Demand Side Management Tools

Interreg CENTRAL EUROPE
European Union
European Regional Development Fund
TOGETHER

D.T3.3.2 report on PA1 realised on 20 schools and institutional buildings in Italy

CE51 TOGETHER

Executive summary

This template is delivered for reporting pilot actions with technical description and documentation about the combination/selection and application of the integrated measures applied in pilot buildings. Partners are required to include a presentation of their Pilot Action, providing with an overview of the implemented activities and results achieved. Each partner has to produce this report using information and content collected at local level with the support of the managers/users/negotiating panels of the involved buildings.
It is not requested to included detailed information for each single buildings involved (a part some specific information about the energy consumption) as detailed information have been already provided in the PILOT CONCEPT DESIGNS. Exemplification, reference to specific context are welcome.

Note for the authors: please provide information in all the requested text boxes. You have to consider that the provided information will serve to prepare other project documents/deliverables such as the final e-book. For that reason it is important to write clearly to create the conditions that everyone can understand and get the added value you want to share with the "external" audience.

1. Summary description of the pilot action (including investment, if applicable) explaining its experimental nature and demonstration character. Overview of the Pilot Actions implemented, general introduction. Write max 2 pages that introduce your local activities, the target group engagement, results. Please give evidence of the approaches implemented in the different buildings in particular if they are not belonging to the same category (educational, institutional, others) include some pictures in the "GALLERY"

THE PILOTS CLUSTER AND SMART METERS SOLUTIONS

The Province of Treviso has been working on a cluster of buildings that are either directly owned and managed or owned and managed by involved Associated Partners, for a total 20 pilot buildings that are:

1. 6 primary schools, owned by the associated Municipalities involved
2. 4 lower secondary schools, owned by the associated Municipalities involved
3. 8 upper secondary schools, owned by the Province of Treviso
4. 2 institutional buildings, owned by the associated Municipalities involved.

Pilot Action wanted to trigger this process of change or, better still, for change, by focusing on all users who live and manage buildings, giving them an instant measure of the effectiveness/ineffectiveness of activities undertaken.
The first activity to stimulate awareness is, therefore, visualization and immediate and objective evaluation provided, in the case of Project TOGETHER, by investments in devices for the real-time detection and monitoring of electricity and heat consumption:

Two types of smart meters solutions were implemented:
A) **Installation of BASIC** metering devices carried out in the 12 buildings belonging to the 10 Associated Municipalities;
B) **Enhancement of the existing** metering devices carried out in the 4 buildings belonging to the Province of Treviso (Connected to the existing metering).
In these buildings, the thermal consumption includes both the value of the main building (e.g. school) and the one referred to other annexed buildings (e.g. gym). Thus, it was necessary to identify and measure one single thermal flow through a flow meter, in order to obtain, by difference, the consumption of the individual buildings.
The upgrade system accounts separately for consumption in the gym, a place generally used by multiple users, many of them external to the school's organization, and therefore "no man's land".
Collected data transit through the Province's server and leverage an already decoded IT system, monitored by provincial staff that performs Energy Management activities and has now become a support structure for the 10 municipalities in which the complexity of the entire operation is now being tested for the first time.
The know-how transfer operation found in the project the necessary funds and an opportunity to put an end to an energy management system based on the passive payment of energy bills and on the automatic fulfilment of demands for energy by schools.

The pilot buildings have been concretely involved in a project of technological and behavioural experimentation.

If technological experimentation consists on the installation of devices, as well as on relevant training and increased ability to analyze consumption scenarios, **behavioural experimentation comprises a series of activities common to all the buildings and for specific activities defined by the individual working group.**

THE PROCESS FOR SETTING UP THE PILOTS

Common activities are identifiable in the process of:

1. Establishment of a mixed work group, composed of as many subjects representing the building and sub-categories of users, called **Negotiating Panel**;
2. Implementation of a **SWOT survey** of issues concerning buildings realized by the working group;
3. Implementation of **energy audits** that have suggested a list of necessary interventions to improve energy efficiency in each building;
4. Verification and analysis by the working group of the results of energy audits;
5. Acquisition of **skills and knowledge** to leverage the potential of sensors;
6. Identification **of critical points** and definition of an **intervention plan;**
7. Identification of a **consumption reduction target** in a partnership that defines the allocation of savings.
8. agreement and signature of the so called Building Alliance

The process can be represented as it follows:

Moreover, in high schools, the administration of a **social audit** *(more information in the following part of the document)* that is instrumental to understanding knowledge of school population in matter of energy issues and their degree of awareness of the impact of one's choices on consumption:

1. Focused work with some target groups such as laboratories, design of ad hoc posters and material for instilling proper behaviour and for clarifying the rules and procedures resolved upon by the negotiating panel;
2. Assistance in decoding consumer data (online assistance and physical assistance).

Each Negotiating Panel has approved **a Pilot Concept** (meant as a Building Action Plan) through the approval of the so-called Building Alliance, for a total of 17 signed Alliances.
Only 2 municipalities (connected to 3 pilot buildings) could not sign the Alliance due to internal and administrative reasons, but the lack of an official approval did not prevent the implementation of the activities resolved upon in the pilot buildings concerned.
The Province of Treviso has adapted the transnational text (available in the project website) and is negotiating the goals with the 8 upper schools; the 10 Municipalities involved have first to solve with their financial departments the issue of how and whether it is possible to "share" the energy savings.
The Municipalities had to check the most suitable mechanism to achieve this aim, since the rules to manage public administrations budgets can be very strict.

THE AIM OF THE PILOTS

The core activity of the project is the implementation of behavioural and organizational interventions that could lead to a more aware and rational use of energy by users. The main goal is, of course, the achievement of energy savings, but the educational value related to this type of activities is also fundamental, considering also that most of the buildings involved in Treviso's Pilot Actions are schools.
The specific activities of each institute reflect the contents of the intervention plan defined by each negotiating panel on the basis of a framework of suggested interventions, to include "nudges" through the process of training, animation and support triggered by Project TOGETHER working group.

BEHAVOURAL MEASURES

The biggest effort in all the pilot buildings is the implementation of activities addressed to users of buildings to enhance their behaviour towards a more efficient use of energy.
Except for the Municipalities of Carbonera and Conegliano that have developed their activities in two institutional offices, the other 18 buildings targeted behavioural interventions mainly to students and auxiliary staff, with the fundamental role of teachers in guiding students to reflect about energy issues and the need for energy savings.
Depending on the age of students, ranging from 6 to 18 years old, activities implemented were:

- **games**
- **competitions**
- **creation of posters and other graphic/video tools to communicate the correct behaviours to adopt**
- **awareness raising activities**
- **gentle pushes**
- **analysis of consumption data**
- **other surveys on building use and related consumption (actual and theoretical)**
- **peer education**

to activate processes of reflection and behavioural change.

Naturally, the technical-scientific complexity of the activities implemented is defined according to the reference target group that, moreover, does not function as passive spectator, but as co-producer of initiatives and material, in the context of a living-lab logic.
Adherence to the project has created favourable conditions for cooperation, triggering collaborative processes that find their expression in the School-to-Work formula (see the Leveraged effect).
It was tailored made a targeted on line questionnaire targeting the employee of the 2 institutional buildings.
The questionnaire is partially overlapping with the social audit questionnaire administrated to the upper secondary schools students.
Although every pilot building has elaborated a tailored plan depending on the features of building and users, the programmes proposed have the following common structure:
▫ a **preliminary training/learning** phase for students and/or janitors (sometimes teachers as well) on energy issues and smart metering;
▫ a **periodic monitoring of consumption** (at least one before and one after the implementation of DSM measures);
▫ an **active involvement by students** in the production of communication materials and in peer-to-peer education.
This scheme usually takes the form of a game in primary schools, and gradually becomes more structured in secondary and high schools, where, in this last case, the activities elaborated for Project TOGETHER are part of the so-called **"Work-linked training**" programme.

ORGANIZATIONAL MEASURES

Regarding organizational interventions, all **the Negotiating Panels** have considered the possibility of a **better organization in the use of spaces** both during school time and when school is used by external users (e.g.: activities organized by external associations in the afternoon or in the evening).
An important intervention was introduced in the school belonging to the Municipality of Casier that is, the 5-day week, thus closing the school on Saturdays and as a consequence saving one day of heating and lighting. Other interventions deal with a more careful scheduling of the use of spaces and classrooms, thus avoiding, for example, to keep the heating on for the use of only one room.

TECHNICAL MEASURES

The Municipalities of Casale sul Sile, Paese, Ponte di Piave and Quinto di Treviso have invested own resources for technical energy efficiency interventions in the pilot buildings. The interventions already financed and being implemented are:

1. Replacement of existing lamps with new LED in Casale sul Sile and Quinto di Treviso;
2. Installation of thermostatic valves in Paese. The Administration is also considering the implementation of an EPC;
3. Roof insulation and refurbishment of windows in Ponte di Piave.

