

Engineering Powerful Solutions for Water & Air Challenges

Q4 | 2025

The World Is Changing

Industries face rising pressure to protect the environment, meet tougher regulations, and respond to more demanding communities

- Social Pressure
- Environmental responsibility
& License to operate
- Compliance risk
 - Urban Waste Water Treatment Directive, Industrial Emissions Directive, Fit for 55 package

48%

global wastewater
untreated

2.3B

people
water-stressed



Old Solutions Are No Longer Enough

Traditional systems are costly, inefficient, and unsustainable, while the need for clean water and air grows every day

By 2050, 40% more water will be needed for food, energy, and industry...

Expensive

✗ High CAPEX

✗ High OPEX

✗ Lifecycle costs

...for municipalities and industries, traditional treatment feels like a never-ending cost center

Cities and industries face stricter air quality rules (e.g. EU Industrial Emissions Directive)...

Slow to Implement

✗ Construction delays

✗ Permitting barriers

✗ Inflexibility

...by the time a conventional system is operational, regulations or business needs may already have changed

Traditional systems drive costs up and often produce secondary pollution streams...

Hard to Scale

✗ Emerging pollutants

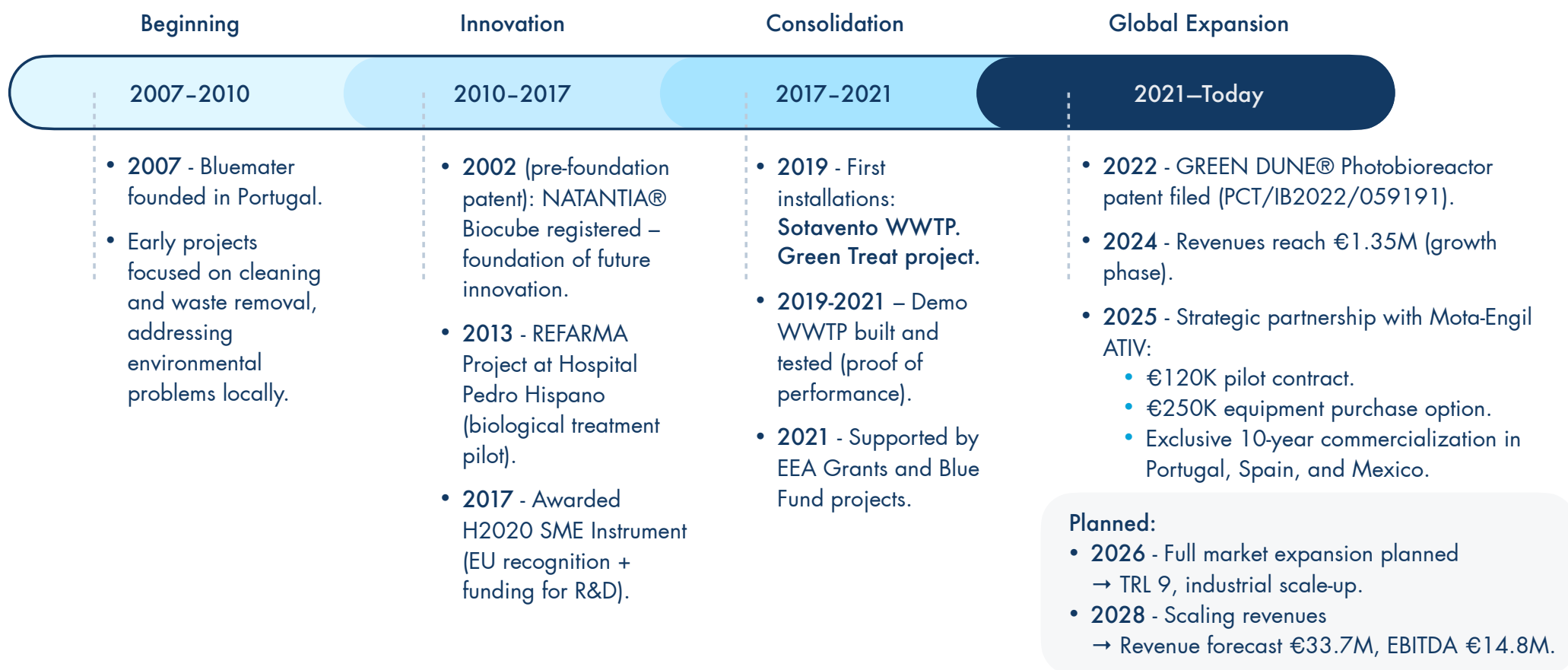
