Self-**C**onsumption **O**f **R**enewable **E**nergy by hybrid **S**torage systems

SCORES project presentation

Event name

Location, date

Presenter name

Company

The project leading to this application has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 766464.

SCORES PROJECT

SCORES combines and optimizes the **multi-energy generation**, **storage** and **consumption** of **local renewable energy** (electricity and heat) and **grid supply**. Via the development of compact hybrid storage technologies, integrated through a smart Building Energy Management System, the project will optimize the self-consumption in residential buildings, bring new sources of flexibility to the grid, and enable **reliable operation** with a **positive business case** in Europe's building stock.

12 Partners

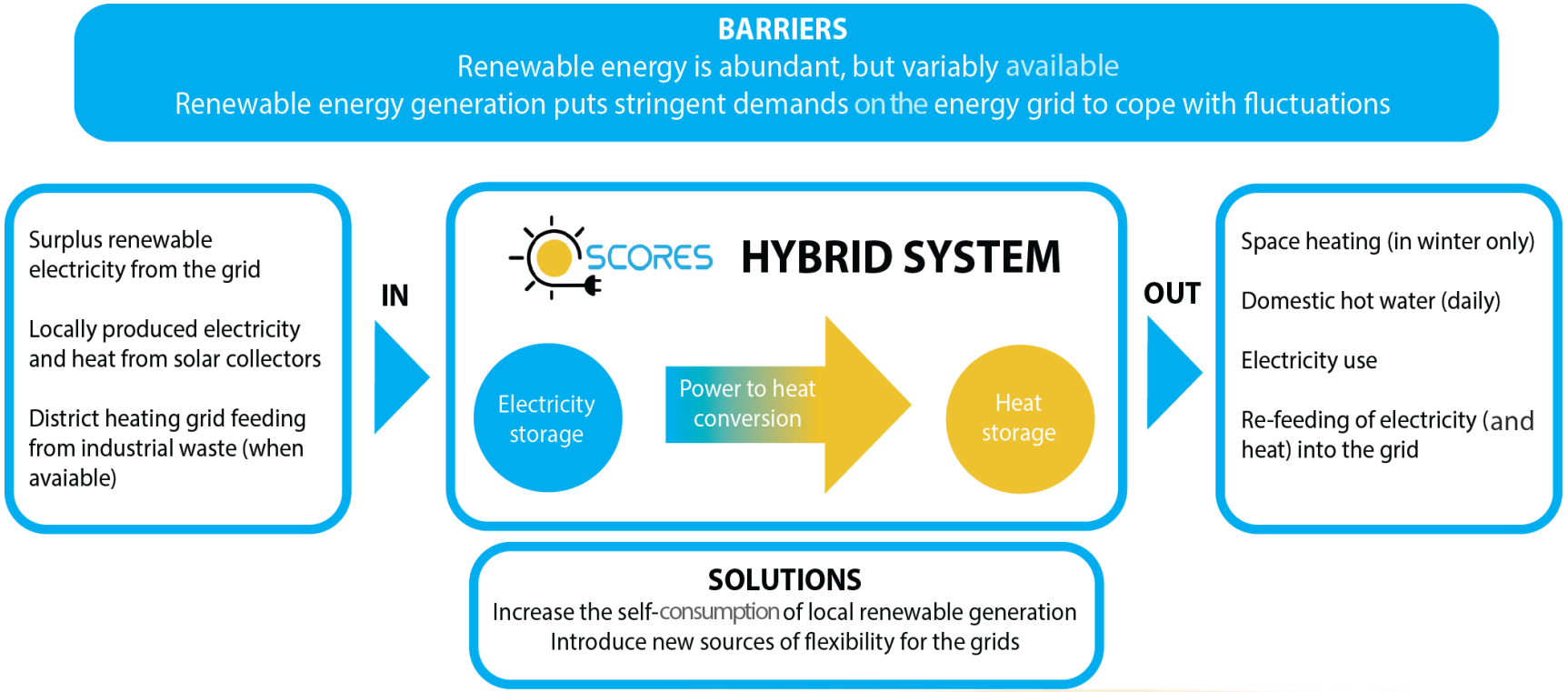
9 Work Packages

Budget **€6M**

48 Months

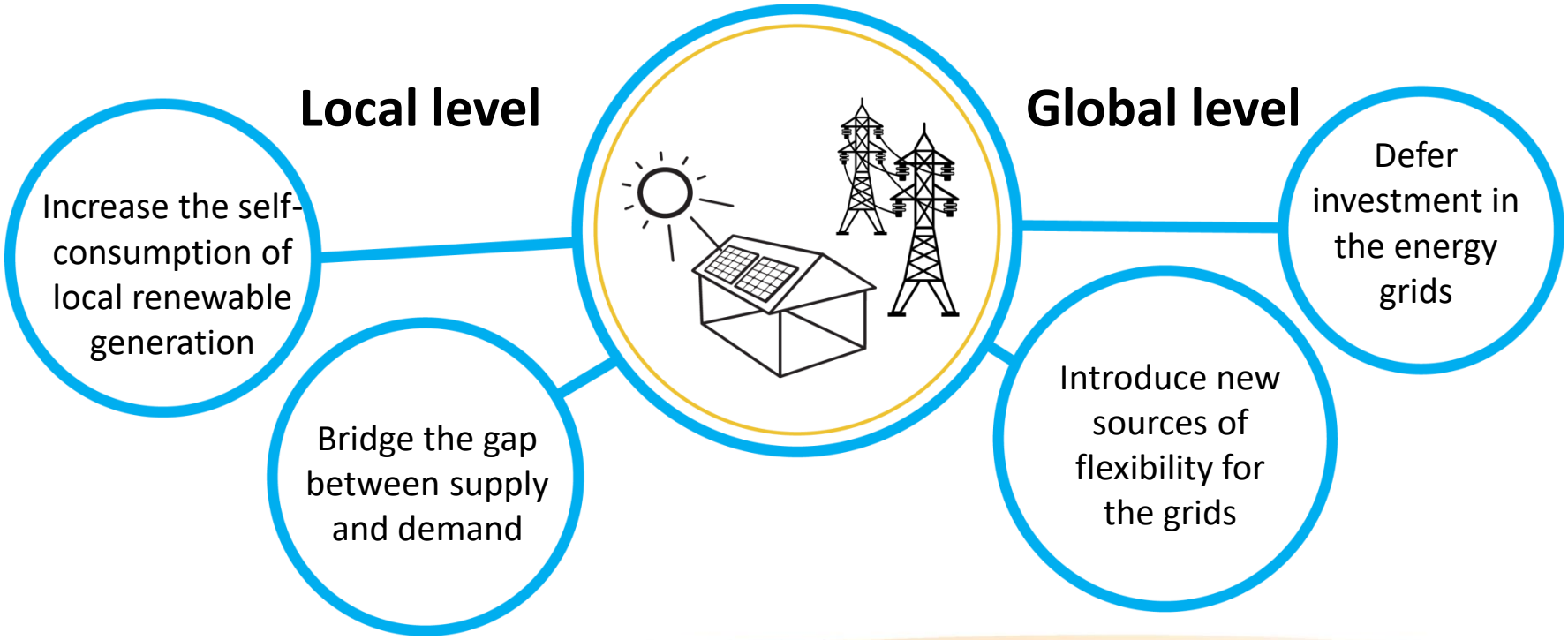
OVERALL CONCEPT

The SCORES concept is based on a hybrid system combining effectively and efficiently solutions that **harvest electricity** and heat from the sun, **store electricity**, **convert electricity into heat**, **store heat**, and **manage the energy flows** in the building.



OBJECTIVES

Demonstrate in the field the integration, optimization and operation of a building energy system including **new compact hybrid storage technologies**, that optimize supply, storage and demand of electricity and heat in residential buildings and that increases self-consumption of local renewable energy in residential buildings at the lowest cost.



