



# Company Introduction

*ArbaCore™ — Steam Exploded Black Pellets for Industrial Coal Replacement*

**60,000  
t/yr**

Annual  
capacity

**30,000+  
hours**

Operating  
track record

**World's  
#1 producer**

Steam-treated  
black pellet



# Introduction to Arbaflame

Norwegian bio-tech company — converting certified sawmill residues into ArbaCore™ biocoal (coal substitute) and bio-chemicals

**60kt/yr**

Production target

**30,000+**

Op. hours

**6 IPs**

Patents



**100%**

Bio-waste

## What we make

- ArbaCore™ biocoal: direct coal substitute — TRL9, Eurofins-certified, SBP-certified
- Furfural, biogas, bio-methanol and acetone — circular bio-refinery co-products

## Where we operate

- Arba One: First-of-a-kind industrial plant, Kongsvinger, Norway 
- Pearl Infrastructure Capital (majority shareholder since 2025) + FICAP France = **180,000 t/yr** group capacity 

# A Conservative and High-Stakes Market

*Industrial coal replacement moves slowly — but regulatory pressure is now making it inevitable*

## Market Dynamics

- Long qualification cycles — procurement decisions made by plant engineers and operations
- Physical in-plant testing required before any offtake commitment — no shortcuts
- RED III & EU ETS driving mandatory phase-out for hard-to-abate industry
- CO<sub>2</sub> cost pressure accelerating in cement, metals, asphalt, lime and CHP
- No CAPEX conversion — existing coal infrastructure accepts ArbaCore directly

## The Opportunity

**~8,000 Mt**

Global industrial coal consumption per year (IEA)

**<1 Mt (?)**

Black pellet market today — growing rapidly

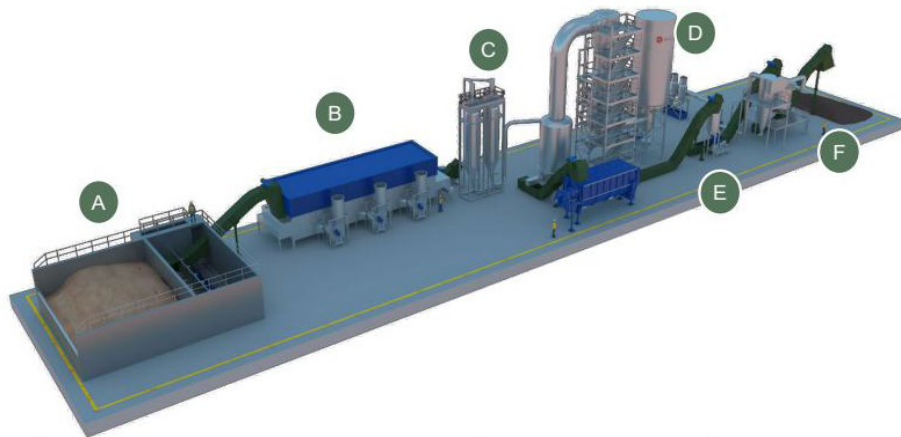
**20+ Mt**

Projected black pellet demand by 2035 (BNEF)

**<90 €/t**

EU ETS CO<sub>2</sub> price — driving fuel switching

# Steam Explosion Technology — How ArbaCore is Made



A

## Input & Pre-dryer

Sawdust in — moisture reduction, pre-milling

B

## Pre-dryer & Milling

Sawdust dried to target moisture, coarse milled

C

## ArbaKit™ Reactor

Steam explosion at certain temperature a pressure

D

## Flash Tank & Heat Exchange

Pressure released; 30% thermal energy recovered

E

## Post-dryer & Pellet Press

Lignin rebinds without additives; pelletised

F

## Cooler & Storage

Hydrophobic ArbaCore™ dispatched or stored outdoor

At step C, high-pressure steam physically ruptures wood cell walls and removes hemicellulose. Released lignin, wood's natural polymer binder, re-solidifies around fibres on expansion, creating a dense, hydrophobic, coal-like pellet with no synthetic binders or additives.

