



STORAGE RESEARCH INFRASTRUCTURE ECO-SYSTEM

RI Information sheet 2022

University of Birmingham, RI Birmingham Energy Innovation Centre (BEIC)
Thermal 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



Figure 1 BEIC facilities



Figure 2 BEIC hanger Thermochemical energy storage demonstrator (5kW/50kWh)

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

Birmingham Energy Innovation Centre (BEIC), Tyseley Energy Park (TEP), Hay Mills, Birmingham B25 8DW, UK

- 52°27'41.1"N 1°50'24.7"W

3. Description of the research infrastructure for the webpage

Web site address

BEIC at Tyseley Energy Park (TEP)
<https://www.tyseleyenergy.co.uk>

Description of the infrastructure

The University of Birmingham Centre for Energy Storage (BCES) & Energy Innovation Centre (BEIC) are cross-campus initiatives with thermal energy storage research hub at School of Chemical Engineering. Birmingham Energy Innovation Centre (BEIC) at Tyseley Energy Park (TEP) – Our off-campus pilot and demonstration facilities in the University of Birmingham Energy Innovation Centre, which 3.5 miles from the University of Birmingham Edgbaston Campus (to be operational from June 2021)

Our unique services and facilities include the following:

- Thermochemical energy storage demonstrator (10kW/100kWh);
- Integrated gas compression heat recovery and storage system for managing peak compressed air supply, power supply and compression heat recovery and storage (100kW/500kWh);
- Thermochemical based air-conditioning demonstrator (5kW/50kWh);
- Composite phase change material-based battery thermal management system for electrical vehicles;
- Efficient & cost-effective telecommunication base station and data centre cooling systems using composite phase change material and thermochemical energy storage;
- Cryogenic energy storage based combined cooling, heating and power demonstrator;
- Mobile heat storage demonstrator (10GJ);
- Mobile composite phase change material based cold chain transportation demonstrator (standard 40ft container sized, charging time <2hours, discharge time > 180 hours);

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)

- Confidentiality agreement to be signed by both sides of the user and the RI before the work commences, if required.
- All the instrument (item above 25K) in these facilities are covering by the Birmingham University Insurance for safe running.
- The fire safety training, chemical hazard awareness training, building and facility induction, fire induction will be conducted before the work commences.
- The risk assessment and COSHH assessment related with the material testing will be completed by the users and to get an approval from the responsible person of the facility before the access of the facilities

- Fully instrument training including the general risk of the instrument operation, basic operational procedure, the method validation, data analysis, instrument running SOP will be given before use the instrument

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

- Thermal Energy Storage
- Composite TES materials
- Thermochemical Energy Storage
- Latent Heat Thermal Energy Storage
- Heating and cooling
- Waste heat recovery
- Thermal management

8. TRL level (if applicable):

- 1-3
- 4-6
- Above