



STORAGE RESEARCH INFRASTRUCTURE ECO-SYSTEM

RI Information sheet 2022

University of Bologna

Laboratory of Magnet Engineering and Applied Superconductivity

Technology(ies) of Energy Storage: Superconducting Magnetic Energy Storage

Contact person 1:

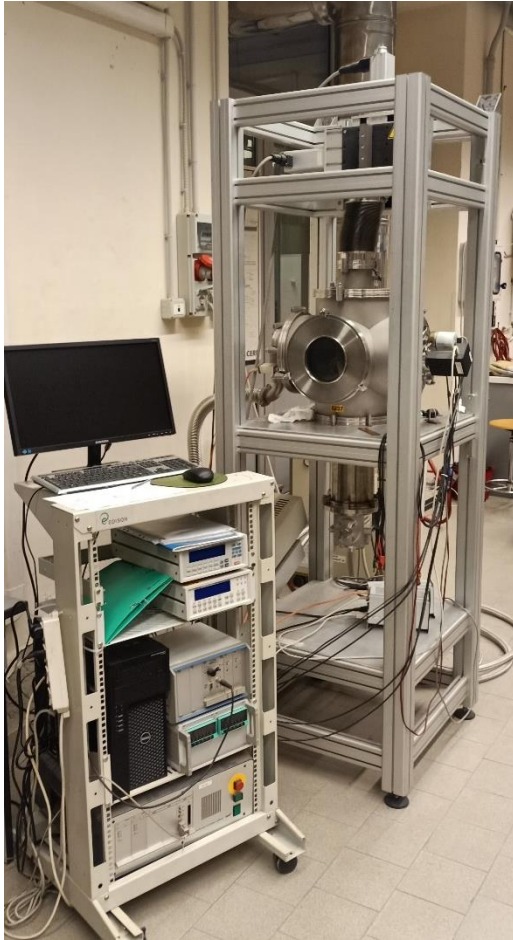
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Project Acronym	StoRIES
Call	H2020-LC-GD-2020
Grant Agreement No.	101036910
Project Start Date	01-11-2021
Project End Date	31-10-2025
Duration	48 months

1. Photo



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

[44.488133411335305, 11.328597184247755](#)

3. Description of the research infrastructure for the webpage

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)

...

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

...



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

LIMSA is equipped with the facilities for the characterization and quench analysis of superconductor wires, tapes, and small coils, both at liquid nitrogen at 77K and with cryogen free cooling down to 10 K. Further apparatus is dedicated measurement of the levitation performance of and bulk superconductors or tapes interacting with permanent magnets. The laboratory is also equipped with high-performance computational facilities for research and for industry consultancy.

Services currently offered by the infrastructure:

- Methodology for the assessment of SMES systems in stand-alone applications and in hybrid energy storage systems
- Design of SMES coils (electromagnetic, mechanic, thermal, quench, protection)
- Design of power electronic for SMES management, grid interface and protection
- Self-field characterization of commercial superconductor tapes
- Measurement of levitation force between bulk superconductors and permanent magnets
- Development of advanced modelling methods and tools for AC loss and quench computation

8. TRL level (if applicable):

- 1-3
- 4-6
- Above