✗ Climate performance

✗ Air/gas treatment

...they fall short of meeting modern sustainability targets and "next-generation" environmental directives

From Local Initiative to Global Force

Born in 2007 as a project for waste removal, Bluemater has evolved into a consolidated company leading eco-efficient innovation





Our mission is simple but powerful:

**To make
clean
technology a
competitive
advantage.**

Our solution:



Reduce
expenses



Improve
efficiency



Help companies
stay competitive while
protecting the planet

Innovation. Technology. Design.

Every Bluemater solution is holistic, customized, and engineered to solve each client's unique challenges

Thinking Beyond Conventional Limits

Bluemater doesn't just adapt existing technologies; it invents.

Patents like NATANTIA® Biocube (2002), SYCON® Biotower (2017), and the GREEN DUNE® Photobioreactor (2022, patent pending) show a consistent track record of original R&D

Engineering Eco-Efficiency

Bluemater's solutions are modular, chemical-free, and energy-efficient

Every system is built to lower CAPEX and OPEX:

- 50%** lower operational costs
- 60%** faster construction & installation
- 80%** lower maintenance

Solutions That Fit Real Life

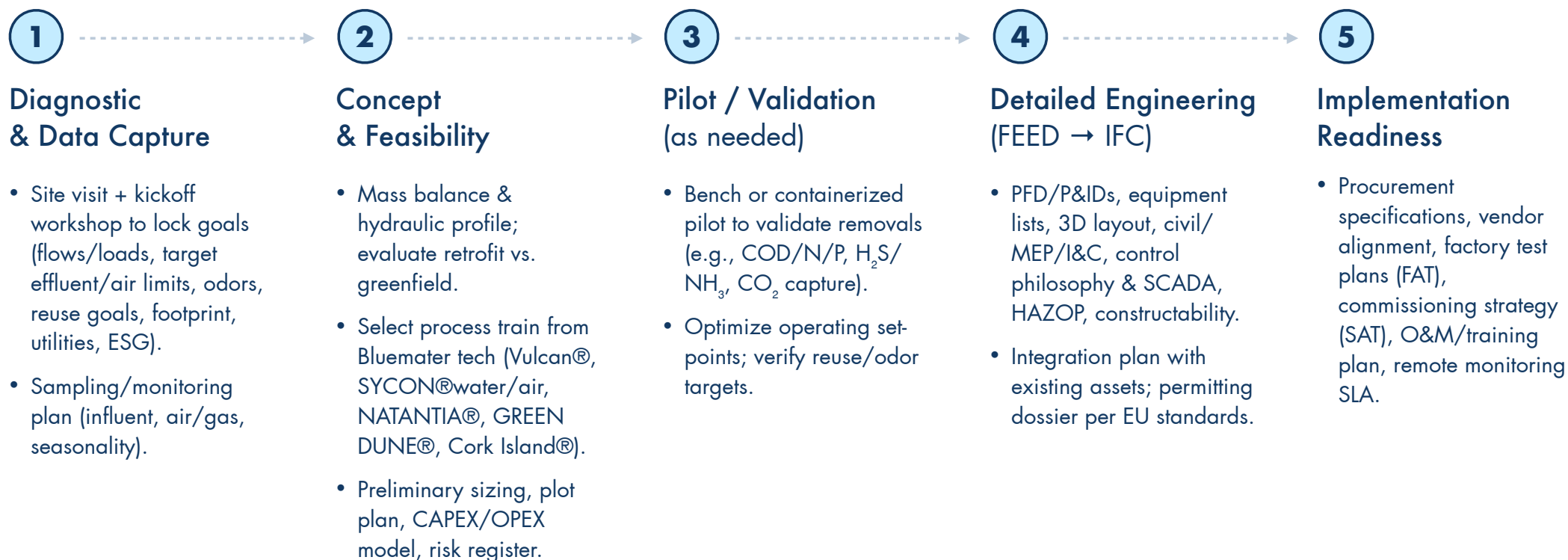
Design here means usability and adaptability

