

DELIVERABLE T3.2.2

D.T3.2.2 – Pilot action reports

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A.T3.2 Evaluation of pilot actions for EE improvement

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1. Introduction and aims

This document is a post-investment report describing the pilot action. This determines the results of the investment and other accompanying activities.

The aim of this document is to present the achievements of the implemented measures and their usefulness.

2. PA report

This chapter presents in tabular form all interesting information about the pilot action. The table below is the business card of the pilot. It contains attractive information that not only shows the course and achievements of the pilot action but can also be a tip for people interested in similar energy efficiency improvement measures or owning similar buildings. It was demonstrated in document D.T3.1.8 that pilot action in Velenje is a good practice, so it is a testimony to how such investments should be implemented.

Name of the pilot action	Improving energy management (PA7) in a public school of Velenje
Type of the pilot action	Investment
Location	Municipality of Velenje, Slovenia
Number of modernized buildings (with building's type)	1 educational building
Modernized area of the buildings	8000 m ²
Main problems in the buildings	High energy consumption due to building large dimensions and old systems A lot of investments funds for energy recovery needed No educated staff (e.g. energy manager in the building), lack of proper control and energy management Lack of knowledge and energy awareness among managers and users of the building
PA goals	<ol style="list-style-type: none"> 1. improvement of the energy performance, better management of energy consumption 2. monitoring, planning and control of energy and water consumption costs 3. increasing the comfort of the building use 4. easier maintenance of the facilities 5. promoting and disseminating knowledge about energy, efficiency measures in the building 6. financial savings
Type of energy efficiency improvement method used	<ul style="list-style-type: none"> - installation of smart metering for electricity, heating and water - installation of central monitoring system
Number of smart meters (with their purpose)	2 smart meters for electricity 3 smart meters for heating
Pilot action duration	05.2018-09.2019
Partners involved	MOV
People number involved to implement the PA	5-12



Investment value	14 823 €
Description/Details of the PA	<p>The pilot action was implemented measures: installation of monitoring system - installation of smart meters in the Music Scholl Fran Korun Koželjski Velenje and education of building managers. The second issue is equally important, as energy monitoring should coincide with rational and conscious energy consumption. The implementation of the central monitoring system consisted of installation of heating meters on three different parts of the building and installation of electricity meters on two main distribution boxes. Parallel activities are education head staff of school and maintenance team, motivating them to analyze energy consumption on a daily basis and reduce energy consumption through various organizational measures. In addition, the activities were also focused on raising awareness among the building's employees and users regarding the Rational Use of Energy (RUE). Our pilot actions were installing PLC computer which is connected with smart meters through smart metering system (two smart meters were installed Electric Greatness Meter and Heat gauge). The data gathered by the smart meters will be used by an energy management system that keeps track of the consumption, therefore the detailed energy flows help us to determine malfunctions, to reveal over-consumption periods and make recommendations to decrease energy use, to ease the operation of the building and most importantly to increase comfort.</p>
Type and number of the stakeholders reached	<p>Number of reached target groups in the framework of pilot action:</p> <p>General public - 44 Local public authority - 7 Regional public authority - 1 Sectoral agency - 4 Infrastructure and (public) service provider - 3 Higher education and research - 2 Education /training centre and school - 2 SME - 2 Business support organisation - 2</p>
Achieved effects/results	<ul style="list-style-type: none"> • Improving energy efficiency in Velenje. • Building users will gain experience in how smart metering works and how it should be monitored. • Reduction of energy consumption of up to 10% (the power of control). Overall energy savings for heating and electricity are around 51,3 MWh so far. • Education of building managers. • The energy management system helps to determine malfunctions, to reveal over-consumption periods and make recommendations to decrease energy use. • The raising environmental awareness and change society's bad energy habits. • Increasing the comfort of the building use. • Easier operation of the building. • Promoting and disseminating knowledge about energy efficiency measures in buildings.



	<ul style="list-style-type: none"> • Raising awareness among the building's employees and users regarding the Rational Use of Energy (RUE). • The exchange of experiences and practices of carrying out similar investments in various political, social and technical conditions.
Satisfaction of users	Building managers have learned about the benefits of energy monitoring in the form of reduced energy consumption. Using the OnePlace platform is very interesting because there is a great demand from potential investors in solar installations. It can serve as an urban database for energy and resource consumption data, and as a support for strategic planning for the municipality, energy agencies and local services.
Possibility of replication	The activities can be transferable and replicated in other cases and regions. The conducted analysis shows that the pilot action in Velenje and the lessons learned during its implementation can be repeated in the Savinjsko-Šaleška region (SAŠA region).
Distinctive feature of the pilot action	<ul style="list-style-type: none"> – use of new / modern technologies and solutions (installed smart meters) – good cooperation with building managers and external experts during the lifetime of the pilot – implementation of organizational measures (building managers are controlled by municipality (monitoring the energy usage) and this is the main reason for building managers are acting more responsible) that affect the reduction of energy consumption, because they can provide energy savings of up to 10% (the power of control) or, in certain cases, even more when properly implemented
Number of staff trainings	1
Number of promotional meetings – focus group meetings, seminars	3

Table 1: Pilot action business card

The results presented above clearly show that the pilot action has brought and will bring so many benefits that one can speak of success.

The analysis of activities showed that all intended plans were implemented and met expectations.

3. Conclusions

This study is a summary of the pilot action in Slovenia. The main results are measurable benefits achieved in selected buildings, including cost and energy savings and reduction of CO₂ emissions. In addition, it can be concluded that the OnePlace platform is useful for preparing, conducting and monitoring EE investments as a tool supporting the entire investment process.

The identified replication possibilities of the pilot action in other buildings or locations as well as the transfer of acquired knowledge and experience prove that the pilot can be successfully continued and developed.

The information contained in this document is based on deliverable D.T3.1.8, D.T3.2.1, Output 3.1 and PA7 fact sheet.