

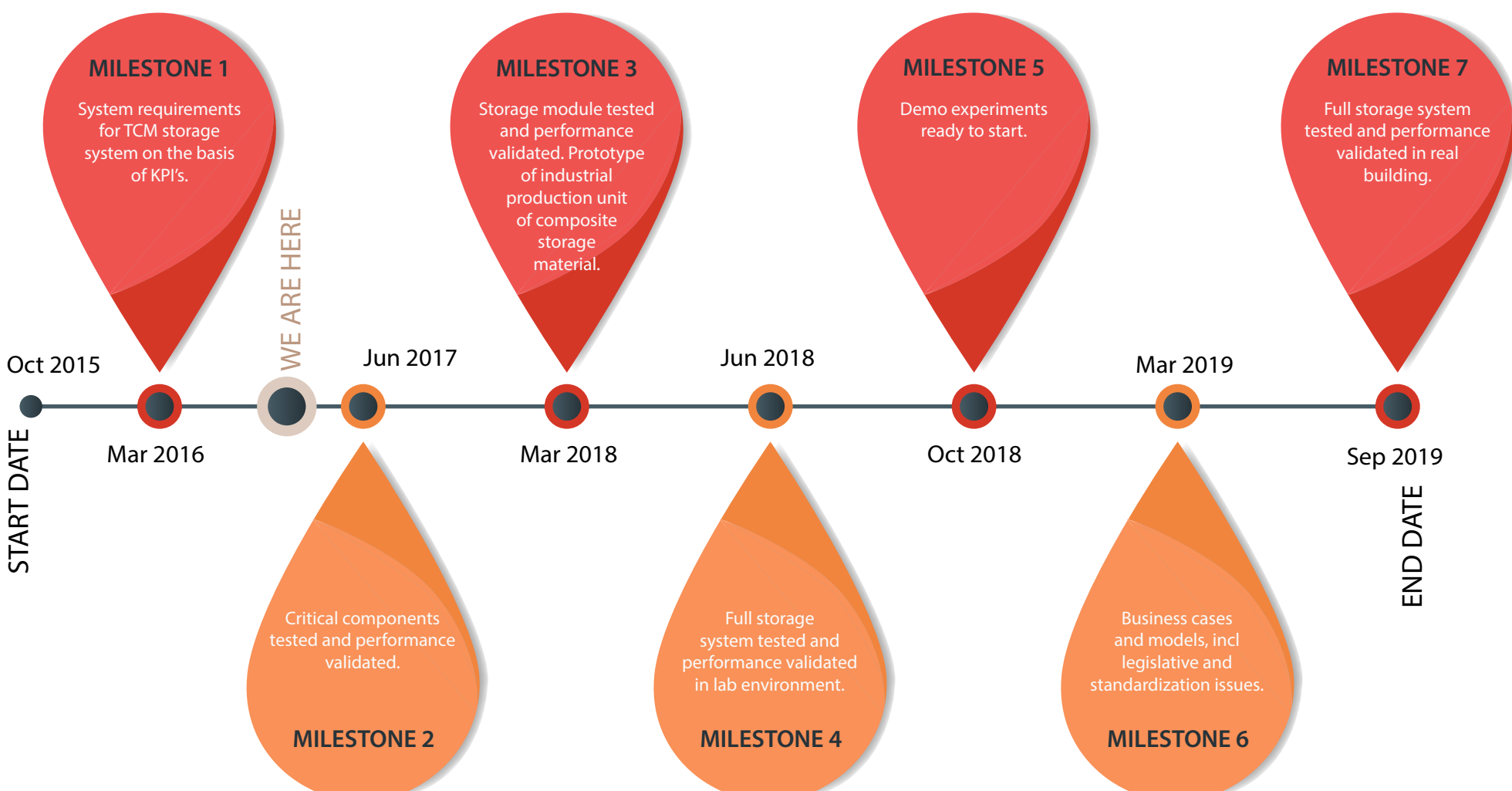
Dear Reader,
we proudly present the second CREATE newsletter. This newsletter was created to provide you with an overview of the progress of the CREATE project. The project has reached a milestone of 15 months. At this point, we would like to share with you the latest news on the advances that were made in the past months as well as elaborate on our plans for the upcoming period.



Compact **RE**trofit **A**dvanced **T**hermal **E**nergy storage

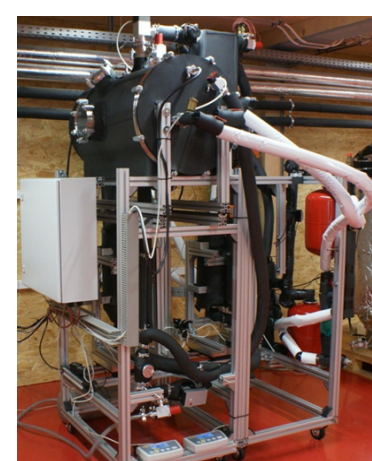
An economically affordable, compact and loss-free heat battery for existing buildings

TIMELINE



TESTING RIG

As a project partner, the Austrian research institute AEE is responsible for the development of the critical components including the evaporator. In their laboratory, a test rig was built to conduct experimental investigations and optimize different designs of the heat battery. This setup will be used for testing the first prototypes of the evaporator for the CREATE project.



PROJECT DEVELOPMENT

- Final selection of base material
- Second wave of characterization activities
- Preselection of base material
- Selection Principles
- First wave of characterization activities
- Thermochemical material requirements

Thermochemical storage materials like sodium sulfide hydrates are best suited for seasonal thermal storage applications. Their thermal energy can be stored for months virtually without losses.