THE PILOTS IN TREVISO AND THEIR CONNECTION WITH THE APPROACHES PLANNED IN THE PROJECT

According to chapter 3.2 of the D.T2.1.6 Pilot Concept, there are three types of Pilot Actions that can be carried out at the level of an individual building:
1. Combination of the day-to-day energy management system with the DSM measures that have been developed: BASIC APPROACH.

2. Improvement of the already existing measures for the user involvement with new DSM tools: IMPROVEMENT APPROACH.
3. Application of the integrated tools developed in WP T2, including an improved Energy Management System, financial, technical, contractual and DSM tools: EVOLUTIONARY APPROACH.

On the basis of the tools selected by each Negotiating panel, the picture of the pilot action can be summarized as follows:
a) The Province of Treviso has implemented the so-called **EVOLUTIONARY approach**. The Province of Treviso intends to launch a new Energy Performance Contract in the year 2018, the so-called EPIC, literally Energy Performance Integrated Contract: this is an Energy Performance Contract whereby energy efficiency and reduced consumption are achieved not only by technological improvements, but also by social investments that act, on the one hand, on a more efficient organization of the use of space, and on the other hand on the change in user behaviour towards a more aware and virtuous use of buildings. The Energy Performance Integrated Contract (EPIC) represents an innovative tool in the hands of PAs, as a new type of "integrated" Energy Performance Contract (EPC) through which technical and social aspects of energy consumption are considered together, and an improved energy performance of buildings is guaranteed not only by technological investments but also by a better organization of the use of spaces and by the involvement of building users towards a more aware behaviour in the use of buildings.
b) The Municipalities of Casale sul Sile, Paese, Ponte di Piave and Quinto di Treviso have tested an IMPROVEMENT approach by investing own resources for technical energy efficiency interventions in the pilot buildings. The interventions already financed and being implemented are:

1. Replacement of existing lamps with new LED in Casale sul Sile and Quinto di Treviso;
2. Installation of thermostatic valves in Paese. The Administration is also considering the implementation of an EPC;
3. Roof insulation and refurbishment of windows in Ponte di Piave.

c) The other Municipalities still follow a BASIC approach, although some of them are considering to improve their approach through technical investments and/or the implementation of an EPC or other financial measures. These are: Carbonera, Conegliano and Mogliano Veneto, while Casier, Silea and Santa Lucia di Piave will only experiment behaviour-based measures.
It has to be underlined that Conegliano has started the process to launch an EPC contract by the end of the new year (2019) with the provision in ToR of DSM measures. The approach of Conegliano ois anyway to be considered as EVOLUTIONARY, also considering the particular contractual tool (Project Financing through PPP) which is planned to be used.
The Municipality of Quinto has already launched a project financing scheme for the street lightening (that was in part discussed during the training activities) and is starting the process to launch an EPC contract by the end of the new year (2019) with the provision in ToR of DSM measures.

TARGET GROUPS

1. The staff working in the 2 institutional buildings involved in the project for a total of 80 persons;
2. End-users of the public buildings **actively** involved in the project: 300 students, 40 teachers, 18 auxiliary staff; questi studenti sono differenti dagli altri 8000… non capisco
3. Approximately 8,000 students, staff and teachers targeted by the peer-to-peer activities and communication campaign organised in the individual pilot buildings and targeted by the info points installed in the premises of the pilot buildings.

It involves the project target groups, i.e. the owners/managers/users of buildings, who can strongly benefit from such investments in terms of opportunities to reduce, and keep under control, energy consumption, and to enhance the opportunity to foresee and therefore prepare the ground for future investments.

4. staff members of the 10 Associated Municipalities for a total of 15 employees

RESULTS

- **Improved capacity of managers** of the building to engage the whole chain of the users in the decision-making process related to usage of the spaces and time of usage;
- **20 Negotiating panels**. It is a group of people on a specific object/building who work together in a joint effort to reach the set energy saving goals, thereby achieving mutual benefit (economic and environmental). The Negotiating Panel Concept is made up of representatives of owners, managers and users (including end users, i.e. occupants), contributing together to the energy management of the building.

Establishment of a **Negotiation Panel is a first step in introducing full-scale energy management system in a building.** It comprises all relevant stakeholders and envisages open discussion principles to define measures and deliver desired energy saving targets at the level of an individual building. The roles and responsibilities of different members of the Negotiation Panel are described in this Guide.

- 17 signed Building Alliances out of 20 buildings: the effort to reduce the energy consumption is a shared effort. The Building Alliance identifies the common goals of energy reductions, the “profit sharing” approach, incentives, etc., decided by the Negotiating Panel. The Building Alliance is the result of a co-working approach that has to be adopted by all the project partners since the beginning of the project.
- **Launch of the Public Procurement** for the externalisation of the **Global Service for maintenance** and management of the buildings belonging to the Province of Treviso. It has been inspired by the framework of the Energy performance Integrated Contract elaborated by the project.

LEVERAGED FUNDS

3 Municipalities (i.e. Casale sul Sile, Paese and Quinto di Treviso) out of 10 have decided to invest own resources to improve the energy efficiency of their buildings with an investment of the lightning system highlighted by the energy audits provided by the project for a total amount of about 60.000 euros. The funds are already planned in their respective budget under the name “TOGETHER”;

5 Municipalities out of 10 (i.e. Silea, Mogliano, Paese, Conegliano and Casier) had to invest own resources for adjusting the heating system of the pilot buildings for total leveraged funds of € 18.000,00with an average amount of € 2.500,00;
The Municipality of Ponte di Piave has already invested 5.325,30 for integrating the new monitoring system with another sensor monitoring the water.
The Municipality of SIlea has decided to invest € 270,000 for retrofitting the school involved as pilot arena.

The EPIC contract of the Province of Treviso will involve a larger number of buildings, for a total surface of around 500.000 sqm. The technological investments to improve energy efficiency will be activated by the private contractor which will be selected through public competition. T is not possible therefore to know the precise amount, although a reasonable estimation, according to the bid specifications, may lead to an amount between € 2.500.000,00 and € 4.000.000,00.

ADDITIONAL INFORMATION
In some of the pilot buildings, additional activities have been performed. They are:

The Social Audit Questionnaire
This questionnaire represents the experimental work developed by the Province of Treviso in cooperation with the University of Maribor.
This set of questions aims to understand the behavioural attitudes of building users. The data will be processed in accordance with the current legislation and in any case no personal data is required other than sex, class and school of affiliation.
The results of the questionnaire will not be used for individual evaluation purposes by the School or the Province of Treviso, but they will be used for research purposes and for better understanding what the most effective measures capable of motivating behavioural change might be.
There are 32 questions within this survey that can be easily adapted to other target groups. All the project partners can adapt the questionnaire for their local purpose.
This questionnaire is part of the pilot actions implemented by the Province of Treviso, but could be used as a “social audit” tool. A total of 1.464 questionnaires were collected out of which
1.286 valid.

The Green-schools Competition and Energy Saving Ranking
The Province of Treviso has recently launched the VI edition of the GREEN SCHOOLS COMPETITION. The competition is open to all the upper schools of the territory as it is not possible to restrict the call only to the schools adhering to Project TOGETHER. Project TOGETHER, however, has markedly inspired the terms of reference of the competition.
First of all, 8 out of 20 pilot buildings involved in Project TOGETHER could participate in the Competition that is concretely aiming at registering energy reduction, monitored through the smart meters already installed several years ago in all the buildings belonging to the Province of Treviso.
The terms of registration to take part to the Green Schools Competition present some important changes introduced by also considering the implementation of TOGETHER Project, which made it possible to highlight the need for measuring consumption levels and the possible actions of improvement/containment based also on the behaviour of those stakeholders who live in the public

buildings: managers, owners and final users. In addition, Project TOGETHER permitted the organisation of possible paths of the so called “Behavioural Demand Side Management and Analytic Demand Side Management” present within the scope of the tools elaborated by the partnership and published on the project website. The main focus of the sixth edition will be on electricity savings and their monitoring that will be assessed and awarded through monetary prizes.
Moreover, the sixth edition is organized after the Living Lab logic that is crucially featuring Project TOGETHER. As a matter of fact, end-users are not only the target of education training or of decisions taken about them, but they are part of decisions as involved in the so called Negotiating Panel, developed in a specific tool proposed by Project TOGETHER and available in the project library (see URL http://www.interreg-central.eu/Content.Node/TOGETHER.html) .

Finally, the current competition is a strong “gamification” example that is defined by Wikipedia as the application of game-design elements and game principles to non-game contexts.
The structure and terms of reference of the competition can be of inspiration for the Project TOGETHER partners, as well as for other interested administrations. The added value provided by this kind of competition is based on actual measurement and not only on general criteria and assessment of “good intention”. Finally, the Province of Treviso has decided to publish on the project website the consumption trend, that is, a sort of ranking of our pilot building consumption trend, hoping for further energy savings!