PURPOSE

Competitive industry

Grid stability

Energy Independency

CO_2 reduction

Jobs Creation

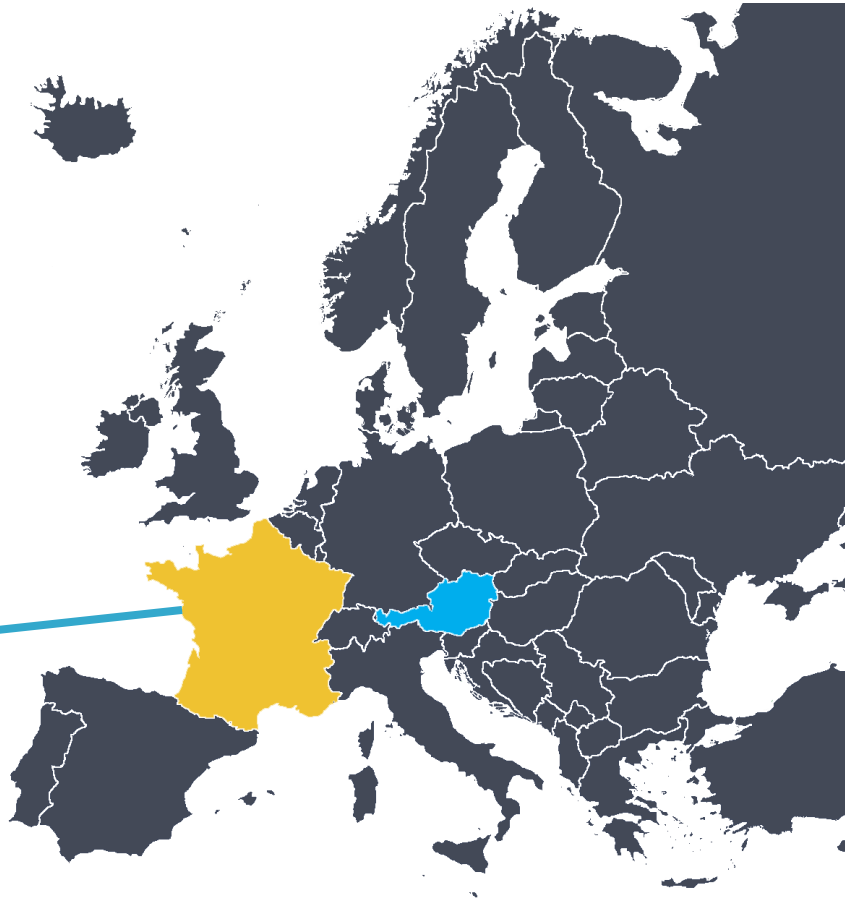
More renewables

GOALS

1. • Develop a technology of second life Li-ion batteries
2. • Electric driven heating with intraday PCM heat storage
3. • Optimize a high performance water to water heat pump supplied by hybrid PV and solar collectors
4. • Improve and optimize compact loss free heat storage technology
5. • Develop an integrated building energy management system
6. • Assess the economical potential of the hybrid system
7. • Efficient air to air heat pump for space heating with intraday PCM storage

DEMONSTRATION

Demonstration of the integrated hybrid energy system will take place in **two real buildings** representative of different climate and energy system configurations for 3 cases, in Northern Europe (**Austria**) with and without a heat grid, and in Middle/Southern Europe (**France**) without a heat grid.



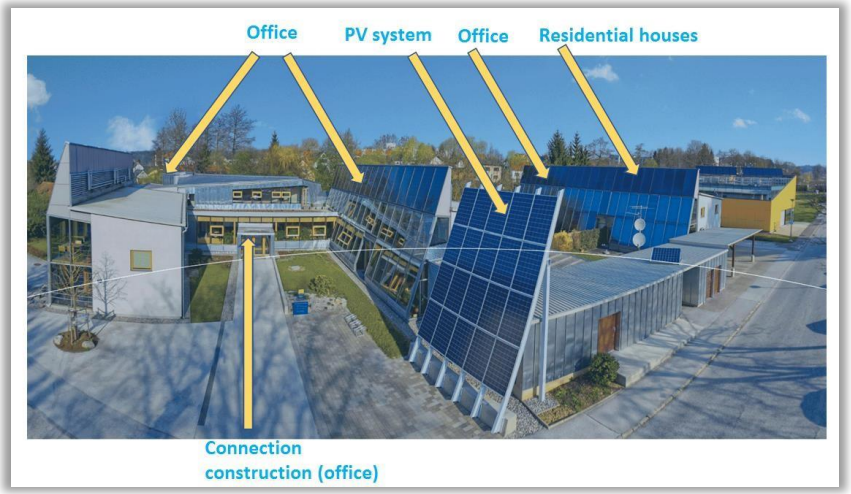
DEMONSTRATION

Agen, France

First demonstration sites of the SCORES technologies is located in the South of France, in Agen, where a new state of the art building has been constructed, comprising of 115 small apartments and collective areas for retired people.

