



MicroTurbine Area LNEG IMP



National Laboratory of Energy and Geology (LNEG) building

[www.improvement-sudoe.com;](http://www.improvement-sudoe.com;)  
[www.improvement-sudoe.eu](http://www.improvement-sudoe.eu) [www.improvement-sudoe.es](http://www.improvement-sudoe.es)  
<https://www.facebook.com/Improvement-sudoe-108283054687328/>  
<https://twitter.com/ProjImprovement>  
<https://www.linkedin.com/company/improvement-sudoe/about/>  
<https://www.instagram.com/improvementsudoe/>  
<https://www.youtube.com/channel/UC7MpmeyHOZ9CqJuk0AP831w>

Interreg



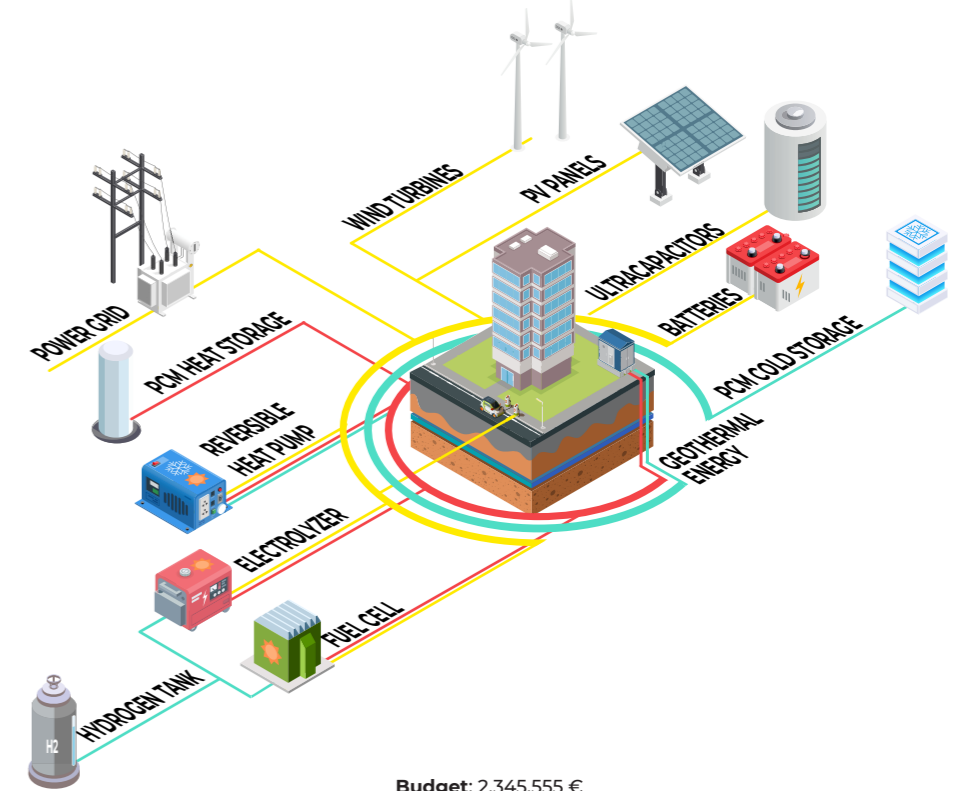
Sudoe

IMPROVEMENT

European Regional Development Fund

# IMPROVEMENT

INTEGRATION OF COMBINED COOLING, HEATING AND POWER MICROGRIDS IN ZERO-ENERGY PUBLIC BUILDINGS UNDER HIGH POWER QUALITY AND CONTINUITY OF SERVICE REQUIREMENTS (SOE3/P3/E0901)

