## Greenet



The network of Horizon Europe Cluster 5 National Contact Point.









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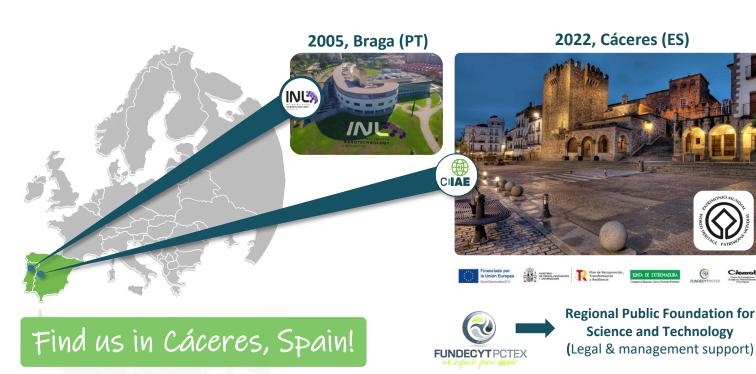
**GREENET Brokerage Event 6th May 2025** 



# Greenet

Iberian
Centre for
Research
in Energy
Storage
(CIIAE)









>80 M€ initial funding



>100 researchers & engineers (130 by 2026)



Publicprivate financing strategy





https://ciiae.org/





# 3 Technological Pillars (TRL 2 up to TRL 7)



#### **Electricity** Storage

- Advanced batteries (metal-Air, Zn-Air; Li-ion; Na-ion; flow batteries)
- Circular economy (degradation, second life, recycling process, incorporation of secondary raw materials)
- Supercapacitors (micro SC, hybrids SC, isolation for high voltage)



#### Thermal **Storage**

- · Sensible heat (molten salts, nanofluids, HTF)
- · Latent heat (PCMs; solid-solid and solid-liquid transitions)
- Thermochemical heat (chemical sorption and physical sorption)
- · Integration of materials, components and engineering systems for heat storage in buildings and industries



#### H<sub>2</sub> and Power-to-X

- Low and high temp. electrolysers and fuel cells (AEL, AEM, PEM, r-SOC, co-SOEC, PCEL)
- Hydrogen storage and transport
- CO<sub>2</sub> capture and uses (DAC)
- Catalysis for chemical and synthetic fuels (CO<sub>2</sub> hydrogenation, methanol and NH<sub>3</sub> synthesis, electro-, photoand photoelectro- CO<sub>2</sub> reduction)



#### + 5 Pilot plants (TRL 5 up to TRL 6)

1 Redox flow battery

2 Thermal storage 3 Hydrogen and power-to-X 4 Circular economy 5 Microgrid



### + Cross-cutting (TRL 2 up to TRL 7)

Atomistic simulations, CFD modelling, Prototyping, Techno-economic analysis, LCA, Regulation









A Circular and Chemistry-Neutral Approach for Recycling and Recovery of Battery Waste Feeds

**Coordinator: INSTM, IT** 

https://renovate-project.eu/ HORIZON-CL5-2023-D2-01



Syngas Modular Units Providing Renewable Energy From Multiple Wastes and For Different Uses

Coordinator: RINA Consulting SPA, IT

https://www.supremas.eu/ HORIZON-CL5-2023-D3-03

Clusters 4 and 5



Alternative Routes for Basic Chemicals Productions Using Hydrogen as Feedstock

Coordinator: CIRCE Centro Tecnológico, ES https://alchemhyproject.eu/ HORIZON-CL4-2024-TWIN-

**TRANSITION-01** 

Ongoing Collaborative European Projects

#### **Roles of CIIAE:**

- Research performer
- Technology developer
- Provision of research and technology infrastructure
- Provision of demonstrators
- Project Management
- Communication and training



For Tunable Thermochemical Energy Storage

<u>Coordinator:</u> Eindhoven University of Technology, NL

https://4tunates.eu/

EIC Pathfinder Open 2023



Solid-state PCMs for Advanced energy Recovery and Key thermal control in electronics

Coordinator: CIIAE, ES

EIC Pathfinder Challenge 2024

**EIC Pathfinder** 







## **Collaboration Areas of Interest**

Destination 2. Crosssectoral solutions for the climate transition Electrical Energy Storage Derpartment
Thermal Energy Storage Department
Hydrogen and Power-to-X Department
Cross-Cutting lines

Destination 3.
Sustainable, secure and competitive energy supply

Hydrogen and Power-to-X Department
Thermal Energy Storage Department (Offering a DEMO)
Cross-Cutting lines

Destination 4.
Efficient, sustainable and inclusive energy use (Call 2026)

Thermal Energy Storage Department (Offering a DEMO) Cross-Cutting lines

Destination 5. Clean and competitive solutions for all transport modes

Electrical Energy Storage Derpartment
Thermal Energy Storage Department
Cross-Cutting lines

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# Thank you for your attention!

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