HORIZON-CL5-2026-03-D3-22: Novel solutions for off-grid storage of renewable energy for critical infrastructures

Call: Cluster 5 Call 03-2026 (WP2026-2027)	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). Subject to restrictions for the protection of European communication networks.
Technology Readiness Level	Activities are expected to achieve TRL 4-5 by the end of the project – see General Annex B. Activities may start at any TRL.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [1].

Expected Outcome: Project results are expected to contribute to all the following expected outcomes:

[1] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- Enhanced European knowledge and leadership in off-grid clean energy storage technologies.
- Improved energy security and cost-effectiveness of Europe's energy systems, particularly for critical infrastructure.
- Elimination of fossil-based backup solutions for critical infrastructures, strengthening European competitiveness.

Scope: The topic aims to develop novel, cost-efficient off-grid energy storage solutions for renewable energy, tailored for critical infrastructures such as hospitals, transport hubs, data centres, and utilities. Solutions should address challenges specific to off-grid or non-interconnected area contexts, including storage scale, compromised grid interaction, resilience to potential shortages of critical materials, and multi-energy needs (electricity, heating, cooling). Emphasis should be on robustness and error-freeness, while considering sustainability, efficiency and performance. The project should foresee these solutions for using real-world critical infrastructures through simulation and experiments and establishing a procedure for decision-making, focusing on energy security and resilience against high-impact, low-probability events, by ensuring operational efficiency both on-grid and off-grid. Where relevant, interdependencies among critical infrastructures and system redundancy should be considered.

Projects are encouraged to support the reconstruction of Ukraine by including Ukrainian beneficiaries.