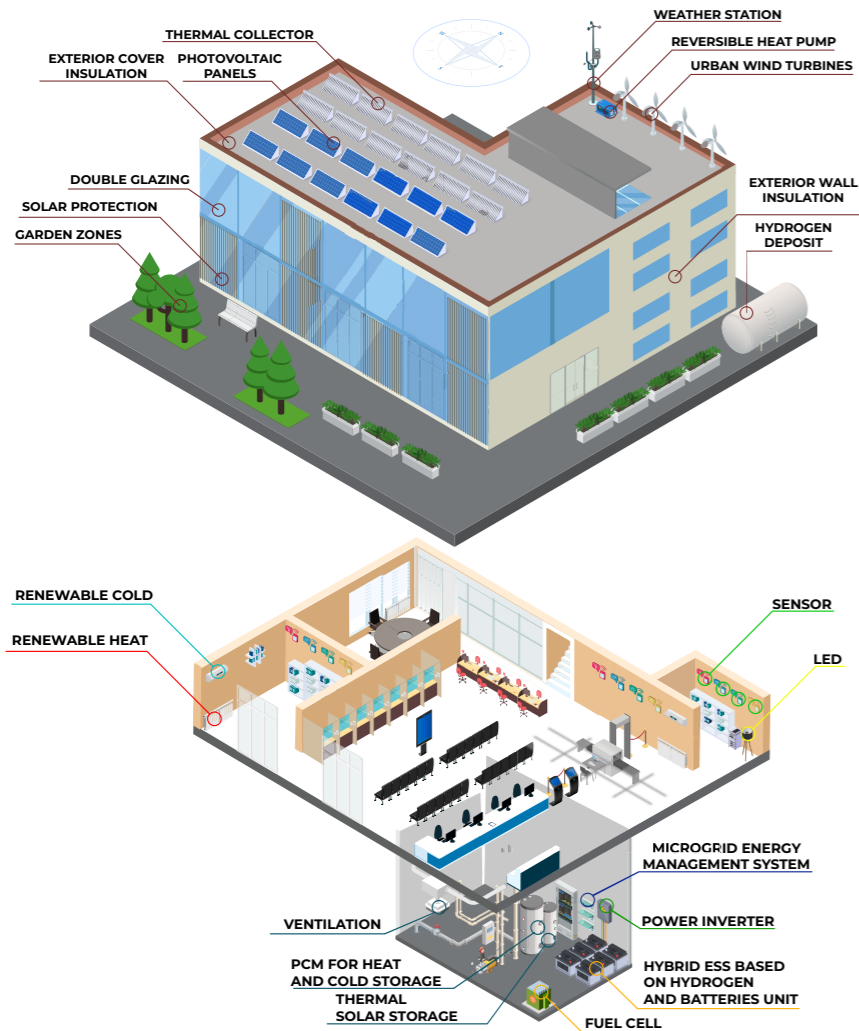


**Budget:** 2.345.555 €  
 (ERDF and Interreg SUDOE funding Rate: 75%)  
**Execution Period:** October 2019-March 2023



The overall objective of **IMPROVEMENT** is to turn existing public buildings into near-zero energy consumption buildings by integrating renewable energy microgrids with combined heat, cooling and power generation and storage systems. More specifically, **IMPROVEMENT** has three specific objectives:

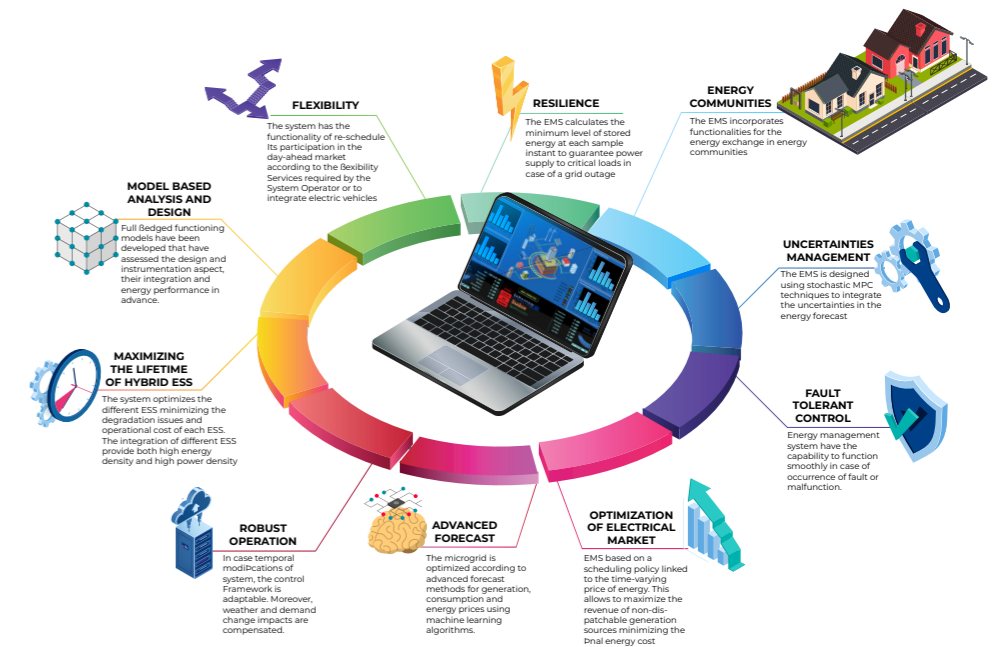
**1** Development of a system to **IMPROVE ENERGY EFFICIENCY IN PUBLIC BUILDINGS** through a solar heating and cooling generation system and the incorporation of active/passive techniques for near-zero energy consumption buildings.



**2** Development of a **FAULT-RESILIENT POWER MANAGEMENT SYSTEM** for microgrids under high quality supply design criteria.



**3** Development of a **MICROGRID ENERGY CONTROL SYSTEM** for renewable generation microgrids with hybrid energy storage under criteria of minimum degradation, maximum efficiency and priority in the use of renewable energy.



The **IMPROVEMENT** project will carry out **2 pilot plants** to implement and validate the new developments.

· **Lisbon Pilot Plant:** This plant, located in the National Laboratory of Energy and Geology (LNEG) building, will integrate renewable heat/cold generation systems into a microgrid for the conversion of an existing public building into a zero energy consumption building.

· **Puertollano Pilot Plant (Ciudad Real):** Experimental microgrid platform located at the headquarters of the National Hydrogen Centre (CNH2) where the different technical solutions devised will be integrated and tested.