

Did you know?



Recovery of urban waste heat alone could meet 14% of Europe's heat demand for buildings, 23% of which comes from data centres.

The THUNDER project aims to overcome existing barriers hampering a wide adoption of Data Centers waste heat recovery strategies, providing an innovative, efficient and cost attractive Seasonal Thermal storage based on Thermochemical Materials.

The THUNDER solutions are validated in field conditions at the **Demosite in Varna (Bulgaria)**, as well as in **10 further Demosites** across all over Europe. Co-design and training workshops will be organized at the replicability identified sites to promote stakeholders engagement and social awareness thus unlocking barriers and make it real THUNDER replication.





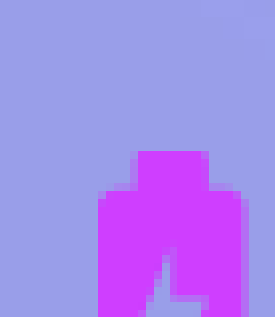

Thermochemical material storage technology

THUNDER explores both traditional (water-based) and innovative seasonal thermal storage systems, comparing their energy performance and cost-effectiveness. The innovative thermochemical storage has high energy density and efficiency, designed in modular units to suit locations with limited space. Custom-designed heat pumps will manage heat flow during charging and discharging, optimising the energy, environmental, and economic performance of the system.

Using innovative thermochemical material (TCM) storage technology, THUNDER solution stores more efficiently surplus of heat and releases it when and where more convenient. This next-gen system, combined with high-temperature heat pumps, efficiently captures and reuses low-grade waste heat.



Demosite goals

-  +70% efficiency of the seasonal thermal storage
-  120 kWh/m³ of energy density of the seasonal thermal storage
-  The actual value of tested thermochemical materials
-  A lowering of the capital cost of TCM storage (at least a half)
-  An energy saving of 90 kWh/m³ of TCM storage
-  A CO₂ saving of 24 kgCO₂/m³ of TCM storage, compared to heat produced by methane combustion



www.thunderproject.eu

#THUNDER

