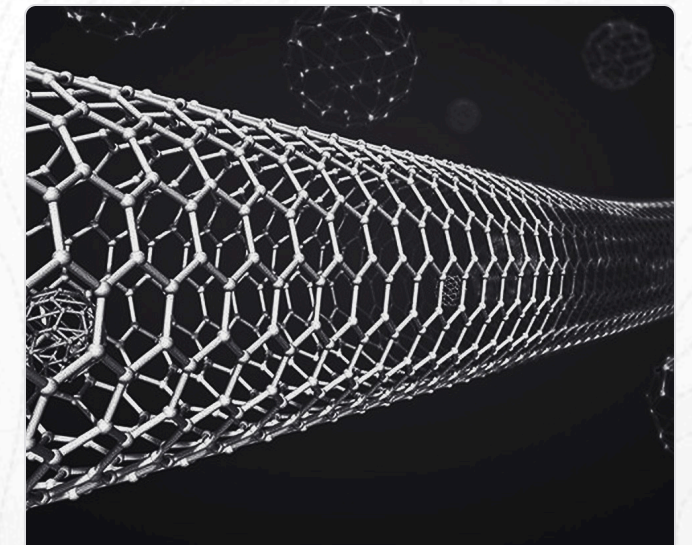


04 —

Functionalized carbon

Surface chemistry tailored to each application

- Catalysis
- Selective sorption
- Environmental remediation



05 —

Nano carbon

Graphitic and nano-structured carbon materials

- Energy storage
- Conductive additives
- Advanced composites



Laboratory certificate with every consignment



Traceable biomass origin



Consistent grade, batch after batch

REQUEST A SPECIFICATION SHEET

— OUR IMPACT

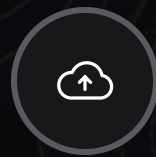
Carbon that stays out of the atmosphere **for centuries**

Plants pull CO₂ from the air as they grow. Our reactors hold about half of that carbon as stable biochar, which then rests in soils and materials for hundreds of years.



2.5–3 t CO₂

held in every tonne of biochar, depending on its carbon content



Plants absorb CO₂

Crops and trees capture carbon as they grow



Biomass

Residues are collected in place of burning



Pyrolysis

Heat without oxygen fixes the carbon



Biochar

A stable, highly aromatic carbon



Permanence

Stored in soil and materials for 200+ years



Climate

Durable, measured carbon removal



Soil

Better water and nutrient holding



Air

Residues converted in place of open burning



Livelihoods

Income for farmers and rural enterprises



Restoration

Invasive species cleared and put to use

CREDITS · CORCS AND FRAMEWORKS

Credits issued once the carbon is **locked away**

Each credit is issued after the biochar has been produced, tested, stored and checked by an independent verifier, under a published carbon-removal methodology.

1 CORC

= 1 tonne of CO₂ removed from the atmosphere and durably stored

CO₂ Removal Certificates are issued by Puro.earth on the Puro Registry. Biochar CORCs carry a durability label of 200 years and more under its 2025 biochar methodology.



PURO STANDARD

Biochar Methodology, Edition 2025

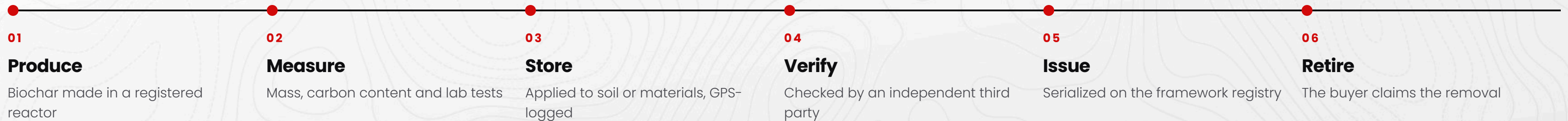
- CORC200+ durability label for biochar
- Biomass sourcing criteria checked at intake
- Facility audit and output audits by an independent verifier



ISOMETRIC STANDARD

Biochar Production and Storage Protocol

- Removal credits issued ex-post
- Batch mass and carbon traced to the storage site
- Modules for distributed, small-scale and mobile production



Puro.earth and Isometric identify the standards Kari Energy projects are designed to meet. Each framework certifies individual projects after independent verification.

PARTNER WITH US · COMPANIES

High-integrity carbon credits **for companies**



Durable, verified removal

Biochar credits issued after measurement and independent verification.



Traceable to the field

Every credit links to its biomass source, reactor, lab results and storage site.



Programmes in your value chain

Residues from your sourcing regions become removal and farmer benefit.



Reporting-ready data

Batch-level records for BRSR, ESG and CSR reporting.

[REQUEST AN OFFTAKE PROPOSAL →](#)[VIEW A SAMPLE RECORD](#)

Spot purchase

Verified credits from issued batches

Forward offtake

Multi-year supply at agreed volumes

Programme partner

CSR and value-chain projects

karienergy.com/registry/KE-TN-R07-0417

Removal record · KE-TN-R07-0417

ILLUSTRATIVE

NET REMOVAL

5.22 tCO₂e

DURABILITY

200+ years

BIOCHAR STORED

2.80 t

BIOMASS

Paddy straw · FPO collection hub, Tamil Nadu

REACTOR

R-07 · continuous rotary unit · peak 612 °C

LABORATORY

Organic carbon 78.4 % · H/C_{org} 0.31 · contaminants within limits

STORAGE

Soil application · 14 farms · 22 ha · GPS-logged

VERIFICATION

Independent third-party review of raw records

BIOMASS

REACTOR

LAB

STORAGE

VERIFIED

ISSUED



PARTNER WITH US · FARMERS

Healthier soils and **stronger livelihoods**



Income from crop residue

Straw, stalks and husk bought at the farm gate or village hub.



No more burning

Residue becomes carbon, keeping smoke away from homes.



Enterprise for FPOs

Producer organisations can run collection hubs and facilities.



Better soil

Biochar helps soil hold water and nutrients through dry spells.



A share in carbon value

Farmer groups share in the value of verified removal.



Soil testing and guidance

Agronomy support on how much biochar to apply and where.

[REGISTER YOUR FPO →](#)
[TALK TO OUR FIELD TEAM](#)

HOW FARMERS JOIN

1

Join through your FPO

2

Collect residue after harvest

3

Weigh and sell at the hub

4

Receive biochar for your fields

5

Share in verified carbon value

— ABOUT · BACKED BY

Backed by agricultural science and **climate expertise**

Kari is the Tamil word for black, the colour of the carbon we make. The company is built on the research strength of Tamil Nadu's agricultural university and the field experience of an ecological restoration company.



AGRICULTURAL SCIENCE PARTNER

Tamil Nadu Agricultural University

The state's agricultural university in Coimbatore, supporting soil science, crop trials and farmer outreach for biochar across Tamil Nadu.



FOUNDING COMPANY

Oxyseed Climate Solutions Pvt. Ltd.

An ecological restoration and spatial intelligence company that develops and backs Kari Energy.

CIN U02101TZ2026PTC038766

ADDRESS 208 East TV Samy Street, RS Puram, Coimbatore 641002

WEB www.oxyseed.org



EXPLORE

Technology

Products

Impact

Credits

PARTNER

Companies

Farmers & FPOs

Network operators

Research partners

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Biomass to permanence.