# ArbaCore™ — The Product

*Pelletized or milled to powder: vs. white pellets: +10% energy/t · -20% milling power · +73% energy/m<sup>3</sup> pulverized*



## Physical Parameters — Eurofins Certified

Bulk density	750 kg/m <sup>3</sup>
Net calorific value	5.246 MWh/t
Total moisture	8.0%
Durability	98.9%
Particle size distribution ≤ 2.00mm	98.75%
Carbon intensity	116 kgCO <sub>2</sub> e/t
Volumetric energy, pulverized 100µm	2.25 MWh/m <sup>3</sup>

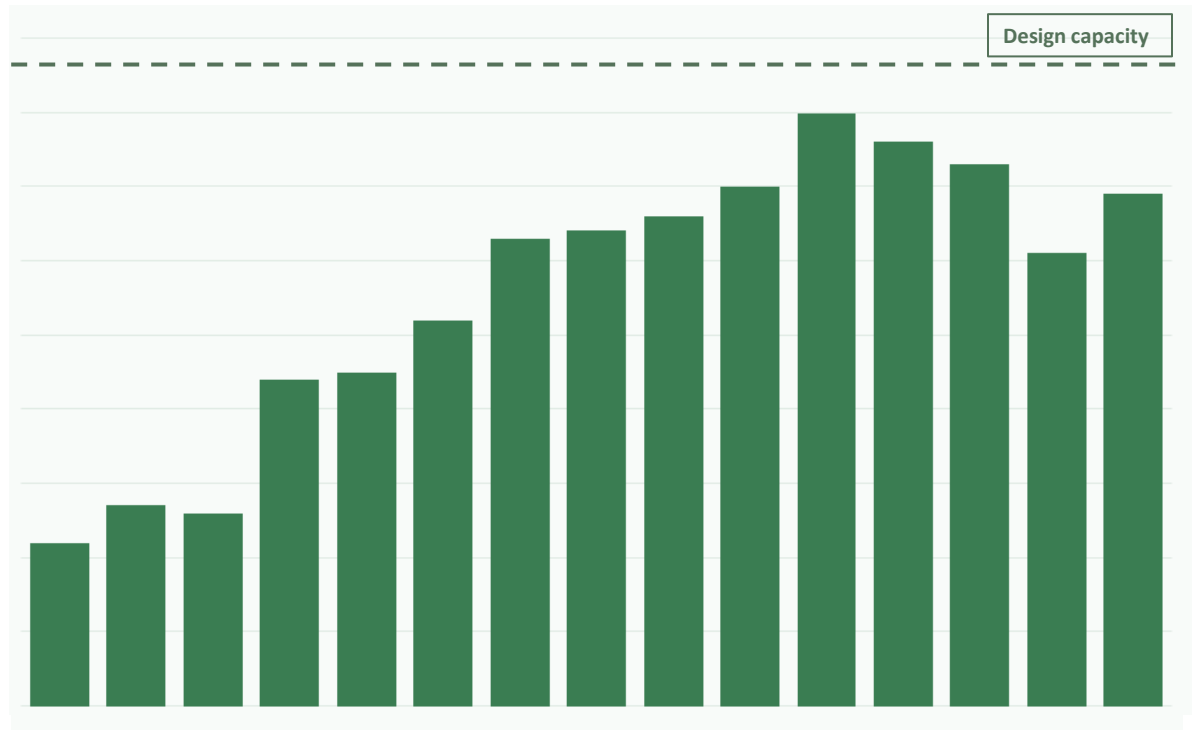
# Why ArbaCore Wins Against Alternatives

Criterion	Traditional Biomass / Pellets	Fossil Coal	ArbaCore™ Biocoal
Energy density / m <sup>3</sup>	Moderate	High	High ✓
Outdoor storage	No — absorbs water	Yes	Yes — Hydrophobic ✓
ATEX explosion risk	High Risk ✗	Low	No Risk ✓
Climate / CO <sub>2</sub> tax	Neutral	Negative ✗	Climate Positive ✓
Geopolitical supply	Moderate / import	High / import	Low — local Norway ✓
Conversion CAPEX	Often required	None	None ✓

ArbaCore combines coal's physical storage advantages with a climate-positive profile, no CAPEX, supply security

# Arba One — Production Track Record (2022–2026)

Monthly production Aug 2022 – May 2026



**+250kt**  
Cumulative production since start

**32**  
Dry bulk vessels shipped from Port of Oslo

**+30,000hrs**  
Plant availability since start

**4,200t**  
Peak production month

# Industrial Focus — Qualification Where It Matters

*Direct end-users only — no traders, no intermediaries. Tested at 20+ power plants and industrial facilities*

## Combustion



Industrial facilities that burn fuel at high temperatures for Heat/energy generation or their process applications.

### Customers / pipeline:

Industrial boilers, CHP plants, cement kilns, asphalt dryers, lime kilns — high-temperature heat and energy generation

## Fixed Carbon



Metallurgy customers that refine metals through chemical reactions requiring carbon.

