

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)	I2 - Investment in an energy monitoring system for pilot actions in 12 public buildings in Zagreb (PA4)
Responsible partner (PP name and number)	PP4/Zagreb
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

The TOGETHER project in Zagreb included the participation of 12 buildings, thereof 6 kindergartens and 6 primary schools. The main aim was to encourage the behaviour change in children (as they were the primary target group), as well as raise their awareness concerning the issues of energy and energy saving. Aside from the children target group, the project activities and the manner of their implementation were designed so as to include the adults (mostly the building staff and teachers, as well as the children's parents) and encourage them to also change their attitude towards the question of energy and energy saving. In order to do so, the City of Zagreb organized and implemented the required training workshops, whereof two were held on site - one in a kindergarten and one in a primary school included in the project. Aside from that, the City of Zagreb also organized three advocacy meetings and eight stakeholder group meetings in order to present the project results. These were organised and conducted with the aid of the external expert, contracted to help the schools and kindergartens implement the project actions. All the objects participating in the project opted for a pilot action that included active participation of children and building staff: at the beginning of the project activities, the schools and kindergartens formed Energy tams, groups of students/children, teachers, principals and caretakers who took it upon themselves to monitor activities implementation in the building as well as to work with other individuals (children and adults alike) and raise their awareness, thereby permanently changing the behaviour of the building users. Some of the activities organized by buildings themselves included as follows: production of films, inclusion of additional topics - such as connection between energy saving and environment protection - into their project activities, organizing eco patrols, monitoring energy consumption, creating promotional posters, labels, graphs (= awareness raising campaigns), "Big kids teach the small kids" lectures, including the activities in sports events ("Get moving to save energy") etc. The activities also included daily monitoring of energy, water and heating savings achieved, by way of monitoring the dashboards and using the measurement devices - luxmeter, energy consumption meter and thermometer. The pilot actions also included use of the educational game developed for the purposes of the project, Planet defenders, which was received quite well, as it allowed for the topic to be presented to the children in a fun and interactive way.

Smart meter system is used in two ways:

1. on object monitoring the results of implemented measures and activities from past week. So, users can now better understand what activities give best results. If users manage to include everyone in the activity of turning off the light after using the classroom or switching all computers off (total shut down not stand by), the results of the energy saving will be displayed on the monitor. Using the measurement devices, they can get an accurate reading of how much energy every electric device is consuming.
2. the system shows the state of the building during the night, when nearly zero consumption is expected, especially as concerns water.

In one pilot building, we prevented overleakage, after having noticed high water consumption at night. There occurred pipe rupture behind the meter. We got positive opinions from the users (mostly kids) that they are checking the dashboards every morning to see if the troll is crying or is happy.

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

The NUTS region where the trainings were being conducted is HR041, the City of Zagreb, as indicated in the Application form. The pilot buildings are located in different areas of the city and include 6 primary schools and 6 kindergartens.

Investment costs (EUR), if applicable

Investment costs (EUR), if applicable

The investment is made of up of 2 core parts:

- BL5 - equipment in total amount of € 36.482,63 (VAT included)
- BL6 - works for the installation of the procured equipment in total amount of € 23.099,33 (VAT included).

Moreover the contract covers the full functionality of the installed sistem for the 5 year period from installation

In EUR				
OBJECT	CONTRACT VALUE	FOR PAYMENT EKONERG (30%)	FOR PAYMENT LENS (70%)	TOTAL
1.	5.104,74 €	1.299,97 €	3.804,77 €	5.104,74 €
2.	4.096,26 €	1.299,97 €	2.796,29 €	4.096,26 €
3.	5.455,15 €	1.299,97 €	4.155,18 €	5.455,15 €
4.	5.190,21 €	1.299,97 €	3.890,24 €	5.190,21 €
5.	3.891,15 €	1.299,97 €	2.591,18 €	3.891,15 €
6.	3.609,12 €	1.299,97 €	2.309,15 €	3.609,12 €
7.	3.848,42 €	1.299,97 €	2.548,45 €	3.848,42 €
8.	3.848,42 €	1.299,97 €	2.548,45 €	3.848,42 €
9.	3.891,15 €	1.299,97 €	2.591,18 €	3.891,15 €
10.	3.822,78 €	1.299,97 €	2.522,81 €	3.822,78 €
11.	4.908,18 €	1.299,97 €	3.608,20 €	4.908,18 €
TOTAL exl. VAT	47.665,56 €	14.299,67 €	33.365,89 €	47.665,56 €
VAT (25%)	11.916,39 €	3.574,92 €	8.341,47 €	11.916,39 €
TOTAL with VAT	59.581,95 €	17.874,59 €	41.707,37 €	59.581,95 €
Additional clarification:				
EQUIPEMENT exl. VAT (BL5)	29.186,10 €	0,00 €	29.186,10 €	29.186,10 €
VAT (25%)	7.296,53 €	0,00 €	7.296,53 €	7.296,53 €
EQUIPEMENT with VAT (BL5)	36.482,63 €	0,00 €	36.482,63 €	36.482,63 €
INFRASTR. AND WORKS exl. VAT (BL6)	18.479,46 €	14.299,67 €	4.179,79 €	18.479,46 €
VAT (25%)	4.619,87 €	3.574,92 €	1.044,95 €	4.619,87 €
INFRASTR. AND WORKS with VAT (BL6)	23.099,33 €	17.874,59 €	5.224,74 €	23.099,33 €
TOTAL exl. VAT	47.665,56 €	14.299,67 €	33.365,89 €	47.665,56 €
VAT (25%)	11.916,39 €	3.574,92 €	8.341,47 €	11.916,39 €
TOTAL with VAT	59.581,95 €	17.874,59 €	41.707,37 €	59.581,95 €

