

Non-confidential Opportunity

Stationary Electrochemical Platform with Controlled Electrolyte

KETs2026 B2B / Industrial Investor Overview



Purpose: identify industrial and R&D; partners for feasibility assessment, modelling, laboratory validation, prototype design and pilot demonstration. This presentation deliberately avoids confidential implementation details.

1. Opportunity snapshot

Project stage	Early-stage concept / feasibility planning (experimental validation required).
Concept	A modular stationary electrochemical reactor combining porous carbon-based media, replaceable electrodes, aqueous circulating electrolyte and automated electrolyte control.
Potential value	Long-duration stationary storage, renewable-energy buffering, industrial energy management and possible heat-recovery coupling.
Partnership sought	Co-development, feasibility study, Horizon Europe consortium, testing partner, demonstrator partner or industrial investor.

The concept targets the need for safer, maintainable and potentially recyclable stationary storage solutions. It should be positioned as a research and co-development opportunity, not as a finished commercial battery.

2. Non-confidential technical principle

- Electrochemical modules assembled in series or parallel to adapt voltage, power and capacity.
- Porous conductive media such as activated carbon, graphite granules or ceramic structures to support ion exchange and reaction surfaces.
- Controlled aqueous electrolyte circulating through the system, with automated monitoring of pH, conductivity, temperature, flow, voltage and current.
- Maintenance concept based on replaceable electrodes, filtration, electrolyte correction and diagnostic monitoring.
- Possible hybrid carbon-redox pathway combining capacitive storage and dissolved redox species in an aqueous medium.

3. Why it fits KETs2026

KETs2026 explicitly addresses Energy Storage (Battery Value Chain and Hydrogen), Advanced Materials, Manufacturing, Circularity and Energy-Intensive Industries. The project should be proposed mainly in the Energy Storage workshop, with secondary relevance to Advanced Materials and Manufacturing.

4. Most relevant KETs2026 participants to approach

Target	Meeting rationale
ABB / ABB AG	Large-enterprise priority for grid integration, industrial energy management, control systems and power conversion.
ADDEV Materials	Materials-processing SME potentially relevant for electrodes, separators, coatings, seals and manufacturable components.
CRM Group	Advanced materials and industrial-process R&D; fit for electrode and validation work packages.
CTAG	Testing, validation and battery-demonstration profile; useful for independent evaluation.
Nowocert	Certification/testing angle for safety, compliance and renewable-energy/battery assessment.
Steinbeis Europa Zentrum / BayFOR / Auvergne-Rhone-Alpes Entreprises	Consortium-building, proposal support and partner-search support.
Aalto University / AIMPLAS / AIR Institute	R&D; and modelling partners for materials, circularity, AI-enabled optimisation and battery-related testing.

Target	Meeting rationale
Swarovski	Industrial use-case partner for energy-intensive industry validation rather than battery technology development.

5. Partnership offer for the KETs2026 platform

Opportunity title: Modular stationary electrochemical storage platform with controlled aqueous electrolyte

Short description: Seeking industrial and R&D; partners to assess and prototype a modular electrochemical storage platform combining porous carbon materials, circulating aqueous electrolyte, replaceable electrodes and automated electrolyte control for renewable-energy and industrial-storage applications.

What is needed:

- Electrochemical feasibility and electrolyte screening.
- Porous carbon, graphite, ceramic or membrane materials expertise.
- Hydraulic, thermal and stack mechanical design.
- Power electronics, sensors and digital control.
- Pilot site for stationary storage use case.

Development roadmap:

- Phase 1: electrochemical model, safety pre-assessment and partner due diligence.
- Phase 2: laboratory cells and materials screening.
- Phase 3: controlled prototype with sensors, pumps and electrolyte management.
- Phase 4: kW-scale demonstrator.
- Phase 5: pilot installation for renewable-energy or industrial storage.

6. Honest technical validation points

- Select stable aqueous redox chemistry and manage solubility limits.
- Measure round-trip efficiency, pumping losses and internal resistance.
- Verify membrane/separator resistance, durability and fouling behaviour.
- Assess corrosion, gas evolution, pressure, leakage and emergency shutdown requirements.
- Quantify cost per delivered kWh over lifetime and recyclability route.

7. Suggested B2B meeting request text

I would like to discuss a non-confidential early-stage opportunity for a stationary electrochemical storage platform with controlled aqueous electrolyte. I am seeking partners for feasibility, electrochemical testing, advanced materials, control systems, demonstrator design and potential Horizon Europe consortium development. A first meeting can remain fully non-confidential and focused on fit, technical risks and possible next steps.

8. Sources used for public positioning

- KETs2026 B2Match home page: event scope includes Energy Storage, Batteries, Hydrogen, Manufacturing, Advanced Materials, AI and ICT.
- KETs2026 workshops page: WS 4 Energy Storage (Battery & Hydrogen), WS 6 Advanced Materials, WS 1 Manufacturing & Circularity & Energy-Intensive Industries.
- KETs2026 companies page: public participant profiles include ABB, ABB AG, ADDEV Materials and other organisations aligned with energy, batteries and advanced materials.
- Uploaded invention document: stationary electrochemical platform with modular cells, controlled electrolyte, porous conductive materials and a validation roadmap.

Document status: non-confidential summary for initial outreach only. Technical performance ranges remain hypotheses pending experimental validation.