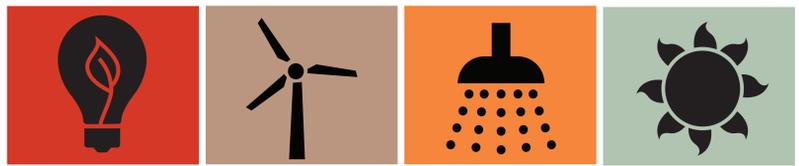




CREATE[®]



Compact **R**etrofit **A**dvanced **T**hermal **E**nergy storage

An economically affordable, compact and loss-free heat battery for existing buildings.

The main aim of CREATE is to develop and demonstrate a heat battery, i.e. an advanced thermal storage system based on Thermo-Chemical Materials (TCMs), that enables:

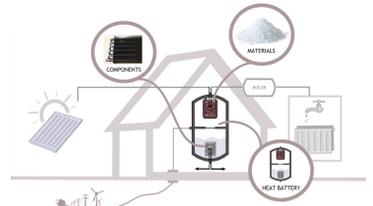
Economical affordability: For the existing building stock CREATE will reach at least a reduction of 15% of the net energy consumption with a potential Return-On-Investment shorter than 10 years.

Compactness: Novel high-density materials will be used in order to limit the use of the available space to a maximum of 2.5 m³ thermochemical material.

No heat losses during storage: This is an intrinsic material property of thermochemical storage technology, thereby enabling long-term storage.

The CREATE concept is based on advanced compact thermal storage for existing dwellings using thermochemical storage materials. The heart of the system consists of a vessel that contains a salt that is hydrated and dehydrated, which generates an energy effect. In the time between de-hydration and hydration the energy is stored in the salt. We envision two applications for the heat battery:

- 01 decentral thermal energy storage bridging supply and demand of renewable thermal energy
- 02 decentral grid-connected storage for increasing energy efficiency and introducing flexibility in the electricity grid, e.g. using a heat pump.



Schematic of the CREATE concept

CREATE is focusing the following sub-objectives:

- Stable & compact materials
- Efficient and high power energy discharge
- Long lifetime
- Safe and reliable operation
- Affordable technology
- Future value chain

DEMONSTRATION

Implementation of the CREATE concept is foreseen in typical European dwellings. MOSTOSTAL will install a full scale solar TCS system delivered by the CREATE project. The system will be installed into a single family house in Warsaw, Poland, where a land climate delivers both cold winters and warm summers.



Single family DEMO house (provided by MOSTOSTAL by courtesy of the City of Warsaw)

PARTNERS



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