


3R-BioPhosphate Ltd.



3R Recycle - Recover - Reuse From Circular Thinking to Energy Independence





Pioneering Zero Emission,
Energy Independent Pyrolysis and
Nutrient Recovery Technology with
Premium Products for
Diverse Industrial Markets

3R-BioPhosphate Ltd. Who We Are

3R-BioPhosphate Ltd., established in 1989, is a technology-intensive, innovation-driven company **specialised in the development and industrialisation of high-value biomass upcycling solutions**. With its proprietary 3R Zero Emission & Energy-Independent Pyrolysis Technology, the company transforms unexploited agricultural and food industry by-products into market-competitive, eco-safe and high-performance products. Our flagship innovation is the ABC Animal Bone Char BioPhosphate – a natural, safe, and EU REACH certified BioPhosphate fertiliser and adsorbent – created through a high-temperature carbon refinery.

Proven Technology & Track Record

- Joint venture origin with **ALSTOM Power** subsidy (Lang Machine Works, est. 1870).
- Independent company since **2002**.
- Coordinator and lead technology designer of numerous **international RTD programs** under **EU FP5, FP6, FP7, CIP Ecoinnovation, and H2020**.
- Full **industrial demonstration, Authority-permitted, and REACH-certified** technology.
- **Post-TRL8 status (2025)** and ready for **global market replication**.

Our Mission

To provide sustainable, circular, and profitable solutions that convert low-value organic waste into premium regenerative bio-fertilizers, green energy, and water purification materials—serving the growing global need for food security soil regeneration, and climate-smart agriculture.

3R Management: Global Expertise, Proven Results



Edward Someus
CEO,
Inventor,
Upcycling
Engineer

The 3R team brings over 25 years of leadership in pyrolysis technology and nutrient recovery, blending industrial engineering, technology development, market strategy, and knowledge management into a single high-performance force. Our members have strong, more than 25 years, backgrounds in industrial engineering, technology development, business and marketing strategy, financial planning and knowledge management.

Fully prepared for TRL9 operations, the team demonstrates technical, commercial and financial readiness, **and a clear focus on value creation, we deliver both profitability and sustainable impact**. Passionate, motivated, and united by a long-term growth vision, our transparent and collaborative culture drives innovation that sets global benchmarks and ensuring effective collaboration, innovation, and sustained success.

Our Core Competence: BioPhosphate

Our BioPhosphate product is a highly concentrated natural phosphorus fertilizer and advanced water treatment adsorbent derived from food-grade animal bones.

- High nutrient density: 35% P₂O₅, 37% Ca.
- Zero contaminants: No Cadmium, no Uranium. Safe for open ecological application.
- Dual function: Slow-release, plant-available phosphorus and water treatment adsorbent.
- Full REACH registered. Meet EU Fertilizing Products Regulation 2019/1009 in several PFCs and CMCs. Also meet US, UK, and JP standards. Carbon-negative product.
- BioPhosphate provides a secure, local, renewable source of this critical raw material.

Diverse Portfolio of High Added-Value Upcycled Products

The 3R technology delivers a range of advanced, market-ready products:

- 1. ABC BioPhosphate Fertiliser:** A premium, phosphorus-rich organic fertiliser made from food-grade animal bones. Produced via chemical-free, advanced zero-emission and energy independent 3R-pyrolysis. ABC BioPhosphate is a clean alternative to cadmium- and uranium-contaminated, fossil energy-intensive mineral fertilisers. It supports drought-resilient and organic farming and is also suitable for water purification applications.
- 2. Green Ammonia & Hydrogen:** Extracted from refined bone oil. This renewable input supports green hydrogen and ammonium nitrate production.
- 3. Advanced Adsorbents:** Designed for industrial and municipal water treatment, delivering effective environmental purification.
- 4. Recovered Bioenergy:** Self-generated renewable energy for on-site or farm-level use, enhancing operational profitability in circular industrial symbiosis.

Key Assets

3R Integrated Infrastructure for Sustainable and Circular Solutions:

1. Advanced Pyrolysis Demonstration Facility

- TRL8-level, innovative 3R pyrolysis system. Regional throughput: 2,000 t/y of food-grade Cat. 3 cattle bone meal. Output: ABC (Animal Bone Char) biochar for BioPhosphate production.

2. High-Value Agro-Biotech Fermentation Laboratory

- Fully equipped for fungal-based bioprocessing
- Specialised in biotech operations for producing multifunctional formulated BioPhosphate

3. Composting Facility

- Capacity: 1,000 t/y for integrated co-processing of green compost, straw, and horse manure

4. On-Site Analytical Laboratory

- Quality and safety testing for: (i) Food crops, soil, and water, (ii) Agri food by-products, (iii) Biochar, BioPhosphate, compost.