Plants that require less space:

- Systems that integrate with existing infrastructure.
- Products that require little energy and minimal operator training

No Silos – A Holistic Approach

Instead of “one-size-fits-all” equipment, Bluemater combines technologies into customized ecosystems



This integrated mindset allows Bluemater to address the full environmental challenge (water, air, odor, emissions) in a way traditional suppliers can't.

Certified European Quality

Patent-protected, certified, and manufactured to European standards. Ensuring durability, reliability, and global trust



A trusted European brand.

Not experimental tech

- All Bluemater solutions are conceived, engineered, and manufactured in Portugal and follow strict EU certification protocols.

Exclusive Technologies

NATANTIA® Biocube (2002)

One of the earliest modular biological filters, patented well before sustainability became mainstream.

GREEN DUNE® Photobioreactor (International Patent Pending – PCT/IB2022/059191)

A next-gen system that captures CO₂, removes nutrients, and valorizes biomass.

SYCON® Biotower (Patent N°108472)

A modular tower system for wastewater and air, lowering energy use and space needs.

Cork Floating Island® (National Utility Model N°12351)

A nature-based, zero-energy water treatment solution leveraging Portugal's cork industry.

Exclusive Technologies with No Equivalent

From photobioreactors to floating islands, Bluemater products deliver performance no competitor can match



VULCAN® FLOTATOR

Advanced flotation and oxidation with low energy use.



NATANTIA® BIOCUBE

Patented biological filters for maximum efficiency and easy integration.



GREEN DUNE® PHOTOBIOREACTOR

CO₂ capture, nutrient & emerging-pollutant removal, biomass valorization.



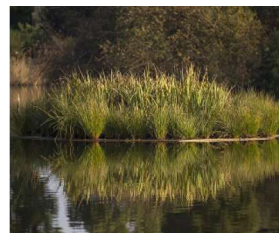
SYCON®WATER BIOLOGICAL TOWER

Modular biological wastewater treatment with small footprint and no chemical additives



SYCON®AIR BIOTOWER

High-efficiency odor & gas treatment (H₂S/NH₃), countercurrent design with organic media, low OPEX/water use, compact layout.



CORK FLOATING ISLAND®

Nature-based bioremediation with zero energy cost.

Tailored for Real-World Impact

Our systems help clients cut emissions, comply with strict regulations, and secure their license to operate, while lowering total treatment costs

Bluemater focuses on sectors with high environmental footprint and strict compliance needs

Municipalities

Landfills &
Composting
Centers

Agriculture &
Food
Production

Food &
Beverage
Processing

Healthcare

Hospitality

Heavy
Industry

Emissions reduction

Treating CO₂, CH₄, odors, and
air pollutants at the source.

Regulatory compliance

Meeting EU directives (e.g. Urban
Wastewater Directive, Industrial
Emissions Directive), which are
tightening every year.

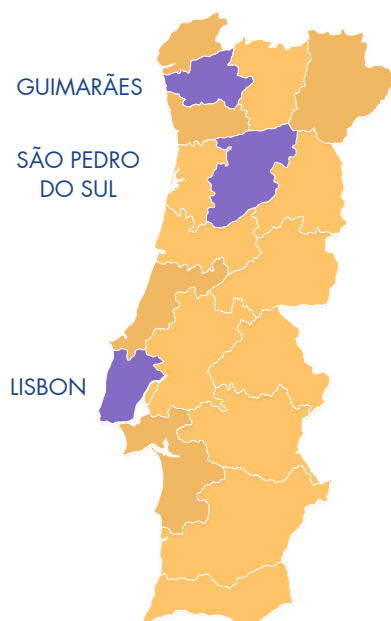
License to operate

Securing approvals, avoiding
penalties, and maintaining
community acceptance.

