El autoconsumo como vector para la integración del almacenamiento en el sistema eléctrico. Necesidad de incrementar la aceptación de lo usuarios y mejorar sus funcionalidades

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BATTERYPLAT

Call: Cross-sectoral solutions for the climate transition

Clean and sustainable transition of the energy and transport sectors towards climate neutrality facilitated by innovative cross-cutting solutions

The main impacts to be generated by topics targeting the battery value chain under this Destination are:

Accelerated roll out of electrified mobility through increased attractiveness for citizens and businesses, offering lower price, better performance and safety, reliable operation of e-vehicles. **Increased grid flexibility**, **increased share of renewables integration and facilitated self-consumption and participation in energy markets by citizens and businesses**.

- Increased grid flexibility
- Renewable integration
- Self-consumption
- Participation in energy markets

ENERGY STORAGE SYSTEMS

Reto 1: Incrementar la aceptación de lo usuarios

HORIZON-CL5-2021-D2-01-02: "Advanced high-performance Generation 3b (high capacity / high voltage) Li-ion batteries supporting electro mobility and other applications (Batteries Partnership)" – TRL 6

Deadline	Type of action	Indicate project budget	Number of grants	Budget
19/10/2021	RIA	6 to 8 millions	3	24 millions

- **Objective/Scope :** The overarching R&I challenges lie in the development of advanced materials enabling higher energy / power density thanks to higher capacity and/or operating at higher voltage.

- **Impact – Expected outcomes**

  - Advanced Li-ion batteries delivering on cost, performance, safety, sustainability and recyclability, with clear prospects for cost-competitive large-scale manufacturing → For self-consumption as other application than mobility

  - Increase in energy density → Customer's acceptance: very useful for mobility and for increase the use of bateries for self-consumption in residential and commercial.

  - Broader user acceptance leading to a significantly broader market penetration → Integration of batteries for a residential scale and for mobility.

- **Consortium:**

  - Mostly research partners, battery manufacturers and pilots for test the solution in mobility or self-consumption application.

Reto 1: Incrementar la aceptación de lo usuarios

HORIZON-CL5-2021-D2-01-03: "Advanced high-performance Generation 4a, 4b (solid-state) Li-ion batteries supporting electro mobility and other applications (Batteries Partnership)" – TRL 5

Deadline	Type of action	Indicate project budget	Number of grants	Budget
19/10/2021	RIA	8 to 9 millions	4	36 millions

- **Objective/Scope :** The overarching R&I challenges lie in the development of solid-state electrolytes, cathode materials and anode materials enabling higher thermal and electrochemical stability while targeting higher energy / power densities, fast charging, cyclability and improved safety.

- **Impact – Expected outcomes**

  - Advanced Li-ion batteries delivering on cost, performance, safety, sustainability and recyclability, with clear prospects for cost-competitive large-scale manufacturing → For self-consumption as other application than mobility

  - Increase in energy density → Customer's acceptance: very useful for mobility and for increase the use of bateries for self-consumption in residential and commercial.

  - Broader user acceptance leading to a significantly broader market penetration → Integration of batteries for a residential scale and for mobility.

- **Consortium:**

  - Mostly research partners, battery manufacturers and pilots for test the solution in mobility or self-consumption application.

Reto 2: Integración del almacenamiento

HORIZON-CL5-2022-D2-01-04: Towards creating an integrated manufacturing value chain in Europe: from machinery development to plant and site integrated design (Batteries Partnership)" – TRL 6 - 7

Deadline	Type of action	Indicate project budget	Number of grants	Budget
06/09/2022	IA	7 to 8 millions	2	15 millions

- **Objective/Scope :**In order to build globally competitive Li ion battery (LIB) cell production plants in Europe, all the production value chain from machinery to plant and **site development and optimisation** is expected to be considered holistically, from machinery development to plant and site integration and optimisation

- **Impact – Expected outcomes**

  - Strengthening Europe's battery cell industrial manufacturing and denvelopment of new battery cell manufacturing machinery → More resources for increase the storage penetration in EU and better costs for final users

  - Enabling deeper collaboration between (i) battery process equipment companies (ii) industrial-scale cell manufacturing, (iii) material, energy and other supply chain sectors benefitting from sector coupling.

  - To stimulate and intensify the collaboration between pilot line operators, industrial-scale academia, cell manufacturing companies and European equipment companies

- **Consortium:** Mostly battery manufactures

Reto 3: Mejorar las funcionalidades

HORIZON-CL5-2022-D2-01-06: Embedding smart functionalities into battery cells (embedding sensing and self-healing functionalities to monitor and self-repair battery cells) (Batteries Partnership) – TRL 2-4

Deadline	Type of action	Indicate project budget	Number of grants	Budget
06/09/2022	RIA	Around 5 millions	3	15 millions

- **Objective/Scope :** The target of this call is to embed sensors and self-healing functionalities into single battery cell, with sensors being capable to detect defective operation and trigger self-repairing functionalities via the Battery Management System (BMS). → Different pilots should be define to test it.

- **Impact – Expected outcomes**
  - Increased quality, reliability and life (QRL) of the battery system by integrating both sensing and self-healing functionalities at the battery cell level.
  - Disruptive battery cell and battery management system technologies, to support a competitive and sustainable battery manufacturing industry in Europe

- **Consortium:**
  - Research partner (new smart functionalities), pilot partners (testing the new functionalities), industrial partners (integration of the solution)

Reto 3: Mejorar las funcionalidades

HORIZON-CL5-2022-D2-01-09: Physics and data-based battery management for optimised battery utilisation (Batteries Partnership)

Deadline	Type of action	Indicate project budget	Number of grants	Budget
06/09/2022	RIA	Around 5 millions	3	15 millions

- **Objective/Scope :**Projects are expected to substantially advance the state of the art in the field of battery management, by developing innovative physics and data-based approaches, both at the software and hardware levels to ensure an optimised and safe utilisation of the battery system during all modes of operation

- **Impact – Expected outcomes**

  - New physics and data-based approaches for battery management, with the potential to enhance performances, lifetime, reliability and safety of battery systems for transport and stationary applications.

  - New physics and data-based approaches for battery management facilitating predictive maintenance, and/or knowledge-driven end-of-life management of battery systems, and/or the development of more accurate degradation models.

- **Consortium:**

  - Research partner (develop new way of managing), pilot partners (testing the new functionalities), industrial partners (integration of the solution)

¿ALGUNA DUDA?

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