The material also has high theoretical energy density with 784 kWh/m³ (water 60 kWh/m³).

In a real storage system the utilized energy storage density depends on the heat and mass transport in the system. As the storage system is evacuated, the pressure difference drives the vapor transport between the sorption storage and the critical components, like the evaporator.

This component is necessary for discharging the storage system and evaporating the distilled water at a low pressure between 8.7 to 23.4 mbar, which correspond to the temperatures of 5 to 20 °C. Therefore, a high heat transfer for this heat exchanger is desirable so that the evaporation occurs at a high local temperature and pressure. Finally it improves the vapor transport, the utilized energy density of the material and the storage system efficiency.



DEMONSTRATION APPROACH

Built year	2009
Basement	none
Floors	2 + attic
Useful space	277,6 m ²
Building volume	1258,5 m ³
Ext. sidewalls	plaster, aerated concrete 24 cm, mineral wool 12 cm, plaster
Roof	gypsum-carbon board, wooden structure, mineral wool 20 cm, wooden board, ventilation space, chipboard, galvanized steel sheet
Boiler room area	7,1m ²
Heating source	Bifunctional gas boiler 31 kW
Heating system	Conventional radiators, heating pipes placed in the floor
Number of solar collectors	9
Mechanical ventilation	none
Artificial heating source	none
Number of people	4

A single family house will be monitored to gather data which will be afterwards compared to data measured after installation of CREATE system.

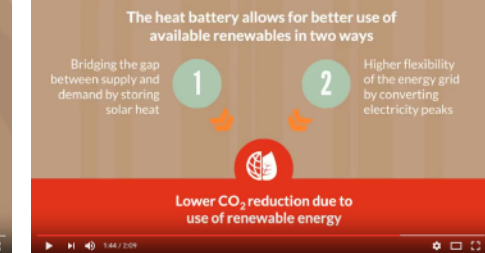
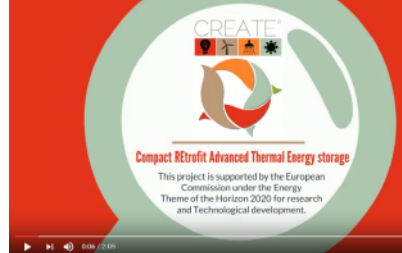
The criteria measured during this period are, for example, energy demand for space heating and for domestic hot water, directly covered and uncovered energy load, amount of solar energy which was stored and which was wasted.

Currently, the installation of the CREATE system to the demo building is under preparation.



VIDEO

In the following link, you can find the CREATE project video. We invite you to watch, comment and share.
goo.gl/8LIZwe



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HORIZON 2020 RESEARCH PROJECT
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 680450.

YOU CAN FIND US ALSO ON:



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UPCOMING EVENTS

BUILDING FAIRS – Brno, Czech Republic

The **CREATE** project will be exhibited by **FENIX TNT** at the Building Fairs in Brno, Czech Republic. The event will take place during **26th – 29th March, 2017**.

For more information see:

<http://www.bvv.cz/en/building-fairs-brno/>

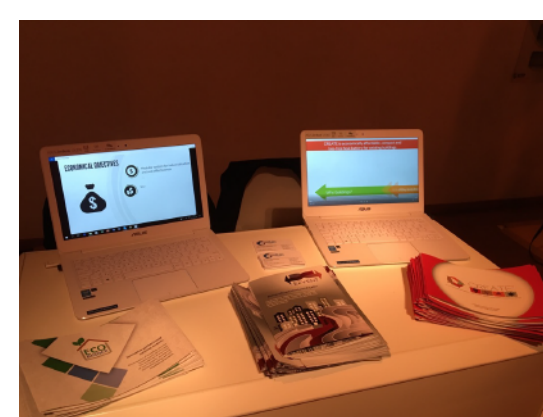
PAST EVENTS

ECTP CONFERENCE

The aim of the **ECTP CONFERENCE** was to present and discuss current and anticipated innovation in the field of built environment. High-level speakers from academia, industry and the European Commission introduced global schemes and visions from various stakeholders.

The aim of the conference was to address diverse issues under the five priority areas of the ECTP: active aging and design; energy and efficient buildings; heritage and regeneration; infrastructure and mobility; and materials and sustainability. During the event, booths and posters of innovative European projects were exhibited to the participants of the conference.

The **CREATE** project was exhibited by **FENIX TNT** representatives. The ECTP conference took place on the **18th of November 2016** in Centre for Fine Arts, in Brussels, Belgium.



EUROSUN VISIT

The **EUROSUN** conference held **11th – 14th October 2016** in Palma de Mallorca has gathered companies and universities from around the world. The subjects presented covered a wide spectrum of applications of energy production, conversion and storage including as the common heat solar energy. The intermittent character of the solar energy makes the subject of energy storage extremely relevant. In particular, the case of heat storage is very important for the built environment and the evolution towards zero energy buildings and was also the subject of several presentations and posters at EURO SUN. In this context, the seasonal heat storage use case addressed in **CREATE** is one of the important topics discussed at EURO SUN.

The **CREATE** project has been introduced to the EURO SUN participants with an oral presentation by **Anca Anastasopol (TNO)**. The successful demonstration of the heat battery using thermochemical materials in MERITS was presented as an introduction to the CREATE project. The continuation of this route in CREATE was received with enthusiasm and interest by the audience.