Track Record of Success

For years, Bluemater operated mainly in Portugal, validating its solutions with municipalities and industry leaders

Municipality Clients



Industry leaders



Flagship projects

- ★ Sotavento landfill WWTP
- ★ Senhor Bacalhau WWTP
- ★ BM Demo WWTP.

R&D collaborations



Global Trust

Consolidating leadership with operations and partnerships in Europe, Asia, and beyond. We're on a path to global industry leadership

Strategic Agreement (2025)

10-year exclusive commercialization with Mota-Engil ATIV (Portugal, Spain, Mexico).

Growth Trajectory

- Revenues: €1.35M → €33.7M (2024–2028).
- EBITDA: €696K → €14.8M.
- IRR: 41% | Payback: <5 years.

Bluemater's expansion story is twofold

- **Strategic:** from a local innovator to a global partner (Europe + LatAm + Africa).
- **Financial:** from €1.35M revenue to €33.7M in just 4 years, delivering investor-grade returns with defensible IP.



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Vulcan® Flotator

Category:

Wastewater Treatment – Advanced Flotation & Oxidation

Patent/IP Status: Proprietary Technology



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Core Function

High-efficiency flotation and oxidation unit designed to separate solids and oxidize organic matter in wastewater with very low energy use.

Applications: Municipal WWTPs, industrial effluents, slaughterhouses, landfills.

Technology Overview

Combines air microbubbles and controlled oxidation in a modular reactor, improving the separation of solids and dissolved organics.

Advantages

Low energy
consumption

High solids & fat
removal efficiency

Compact
footprint

Modular
integration with
other Bluemater
systems

Performance & Validation

Removes oils, greases, and suspended solids effectively

Tested in slaughterhouse wastewater treatment plants

TRL: 8–9 (field validated)

Sustainability

Supports circular
economy by enabling
downstream reuse

Lower sludge
production

Chemical-free
operation

made in portugal

NATANTIA® Biocube

Category:

Wastewater Treatment – Biofilm Support Media

Patent/IP Status: PATENTED N° 103043



Core Function

A patented structured percolator media designed to optimize biofilm growth for wastewater treatment.

Applications: Municipal WWTPs, aquaculture, food processing industries.

Technology Overview

Polypropylene modular plates arranged helicoidally to maximize water-biofilm contact and reduce clogging. Enables high surface area (>290–350 m²/m³) for microbial degradation of organics and nutrients.

Advantages

High surface-to-volume ratio

Low energy demand

High COD, BOD, N and P removal efficiency

Modular and lightweight for easy installation

Performance & Validation

Successfully applied in aquaculture and bacalhau processing effluents

TRL: 9 (commercial)

Specifications

Dimensions: 10×10×1.25 cm or 50×50×2.5 cm plates

Material: Resistant polypropylene

Sustainability

Long lifespan
(10+ years)

Fully recyclable
components

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SYCON®water Biological Tower

Category:

Wastewater Treatment – Secondary Biological Filtration

Patent/IP Status: PATENTED – N° 108472 (Portugal)



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Core Function

A biological percolator tower designed for aerobic treatment of wastewater. It removes organic matter and supports nitrification/denitrification, making it ideal for secondary effluent treatment in WWTPs, landfill leachates, and contaminated water streams.

