

09.02.2021 | 10:30 - 12:00 CET

Technology Demonstrators: Heat Pump technology and processes of the future

Online Seminar





HEAT4COOL

HOCHSCHULE
LUZERN



Valencia Site
Antonio Mingo (Solintel)





- 1. Project introduction**
- 2. Valencia Pilot Site**
- 3. Positive impacts and results to be highlighted**

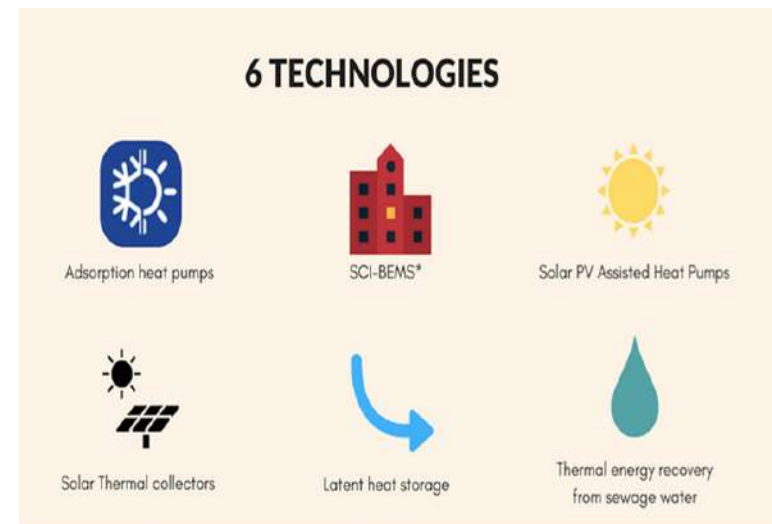


1.-Project introduction

The Heat4Cool project is an EU funded project, started in October 2016 and operated for four years.

The project proposes innovative, efficient and cost-effective heating and cooling solutions to optimize the integration of six technologies:

- Adsorption heat pump
- PCM storage batteries
- SCI-BEMS
- Solar PV
- Solar thermal
- Heat recovery from sewage water





1.-Project introduction

The integrated solutions will provide:

- Space heating, cooling and domestic hot water in one case by integrating new technological solutions.
- Renewable energy solutions
- Smart control system

Heat4cool aims to achieve:

- Reduction of 30% in energy consumption in a technically, socially, and financially feasible manner.
- Demonstrate a return on investment lower than 10 years.
- Provide best practices examples for the construction sector.

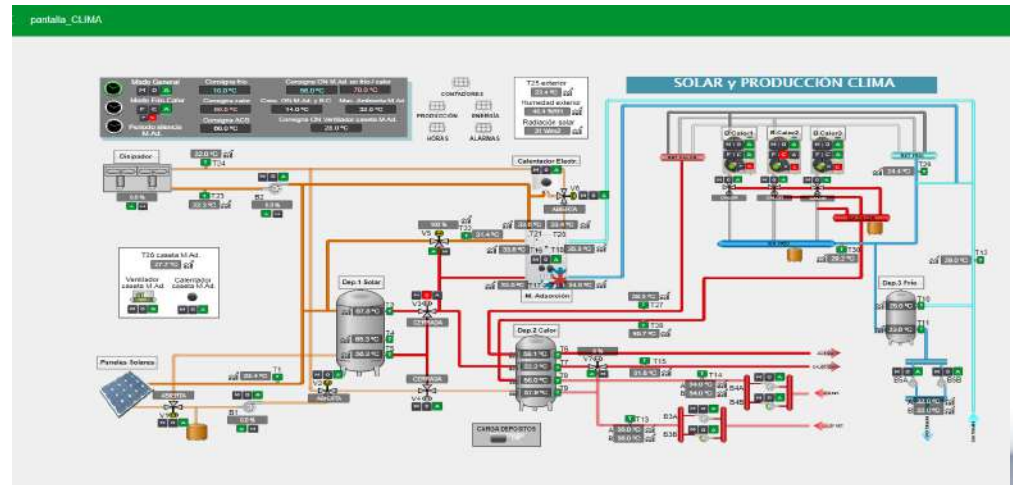
KEY GOALS

- 1 Pay-back period of below 10 years
- 2 Reduction of **energy consumption** by 30% in residential buildings
- 3 An advanced decision-making tool and an easy to install **energy efficient** solution for retrofitting buildings
- 4 High potential of **replication across Europe** contributing to large scale market deployment before 2025