Junior Competition
Taking inspiration from the Green Schools competition annually launched by the Province of Treviso and from the gamification approaches inspired by the Demand Side Management tools elaborated by the project, the Province of Treviso has launched the so-called #Junior Competition targeting the primary schools and lower secondary schools involved in the project. The competition proposed aims to encourage the success of the activities planned by the schools in the form of a challenge intended as a virtuous confrontation that can, in a playful way, stimulate the children, the teachers, and all the school staff, to "do together, to do better". Result of the competition will be assessed by the end-January 2019.

Work-linked training
The so-called “work-linked” training aims to provide young people, in addition to basic knowledge, with those skills necessary to enter the labour market, alternating hours of study with hours of classroom training and hours spent within companies, to ensure their experience "on the field" and overcome the "training" gap between the world of work and the academic world in terms of skills and preparation: a disconnection that often characterizes the Italian system and makes it difficult to enter the workforce once the cycle of studies is completed.
At this stage, 4 out of 8 high schools involved have proposed to the Province of Treviso to sign an agreement for organizing a Work-linked training path to be developed for the Project TOGETHER aims.
The main objective is to educate the students to develop an energy saving-oriented attitude and change their behaviour when energy saving-oriented.
Four students from the Giorgione School have completed their activities producing smart and brilliant instruments that were presented at the Annual Event of the European Network of Living Labs, organized last August in Krakow.

Their Project of Work-Linked Training is called “Our theoretical school’s electrical consumption and potential savings”. They were assured that their school building used to waste high amounts of energy - but was it only a fault of the structure itself?
They were basically convinced that the consumption observed in the last years could be mostly caused by an eco-destructive behaviour of our fellow students and teachers.
Therefore they decided to develop that project in order to show how much could the final users of a public building effect its consumption. Furthermore we also struggled in order to reach a convincing “saving plan” - that became our last goal.

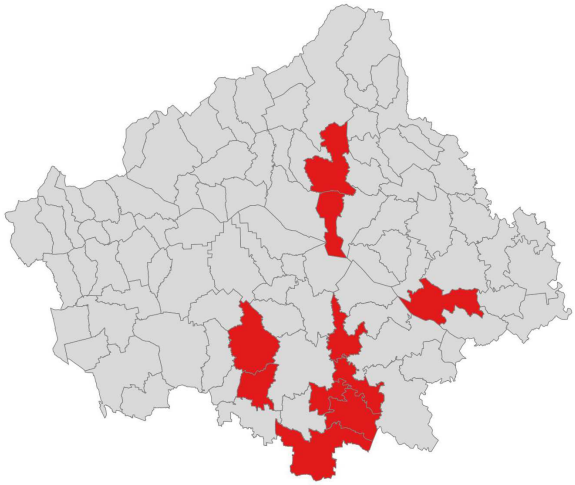
Regulation governing the service of automatic vending machines-bars- canteens at the state schools under the competence of the Province of Treviso. An example of Energy Management System

The Province of Treviso decided to introduce such regulation some years ago, when it was discovered that vending machines were managed in a disorderly fashion. An example is given by empty vending machines still working in summertime, when schools have a reduced number of users.
On the basis of this observations and estimates of the wasted money/energy, the Province of Treviso decided to introduce this regulation as simple “advice”.
Recently, the technical office – after a period of testing – decided to turn the guidelines from a voluntary regulation into a compulsory regulation.
The present Regulation:
1. shall enter into force fifteen days after it has been published on the provincial register;
2. applies to new contracts, whereas the ongoing contracts can get to their natural end as they are concessions ensuing procurement procedure launched beforehand by the schools.

Incentives

At the beginning of the project, the Province of Treviso decided to reinvest a part of the “preparation costs” in incentives for the schools involved in the project.
Each upper secondary school has received an amount of 800,00 euro and the elementary schools/ lower secondary schools have received an amount of 300,00 euro.
The whole amount was invested for procuring and hiring some consumable necessary to implement the project at school level (e.g. papers, copies etc) and in some cases the amount was used to award the involved students. For example, the elementary school Veleri (Mogliano Veneto) and the upper secondary school Cerletti used the received amount to cover the costs to visit the Park of renewables in Padova.

2. Indicate the NUTS (Nomenclature des unités territoriales statistiques) regions concerned by the pilot action



ITH34, Treviso

The pilot action implemented in the Province of Treviso consists in a set of integrated measures to be tested on 20 buildings, of which 8 high schools, 4 secondary schools, 6 primary schools and 2 institutional buildings.

1. I.C. Casale sul Sile, Scuola primaria “Rodari”
2. I.C. “Mandela”, Scuola primaria “Dante”
3. I.C. “Minerbi”, Scuola primaria “Valeri”
4. I.C. Casier, Scuola secondaria “Vivaldi”
5. Ponte di Piave, Scuola primaria “Moro”
6. Town Hall of Carbonera
7. I.C. Quinto, Scuola secondaria “Ciardi”
8. I.C. 3, Scuola secondaria “Brustolon”
9. Town hall of Conegliano
10. I.C. Silea, Scuola primaria “Vivaldi”
11. I.C. S. Lucia di Piave, Scuola primaria “A. Canova”
12. I.C. Paese, Scuola secondaria “Casteller”
13. Liceo “Marconi” di Conegliano
14. Scuola Enologica “Cerletti”,Conegliano
15. I.T.T. “Mazzotti”, Treviso
16. I.S. “Giorgione” Castelfranco V.to
17. I.I.S. “Palladio”, Treviso
18. I.P.S.I.A. “Galilei” Castelfranco V.to
19. Istituto Agrario “Sartor”, Castelfranco V.to
20. Liceo “Da Vinci”, Treviso

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

The sustainability of the pilot actions is strictly interlinked with the nature of the investment. Both the Province and the Associated partners will continue to use the smart meters as they give a concrete opportunity to improve their energy monitoring system that was – before the installation of the sensors - principally based on a "passive" payment of the monthly bills, without a critical verification of the real consumption and the reasons leading to a specific energy consumption.
The establishment of a Negotiating Panel in each pilot buildings, co-responsible for finding solutions to improve the state of the art in terms of life style of the buildings, can be considered a measure that can be adopted and used in other frameworks and contexts. The Negotiating Panel is formed under the condition of having a strong political and technical pledge and credence on this type of measures.
This latter condition is the main objective of the thematic work-package T4 aiming at making a formal approval of the Action Plan for the energy efficiency, related to the large scale application of the tested measures. The deployment of smart meters has a strong potential in energy reduction programmes based on the engagement of the users. However, in practical terms, it is not possible to transfer the technology "per se" but the acquired knowledge about the specific type of technology. In some partners regions, the introduction of such pivotal technology represent a "first" time, not only in the city dimension but also in the regional/national dimensions, at least in the public buildings sector.
At the same time, our project is neutral under a technological point of view.
As matter of fact, **the behaviour based energy efficiency programmes can be implemented even when the smart meters are not available**. It is clear that programmes based on the combination of social and technical component are much more reliable and technically correct, but an Administration could start from the lowest step: map and involve the buildings users and create the necessary conditions to start a basic assessment of the consumption profile and the buildings life style.
Afterwards, it could benefit from the stock of tools made available by the TOGETHER project to tailor ad hoc paths to engage building users until the formalisation of a building alliance, where a goal of energy reduction is planned and monitored.
A tutorial showing how smart meters work is available on the project website together with other tutorials produced in order to instil energy efficient behaviours. Moreover a new video is under production with the aim of showing other potential administrations how to successfully implement the TOGETHER processes.

4. Lessons learned and added value of transnational cooperation of the pilot action implementation

It is possible to summarize the lessons learned as follows:

- the daily tasks and the many different duties that technical experts and officers of the small organization (such as the Associated Municipalities in Treviso) have to carry out stifle their spirit of innovation and of understanding how the energy management system could be improved;
- the engagement of the end users in energy efficiency programs based on their involvement is demanding and requires a high level of interdisciplinary knowledge to pilot the process;
- some segments of the buildings communities do not accept to be involved as they consider the involvement not as an opportunity but as an additional burden;

- The more you are attached to your working place and environment, the more you are available to change your behaviour and at least not to hamper the process of changing.
- Transnational cooperation has a crucial role in the delivery of the local training material in the partners' regions as:
    - it produced a common framework of reference in a much more cost-effective way compared to individual efforts, and it achieved economies of scale;
    - it introduced an interdisciplinary approach to energy efficiency never tested before in all the partners' regions;
    - it helps to make use of wider and more diverse pool of knowledge and experience.

5. Describe the Strength, Weakness, Opportunities and Threats that you have registered when implementing the pilot activities.

Strength:

- Strong experience of the Province of Treviso in the real use of smart meter technology. The acquired knowledge has made it possible to speed up a territorial convergence knowledge about such important technology.
- Schools represent a fertile soil where to invest in programmes based on the engagement of users understood as students. Students, specifically smaller children, are truly reactive and positive when there are new challenges and goals. They usually do not need specific awards and concrete acknowledgment of their work and efforts. They just need to be recognisable by their parents when showing a picture, for example. They are happy with a social award, such as a certificate of participation to be hanged out in their room or in the school.
- In some municipalities there are really motivated internal staff who has really understood the aim of the project and the benefit of using smart meters solutions combined with Demand Side Management measures aiming at improving behaviour and the spatial/time usage of the buildings.