### Customers / pipeline:

Silicon, manganese, aluminum smelters — metallurgy requiring a high fixed-carbon reducing agent to replace petroleum coke

## Gasification



Convert solid biocoal to syngas via high-temperature gasification — then synthesise to H<sub>2</sub>, methanol or sustainable aviation fuel

### Customers / pipeline:

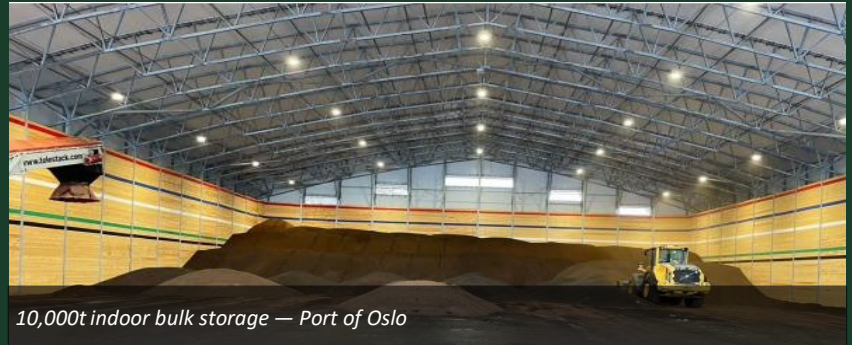
Multiple European projects evaluating ArbaCore for green hydrogen and SAF pathways — early-stage pipeline

**Consumers need to focus on fuel properties and cost per unit of product produced, not just the price per tonne**

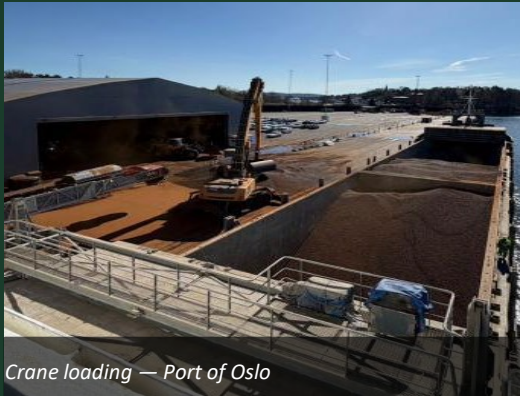
# ArbaCore in the Field — Real Operations, Real Results



Arba One 3,500t storage tent — Kongsvinger, Norway



10,000t indoor bulk storage — Port of Oslo



Crane loading — Port of Oslo



32nd vessel loaded — June 2026



Port of Oslo — dry bulk shipments

# Storage & Shipping — The Coal Advantage



## Why Outdoor Storage Matters

### ✓ Hydrophobic

No water absorption, no rot, no degradation — stores like coal

### ✓ No ATEX risk

No explosion hazard unlike conventional biomass — simpler handling

### ✓ No self-heating

Eliminates fire risk common in coal storage — insurance savings

### ✓ Low dust

Safer for site workers and port operations; cleaner environment

## Storage & Shipping Network

Port of Oslo bulk tent

10,000 t

Arba One bulk tent

3,500 t

Arba One silo

700 t

*Total: 14,200 t · 31 vessels shipped · 3,000–10,000 t dry bulk shipments*

## +250kt Since Start Within Different Industries

*We need cooperation to ensure successful qualification — directly with end-users, not through traders and intermediaries*



01

### Test Sample + Milling Test + Lab Qualification

Small sample delivery (<5t). Customer lab tests energy content, particle size, combustion profile. Arbaflame provides full technical datasheet.

02

### In-Plant Trial Burn

Arbaflame engineers on-site. Co-firing at 5–30% blend. Live measurement of emissions, grindability, combustion stability and performance output.

03

### Scale-Up & Optimisation

Increase blend ratio to target. Tune boiler/kiln parameters, milling settings and storage procedures. Full technical report produced.

04

### Long-Term Offtake Agreement

Anchor contract >10,000 t/yr. PEARL Infrastructure Capital provides supply security backing, critical for procurement sign-off.

End-users needs to verify how ArbaCore can help improve their operations: Performance, temperature, storage capacity, emissions

# SBP Certification — The Prerequisite for European Industrial Biomass

## Feedstock Traceability

94% SBP-controlled processing residues + 6% SBP-compliant. FSC/PEFC certified Norwegian & Swedish sawmill origins. Full chain-of-custody.

## Energy & Carbon Reporting

Steam explosion alters pellet energy characteristics vs standard — SBP-standardised carbon data is the only reliable basis for RED III compliance reporting.

## Market Access Prerequisite

Without SBP, you cannot bid for European utility or regulated industrial contracts. It is the licence-to-operate requirement, not a nice-to-have.

