

# AQUINTAQA

## Executive Summary

**Version 1.1**

**April 2026**

**Pre-NDA Public Summary**

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### 1. Project Overview

AQUINTAQA is developing a desalination platform based on a volumetric gas-sorbent process for the controlled extraction of dissolved salts and related impurities from saline water.

The technology is being developed as an alternative to conventional membrane-based desalination systems. Its core objective is to enable modular, stable, and adaptable treatment of saline feeds through a cyclic physico-chemical process involving gas activation, selective sorption interaction, controlled separation, and regeneration.

AQUINTAQA is currently at the advanced prototype/pre-industrial validation stage. The project is positioned for the next phase of integrated pilot execution and institutional partnership development.

### 2. Technology Concept

The process architecture includes the following functional stages:

- Gas phase activation module
- Sorption media interaction chamber
- Controlled separation stage
- Regeneration and recirculation loop

Unlike membrane filtration systems, AQUINTAQA operates in volumetric mode rather than through surface barrier separation. The process is designed around controlled physico-chemical interaction within the water volume, with selective extraction and subsequent regeneration of the active medium.

Core operating principles have been confirmed through laboratory and prototype validation programs.

### 3. Why AQUINTAQA Is Different

AQUINTAQA is being developed to address structural limitations commonly associated with conventional desalination platforms, particularly membrane-dependent systems.

Its public positioning is based on the following engineering directions:

- **Membrane-free process logic**  
The platform is not based on reverse osmosis membranes and is therefore not architecturally dependent on surface filtration as the primary separation mechanism.
- **Volumetric mass-transfer approach**  
Salt extraction is pursued through controlled interaction within the liquid phase rather than exclusively through pressure-driven passage across a membrane barrier.
- **Adaptability to variable feed conditions**  
The system is being developed for operation across a range of saline feeds, with emphasis on process stability, modularity, and configuration flexibility.
- **Regeneration-based operating architecture**  
The process concept includes regeneration and recirculation logic intended to support cyclical operation and system refinement at pilot and industrial design stages.

AQUINTAQA does not present itself as a theoretical alternative. It is being developed as an engineering platform with experimentally grounded operating logic and staged validation history.

### 4. Development Status

The project has progressed through staged experimental validation.

**Current public-scope status includes:**

- Core principle experimentally confirmed
- Repeatable directional salt removal demonstrated
- Prototype subsystems assembled and tested
- Controlled sample conditions verified

- Pilot and prototype operating experience accumulated across multiple test stages

**Extended validation available under NDA includes:**

- Integrated pilot configuration
- Multi-feed testing
- Continuous operating cycles with cumulative runtime exceeding 800 hours
- Independent laboratory analysis of selected before/after test cycles
- Expanded technical documentation and structured validation records

Detailed technical materials are available in the secure Data Room under confidentiality agreement.

## **5. Public Validation Signals**

Without disclosing protected process parameters, AQUINTAQA may publicly state the following validation-oriented signals:

- Directional salt-reduction performance has been demonstrated across staged laboratory and prototype testing
- Repeatability has been observed under controlled test conditions
- Independent third-party laboratory assessments have been completed for selected cycles
- Product-water recovery in selected configurations has reached up to 98%, depending on feed characteristics and operating conditions

These signals are intended to confirm that the platform has progressed beyond conceptual hypothesis and is supported by accumulated technical evidence. Detailed protocols, feed conditions, operating windows, and full analytical packages remain NDA-restricted.

## **6. Validation and Compliance Orientation**

Testing has been conducted under controlled laboratory conditions and pilot-type environments.

Measured and evaluated parameters include:

- Conductivity reduction
- Salinity concentration change
- Repeatability across operating cycles

- Stability across feed variations
- Selected before/after laboratory analysis

The platform is being developed with reference to major international potable-water frameworks, including:

- WHO guidelines
- EU drinking water directives
- US EPA standards

Formal certification programs have not yet commenced. At the current stage, AQUINTAQA's compliance orientation is benchmark-driven rather than certification-driven.

## **7. Engineering and Deployment Status**

The system architecture has been defined at prototype level, and the project is transitioning toward the next technical phase.

Key near-term engineering priorities include:

- Industrial engineering design
- Process optimization
- Modular scaling assessment
- Integrated system refinement
- Pilot configuration hardening for extended continuous operation

No commercial-scale deployment has yet been executed. The next execution milestone is an institutional-grade pilot demonstrating operational continuity, analytical discipline, and reproducible technical performance under a structured program.

## **8. Current Objective and Next Milestone**

AQUINTAQA's current institutional objective is to complete the next validation step between advanced prototype status and commercial deployment readiness.

The immediate milestone is the execution of a robust pilot program designed to:

- confirm engineering stability under extended operation,
- expand the evidence base across representative saline feeds,
- generate institution-ready reporting, and

- prepare the platform for the next phase of industrial partnership and capital formation.

At this stage, the project is not seeking generic visibility. It is seeking technically competent counterparties capable of engaging with a serious validation program.

## **9. Counterparties and Engagement Pathways**

AQUINTAQA is open to discussions with selected institutional counterparties, including:

- strategic investors in water, industrial process, climate, and infrastructure technologies,
- pilot hosts and industrial validation partners,
- engineering and integration partners,
- desalination, water-treatment, and process-industry stakeholders,
- family offices and specialist capital with a long-horizon deep-tech profile.

Engagement is structured in stages:

1. Public pre-NDA review
2. Mutual interest assessment
3. Confidentiality agreement
4. Access to the secure Data Room
5. Technical and institutional discussion on pilot format, scope, and cooperation pathway

The company is interested in informed dialogue rather than broad speculative circulation.

## **10. Organizational Structure**

The project is supported by an international team of engineers and researchers with backgrounds in:

- Chemical engineering
- Process design
- Fluid systems
- Applied physics

Operational and advisory roles are established internally but are not publicly detailed at this stage.

## **11. Intellectual Property and Confidentiality**

The technological framework, process design logic, validation documentation, and operating know-how are subject to structured internal IP protection and confidentiality controls.

At the current stage, AQUINTAQA's protection approach includes controlled documentation, restricted technical disclosure, and NDA-based access management. Specific protection architecture and supporting materials are disclosed selectively in a confidential setting.

## **12. Scope of This Document**

This Executive Summary is a public pre-NDA document intended to provide a high-level institutional overview of the project. It does not include:

- financial projections,
- capital structure,
- detailed business model scenarios,
- partnership terms,
- protected operating parameters,
- full validation datasets, or
- confidential technical documentation.

These matters are addressed individually with qualified counterparties under appropriate confidentiality arrangements.

## **13. Contact**

For institutional inquiries:

[info@aquintaqa.com](mailto:info@aquintaqa.com)

AQUINTAQA Group Ltd

20 Wenlock Road

London

N1 7GU

England

Access to extended technical documentation is available upon execution of an NDA.