Weakness

- Smart meters are not a plug and play technology. They need to be constantly monitored.
- Preliminary activities to be carried out before installation of the sensors have to be carefully performed in order to avoid events that could hamper the installation.
- Public administration officers are sometimes negative in relation to innovation. They are not so open to innovation as it demands new procedures, and new way of working and can put their daily work under discussion
- Activities related to improvement of work spaces are not supported that much, in particular by segments of the working **community covering the bottom places of the internal hierarchy** (e.g. caretakers at schools).
- The **attitude to change depends on the level of satisfaction in the working position/role.**
- Energy efficiency programmes based on behaviour/organisational changes need to be constantly **enriched by feedback**, ideas and support to guarantee a durable result.
- Slow turn over in the Public Administration, schools included.
- The role of the energy manager is not planned at building level.

Opportunities

- A new hiring process is starting in public administrations with younger and more motivated officers/teachers who are much more open to innovation;
- **There is a need to network the local know how and push the public administrations** (mainly the smallest ones) to work together and make their efforts mutually available. As a matter of fact, the cooperation platform established with the project will probably continue after the project;
- In terms of administrative duty, the Province of Treviso has a specific duty to provide institutional and technical assistance to local communities. Project TOGETHER and its activities have achieved this result 100%.
- Some municipalities have a clear vision on how to further develop the pilot actions and how to transfer the tested methods onto other buildings
- **Launch of the Energy Integrated Performance Contract**. In the terms of reference, it is envisaged that the maintenance costs of smart meters installed in the pilot buildings will be covered by the fees paid to the contractor.
- **A new European Project has been recently approved**. One of the aims is to streamline behavioural programmes and financial solutions into the future regional policy plan, involving the community and the Region. We joined this project with the aim of capitalising territorial engagement towards behaviour-based energy efficiency programmes combined with analytic DSM/Smart meters launched with Project TOGETHER.

Threats

- **Lack of human resources** to replicate in the longer period the practical assistance that was guaranteed by Project TOGETHER. The team that was established will support in a more limited way the communities, unless further decision is taken;
- **Lack of funds for investing** in the upgrade and enlargement of the local monitoring network;
- The staff members engaged in controlling and checking the smart meters could be removed and/or change office/department, so one threat could be the lack of a good hand-over.

Before pilot implementation
Implementation of the pilot activities and implementation of the energy audit

September 2017- December 2018
Implementation of the pilot and use of the smart meters. The baseline is calculated on the basis of the historical data (if available) or on the basis of the energy audit

January 2019
Reporting and data elaboration

February - April 2019
Elaboration for the Political level (reinvestiment plan And action plan

Follow up: PPs and APS continue to use the smart meters even after the closure of the monitored period

7. Total energy saved (in kWh) within the monitoring period, which is one year (please considered your pilot buildings altogether)

Saved energy in buildings belonging to the municipalities = - 62. 089 kWh
Saved energy in buildings belonging to the municipalities (thermal): + 61.892 kWh (increased consumption)

Saved energy in buildings belonging to the Province : + 35. 690 kWh (increased consumption)

8. What the baseline refers to? (audit, historical data etc.? You have to indicate what type of data was used. Please, give a short description about the type of data used.
This table is completed by an extra excel file that was elaborated during the group meeting devoted to define a stand transnational approach to collect relevant data. The excel file has to be completed by the 15th January 2019. it is delivered to the relevant persons on the 5th November via email.

When we speak about **BASELINE** used in Project TOGETHER, we must first of all specify that the BASELINE adopted as reference for displaying results on the DASHBOARD does not differ from the one used in calculating the sharing of savings, as envisaged by the document "**STAKEHOLDERS' BUILDING ALLIANCE**".
The two baselines, however, share the starting premise, namely, the "ENERGY DIAGNOSIS" of the building.
Let us therefore begin by synthetically describing the method of determining the BASELINE displayed in the DASHBOARDS:
1) The starting point was provided by the consumption value set out in the diagnosis document titled "**ENERGY DIAGNOSIS**";
2) The percentage incidence of all the 52 weeks of the year on the overall year value of 100 has been defined: the total annual heating and electricity consumption, set out in the document titled "ENERGY DIAGNOSIS", is thereby traced back to a daily value;
3) The weekly percentage incidence of electricity consumption is the result of a proportion of registrations obtained by the installation of X METERS in provincial school buildings since 2012;
4) The weekly percentage incidence of heating consumption derives instead from a proportion based on climate in relation to the average of daytime degrees in the last 4 years of ARPAV control units in Treviso and Conegliano;
5) The daily percentage incidence has been determined by the allocation of a "k" weight to the individual day of the week;
6) The change in emoticons takes place therefore pursuant to the consumption level obtained for the day that just passed compared with the daily value of the baseline;
7) For each baseline, heating and electricity, a "threshold" value expressed as percentage and equal to 10% for electricity and 35% for heating has been set beforehand.
Turning now to the BASELINE introduced in determining the sharing of savings (ALLIANCE):
-for municipal buildings, reference is made to the consumption value set out in the document titled "ENERGY DIAGNOSIS";

- for provincial buildings, reference is made to the average consumption of the preceding 4 years, since the presence of the smart meters installed since 2012 is exploited

ELECTRICITY								
	total net heated floor area	baseline consumption (before the pilot action)	baseline period (before the pilot action)	consumption after pilot action	monitored period after pilot action	kWh/m2 after pilot	Baseline calculation	
	m2	kWh	start date, end date	kWh	start date, end date		Indicate whether the baseline is calculated by smart meters or bill audit	Indicate add all problems with measurements and collecting data
Vivaldi di Casier	3.412,00	32.614,00	2014	21.600, + 10.380 = 31.980,00	2018	9,37	AUDIT	
Rodari Casale sul Sile	2.813,84	34.954,00	2014	26.750,00	2018	9,51	AUDIT	
Dante Aligheri, Mogliano Veneto	990	30.297,00	2015	17.450,00	2018	17,63	AUDIT	
Valeri, Mogliano Veneto	1.145,40	22.314,00	2015	17.520,00	2018	15,3	AUDIT	
Scuola Moro, Ponte di Piave	1.368,00	23.125,00	2015	6.531,00	2018	4,77	AUDIT	
Comune di Carbonera	1.404,00	51.415,00	2015	45.880,00	2018	32,68	AUDIT	
Scuola Ciardi di Quinto di Treviso	2.731,00	44.780,00	2015	35.240,00	2018	12,9	AUDIT	
Scuola Brustolon di Conegliano	5.810,00	60.596,00	2015-2016	58.200,00	2018	10,02	AUDIT	

Sede di Conegliano	2.471,00	50.525,00	2015	45.220,00	2018	18,3	AUDIT	
Scuola Vivaldi, Silea	1.551,51	21.259,00	2015	16.550,00	2018	10,67	AUDIT	
Scuola Canova, Santa Lucia	1.434,00	53.262,00	2013	45.520,00	2018	31,74	AUDIT	
Scuola Casteller, Paese	5.812,00	96.446,00	2015	101.200,00	2018	17,41	AUDIT	
Liceo Marconi	5.329,53 (AUDIT) + 800,00 (GYM) = 6.129,30	140.200	2013	180.600,00	2018	29,47	XM	
Istituto Sartor***	2.697,00	92.750,00	2015	94.280,00	2018	34,96	XM	
Istituto Mazzotti	14.270,00	310.700,00	2016	299.000,00	2018	20,95	XM	
Istituto Giorgione	3.808,00	83.200,00	2015	84.230,00	2018	22,12	XM	
Istituto Galilei	7.582,00	216.600,00	2016	193.500,00	2018	25,52	XM	
Istituto Agrario Cerletti	609	147.900,00	2016	146.800,00	2018	40,68	XM	
Liceo da Vinci	10.240,00	252.300,00	2015	285.200,00	2018	27.85	XM	
Istituto Palladio	15.446,00	236.000,00	2016	242.100,00	2018	15,67	XM	

** data will be controlled again

*** There is a single natural gas meter for the school's thermal system (including the gym) and the boarding school. The total consumption for the 2014/15 season is equal to 41.554 m3 but for the building being diagnosed (school and gymnasium) the consumption was re-proportioned according to the heated volumes, which is equal to 27.069 m3In the audit, due to a mere material error, a different value was reported.

