



POLITECNICO
MILANO 1863



HEAT4COOL



WP6 Demonstration, validation and LCA

HOCHSCHULE
LUZERN

Emil Vitanov, (Balkanika Energy PLC)





- WP6 objectives

- To perform detail design for the demonstration sites;
- To train installer and users;
- To apply the Heat4Cool energy efficient retrofitting solutions in 4 demo pilots: Bulgaria, Poland, Spain (buildings) and Budapest (district);
- To monitor the performances of the retrofitted buildings over a 1 year period;
- To validate the Heat4Cool final solutions against the parameters of control, user acceptance and LCA.





• Tasks, deliverables and milestones

I. Tasks and deliverables:

Task 6.1. Engineering, Design, Planning and Preparation of Retrofitting Project

Lead partner: Balkanika Participants: Polimi, Sortech, Thermowatt, Hypertech, Tecnalía, Sunamp, AES Solar, Solintel, Symelec, Iznab (M13 – M29)

Status: Completed

D6.1 Documentation and Drawings from Engineering and Design

Submitted: (M52)

D6.2 Plan for Execution of Retrofitting Project

Submitted: (M32)

Task 6.2. Training and Customization. Operation and Maintenance Manual

Lead partner: Symelec Participants: Sortech, Thermowatt, Hypertech, Sunamp, AES Solar (M19 – M29)

Status: Completed

D6.3 Trainings and Guidelines

Submitted: (M31)

D6.4 Operational and Maintenance Manual

Submitted: (M31)





Task 6.3. Execution of the Retrofitting Plan at Demo Sites and Monitoring

Lead partner: Balkanika Participants: Polimi, Sortech, Thermowatt, Hypertech, Sunamp, AES Solar, Symelec, Iznab (M30 – M45)

Status: Completed

D6.5 Executed Retrofitting Plan at Demo Sites

Submitted: (M54)

D6.6 Report of Data from Monitoring Period

Submitted: (M54)

D6.9. Documentation and drawing from Engineering and design. Execution of the retrofitting plan for the solar assisted AHP in Toledo

Submitted: (M52)

Task 6.4. User acceptance and Evaluation

Lead partner: Symelec Participants: Polimi, Themowatt, Hypertech, Tecnalia, Balkanika, Solintel, Iznab (M39 – M48)

Status: Completed

D6.7 User Acceptance and Evaluation Report

Submitted: (M52)





Task 6.5. Life Cycle Analysis of Integrated Retrofitting Technologies

Lead partner: Iznab, Participants: Themowatt, Hypertech, Tecnalia, Sunamp, AES Solar, Symelec (M30 – M45)

Status: Completed

D6.8 Report of Life Cycle Analysis

Submitted: (M54)

II. Milestones:

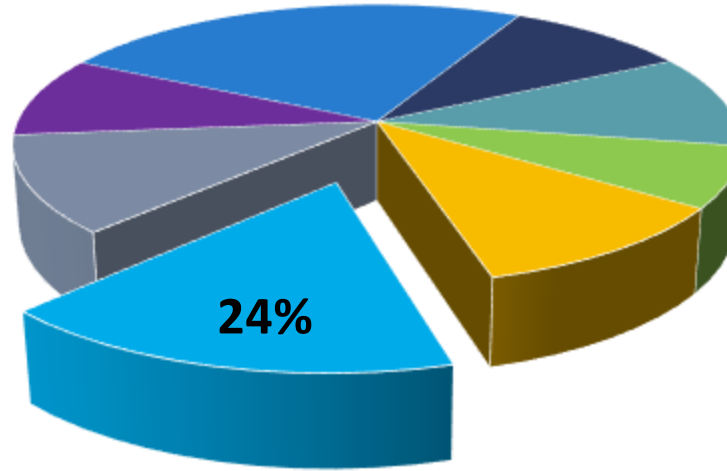
Milestone number	Milestone title	Due Date (in months)	Status
MS7	Plan for Execution of Retrofitting Project	29	Completed
MS8	Executed Retrofitting Plan at Demo	35	Completed
MS9	User Acceptance and Evaluation Report	48	Completed





Planned Use of PMs

PMs dedication for WP6



■ WP1 ■ WP2 ■ WP3 ■ WP4 ■ WP5 ■ WP6 ■ WP7 ■ WP8

WP1	53,5	7%
WP2	82	11%
WP3	126	16%
WP4	99	13%
WP5	70	9%
WP6	188	24%
WP7	73	9%
WP8	81	10%
TOT	772,5	100%





• **WP6 final results**

- ❑ The engineering and design retrofitting works were elaborated, followed with carrying out of the relevant plans, timeline and responsibility matrix of the deliveries, preparation activities, de-installation works, installation works, construction works and commissioning works for the all Demo Sites (*Valencia; Sofia; Budapest; Chorzow*);
- ❑ The relevant training activities and customization process were provided. Maintenance and operation manuals have been prepared;
- ❑ The three demo sites (*Valencia; Budapest; Chorzow*) were monitored by tracking the relevant data (in which actual data are gathered and compared against planned results);
- ❑ Life Cycle Analysis of the Integrated Retrofitting Technologies was prepared, taking into account specific results and all benefits.





• **WP6 final results**

- ❑ Retrofitting works were followed by BALKANIKA for the pilot site in Sofia.
- ❑ IZNAB for the pilot site in Chorzow.
- ❑ SYMELEC for the pilot site in Valencia.
- ❑ THERMOWATT for the pilot site in Budapest.
- ❑ POLIMI has been responsible for the monitoring data and assessment at pilot site level.
- ❑ IZNAB has been responsible for the Life Cycle Analysis of the Integrated Retrofitting Technologies implemented in the project.





Thank you

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