

Project SUDOE Improvement

INTERREG IMPROVEMENT AWARENESS RAISING EVENT IN PORTUGAL LNEG (26 Out 2022)

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The IMPROVEMENT project is perfectly aligned with the European objectives by applying and validating new approaches for the renovation of public buildings in the region covered by the Interreg SUDOE program.

In the Portuguese case, the selected public building was built in the 1980s on the "Campus do Lumiar" and internally identified as "Edifício C",

The IMPROVEMENT Project has as main objectives;

- Improve energy efficiency in public buildings, through a solar heating and cooling generation system, and integration of active/passive techniques in buildings with almost zero energy needs (NZEB);
- Ensure power control for fault-resistant microgrids/isolated systems, according to high quality design criteria;
- Design an energy management system for micro-grids from renewable sources (micro-wind and PV) with a hybrid energy storage system according to criteria of minimum degradation, maximum efficiency and priority in the use of renewable energies.

The national pilot is being developed and operated by the teams of the Portuguese partners in this project, IST and LNEG, it is located at LNEG facilities in order to test, validate and demonstrate a management system for renewable energy micro-grids with generation combined heat, cold, electricity and storage systems.



Portuguese Pilot area (operated by LNEG & IST)
(Laboratory for Integration of Renewable Energy) at LNEG/Lisbon





Integration of endogenous renewable generation in a nZEB building

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RES in nZEB buildings





Wind Turbine





Renewable production 2018/2022 - PT Pilot

Interreg

Sudoe











Global Monitoring System View





Homepage Monitoring (web interface)



Sudoe Pilot Area – Comfort and Consumption Monitoring (web interface)

Interreg







Energy Monitoring (web interface)







Thermal Monitoring and control (web interface)





Thermal Monitoring and control (web interface)







Pilot Area - Electrical changes



- A new electrical circuit was designed to create a microgrid.
- Automatic switch between renewable and public supply (the default is renewable).
- New electric switchboard and protections.
- Supply of energy is assured in case of mains failure.



Pilot Area - Lighting system



- High performance Led lightning
- Dimmable LED lights in meeting room & auditorium
 - Dimming 0-10V control
- Motion sensor in pilot area access zone

Energy reduction 75%

Interreg Balance generation vs consumption (no EMS) OVEMENT



Sudoe

:: Optimizing consumption system ::

Monitoring total consumption, and automatically disconnecting one or more non-priority circuits when the set threshold is exceeded.

::Priority::

Circuits that not be turned off (Ex. Lights, office Schuck plugs)

::Non- Priority::

Circuits that can be turned off (Extra Schuck plugs)







THANK YOU! www.improvement-sudoe.eu





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