GAS								
	total net heated floor area	baseline consumption (before the pilot action)	baseline period (before the pilot action)	consumption after pilot action	monitored period after pilot action	kWh/m2 after pilot	Baseline calculation	
	m2	kWh	start date, end date	kWh	start date, end date		Indicate whether the baseline is calculated by smart meters or bill audit	Indicate add all problems with measurements and collecting data
Vivaldi di Casier	3.412,00	335.516,34	2014	259.200,00	2018	98,33	AUDIT	
Rodari Casale sul Sile	2.813,84	270.457,00	2014	170.400,00	2018	96,12	AUDIT	
Dante Aligheri, Mogliano Veneto	990,00	80.260,52	2015	33.440,00	2018	81,07	AUDIT	
Valeri, MoglianoVeneto	1.145,40	79.497,00	2015	69.440,00	2018	69,41	AUDIT	
Scuola Moro, Ponte di Piave	1.368,00	271.504,62	2015	576.400,00	2018	198,47	AUDIT	
Comune di Carbonera	1.404,00	86.086,57	2015	83.440,00	2018	61,32	AUDIT	
Scuola Ciardi di Quinto di Treviso	2.731,00	220.352,97	2015	225.200,00	2018	80,69	AUDIT	
Scuola Brustolon di Conegliano	5.810,00	724.343,71	2015-2016	363.200,00	2018	124,67	AUDIT	
Sede di Conegliano	2.471,00	231.855,41	2015		2018		AUDIT	
Scuola Vivaldi,Silea	1.551,51	184.796,00	2015	163.700,00	2018	119,11	AUDIT	
Scuola Canova, Santa Lucia	NO GAS							
Scuola Casteller, Paese	5.812,00	382.969,25	2015	312.300,00	2018	65,89	AUDIT	
Liceo Marconi	5.329,53 (AUDIT) + 800,00 (GYM) = 6.129,30	537.311,47	2013	614.995,70	2018	115,3	COSTER	
Istituto Sartor	2.697,00	289.367,61	2015	258.532,96	2018	95,85	COSTER	
Istituto Mazzotti	14.270,00	568.397,99	2015	607.363,04	2018	42,56	COSTER	
Istituto	3.808,00	178.619,21	2015	176.759,15	2018	46,42	COSTER	

Giorgione								
Istituto Palladio	15.446,00	610.805,22	2015	568.280,40	2018	36,79	COSTER	
Istituto Galilei	7.582,00	669.236,66	2015	709.431,16	2018	93,57	COSTER	
Istituto Agrario Cerletti	3.609,00	342.037,24	2015	353.090,70	2018	97,84	COSTER	
Liceo da Vinci	10.240,00	744.547,81	2015	937.887,15	2018	91,59	COSTER	

9. Do you have some issues with gathering the consumption data? Have you lost some data? (for various reasons such as the router stopped working, the wrong predefined constants in concentrator, same basic arithmetic issues that programmers did wrong by mistake, etc). How did you solve it?

One of the main problems we have discerned in data collection was determined by the disconnection of the Internet network during the exam and final assessment period.
It sometimes happened that since disconnection, due to the summer shutdown of schools, no connection was restored and, accordingly, the monitor did not display anything.
It was necessary to contact the individual municipal spokespersons and ask them to personally check on site the problem to look for a solution: sometimes the lack of a person experienced in computer systems inside the schools is a huge obstacle.
It later happened in a case that, although the connection was perfectly operational, the SMART METER failed to record and the instrumentation maintainer was thus contacted to understand what the problem was.
We furthermore realised that the **Third Supervisor/Energy Operator (of municipal administrations)** had not been involved in monitoring consumption through the newly installed tool: the role of the Third Supervisor in using the metering system might entail the consumption trend to be more widely shared amid the owner's staff.
For example, the municipal administration offices might have used this new tool even to check more comfortably and promptly actual compliance by the Third Supervisor/Energy Operator with contractual obligations. The Third Supervisor, in turn, should sense that "you cannot manage what you cannot measure".
The problems detected in data collection once again highlighted:
- how strategic is the presence of an "Energy manager" or in any event of a person well-versed in energy efficiency;
- the importance of dialogue and the "transfer of information/instructions" between teachers and owners.

10. How have you solved this problem ? what are the advices and suggestions that you might stress out so the others that will replicate similar investments could use them?

The suggestions we feel like giving other administrations intending to install smart meter sensors are both technological and organizational in nature:
1) from a technological viewpoint, it is very important to know and carefully study the systems, especially heating ones, on which to intervene through the installation of sensors. It is necessary to acquire, before launching the tender, all the documentation relating to the systems, including any statements of compliance by the systems, as well as to contemplate in the budget the necessary sums to adapt the systems (alternatively, to lay down, in any tender specifications on energy performance, that the contractor should adapt the buildings to be able to install the sensors).
2) from an organizational viewpoint, it is crucial to envisage in the team at least one person dealing with the daily supervision and verification of the operation of the sensors (e.g. checking whether the monitors and PCs are connected to the network or whether the sensor itself is connected and accordingly transmits the data to the server). The smart meter technology is in fact complex and does

not operate as “plug and play” technology. The human role is so important in an energy management system that we cannot at all think to delegate the monitoring of consumption to the machine alone.
An appointee must be specialised and have adequate time to be able to extract, elaborate and compare data and create at least monthly reports that must be submitted to both the owner and the manager of the building, especially where the Building Alliance is linked to a consumer reduction target. A constant data recovery and a frequent assessment make it possible to check whether the set of actions defined in the energy improvement plan are effective and efficient.
If the data recovery is done too far away in time and passively, without generating the adoption of corrective measures, the sensor would then be almost useless.
We would therefore like to suggest to the Administrations intending to approach such technology to carefully ponder the workloads or to stipulate in the contract of supply a component of monitoring and report-drafting services.

11. Describe the investment costs and indicate what are they
OPEX – Operating Expense costs that are the ongoing costs for running the system
CAPEX – Capital expenditure costs of developing or providing non-consumable parts for the product or system.

Example: purchase of a copier must be deemed Capex, whereas the annual cost for paper, toner, power supply and maintenance represents Opex. For such more wide-ranging systems as business ones, OpEx might even include the cost of manpower and sites, such as rental and associated services.
When we speak of OPEX (OPerating EXpenditure) costs, we refer to the costs necessary to manage a product, a business or a system, otherwise termed O&M - Operation and Maintenance – costs. OPEX costs can be listed as follows:
- costs of staff devoted to the phase of designing, managing and coordinating the smart meters: 30,000.00 for the duration of the project;
- BL6, that is, works for the installation of the procured thematic equipment for a total amount of € 21.829,50 (VAT included). Moreover, the contract includes the terms of reference for a service: support and service for constantly monitoring the on-line monitoring system and its correct operation; training and assistance for a total amount of € 9.387,66 (VAT included, covered by BL4).
Its counterpart, CAPital EXpenditure or Capex, is the cost to develop or provide enduring assets for the product or the system. In Project TOGETHER, CAPEX costs are € 60.538,55 (VAT included) as set out in the accounting attachment

12. Total energy metered from the installation (fully working) to December 2018

Electric consumption 1.973.751 kWh
Thermal consumption 6.483.057 kWh

** data will be controlled again

13. How many Building Alliances were signed? Please provide information about the involved pilot buildings/institutions that agreed to officially sign a building alliance and give an overview of their terms of reference (e.g. energy reduction goal, % of division of the energy savings etc).
Has been the building alliance internally disseminated and shared with all the buildings players (e.g. teachers, students, janitors etc)
How have you informed all the interested buildings players about the alliance and its aims and conditions? In case you have not signed the Building Alliance, please describe the reasons and the alternative measures you have adopted.

It has to be put in evidence that a total of 17 Alliances were signed (out of 20 originally planned) and officially approved by the owners and managers.

Only 2 Associated Municipalities had some problems to agree on signature of the alliance due to internal administrative problems.

- 8 building alliances between the Province of Treviso and the 8 upper secondary schools
- 9 building alliances between 8 Municipalities and 10 pilot buildings.

In total 3 buildings were not involved in a building alliance (buildings: n. 8, n. 9 and n.12).
In total buildings were not involved in a building alliance. In any case, even without signature of the Alliance, a good level of cooperation was recorded between managers and owners, with the implementation of relevant activities aiming at socialising the energy.

In any case, even without signature of the Alliance, a good level of cooperation was recorded between managers and owners, with the implementation of relevant activities aiming at socialising the energy.
The Municipalities (8 out of 10) that signed the Alliances with their combined buildings, have tailored made the text of the Alliance adapting the transnational text of the tool “Building Alliance”.
Each building owner has agreed with the building management level:

- the percentage of reduction to be achieved
- the minimum level of reduction to be achieved
- the maximum amount to be divided in case of achievement of the goal
- the percentage to assign to the building management in case of achievement of the minimum goal.
- the monitored period
- the monitored consumption: electricity and or heating
- the role of the parties in the implementation of the Action plan

Seven building alliances signed by the Municipalities have planned to award the 100% to the building board in case of a full achievement of the goal. In these 7 pilots, the Reinvestment plan can be considered automatic as the whole amount generated by the energy savings will be rewarded and "reinvested" .

It is important to highlight that one of the signed alliances is related to one of the 2 institutional buildings involved in the project. It is the building of the Municipality of Carbonera, and the alliance was signed by the Mayor and by the workers' representative, in agreement with the trade union.
Hereunder is a table containing the relevant information about the signed alliances.

