

*

Acceleration Program 2026

 ERIA
ESTABANELL
INNOVATION HUB

*

AREA: Retail & Energy Services

CHALLENGE: Compact, affordable home battery.

¿How could we **deploy a flexible asset**—such as a **compact, affordable home battery**—sized for households with contracted **power between 3 and 7 kW**, enabling **payback within a reasonable timeframe**, delivering bill savings and/or enabling new energy services?

*

*



COMPACT, AFFORDABLE HOME BATTERY

Why this challenge matters

The residential market is moving toward electrification and self-consumption, but the reality is that most homes in Spain operate with low contracted power (3–7 kW), typical annual consumption (2,700–3,500 kWh), and space and budget constraints, especially in urban environments and apartments. At the same time, penetration of electric vehicles and heat pumps remains low, which limits the presence of large controllable loads that today would make it easier to maximize the value of a home battery solely through load shifting or dynamic optimization. In this context, the challenge is to identify a compact, affordable, and smart battery that makes sense for the mass market (3–7 kW) and can deliver an attractive payback.

Current context

Today’s home batteries still face significant adoption barriers: high total cost and long payback periods, size/weight and installation complexity (especially in apartments), insufficient perceived value without PV (or when used only for “backup”), and uncertainty around degradation, warranties, and maintenance.

For an energy retailer, however, a residential battery designed specifically for the 3–7 kW segment and equipped with an intelligent control layer can enable a clear value proposition even in homes without EVs or heat pumps, through: increased self-consumption (when PV is present), peak reduction and bill optimization (where applicable), optional integration with existing equipment where viable, and readiness to capture more value as electrification grows in the coming years.





COMPACT, AFFORDABLE HOME BATTERY

What are we looking for?

To identify and validate a residential battery solution that combines:

- Technical fit for the 3–7 kW range and a target energy capacity between 5 and 10 kWh (modular), with conservative (3–5 kWh) and optimal (8–12 kWh) scenarios depending on the consumption profile and the presence of PV.
- Compact form factor and installation that is viable in typical homes and apartments (not single-family houses).
- Total cost aimed at an attractive payback (ideally based on savings and/or service revenues). In addition to monthly savings, it is necessary to quantify and report: (i) “useful annual shifted kWh”—the energy effectively charged and discharged with economic impact—and (ii) the number of annual cycles, to avoid oversizing in households with typical consumption of 2,700–3,500 kWh/year.
- And smart operation (HEMS) that maximizes real value for the customer.

We are looking for startups with high potential impact in residential energy storage, capable of co-developing and validating a solution in a real-world environment during the program.