Gleisdorf, Austria

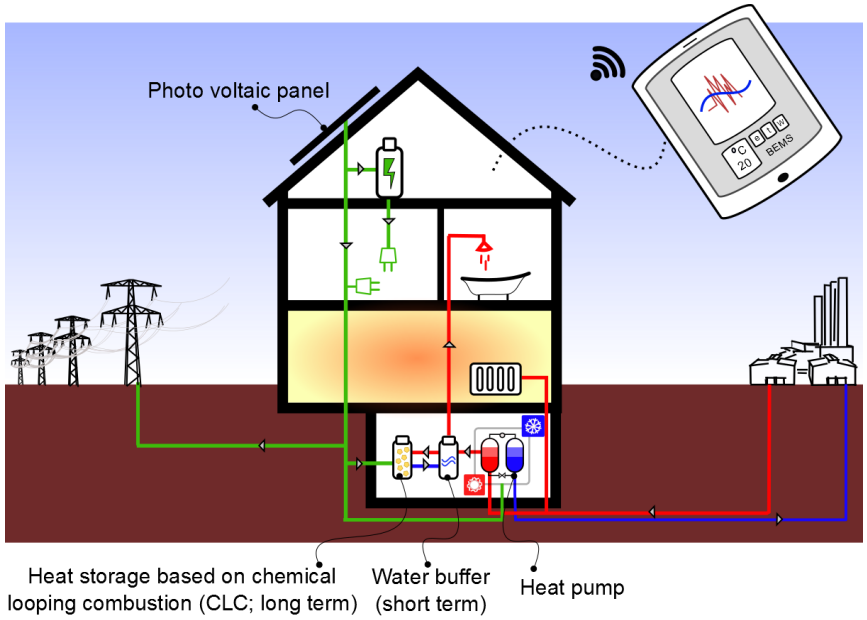
Second demonstration sites of the SCORES technologies is located at Gleisdorf, in Austria. In Gleisdorf, an already existing residential building block is connected to both the electricity network and the local heating network.



HYBRID SYSTEM CONCEPT

Configuration A

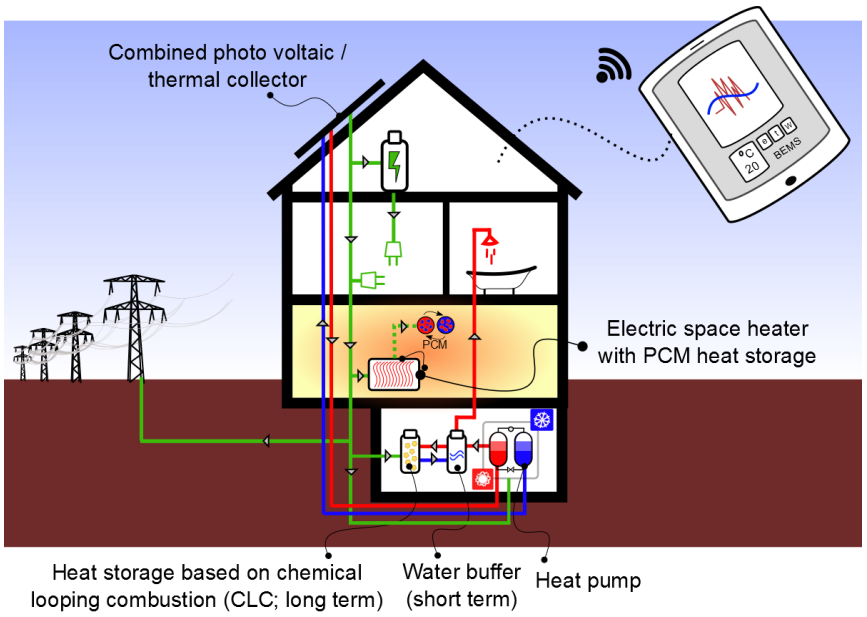
Connected to district heating grid:



Demo in Austria

Configuration B

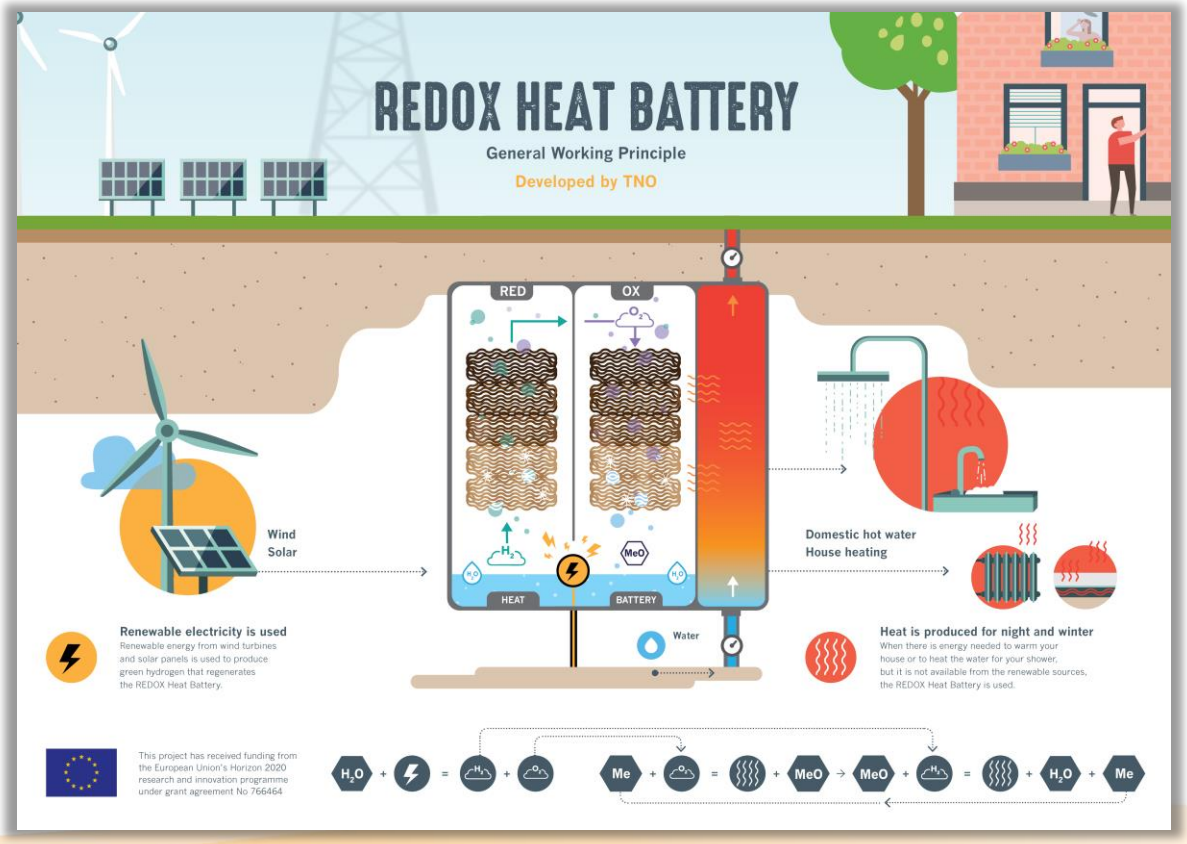
Based on electric heating:



Demo in France

REDOX HEAT BATTERY

REDOX heat technology is developed by TNO. REDOX heat battery uses the REDuction and OXidation reactions to store heat. REDOX heat is a modular heat storage system. It can easily be implemented in a single-family house, an apartment building or a neighborhood and scaled to the appropriate size.



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SCORES

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THANK YOU FOR ATTENTION!

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