5. Agricultural Training & Outreach Centre

- Capacity: 125 visitors per event/day
- Practical demonstrations of 3R BioPhosphate technology

6. Self-Sustaining Circular BioGarden

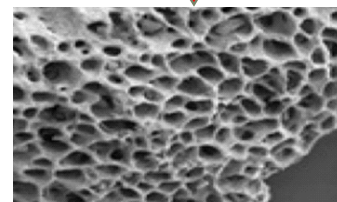
- Showcasing BioPhosphate product applications for end-user



Food grade bone grit
Raw materials sources from the EU. Unexploited biomass resources.



3R Technology
Zero emission and energy independent pyrolysis.
Operates at 850°C.



Animal Bone Char BioPhosphate

Bio-fertilizers
Adsorbents
Green Ammonia
Green energy

**Growing Nature,
Closing Cycles,
Opening Markets**

Business Opportunity:

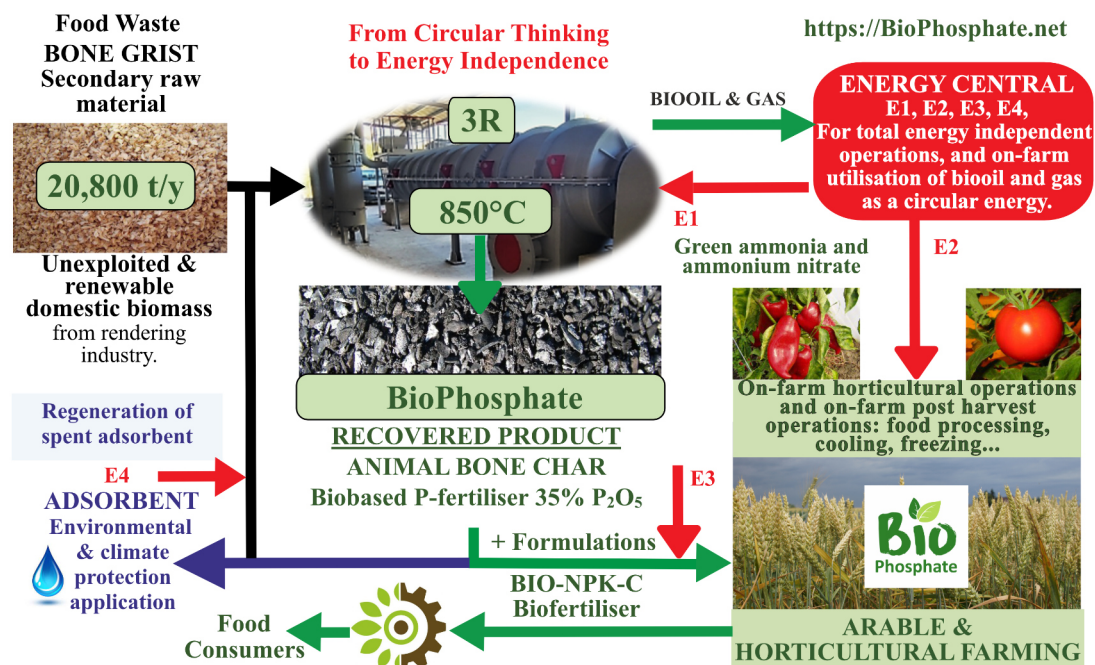
Scaling the Future of Sustainable Agriculture, Clean Water & Green Energy

We invite strategic partners to join us in replicating and expanding our 3R Zero Emission Pyrolysis Technology, ABC-BioPhosphate fertilisers, and advanced bio-based adsorbents on an international scale. **This unique business opportunity offers access to a commercially proven, certified, and future-ready system that delivers both economic and environmental value.** By partnering with us, you gain:

- Full technical know-how & turnkey implementation support, ensuring smooth project development and operational success.
- Field-demonstrated, certified technology, validated across Europe under diverse soil and climate conditions. Original invention, solely owned and protected under multi-layer IPR
- TRL8+ industrial readiness with full EU certification and permits
- Zero emission & energy-independent processing
- Scalable model: Modular systems from 2,000 t/y to 20,000+ t/y industrial capacity
- Market-driven applications in fertilisation, water treatment and green energy
- Unique dual-market positioning:
 - **Contaminant-free, bio-based BioPhosphate bio-fertiliser products** replacing harmful & energy intensive chemical fertilizers.
 - **High-performance adsorbents** for complex industrial water purification and environmental protection.
- High returns with minimized risk, supported by a conservative investment strategy, rapid ROI cycles, and access to expanding agricultural and environmental markets.
- Robust project security, including industrial insurance and reinsurance programs for maximum investor confidence.

This is more than a business opportunity—it is a chance to lead the transition toward sustainable, circular, and profitable agriculture and water management, backed by a technology with proven scalability and global demand.

ECONOMICAL, SUSTAINABLE & ZERO EMISSION "3R" BIOPHOSPHATE RECOVERY
PREVENT Water Contamination, PROTECT Water Resources & RECOVER Clean Water



Economy Meets Sustainability: Circular Solutions for a Profitable Future



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**Bio
Phosphate**