

# Greenet



The network of Horizon Europe  
Cluster 5 National Contact Point.



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## GREENET Brokerage Event 6th May 2025



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# Greenet



## Iberian Centre for Research in Energy Storage (CIIAE)



<https://ciiae.org/>

2005, Braga (PT)



2022, Cáceres (ES)



Find us in *Cáceres, Spain!*



FUNDECYT PCTEX  
*un espacio para crecer*

Regional Public Foundation for  
Science and Technology  
(Legal & management support)



4<sup>th</sup> Nov.  
2022



>80 M€  
initial  
funding



>100  
researchers &  
engineers  
(130 by 2026)



Public-  
private  
financing  
strategy



## 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. electrolyzers 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-, photo- and 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

# Iberian Centre for Research in Energy Storage (CIIAE)



**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>



**Alternative Routes for Basic Chemicals Productions Using Hydrogen as Feedstock**

Coordinator: CIRCE Centro Tecnológico, ES  
<https://alchemhyproject.eu/HORIZON-CL4-2024-TWIN-TRANSITION-01>

Clusters 4 and 5

## 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**

Coordinator: 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

Ongoing  
Collaborative  
European  
Projects





# Collaboration Areas of Interest

## **Destination 2. Cross-sectoral solutions for the climate transition**

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



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<https://ciiae.org/>

**Thank you for your  
attention!**

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