

OUTPUT FACT SHEET

Pilot actions (including investment, if applicable)

Version 2

Project index number and acronym	CE906 BOOSTEE-CE
Lead partner	Bruno Kessler Foundation
Output number and title	O.T3.1 Pilot actions for EE upgrade in public buildings
Investment number and title (if applicable)	PA6 - EE with OnePlace platform (PA6) in a kindergarten of Koprivnica (HR)
Responsible partner (PP name and number)	City of Koprivnica (PP9), Regional Energy Agency North (PP4)
Project website	https://www.interreg-central.eu/Content.Node/BOOSTEE-CE.html
Delivery date	10.2019
Summary description of the pilot action (including investment, if applicable) explaining its experimental nature and demonstration character	

Braca Radic Elementary School and the Kindergarten Loptica were chosen because these two objects needed to go through refurbishment process and that was a chance to integrate smart metering system to track improvements in energy efficiency through process of refurbishment. Also, it was a chance to track possibilities for further energy efficiency improvements. These two buildings were struggling with problems of excessive energy consumption, lack of proper control and energy management, unreasonable and irrational use of energy, lack of energy awareness among users of the buildings, etc. and smart metering system is great way to fully or partly correct these problems.

Intelligent energy management systems were built into two buildings, Braca Radic Elementary School and the Kindergarten Loptica. Basically, the system includes measuring devices (smart meters) and software for displaying and comparing the results. Measuring devices include reed switch that collect information about electric energy, gas and water consumption as well as internal temperature and CO2 level. Central unit processes and displays collected data within specially designed software in real-time. This investment provides numerous benefits such as monitoring, planning and control of energy and water consumption costs. Ultimately, the system enables better management of energy consumption, easier maintenance of facilities and financial savings. Furthermore, smart metering data are integrated in Croatian Energy Management Information System (ISGE).

The whole process of SM system implementation in Braca Radic Elementary School and Kindergarten Loptica started with the first month of 2018 when the needs have been defined. Current state of the building was analysed. After that, market research was conducted in March 2018 to explore possibilities of available SM systems. In April, tech guys from Regional energy agency North linked the needs with the possibilities of SM systems considering financial frame. Considering that, project subject was defined and according to that, public procurement was carried out. Contract was signed in July with the ASR Group company which performed the works. System is in full function since the beginning of October 2018.

As for the pilot action objects in Koprivnica, applied solutions is promoted on OnePlace and it will probably be replicated elsewhere in Croatian regions and beyond as a good practice to follow. Pilot actions were also often promoted on social networks and articles in local newspapers and websites.

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

- NUTS 1 - HR0 Hrvatska
- NUTS 2 - HR04 Continental Croatia
- NUTS 3 - HR045 Koprivnica-Krizevci County

Investment costs (EUR), if applicable

Investment costs (total) - 13900 EUR:
Thematic equipment - 6900 EUR
Installation works - 7000 EUR

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

Increasing public energy awareness.

Building users will gain experience in how smart metering works and how it should be monitored.

Monitoring, planning and control of energy and water consumption costs.

The system will enable better management of energy consumption, easier maintenance of facilities and financial savings.

Smart metering data are integrated in Croatian Energy Management Information System (ISGE).

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

Installed equipment in two pilot action buildings remains the property of the City of Koprivnica according to the Agreement drawn up between CoK and two pilot action buildings - Kindergarten Loptica and Primary school Braca Radic. The city is committed to maintain the installed equipment and to collect the data through smart metering (SM) system for minimum 5 years. Data will be analyzed in order to optimize termotechnical systems in the buildings with the ultimate goal - reducing energy consumption in buildings. By Croatian law, all public buildings in Croatia are obligated to send energy consumption data to Croatian Energy Management Information System (ISGE). Implemented SM systems are connected to ISGE and will send data automatically and indefinitely so employees of Kindergarten and School don't have to do it manually.

The applied solutions will be replicated elsewhere in Croatian regions and beyond as a good practice to follow.

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

The effect of investments and the added value in the transnational dimension is the exchange of experiences and practices of carrying out similar investments in various political, social and technical conditions. Joint cooperation between project partners on development and preparation of pilot actions may create excellent base for future work and joint cooperation on other future projects.

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

By Croatian energy efficiency law and Croatian rulebook on systematic energy management, all of the public sector buildings in Croatia are obligated to send energy consumption data to Croatian Energy Management Information System (ISGE). Implemented SM systems are connected to ISGE and will send data automatically and indefinitely.

There is the potential to change society's bad energy habits by raising environmental awareness. By collecting a data on energy consumption and tracking of energy losses enabled through smart metering system, we can take targeted actions to increase energy efficiency in buildings and thus directly take a part in CO2 and energy consumption reduction.

Women and men are equally presented among staff and through all of the segments of pilot action preparation and implementation. Responsibility for tasks as well as involvement on project is equally shared and fully in line with competencies and experience of staff members of both genders.

The activities implemented in the project equalize the chances of the territory in the region and the country by implementing energy efficiency improvement measures affecting the quality of the climate and the environment, and Koprivnica position as a city increases, where the energy monitoring and management system has been installed as a modern area and following European trends.

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

Deliverables: D.T3.3.1 Pilot actions preparation, D.T3.3.2 Pilot actions guidelines, D.T3.1.7 EE with OnePlace platform (PA6) in a kindergarten of Koprivnica, D.T3.2.1 Evaluation report on pilot actions implementation, D.T3.2.2 Pilot action reports, PA6 fact sheet

Web-link: <https://www.interreg-central.eu/Content.Node/PA/PA6.html>