1. Name of the building	**2. Energy saving goal (minimum to be reached to activate the sharing)**	**3. Monitored period**	**4. %**	**5. Achieved**
Scuola Primaria "G. Rodari" Casale sul Sile	10% elect. 3% heating	01-01-2018 to 31-12-2018	80% to the school	yes
Scuola Primaria "A.Moro"	10% elect. 3% heating	01-01-2018 to 31-12-2018	100% to the school	Yes
Scuola Primaria "A. Canova"	3% elect.	01-01-2018 to 31-12-2018	100% to the school	Yes
Scuola Primaria "D. Alighieri"	3% elect.	01-01-2018 to 31-12-2018	100% to the school	Yes
Scuola Primaria "D. Valeri"	3% elect.	01-01-2018 to 31-12-2018	100% to the school	Yes
Scuola Primaria "A. Vivaldi"	10% elect. 3% heating	01-01-2018 to 31-12-2018	100% to the school	Yes
Scuola Media "G.Ciardi"	10% elect. 3% heating	01-01-2018 to 31-12-2018	90% to the school	Yes
Scuola Vivaldi Casier	3% eletric.	01.09.2018- 31.12.2018	100% to the school In case the goal is not achieved, the school will be awarded with a small prise	Yes
Edificio Comunale di Carbonera	3% eletric.	01.01.2018 to 31.12.2018	100% to the employees for the creation of a space	Yes
Liceo Scientifico Statale Leonardo da Vinci "	At least (as minimum requirement) 10% elect.	05-02-2018 to 31-12-2018	30% to the school 70% to the Province	Not achieved
I.P.S.I.A. "Galilei	At least (as minimum	01-01-2018 to 31-12-2018	30% to the school 70% to the Province	Not achieved

Galileo”	requirement) 10% elect.			
I.T.T. “Giuseppe Mazzotti”	At least (as minimum requirement) 10% elect.	15-02-2018 to 31-12-2018	30% to the school 70% to the Province	Not achieved
I.S.I.S.S. “Andrea Palladio”	At least (as minimum requirement) 10% elect.	02-02-2018 to 31-12-2018	30% to the school 70% to the Province	Not achieved
I.S.I.S.S. “Giovanni Battista Cerletti”	At least (as minimum requirement) 10% elect.	01-02-2018 to 31-12-2018	30% to the school 70% to the Province	Not achieved
Liceo“Giorgion e”	At least (as minimum requirement) 10% elect.	02-02-2018 to 31-12-2018	30% to the school 70% to the Province	Not achieved
I.S.I.S.S. “Domenico Sartor”	At least (as minimum requirement) 10% elect.	29-01-2018 to 31-12-2018	30% to the school 70% to the Province	Not achieved
Liceo Statale “Guglielmo Marconi ”	At least (as minimum requirement) 10% elect.	13-02-2018 to 31-12-2018	30% to the school 70% to the Province	Not achieved

The alliances were published on the official website of the municipalities and schools. The publication is linked to the fact that the approval was conditional on implementation of a specific administrative procedure finalised through the approval of a decree.

The end users of the schools have been notified of signature of the Alliance through an internal circular explaining it.

ALLIANCES RELATED TO THE UPPER SECONDARY SCHOOLS

The period covered by the Alliances signed with the Upper Secondary Schools depends on the date of its signature: the monitored period started with the signature of the Alliance (most of them were signed in January 2018) and closed on the 31st August 2018.

Setting an appropriate target level for the reduction of electric energy consumption in each pilot building proved to be a tricky job, because of the lack of previous experiences. The analysis carried on in the framework of the building alliances process, one of the pilot buildings, however, revealed that an amount of electric energy close to 25% of the total consumption can be considered as a waste, as it’s not strictly necessary to conduct the scheduled activities. Based on the findings of the above

mentioned analysis, a reduction by 10% seemed a “reasonable” level to be set as the goal for the pilot schools.

Actually, none of the pilot buildings belonging to the Province of Treviso have achieved the set goal, as it is shown in the following table.

In 4 cases out of 8, the level of consumption was even higher than the baseline period. Only one school was able to achieve a very positive result but not sufficient to be awarded with the value of the saved energy.

This apparently unfavourable result has led to the need of verifying if the goal (reduction by 10% of the electric consumption) were overestimated and, in particular, if some of the variables that could have impacted on the real and final consumptions had correctly been taken into consideration:

- increase in the number of students living in the interested buildings;
- increase of the educational offers and activities during the evening hours;
- increase of the use of electric devices for the smart learning such as smart dashboards and music instruments, specifically in the Liceo Marconi that has open a music department;
- trend in the summer temperatures, and proper use of the cooling devices, used in the administrative offices even during the summer holidays. For several years some of these schools have participated in the Greenschools Competition, with the result that the level of attention to the themes was already very good. Perhaps the baseline of reference was already very good and the impact of behavioural measures have already reached the higher possible level of energy reduction

Therefore, as a consequence of the assessment of its 8 signed building alliances, the Province of Treviso organised bilateral meeting with each school in order to verify the reasons of the negative results. The 8 Alliances signed by the Province have monitored only the electric consumption.

Another variable that could have influenced the increased level of consumption is the reduced level of control less active control during the summer break when a not controlled used of “private” fan bought by the administrative staff that works during the summer. In one school (ISPSIA Galilei) the extra electric consumption registred during the summer has negatively impact in the final result of the alliance. The trend of reduction has been positive during the whole school year but negatively affected by an extra consumption registred during the month of August, with a pick of consumption.

This evidence remarks the need that it is extremely important to work with the adults and to introduce stronger measures of control and in parallel educational measures to instil proper energy efficient behaviour.

Nome Istituto	Comune	Goal di risparmio	Goal minimo	Energia	Periodo di monitoraggio	Anno 2014 (MWh)	Anno 2015 (MWh)	Anno 2016 (MWh)	Anno 2017 (MWh)	Media 4 anni precedenti Crif	Anno 2018 (MWh) Creg	Crisp_10%	RISPARMIO (CON SEGNO -)
I.P.S.I.A. "G.GALILEI"	Castelfranco	10%	x	Elettrica	dal 01-02 al 31-08	107,2	110,9	107,6	106,20	107,98	99,15	97,1775	-8,17
I.S.I.S.S. "D.SARTOR"	Castelfranco	10%	x	Elettrica	dal 29-01 al 31-08			83,12	72,27	77,70	74,88	69,9255	-3,62
LICEO "GIORGIONE"	Castelfranco	10%	x	Elettrica	dal 02-02 al 31-08	43,96	43,5	45,33	46,15	44,74	44,57	40,2615	-0,37
Liceo Statale "G.MARCONI"	Conegliano	10%	x	Elettrica	dal 13-02 al 31-08			86,01	86,69	86,35	86,07	77,715	-0,32
I.T.T. "G.MAZZOTTI"	Treviso	10%	x	Elettrica	dal 15-02 al 31-08	137,2	135,1	147,1	137,30	139,18	145,1	125,2575	4,26
I.S.I.S.S. "G.B.CERLETTI"	Conegliano	10%	x	Elettrica	dal 01-02 al 31-08	74,39	74,2	78,51	79,93	76,76	80,91	69,08175	5,41
I.S.I.S.S. "ANDREA PALLADIO"	Treviso	10%	x	Elettrica	dal 02-02 al 31-08	98,39	106,8	110,5	102,90	104,65	119,3	94,18275	14,00
LICEO SCIENTIFICO STATALE "L.DA VINCI"	Treviso	10%	x	Elettrica	dal 05-02 al 31-08	127,7	127,8	129	136,10	130,15	153,2	117,135	17,71

ALLIANCES RELATED TO THE ASSOCIATED PARTNERS (some data are still under verification and cannot be considered definitive)

As indicated above, seven building alliances signed by the Municipalities have planned to award the 100% to the building board in case of a full achievement of the goal.
In these 7 pilots, the Reinvestment plan can be considered automatic as the whole amount generated by the energy savings will be rewarded and "reinvested" (See Reinvestment Plan).

