

OUTPUT FACT SHEET

Pilot actions (including investment, if applicable)

Version 2

Project index number and acronym	CE 51 TOGETHER
Lead partner	Province of Treviso
Output number and title	O.T3.1 Pilot actions for improving the energy performance of public buildings in involved PAs
Investment number and title (if applicable)	
Responsible partner (PP name and number)	PP2/EAV
Project website	https://www.interreg-central.eu/Content.Node/TOGETHER.html
Delivery date	31.12.2018

Summary description of the pilot action (including investment, if applicable) explaining its experimental nature and demonstration character

Local activities in Czech pilot clusters were based on energy efficient activities in educational buildings. Due to fact that Czech associated partner - Vysočina Region owns all high school in region and due to fact that work with students is much better then with adult as they are more open to new ideas and approaches, EAV as a project partner decided to work with students of high schools and gymnasiums.

During implementation of our pilots students were not the only target group, we have focused on. We worked with different employees of school buildings:

- We had many meetings with school principals who shared their issues and problems in relation to the building and thanks to our direct contact with owner of buildings (associated partner of the project) we could interpret these issues right to the owner. i.e. necessity of energy retrofiting of the building
- Our cooperation with school caretakers were very close too. Due to fact that they know their building very well, we needed them during installation of smart metering. We were in touch on daily basis.
- Teachers from pilot schools took TOGETHER study materials and helped us with enforcement of energy efficient habits.

EAV (based on application form) apply an approach of mixed monitoring system (manual and automatic). 5 buildings were equipped by smart metering system (automatic data collection) and 5 buildings use manual data collection - janitors manually collect consumption data on weekly basis. Following energy is monitored in Czech pilot cluster buildings:

- Electricity
- Gas
- Heat

The first part of pilot actions was to analyze technical equipment of the building (heating, cooling, lighting, etc.) to make a list of requirements for smart meters installation. These activities were carried out in cooperation with janitors and caretakers. In buildings without SM system the procedure of manual data collection has been arranged.

The second part was installation of smart meters itself and start trial operation of smart meters. To verify the consumption data with real data, janitor collect the consumption data manually too.

Subsequently EAV started with raising awareness campaign in pilot buildings. In duration of pilot actions students was introduced in energy efficiency issues and gained their knowledge and habits in the field of energy efficiency and waste management. The involvement of pupils was supported by educational stories (mainly the Planet defenders interactive game, which is commonly used in English language as a combination of English language and physics teaching), posters, labels, notice boards etc. Another important action was exchange of experience between students from different pilot schools, where they meet each other. For students of pilot buildings were organised study visits in cooperation with Chamber of Commerce of Vysočina region, which cover costs for these study visits.

During implementation of pilot actions EAV used the Energy audit kit (purchased in WPT2) as a practical example for students. They taught how to work with thermocamera, multifunctional meters, laser distance meter, IR thermometer, and clamp multimeter, but we let them work with other meters with which we work on daily basis too - CO2 meter, Humidity meter, Lux meter etc.

Pilot implementation approach was different in different schools based on their interest i.e. in Gymnasium there are very enthusiastic students, there is a team of students who worked on EE activities, they worked with all above mentioned devices fulfilling practical exercises. On the other side in schools were students work with heavy machines and not spend much time in classrooms the approach must be more systematic (i.e. checking of turning off machines which are not used in current time), students and sometimes even teachers are not open to practical examples and exercises, they just „fulfil their duties. “

NUTS region(s) concerned by the pilot action (relevant NUTS level)

Pilot actions has been organised in CZ063 Vysočina region (NUTS 3) in following buildings:

- 1 Gymnázium Jihlava
- 2 Gymnázium Žďár nad Sázavou
- 3 OZS Jihlava, Husova
- 4 OZS Jihlava, náměstí Svobody
- 5 OZS Jihlava, Karolíny Světlé
- 6 SŠPTA Jihlava, tř. Legionářů
- 7 SŠPTA Jihlava, Polenská
- 8 SŠPTA Jihlava, Školní
- 9 VOŠ a SPŠ Žďár nad Sázavou, Studentská
- 10 VOŠ a SPŠ Žďár nad Sázavou, Strojírenská

Investment costs (EUR), if applicable

Investment costs for Smart metering procurement was 11. 018 €.