1.-Valencia Pilot Site





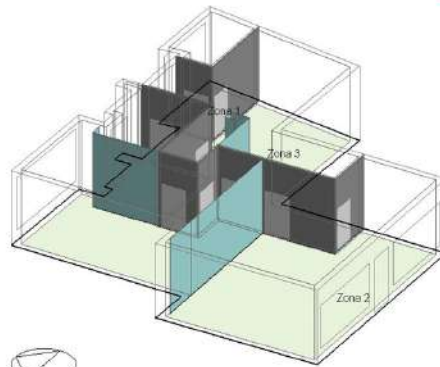
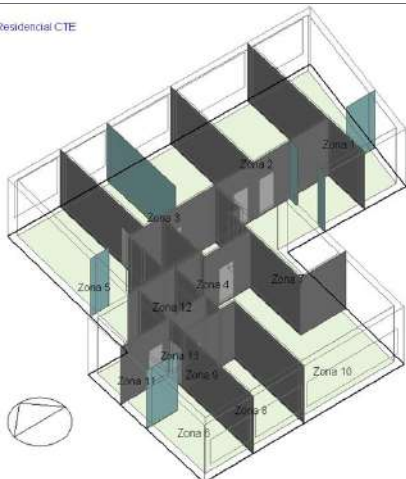
1.-Valencia Pilot Site

