

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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Authors		
	Name (organization)	Name, e-mail
WP leader	Mazovia Energy Agency (MAE), PP5	Aleksandra Luks, a.luks@mae.com.pl
Contributing participants	Tolna County Development Agency (TCDA), PP6	Balázs Kiss, kiss.balazs@tolnamegye.hu



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.T3.1.5 that pilot action in Tolna is a good practice, so it is a testimony to how such investments should be implemented.

Name of the pilot action	Application of OnePlace (PA4) for improving EE in public buildings in Tolna
Type of the pilot action	Investment
Location	Municipality of Tolna, Hungary
Number of modernized buildings (with building's type)	3 public buildings - Town Hall, 'Lovarda' Cultural Center and Sport Center
Modernized area of the buildings	1 922 m ² + 1 959 m ² + 2 050 m ²
Main problems in the buildings	Not having separate meters in different parts of the Sports Hall operated by different organizations The newly installed solar panels on the City Hall is not monitored thoroughly enough, therefore the efficiency of this PV capacity can be tracked No monitoring leading to improved usage patterns and ultimately, higher energy efficiency
PA goals	<ol style="list-style-type: none"> 1. detailed measurement of the energy flows in the building in order to reveal lavish usage, leakages, malfunctions and to be able to monitor the consumption of the building parts with different functions 2. increasing the comfort of the building use 3. easier operation of the building 4. promoting and disseminating knowledge about energy efficiency measures in buildings
Type of energy efficiency improvement method used	<ul style="list-style-type: none"> - electricity metering installed in three spots of the Sports Hall and overall electricity metering in the Town Hall and the Cultural Centre - installation of gas metering on the currently operating 2 gas boilers in the Lovarda Cultural Centre, overall gas metering of the Town Hall and the Sports Hall - integration of data from the installed solar panels on the roof of the Town Hall in a common remote monitoring system
Number of smart meters (with their purpose)	5 electricity smart meters 5 smart gas meters
Pilot action duration	01.2020-10.2020



Partners involved	TCDA
People number involved to implement the PA	4
Investment value	15 000 €
Description/Details of the PA	<p>The pilot action includes an investment in smart meters installation to measure real-time electricity and heat consumption and energy monitoring system for improving energy management. The OnePlace platform is used as implementation and monitoring tool. Staff training in energy efficiency is a complementary activity.</p> <p>As part of the investment, smart metering will be installed to refine the energy monitoring and increase the capacities of the municipal staff to oversee specific utilities. Gas and electricity consumption data will be forwarded via an online system since the Municipality operates numerous buildings.</p> <ul style="list-style-type: none"> • Sports Hall: Identified three spots where electricity smart metering will be beneficial for the operator and the users/tenants. Being able to track the consumption of the cafeteria (operated by a third party making difficult to measure their consumption), the inner lighting of the hall and the outer reflectors separately to determine the timing of certain users. • Town Hall: RES capacities were installed in 2015. The data provided by the inverters will be incorporated into a common software environment facilitating easier use and planning of the electricity generation / consumption. • Lovarda Cultural Centre: Smart meters that measure gas consumption in two gas boilers separately, which provide heating of the facility. The inner temperature measurement will be integrated into the online system so that the staff can monitor and intervene to boost efficiency. <p>Other planned investments in the Municipality of Tolna:</p> <ul style="list-style-type: none"> • Displaying current energy consumption where smart meters are available. • An energy certification process will be carried out during the implementation of the investment.
Type and number of the stakeholders reached	<p>Number of reached target groups in the framework of pilot action:</p> <p>General public – 11518 (with the PA article)</p> <p>Local public authority - 3</p> <p>Regional public authority - 0</p> <p>Sectoral agency - 0</p> <p>Infrastructure and (public) service provider - 0</p> <p>Higher education and research - 0</p> <p>Education /training centre and school - 0</p> <p>SME - 0</p> <p>Business support organisation - 0</p>
Achieved effects/results	<ul style="list-style-type: none"> • Improving energy efficiency in Tolna. • Creation of a best practice for energy, cost and CO₂ - saving based on smart metering and energy certification. • Building users will gain experience in how smart metering works and how it should be monitored. • Increasing the comfort of the building use.



	<ul style="list-style-type: none"> • Easier operation of the building. • Approx. 5-7% reduction in energy consumption, which will reduce costs and CO₂ emissions. • Promoting and disseminating knowledge about energy efficiency measures in buildings. • Raising environmental awareness and change society's bad energy habits. • Increasing public energy awareness by publication the best practice model, and transferring to other objects. • The exchange of experiences and practices of carrying out similar investments in various political, social and technical conditions.
Possibility of replication	The activities are transferable and can be replicated in other cases and regions.
Distinctive feature of the pilot action	<ul style="list-style-type: none"> – Smart metering integrated to an energy management system, – Possibility of future upgrades to automate certain building features, such heating, shading, etc.
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 integration of smart metering in pilot buildings with the municipal monitoring system will result in a comprehensive solution that will also be able to support other buildings connected to one common grid. This will allow control and monitoring of a larger area in terms of energy consumption.

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

3. Conclusions

This study is a summary of the pilot action in Hungary. 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.T3.1.5, D.T3.2.1, Output 3.1 and PA4 fact sheet.