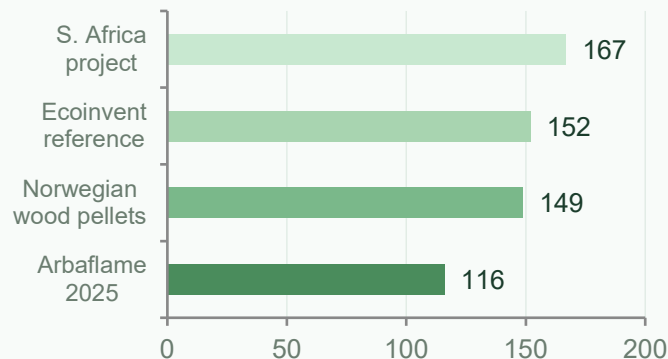
## GHG Performance Verified

Carbometrix-verified carbon intensity: 116 kgCO<sub>2</sub>e/t cradle-to-gate — 22% below Norwegian wood pellet baseline (149) and 32% below Ecoinvent (152).



*"Our steam explosion biocoal technology allows us to unlock far more value from sustainable wood residues, and SBP certification ensures that this innovation is matched by equally strong sustainability assurance."*

**Carbon Intensity Benchmark  
(kgCO<sub>2</sub>e/tonne, cradle-to-gate)**

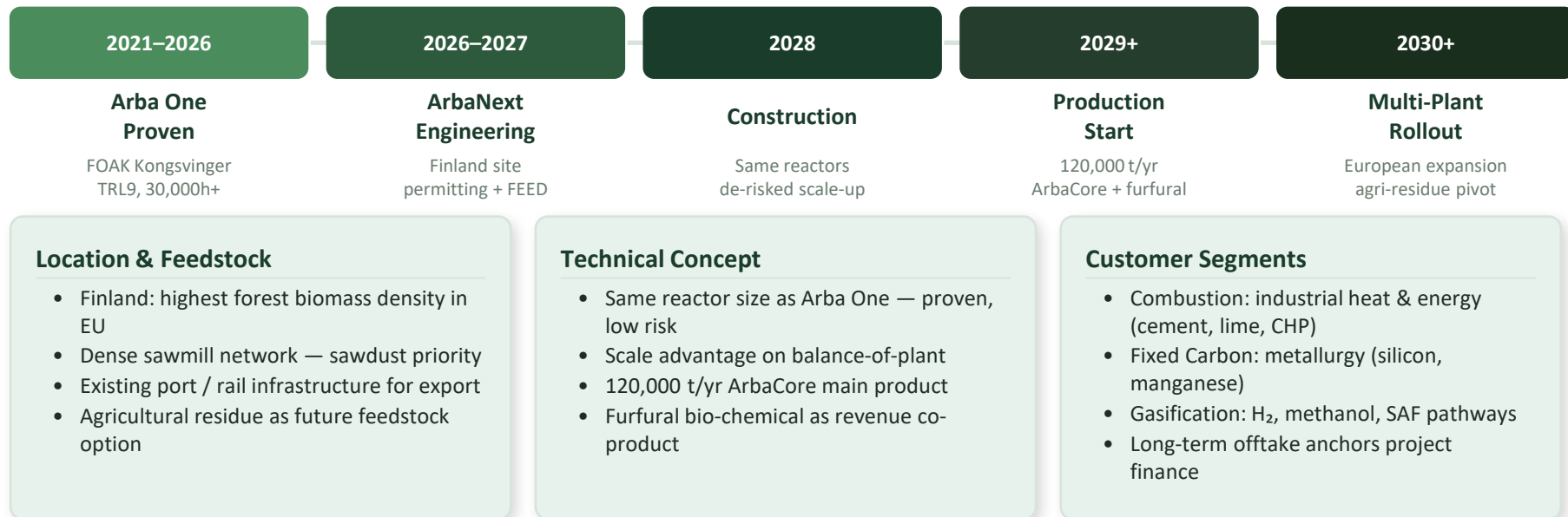


Source: Carbometrix Carbon Footprint Report 2025

SBP certification is the gateway to European regulated industrial procurement. It is also the mechanism by which downstream customers demonstrate RED III compliance to regulators

# ArbaNext — Finland & the Path to European Scale

Planned 120,000 t/yr plant — 2 × Arba One capacity — targeting European industrial market from 2029



Triggers for making the final investment decision: Long-term offtake and feedstock supply



# Thank You

*Questions Welcome*

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World's largest producer of steam-treated black pellets · 30,000+ operating hours · SBP & RED III certified