VIDEO



Residencial CTE

Residencial CTE

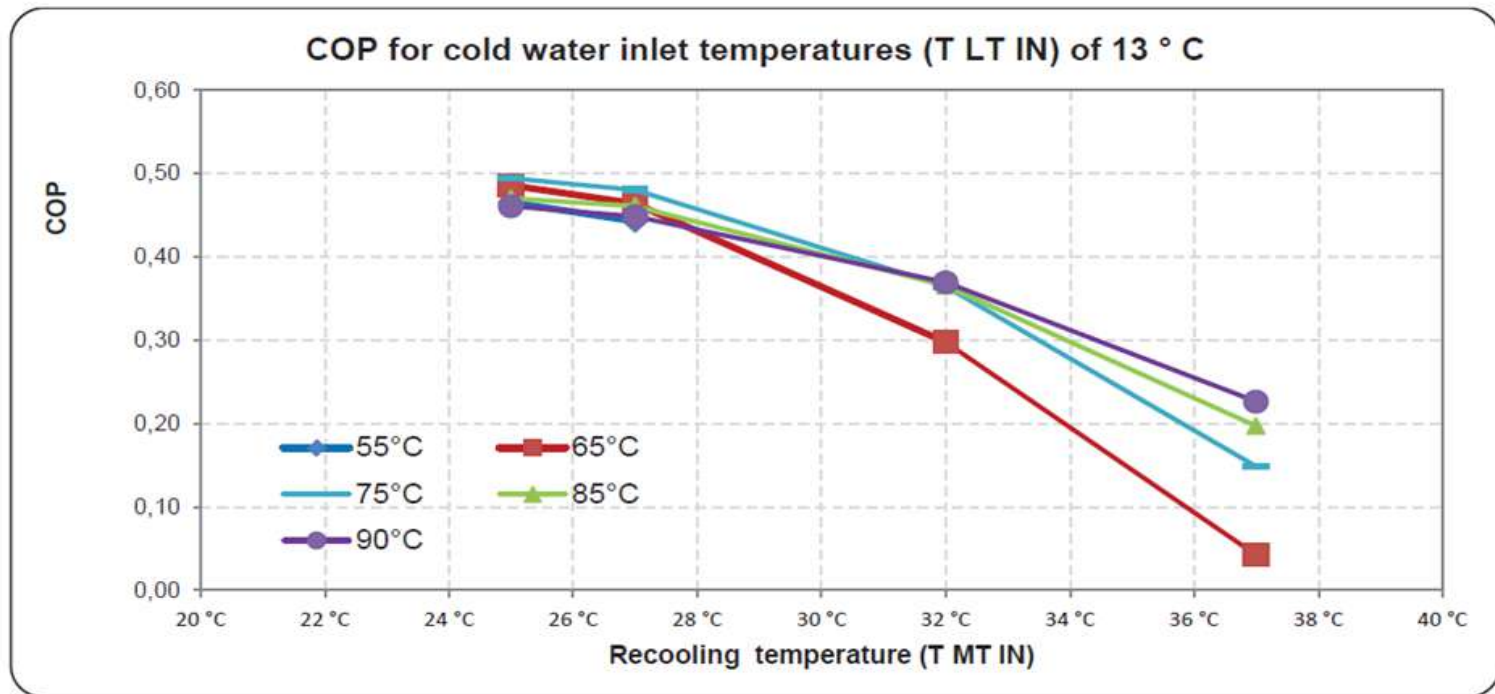




3.- Positive impacts and results to be highlighted

Adsorption Chiller

- Under proper conditions system operates efficiently with a real COP value close to 0,5 as theoretical estimation.

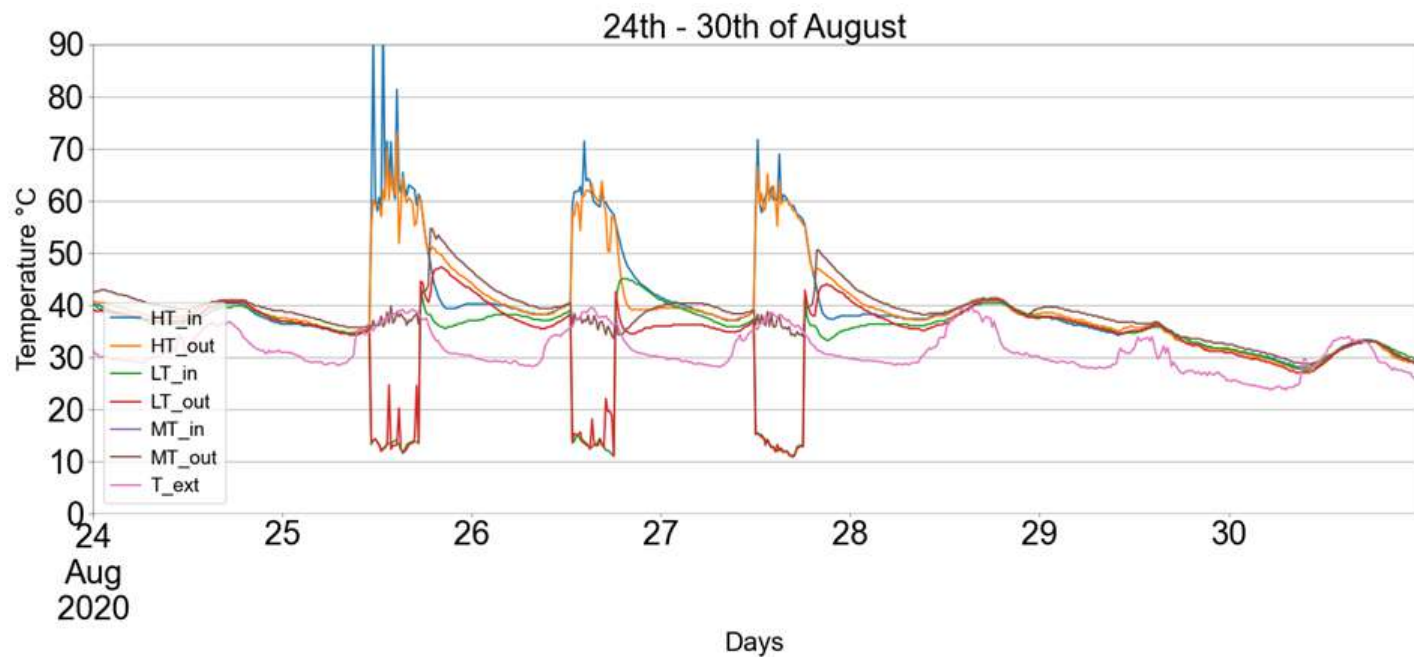




3.- Positive impacts and results to be highlighted

Adsorption Chiller

- It results critical for proper adsorption pump operation to install it inside (a room or case) and a correct sizing and installation of cooler system.