Applications: Municipal and industrial WWTPs, landfill leachate, food

Technology Overview

The SYCON®water tower is a trickling filter where wastewater is pumped to the top and distributed over NATANTIA® Biocubes. Biofilms on the media degrade organics and nutrients as water percolates. It can be retrofitted into existing plants or combined with other Bluemater mod

Advantages

High COD/BOD
removal (>80–90%)

Nitrification +
denitrification
capacity

Low energy consumption (~4
kWh/day, ~10x lower than
activated sludge)

Performance & Validation

Surface area efficiency: 3 kg BOD/day/m² (Natantia media) vs. <0.6

Demonstrated in Sotavento landfill WWTP and Senhor Bacalhau WWTP

TRL: 9 – Market ready

Specifications

Filling media: NATANTIA® Biocubes (preferred) or equivalent synthetic blocks

Maintenance: Daily operator check, Monthly preventive inspection (Bluemater),

Biennial: corrective maintenance (Bluemater)

made in portugal

SYCON®air Biotower

Category:

Air & Gas Treatment – Biological Tower

Patent/IP Status: PATENTED – N° 108472 (Portugal)



Core Function

A modular biological tower for wastewater and gas treatment using percolating biofilm on synthetic supports.

Applications: WWTPs, odour removal in composting centers, landfill leachate, industrial air emissions.

Technology Overview

Countercurrent flow of gas through a percolator bed colonized by microorganisms. Biofilm degrades H_2S , NH_3 , VOCs, and other odorous compounds.

Advantages

95% H_2S removal	90% ammonia removal	Lower water use vs. chemical scrubbers	Compact design with low OPEX	Outperforms traditional biofilters
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Performance & Validation

Installed in Savinor facilities and wastewater odour control

Complies with EU Directive 2010/75/EU (emissions)

TRL: 9 (market ready)

Specifications

Footprint: Vertical modular tower

Energy: Minimal (airflow only)

Maintenance: Monthly checks, periodic media replacement

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GREEN DUNE® Photobioreactor

Category:

Wastewater & Gas Treatment – Algal Bioreactor

Patent/IP Status: INTERNATIONAL PATENT PENDING N°

PCT/IB2022/059191



Core Function

A photobioreactor using local microalgae consortia for nutrient removal, CO₂ capture, oxygenation, and micropollutant degradation.

Applications: Landfill leachate, industrial wastewater, CO₂-rich gas streams.

Technology Overview

Microalgae capture CO₂ and light to produce O₂, sustaining bacterial communities that degrade pollutants. Nutrients (N, P) are assimilated into biomass, and emerging contaminants (e.g., pharmaceuticals, PFAS) are biodegraded or adsorbed.

Advantages

CO ₂ sequestration and O ₂ release	Removes nutrients and emergent pollutants	Low energy demand vs. membranes/RO	Generates valuable algal biomass
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Performance & Validation

Horizon Europe pilot projects in Portugal, Greece, Turkey

90% N and P removal

TRL: 7–8 (demo → pre-market)

Sustainability

Biomass valorization (biofertilizers, bioenergy)	Net CO ₂ negative technology
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Cork Floating Island®

Category:

Nature-Based Solution – Floating Wetlands

Patent/IP Status: National Utility Model N° 12351



Core Function

A cork-based floating wetland platform supporting macrophytes for phytoremediation and water quality improvement.

Applications: Stormwater ponds, lakes, industrial wastewater polishing, aquaculture.

Technology Overview

Cork rafts host aquatic plants whose roots extend into the water. Roots + microbial biofilm filter nutrients, solids, metals, and micropollutants. Cork provides buoyancy, durability, and sustainability.

Advantages

100% natural and renewable cork substrate

No electricity or chemicals

Removes N, P, organics, metals, and emerging pollutants

Provides habitat and biodiversity benefits

Performance & Validation

N removal up to 77%, P removal up to 74%

Tested in industrial effluents, lakes, and marinas

TRL: 8–9 (pilot and operational)

Specifications

Load: Supports up to 16 kg plants/m²

Life expectancy: ~10 years

Maintenance: Occasional plant harvesting and raft inspection

Sustainability

Negative carbon footprint (cork)

Promotes biodiversity and ecosystem services

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