Name of the school	Monitored period	Audit value [kWh]	Minimum goal	Energy saving goal (%)	Crisp_10% oppure Crisp_3% maximum estimated consumption [kWh]	Creg - energy consumption registred with the SM [kWh]	saving [kWh]	Saving [%]	Saved costs (Costo energia 0.2 €/Kwh) [€]	Saving Kwh +
Rodari Casale Sul Sile	da 01-01-2018 a 31-12-2018	34.954	x	10%	31.459	26.750	8.204	23,5%	€ 1.640,80	8.204
Moro di Ponte di Piave	da 01-01-2018 a 31-12-2018	20.886	x	3%	20.259	13.831	7.055	33,8%	€ 1.410,90	7.055
Canova di Santa Lucia	da 01-01-2018 a 31-12-2018	53.262	x	3%	51.664	42.520	10.742	20,2%	€ 2.148,40	10.742
D.Alighieri Mogliano Veneto	da 01-01-2018 a 31-12-2018	30.297	x	3%	29.388	17.450	12.847	42,4%	€ 2.569,40	12.847
D.Valeri Mogliano Veneto	da 01-01-2018 a 31-12-2018	25.130	x	3%	24.376	17.520	7.610	30,3%	€ 1.522,00	7.610
Vivaldi di Silea	da 01-01-2018 a 31-12-2018	21.259	x	10%	19.133	16.550	4.709	22,2%	€ 941,80	4.709
Ciardi di Quinto	da 01-01-	44.780	x	10%	40.302	35.240	9.540	21,3%	€ 1.908,00	9.540

	2018 a 31-12-2018									
Vivaldi di Casier	da 01-09-2018 a 31-12-2018	12.067	x	3%	11.705	16.220	-4.153	-34,4%	-€ 830,56	-4.153
Edificio Carbonera	da 01-01-2018 a 31-12-2018	51.415	x	3%	49.873	45.880	5.535	10,8%	€ 1.107,00	5.535
ELETRICITY										62.089

Name	Energy saving goal (%)	Minimum goal	Periodo di monitoraggio dell'alleanza	Value retried from the audit (Smc) 2014	Valueretrieved from the energy audit (kWh) 2014	Consumption registred with the smart meter Creg (kWh)	Crisp_10% oppure Crisp_3% (kWh)	SAVING %) con segno positivo	Estimated saving (Costo energia 0.2 €/Kwh)	Actual saving (Costo energia 0.2 €/Kwh)	Kwh saving
Rodari Casale Sul Silea	3%	x	da 01-01-2018 a 31-12-2018	25.300,00	240.350,00	220.210,00	233.139,50	8,38%	€ 1.442,10	€ 4.028,00	20.140,00
Moro di Ponte di Piave	3%	x	da 01-01-2018 a 31-12-2018	59.646,00	566.637,00	616.000,00	549.637,89	-8,71%	€ 3.399,82	-€ 9.872,60	-49.363,00
Vivaldi di Silea	3%	x	da 01-01-2018 a 31-12-2018	16.885,00	160.407,50	163.700,00	155.595,28	-2,05%	€ 962,45	-€ 658,50	-3.292,50
Ciardi di Quinto	3%	x	da 01-01-2018 a 31-12-2018	20.613,00	195.823,50	225.200,00	189.948,80	-15,00%	€ 1.174,94	-€ 5.875,30	-29.376,50
	THERMAL										-61.892,00

The alliances related to the buildings belonging to the Associated have registred a positive impact. The goal of reduction was achieved in all the alliances and the level of reduction was more positive than planned.

14. Describe the unexpected positive events/situations that you have registered during the implementation of the pilot activities. What changes in user behaviour can be experienced and how it was measured? *Please provide information and give examples/specific references*

During the pilot cases, several events and positive situations have been recorded:
1) **Activation of a positive experience of Work-Linked training** that specifically involved 4 students of the Upper Secondary Schools "Giorgione" of Castelfranco Veneto. The results of their technical and thematic work were successfully presented at the Open Living Lab Days event organised in Krakow in 2017 by the European Network of Living Labs. Relevance and evidence of their engagement were properly produced on the social networks. The 4 students wrote their impressions and jointly authored a personal story about their experience in the project;
2) **The Municipality of Quinto di Treviso ran a competition in the school**. The aim of the competition was to select a logo to be used for producing some t-shirts to be distributed to the members of the energy team. The selected logo was designed by an individual candidate, and the final result was a yellow bulb supported by the hand;
4) **The Municipality of Quinto di Treviso decided to take part in a project** (Trans boarder cooperation) as beneficiary, thanks to the experience gained as associated partner in Project TOGETHER;
3) The training path developed to support the conceptualisation of the pilots and linked to the smart meter device was so welcomed and approved by participants that they requested the organisers to further implement the training course with further training activities. To that end, the Province of **Treviso organised 2 further training days approaching the so called "environmental minimum criteria" that are demanded by the rules and regulation relating to public procurement;**
5) **A group of 12 delegates from the territory and from the schools was involved in a work trip to Maribor (Slovenia)** during the organisation of the II Transnational Workshop devoted to demand side management and behavioural changes. Their participation was a really good opportunity to invest in networking and human relationships and to further cement the mutual trust in what we were doing together.
6) **Lego Lab**: during participation by the Lead partner in the 2018 Open Living Lab Days organised in Genève, the team got in touch with the methodology of Lego Lab serious play. It was so inspiring that the team decided to buy some Lego boxes to test the activity in the local pilot buildings and to plan a special session on the occasion of the closing conference that will be held in 2019;
7) **Use of the gamification techniques during the workshops with consumers: at the second workshop with consumers organised on 15 October in Trevignano**, participants were presented with a slide setting out the family / individual behaviour we wanted to speak about. This slide contained many examples with some tips on how to improve energy behaviour (e.g. do not take too long a shower). After the informational moment, every person in the room selected a behaviour to change along with a numbered playing card, chosen from a deck. On 19 November, the people who picked up the card on the 15th presented to the plenary session the results of their commitment to others in the room, in a sort of PechaKucha where everyone could speak for 10 or 20 seconds at most, take the applause, and return to his seat. At the end, all the attendees were invited to vote for their favourite card. The 3 best performances were rewarded with a small present offered by the Province of Treviso.
8) the valorisation of the role of school collaborators can become decisive, both as observers and as real energy saving actors

15. The energy monitoring system installed

Please write this part with a simple language that everyone can understand. Write max 2 pages

The monitoring system installed It is a mixture of sensors, connections, hardware and software that automatically carries out the measurement of the buildings energy consumption. The quantity that is measured is the energy CONSUMPTION (electric or thermal) of a building. The SAVING is the DIFFERENCE (subtraction) of the consumption registered in the same period. If by METERING we mean the method for accounting for a physical "quantity" in a traditional way, through a common "meter" in which the final user is in charge of the punctual registration of the "accounted" value, instead the SMART METERING is different because the communication to the final user is done AUTOMATICALLY by the meter itself by using "modern" technologies: SMART.

The investment allows to measure and display almost in real time (maximum intervals of 3 hours between measurements), the electricity and heat consumption in a cluster of 20 public buildings belonging to the Province of Treviso and to 10 Municipalities in the provincial territory that represents the Italian Pilot Arena of the TOGETHER project.

Two modes of system interventions were carried out:

A) Installation of BASIC metering devices carried out in the 12 buildings belonging to the 10 Associated Municipalities

- n. 1 Data-logger XMETER measuring electric consumption
- n. 1 Quantometer measuring thermal consumption
- n. 1 Monitor TV – Showcase dissemination of the consumption data

To favour the dissemination of the results achieved through the project and published on the WEB, in every "BASIC metering installation" a "Monitor TV – SHOWCASE" was placed, directly connected to a personal computer connected to the Internet. The PC is a compact model with preinstalled O.S. Windows 10 Home. It is placed on the wall behind the TV set and it is directly connected to it. It does not have keyboard and mouse: it is equipped

with a remote control software that allows to access it only for maintenance purposes by the staff in charge of maintaining all the SMART METERING equipment present in the building, until the end of the project TOGETHER.

It is configured so that, when it starts, it automatically accesses Windows with non-administrator credentials.

B) ENHANCEMENT of the EXISTING metering devices carried out in the 4 buildings belonging to the Province of Treviso (Connected to the EXISTING XMETER)

- n. 1 Electric Energy Cost Allocator measuring electric consumption
- n. 1 Flowmeter with temperature probes measuring thermal consumption

In these buildings the thermal consumption includes both the value of the main building (e.g. school) and the one referred to other annexed buildings (e.g. gym). Thus, it was necessary to identify and measure one single thermal flow through a flowmeter, in order to obtain, by difference, the consumption of the single buildings.

The success of the project is ensured not only by the availability of technological tools, but also by their understanding. The installed technological package is completed by the transferring of the knowledge that is necessary to make the most of the opportunities provided by technology. In order to analyse consumption data and consequently define the energy performance of a building, it is necessary to establish a BASELINE.

The THERMAL and ELECTRIC Baselines are calculated:
1. starting from the **consumption information retrieved through the energy audit** of the building (carried out at the beginning of the project TOGETHER).
2. **dividing the consumption information described above** by weeks and then by days proportionally to the average weather conditions over the last 3 years
The Smart metering system defined as "**direct feedback measure**" (excerpt from "Achieving energy efficiency through behaviour change: what does it take?" from EEA), provides the building players with the concrete possibility to have a direct and immediate feedback of the incidence of their behaviour and consumption practices on energy consumption.
Feedback systems based on smart metering devices are therefore strategic in Energy Efficiency programmes based on Demand Side Management (DSM) measures and users' involvement.
A strict control of energy expenditure and the optimization of energy efficiency in the activities carried out can improve the reliability of the data/feedback and can, above all, lead to savings.
The investment is made of up of 2 core parts:

- BL5 that is thematic equipment for a total amount of € 60.538,55 (VAT included)
- BL6 that is works for the installation of the procured thematic equipment for a total amount of € 21.829,50 (VAT included). Moreover, the contract includes the terms of reference for a service of:
- support and service for constantly monitoring the on-line monitoring system and its correct functioning
- training and assistance for a total amount of € 9.387,66 (VAT included, covered by BL4)

The total investment (including only the thematic equipment and related works) costs 82.368,00 euro covered by the ERDF for the amount of 65.894,40.

