



STORAGE RESEARCH INFRASTRUCTURE ECO-SYSTEM

RI Information sheet 2022

CERTH, Particle Reactor for Thermo-Chemical energy Storage (PTCS) reactor
(TA 27)

Thermal/thermochemical energy storage/release in particle downer reactors

Contact person 1:

Dr. Spyros Voutetakis, paris@certh.gr; proxy: Prof. Simira Papadopoulou, simira@certh.gr

Contact person 2:

Dr. George Karagiannakis, gkarag@certh.gr

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

characterization if/when needed. A drop-down tube reactor able to reach temperatures up to 900oC and perform solid-gas endothermic/exothermic reversible reactions in the framework of TCS schemes (feasibility assessment is on a case-by-case basis). Solids are in the form of particles spanning from powder to small granules (e.g. 10 μm – 1000 μm) and also depending on flowability characteristics of solids to be used. The setup, via embedded relevant sub-systems, is able to recover the heat during the exothermic step of such reversible chemical reactions and therefore assess operation and efficacy of TCS concepts, also including active materials & critical components evaluation aspects. As of November 2020, the installation is fully functional/operational.

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)

None at the time of preparation of this document.

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

The operation of the facility is only carried out by skilled/qualified personnel. Confidentiality/NDA agreements necessity is evaluated on a case by case basis.

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

Particle Reactor, Thermo-Chemical energy Storage,



8. TRL level (if applicable):

- 1-3
- 4-6
- Above

The above TRL indication is indicative and also may vary depending on the exact targeted application per case.