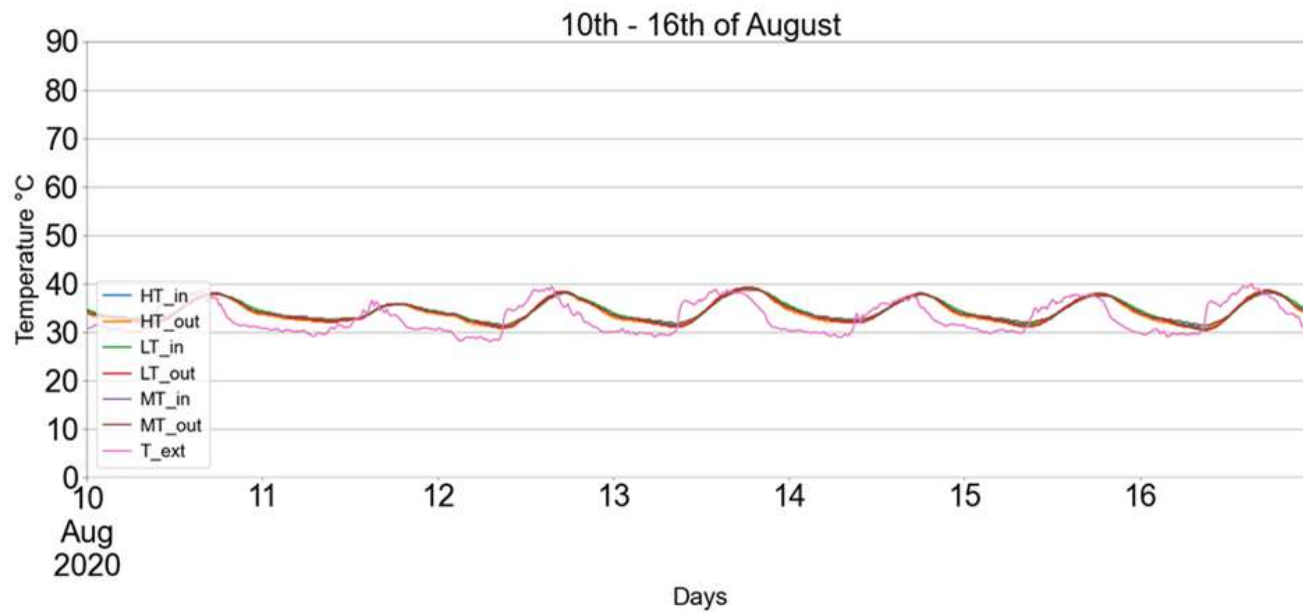




3.- Positive impacts and results to be highlighted

Adsorption Chiller

- Pre-existing infrastructures malfunction could produce serious interferences in normal system operation.

