

DELIVERABLE T1.3.3

D.T1.3.3 – Estimation of heating losses from
thermal data / PA1

03/2020





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A.T1.3 Estimation of PV potential and heating losses

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1. Introduction and aims

The deliverable T1.3.3 belongs to the activities related to estimation of PV potential and heating losses (A.T1.3). In particular for each Pilot Action, a report has been created reporting some information gathered from onsite thermal acquisitions or data owned by local energy agencies. The overall idea is to report the heating loss situation in the pilot buildings and, if possible, the improvement after the investment activities. According to Application Form, the quantification of D.T1.3.3 is 7 but we created 8 documents corresponding to the 8 locations of the Pilot Actions (one cross-border). The various deliverables reports information and graphical results of thermal analyses in all PAs with (public or internal) and without investments. In this latter case, despite the lack of investment, thermal and energetic analyses were performed in any case to provide useful material to the local municipalities and inform them of possible energy efficiency actions they could undertake to improve the energy performance of buildings.

In the following section the activities related to PA1 in Bologna, Italy (RER) are reported.

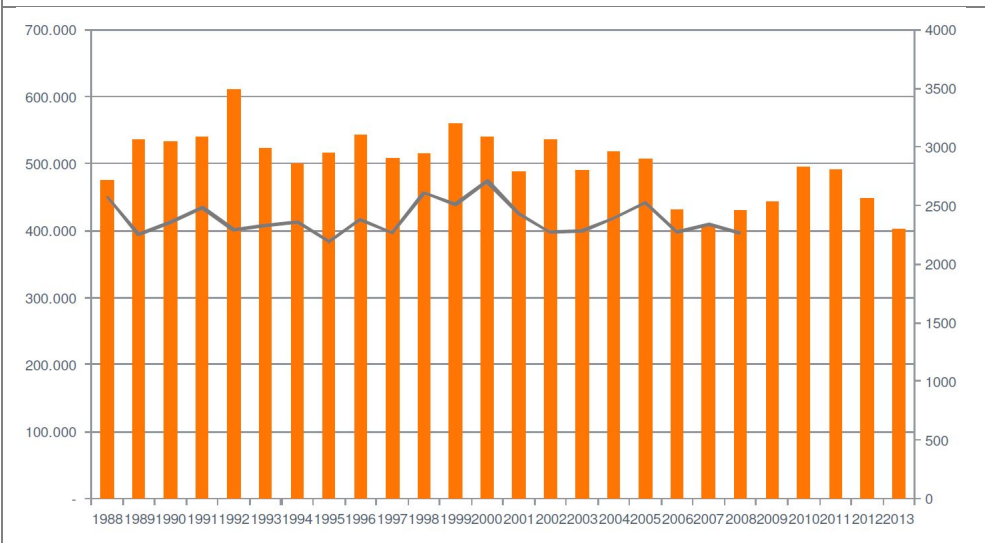
2. Thermal analyses in the BOOSTEE-CE pilot action #1

In the following table, you can find the pilot's analysis with some metadata and comments, to facilitate comprehension and understanding of the situation in the area of Bologna, Italy. No thermal data were acquired as the considered buildings are pretty high and thermal acquisition from the ground would have not correctly reported the exterior heating situation of the façade elements.

The building under consideration is made of 3 tower-shaped buildings of 62 apartments each and hosts 149 low income families, plus 37 private owners that bought their apartments during the years. All investments made in these buildings have to be approved by the Municipality, for what concerns the rented apartments, and by the private owners that have to care for their share. The ambient and water heating plant is obsolete and needs an extraordinary maintenance. For this reason, ACER Bologna, manager of the locate apartments, decided to apply for an EPC tender aiming to ask an ESCo to substitute the gas boiler and the distribution network from the thermal room to all the flats. In this way, with a little extra cost it will be able to repay completely the restoration interventions, and have it maintained for at least 9 years.

This energy efficiency action is still not so popular in Italy, but, thanks to its effectiveness, it's gaining more and more credit among Public Administrations.

Type of building	Social Housing building stock - tower
Number of buildings	3
Number of apartments	186
Number of apartments managed by ACER	149
Owner	ACER Bologna
Energy consumption (heating and how water) [MWh/year]	457 000
Type of energy source	gas boiler and water tank
Year of construction of the power plant (major renovation)	1976 (1999)
Annual final energy demand equivalent [kWh/m2/year]	291,90



- UP: Gas boiler and energy distribution wire, which is in need for strong maintenance
- LEFT: energy consumption chart of last 25 years (up to 2013)