15 ANS DE R&D POUR L'INNOVATION DES ENTREPRISES

HEAT STORAGE

Demonstrator for thermochemical storage of waste heat

An experimental tool with a dual numerical/experimental approach for developing a low temperature waste heat storage system. The aim is to acquire the data necessary for designing and scaling pilot systems for industrial scale operations. This approach is part of the energy efficiency drive focused on renewable energy and waste heat recovery.

Carnot MICA Institute

Scientific / technological breakthrough

The challenge for industry is to integrate an energy buffer storage system into an existing facility
and shift the use of heat over time in order to offset peaks in demand. Carnot MICA Institute's solution is to store the unused heat thermochemically within a sorption system.
An initial formulation of the industrial challenge naturally concerns the thermochemical storage of low temperature heat. A large body of research is addressing this issue, but most of it focuses on solar energy storage for buildings, and is therefore on a different scale and uses different energy sources to the solution proposed here.

Competitive advantage for the economic stakeholders

There are numerous advantages to deploying this technology. Political: the system provides a means of boosting energy independence and reducing greenhouse gas emissions in order to comply with the French law on energy transition for green growth (July 2015). Operational: energy demand often fluctuates and at certain times exceeds the maximum production capacity of renewable and recovered heat sources (biomass, heat pumps, unavoidable heat, etc.). Thermo-chemical storage can be used to manage these fluctuations. Economic: recovery/storage of unused heat minimises energy losses over the lifetime of a facility.

INSTITUT CARNOT MICA

Contact
Carnot MICA - Simona BENNICI - simona.bennici@uha.fr