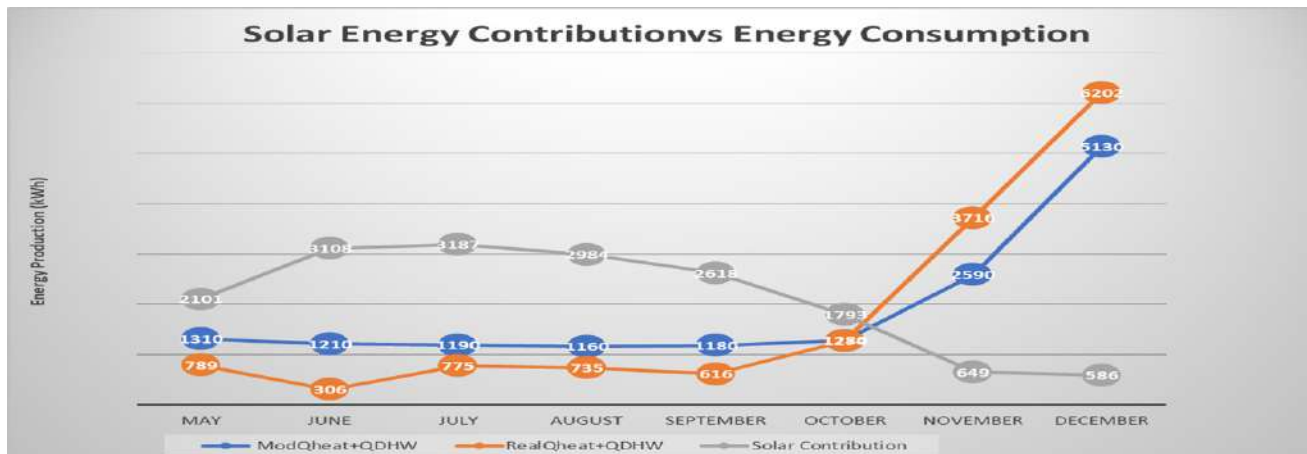




3.- Positive impacts and results to be highlighted

Solar system

- Extensively tested technology under structural restrictions according with building configuration
- Adequate sizing in suitable conditions allows to extend the operation of the adsorption pump beyond daytime.
- Direct functionality for heating and DHW applications
- Producing 50% total heating energy building consumption (Valencia Pilot)





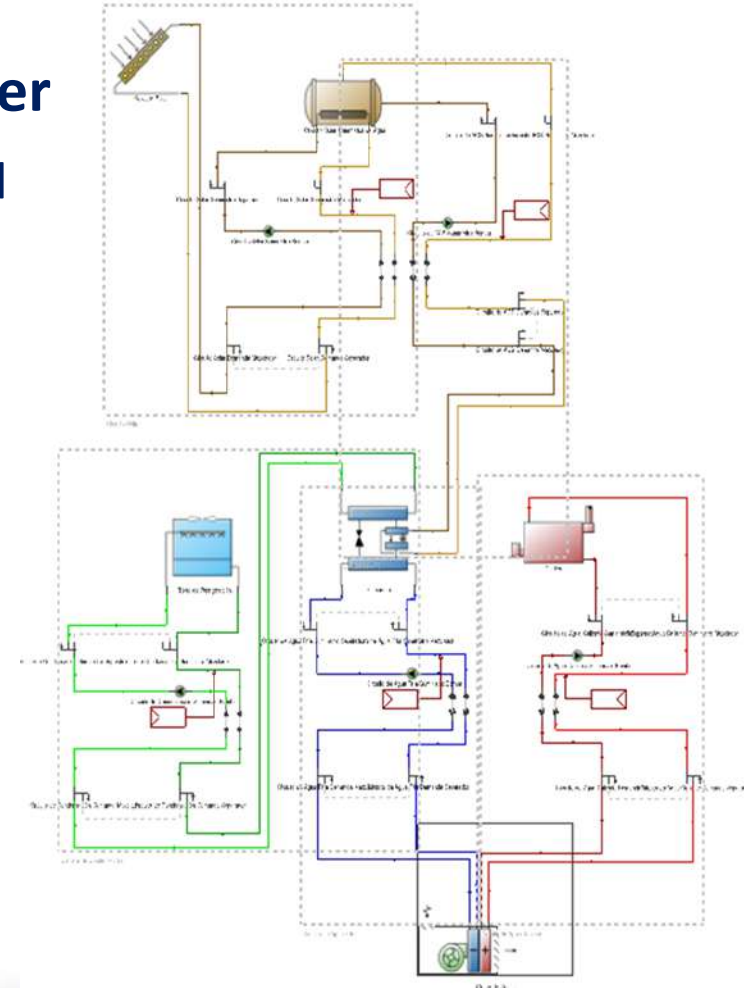
3.- Positive impacts and results to be highlighted

Adsorption Cooler

- Geographical replicability according with local climatical conditions

	Solar Radiation (Kwh/m2)	Summer	Winter
Area I	<3.8	Soft and rainy	Soft
Area II	3.8 to 4.2	Cold and dry	Hot and dry
Area III	4.2 to 4.6	Very cold and dry	Hot and dry
Area IV	4.6 to 5	Soft and dry	Hot
Area V	>5	Semi-soft and dry	Very Hot

	Cooling Saving
Area I	7,41%
Area II	4,63%
Area III	3,48%
Area IV	30,75%
Area V	35,33%





Thank you for your attention

Please, for any doubt don't hesitate to email me
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