



STORAGE RESEARCH INFRASTRUCTURE ECO-SYSTEM

RI Information sheet 2022

Fundació Institut de Recerca en Energia de Catalunya (IREC), PRIMA
Infrastructure

Electrochemical and Chemical

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Project Acronym	StoRIES
Call	H2020-LC-GD-2020
Grant Agreement No.	101036910
Project Start Date	01-11-2021
Project End Date	31-10-2025
Duration	48 months

1. Photo





This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement N. 101036910

2. Geographical coordinates (°, ′, ″, ... N/S, E/W)

Actual coordinates: 41°24'52.4"N 2°13'14.0"E

3. Description of the research infrastructure for the webpage

PRIMA of Institut de Recerca en Materials de Catalunya (IREC) is an infrastructure aligned with the new models of the energy transition focused on the integration of renewable energy and storage in buildings and energy networks, including advanced energy management and integration of electric mobility.

State of the art: PRIMA is a R&D infrastructure in development to assess the development and integration of renewable energy solutions, thermal and electrical equipment as well as innovative energy storage solutions designed to improve energy storage and efficiency in energy systems. The PRIMA infrastructure is also an experimental platform for technology development and testing in a flexible environment.

Services currently offered by the infrastructure:

The infrastructure is equipped with multiple emulators to control the reactive and active power profiles to simulate both consumption and generation, emulators for the electrical real component of different systems and equipment for storage technologies testing and lines and grid emulators. Thus, allowing the testing and validation of technologies (tools, products and solutions) in the following areas:

- Renewable energies and conversion to different energy vectors (i.e. P2X/X2P).
- Storage Systems electrochemical, thermal, thermochemical and chemical development and validation.
- Electrical Vehicle (EV) integration: charging and utilization of EV as moving distributed storage systems such as smart charge, V2X and 2nd life batteries usage.
- Smart energy management: Storage solutions enabling exploitation of energy flexibility associated with aggregation and towards energy markets.

Upcoming services to be offered by the infrastructure:

Connection to real energy networks (DHC, electrical and gas), allowing realistic assessment of performance and potential market barriers.



Hybridization of different technologies and energy vectors holistically managed to provide integrated hybrid and flexible systems.

Testing and validation of solutions and business models by operating in a flexible regulatory regime **Sandbox**.

Prima test benches will include 6 electrical grid emulators and 4 electrical test benches to connect electrical generation and storage systems of 55KVA each, grid emulator of 1000 kVA for grid integration, modular thermal test benches with temperature range (-7°C – 150°C) with a total equivalent heating power of 1000 kW and cooling power of 700 kW, gas substation, climate chamber with temperature range (-30°C – 60°C), HR (15-98%) and 40.000 m³/h ventilation.

4. Availability of the research infrastructure

(Please indicate time periods in which infrastructure will not be available for StoRIES in the next 2 years – if already known)

Operative with restricted functionalities

5. Special considerations (confidentiality / NDA agreements, insurance requirement, special training, HSE training)

To access to the infrastructure, the following procedures will be considered: NDA signature, standard access protocol (necessary insurances compliance, CAE documentation, standard infrastructure and safety trainings) Specific training depending on the Transnational Access Activity.

6. Energy storage technology that can be analysed/studied by using the research infrastructure

- Electrochemical
- Chemical
- Thermal
- Mechanical
- Superconducting Magnetic
- Cross-cutting (Specifically: ...)

7. Key words for the webpage

Grid integration, testing, hybridization, smart energy management

8. TRL level (if applicable):



- 1-3
- 4-6
- Above