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

The pilot action has shown great success through its implementation in this, and another previous project. Since the topic of energy is quite difficult to present to children, the schools that implemented the project are considering implementing it as one of the school activities. Additional benefit can be seen in the growing popularity of the Planet defenders educational webgame, as it covers several topics that can be used when explaining the topics in any school curricula.

Still, the greatest benefit in the concerned territory is tied to the so-called “ripple effect”: namely, as the project in Zagreb included working with the younger generation - kindergarten and primary school children - it is expected that they will implement the newly acquired knowledge to their life outside of the school as well. As the children accept and internalize the information they learned during their participation in the project activities, it is expected they will start transferring it to members of their families as well, thus creating a ripple effect of implementing energy conscious behavior on a greater level.

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

The pilot action was overall a success, insofar as it demanded active participation of the Energy teams, but also other school and kindergarten children. The results of the pilot actions were presented during the advocacy meetings to several stakeholders (including the local, national and regional level and experts in the energy field). The main upside of the pilot actions was the fact that they were comprehensive, but also allowed for the participants to include their own ideas, thereby giving them a feeling of pride, because they could see the direct result of their actions via dashboards with information on the current state of energy, water and heating savings. The Energy teams also had constant support from the partner as well as experts in the field of energy, obtained through the process of public procurement. As the implemented activities are easy to transfer to other schools and don't demand a great investment (save for the acquisitions of dashboards), the possibility of pilot action replication is great.

The sustainability of smart meters holds great importance for several reasons:

1. In accordance with the law on efficient energy use, each facility that consumes more than 700,000.00 kn for energy and water, shall have a system for remote measurement of energy consumption installed
 2. The buildings undergoing, or those that have undergone energy refurbishment, have had a remote energy consumption measurement system installed (monitoring the efficiency of measures installed - verification of savings)
 3. Installing systems with the aim of preventing overconsumption of energy and water (done by sister City Offices)
- All systems merge into the City of Zagreb Central Energy Information System, which monitors and analyzes data obtained. Thereby, adequate measures are taken regarding the analysis. All this has resulted in close to 100 objects equipped by a remote reading system in the City of Zagreb, and this number is continuously on the rise. Alongside such energy consumption measurement, the City is also implementing a remote reading system for measuring energy production on its OIE systems.

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

The implementation of the pilot action has shown that the interest of the target groups is great, however there is a danger of gradual decline of interest as the project progresses. For this reason, it is imperative for the participants to be allowed a degree of freedom so that they can suggest own ideas and implement them. There was significant interest from the schools to contact their counterparts in other countries and some even disseminated the project idea not only among the parents of the children attending the schools and kindergartens in the project, but also to other schools and kindergartens not included in the project.

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

Relevant requirements:

The characteristics of the systems installed comply with the laws and regulations as in force in the Republic of Croatia. The systems installed are also holders of the CE marking, indicating conformity with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). Sustainable development - the pilot actions and the investment activities contribute to positive environmental effects, through the goal of raising the user's awareness and influencing them to mind their energy consumption. The project also included some activities that were not officially included in the project (kindergartens planted their own gardens and learned about the impact of uncontrolled energy consumption on the environment).

Equal opportunity

The Negotiating panels were established so that all interested persons, regardless of their gender or possible physical disabilities, could take part and were also consulted when making decisions. Even though most personnel in kindergartens is female, the project also saw the participation of several male personnel. The project offered the possibility of participation to all and did not discriminate when organizing activities.

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

D.T2.1.6 - pilot concept design

D.T3.2.4 - PA4 design for 12 buildings - kindergardens/elementary schools in Zagreb HR.

D.T4.1.1 - Stakeholder meetings

D.T4.5.2 - Advocacy events

D.C.4.8 - Educational short story aiming at instilling proper behavior

D.C.5.3 - Informative Event “Rethink the Energy Efficiency as the first fuel” linked to the pilot actions

D.C.6.7 - A multichannels and interactive campaign towards the buildings users/visitors

D.C.7.3 - Local Workshops with buildings occupants; how to make them aware of their routines and habits