Expected impact and benefits of the pilot action for the concerned territory and target groups and leverage of additional funds (if applicable)

The main impact are energy, emissions and money savings for Vysočina Region as owner of the buildings, which can open the possibility of use of additional funds for investments in EE in school buildings. Target groups' benefits are based on raising their knowledge and habits, which can be shared to general public. In pilot buildings there were made significant investments during pilots implementation and other investments are planned:

- Energy retrofitting of 3 workshop buildings in SŠPTA Jihlava, Školní. Building were completely insulated (roof, walls, windows and doors replacement)
- New lighting system in 3 buildings of Gymnázium Žďár nad Sázavou. The replacement of old lighting system is divided into 3 phases. During summer holiday is replaced lighting system in one building.

Total leverage funds are about 588.000€.

Sustainability of the pilot action results and transferability to other territories and stakeholders.

All the activities of pilot actions were based on effort to change the habits of students who are open to new ideas and approaches. They can transfer the habits to their homes, where they can teach something new to their parents and siblings. This is sustainability and transferability of soft measures (practises) used within pilot actions duration. Regarding sustainability of investment measures, based on experience from installation of smart meters EAV has an overview about energy and indoor quality environment monitoring market, so they can help to associated partner choose proper solution for dissemination and replication the pilot activities from the investment point of view.

Associated partner considers the possibility of deploying smart meters in most of their buildings (AP owns more than 700 buildings) thanks to experience with cheap smart metering based on Internet of things technology. Based on TOGETHER project cooperation agreement between EAV and associated partner, AP will set up follow up activities based on outputs of TOGETHER project which support them in activities leading to Energy management certification (ISO 50 001). Nevertheless, in all buildings owns by associated partner there is running the manual consumption data collection. Data are gathered in common system developed by IT department of AP for further use.

Lessons learned and added value of transnational cooperation of the pilot action implementation (including investment, if applicable)

It is great to cooperate with other partners, who has different point of view, not only because of different nationality but because of different position in the sense of negotiation power or “company size”. Bigger partners think and performs activities on a larger scale, which can smaller partners follow and transfer. Based on cooperation of different partners with different knowledge and expertise, it was possible to create and disseminate big amount of different high-quality materials helping with investment and non-investment energy efficiency measures.

Another point of view is that different people in different buildings has different opinions and this project does not have to be meant as a benefit and opportunity. We met people with absolute lack of interest who consider project activities as additional duties and nonsense commands.

Contribution to/ compliance with:

- relevant regulatory requirements
- sustainable development - environmental effects. In case of risk of negative effects, mitigation measures introduced
- horizontal principles such as equal opportunities and non-discrimination

Pilot actions idea of reaching energy savings in public buildings and reinvesting of saved money in energy efficiency contribute to national policy targets related to EE of public buildings for 2020: The main target is common for EU - to achieve the savings target by 2020 20% of primary energy consumption. Regarding buildings in public sector, there is aim to Energy retrofit 3% public sector buildings each year. This approach corresponds with sustainable development too.

Sustainable development: the pilot actions combined with the investment contribute to: stimulating market transformation towards more efficient buildings; mobilising public & private investments, rationalizing public expenditure; participants will be stimulated to adopt more efficient behaviour that can be replicated in other contexts (e.g. at home).

Equal opportunity: The use of monitors for the visualization of the consumption data (real-time based) does not exclude the possibility that disabled people, such as the visually impaired, can be involved in the use of energy monitoring data, as it is possible to remotely extract the data and transform them into excel tables and graphs that can be explained by other colleagues and/or schoolmates. Negotiating Panels were established without any gender limitations or pre-fixed quota. It has to be underlined that in the Italian school system most of the teachers are women. The percentage of male of female students depends on the type of schools.

Equality between men and women: Any activity based on understanding/targeting differences in patterns of consumption by women and men (e.g. awareness raising activities, design of key messages etc.) must ensure respect for non-discrimination and is not to be used against the gender equality principle.

Environment: a profitable use of smart meters combined with demand side management activities can leverage EE retrofit investments that could create conditions to improve the users' well-being and environmental conditions.

References to relevant deliverables (e.g. pilot action report, studies), investment factsheet and web-links

If applicable, additional documentation, pictures or images to be provided as annex

Relevant deliverables:

D.T3.1.2 Technical profile of pilot buildings

D.T3.1.3. EA reports

D.T3.3.1 Reporting of Pilot actions