16. Describe how the dashboard/data visualisation is operated and what is the feedback that *receive the buildings' visitors. Whom is addressed the dashboard to? habitual visitors or occasional visitors? Please describe the target. Provide information Do it in max 1 pages and include some pictures in the "GALLERY"*

We should first of all emphasise that, since the beginning, one of the main objectives was to develop energy saving methodologies based on the capacity to modify user behaviour and the manner of managing building-plant complexes through the use of systems for real time display of energy consumption.
Based on the experience gained with the previous editions of Global Maintenance Service, it was always clear that the success of the project could depend not only on the availability of technological tools (SMART METERING) but also and in fact mostly on using and understanding them. As a result, the only way to use information on energy consumption and production with a view to improving energy efficiency is to peruse in real type the consumption data themselves (data of dynamic type).
Because of this, the **dashboard was designed with a special focus on the way in which it might represent a fully-fledged link between user and technology**:

- the users can check at any time the effect of the saving actions undertaken;
- the plant manager is equipped with a tool to quickly assess possible remedial actions.

The dashboard has thus become a graphic panel unto which all the heating and electricity consumption data detected in a building have been channelled: such data are subsequently represented pursuant to some well-defined “rules/algorithms”, and the result is integrated on an Internet website. By means of this dashboard, the teacher, the student and the administrative, technical and auxiliary staff can view in a schematic, yet direct and effective way, one or more indicators. A synthetic description is provided of the way the PC-monitor window display system, installed in the buildings, operates: to facilitate the dissemination of results obtained by the project as published on the WEB, a « TV Monitor – **WINDOW DISPLAY**» directly linked to a personal computer connected to Internet has furthermore been placed in each «BASIC metering installation».
The PC is of compact type with pre-installed Windows 10 Home operating system: it is placed on the wall behind the TV and is directly connected to it. It is moreover devoid of keyboard and mouse: a remote control software installed in it enables access for purely maintenance purposes by the staff in charge of maintaining the whole SMART METERING instrumentation and/or the building, until the natural conclusion of Project TOGETHER. It is set in such a way that, on starting it, an access to Windows is immediately carried out with log-in details of other than administrator. At the end of the start-up procedure, a browser is scheduled to open on a predefined address that kicks in the continuous scrolling of contents relating to Project TOGETHER, including the consumption DASHBOARD for the building in which it is installed. The PC is protected by a free-of-charge antivirus that updates itself daily in total autonomy and is further programmed for a likewise automatic daily restart.
In conclusion, as we can see from the display example set out hereunder, the user can at any time learn how his own building is behaving in terms of heating and electricity consumption, and is able to take decisions and engage in specific conduct to modify and improve the consumption trend itself. The consumption value of the previous day is displayed, and there is a smiley that, referring to the baseline values, takes on different expressions.

17. Relevant for D.T3.3.10 about the involvement of the target groups

Describe the involvement of relevant Target Groups in the implementation of your Pilot Action
Report on the target groups’ involvement in Pilot Actions from the negotiation to its assessment
Please write at Detail what, when, who and how. *Do it in max 1 pages and include some pictures in the “GALLERY”*

First of all, we can list our target group as follows:
1. **Students of the 18 schools** specifically involved as members of the energy team/energy office established in each of them;
2. **Teachers of the 18 schools** involved as members of the energy team/energy office established in each of them;

3. **Other type of staff** (e.g. janitors, IT assistant, etc.) of the 18 schools involved as members of the energy team/energy office established in each of them;
4. **School Heads and Principals**;
5. **Technical experts of the municipalities** identified as persons in charge of project implementation;
6. **Administrators and decision makers of the schools**;
7. **Staff working at the premises of the 2 institutional buildings involved.**

Involvement of the target groups is without any doubt one of the strongest element of the pilot action development. The engagement was recorded through:

- **several meetings** (more than 60) at the schools premises and/or at the premises of the municipalities, throughout the project implementation;
- **round table**s aiming at collecting ideas for an user-friendly dashboard to be developed;
- **on site visits** during installation of the smart meter devices;
- on site visits aiming at verifying the preliminary conditions for their installations;
- **on the job experience** during performance of the energy audit done in the buildings in the very early phase of project implementation;
- **on demand training**: users of pilots buildings have indicated what type of training activities they preferred;
- **engagement in the elaboration of the content of some communication and promotional material:** some students and teachers have been actively involved in the realisation of some communication material or asked to filter and give their opinion as field testers of the communication content and approach;
- **competing**: a senior competition marked TOGETHER was elaborated with the support of experts of the municipalities. The terms of reference were filtered and integrated by them in order to get their stronger commitment to convince schools to subscribe;
- **work travel**: A group of 12 delegates from the territory and from the schools was involved in the work trip to Maribor (Slovenia) during the organisation of the II Transnational Workshop devoted to demand side management and behavioural changes. Their participation was a really good opportunity to invest in networking and human relationships and to further cement the mutual trust in what we were doing together.

18. Relevant for D.T3.4.1 about the SUPPORTING STRUCTURE . Describe your LOCAL SUPPORTING STRUCTURE (how it is composed, who are the members etc). Describe the actions/decisions realised by the Local Supporting Structure that you have organised for supporting the pilot actions. Please write max 2 page with completed information or in any case an adequate information. Detail what, when, who and how

The Supporting structure is composed by:

- 4 Teams of officers of the Province of Treviso (full time employees);
- 2 member of Agenda21 Consulting selected through a public procurement to provide support to the municipalities and schools;
- 1 external expert in Communication and in engagement process (Mr Francesco Molinari);
- 1 IT expert working for the company that has installed the smart meters delegated to solve and identify possible problems (e.g. connections, interruption of the service and data transfer, etc.);

- 1 graphic expert (full employee of the Province of Treviso)

Moreover, Agenda21 Consulting has engaged the Regional Energy Agency of Friuli Venezia Giulia to implement the training programme.
More than 70 bilateral or trilateral meetings were organised with the institutions involved, and additional training activities were organised on 30/31 March 2017 and on 25 September 2017 to introduce the energy audit results and clarify how the energy monitoring activities work.
The Supporting Structure organised "on demand" training activities on how to better use the IT programs whereby to extract and use the collected data and how the algorithm that is behind the dashboard has been conceptualised. The supporting structure provided inspiration and a solid support to tailor the Action plan to energy improvement and concretely supported the municipalities in finding the right dialogue strategy with the schools. The Supporting structure has developed and conceptualised different communication tools to be practically used in the pilot scenarios.

It has to be underlined that the Province of Treviso has launched in October 2018 the tender for contracting the New Global service for the maintenance and energy management of its owned buildings (*see the Reinvestment Plan)*.
The Contractor will implement a set of activities specifically planned for the 12 buildings belonging to the Associated partners too.
It does not plan technical measures to be implemented but it plans a list of activities that the Contractor will have to implement, in order to support the 10 Associated partner in the data monitoring.
It follows the translation of some paragraphs of the "Tender for the asset management and maintenance service of the Province of Treviso" related to the support activity that the new contract will implement in terms of demand side management activities and energy management activities (e.g. data processing, data analysis etc).
The Contractor will implement a set of technical interventions, DSM measures and organisational measures in all the buildings belonging to the Province of Treviso, included the 8 pilot buildings involved in the TOGETHER project.

The new Contract creates the conditions to take alive the Supporting Structure implemented for the TOGETHER project.

Following what is explained in paragraph 7.2, towards the n. 12 municipalities involved in the TOGETHER project, the Contrator will have to guarantee (until 2022) the following:

- ***Remote support**: guarantee the organization of a "TOGETHER Focal point" dedicated to the TOGETHER project with the indication of a dedicated contact person who can support - on call and on demand - the resolution of contingent problems related to the malfunctioning / other of the smart meters . In addition, the "focal point" must verify at least monthly the operation of the smart meters and report to the contact personnel indicated by the individual municipalities, any problems concerning anomalous consumption peaks with respect to the target value entered and connected to the dashboards;*
- ***Technical analysis possible extension of the monitoring system**: assistance to the 10 municipalities involved if there were their interest in enhancing / extending the capacity to monitor the energy consumption of buildings already involved in the monitoring network and / or other*

buildings. The contractor must support the municipalities concerned to define the extension / upgrade conditions;

- ***Training on the consumption monitoring system**: organization of an annual training event to be understood as training for the updating of the municipal staff in charge of consultation of the system; this also implies the development of support training material and other material that can facilitate cascade training towards other personnel;*
- ***Training on funding opportunities and instruments** for the bankability of technological innovation projects: organization of an annual training event to be understood as training for the municipal staff connected to the pilot buildings indicated, which can also be extended to the remaining municipalities of the territory;*
- ***On-site animation for the involvement of users**: organization of an animation activity per year in each single building (eg structured lesson, thematic workshop with involvement of a public figure known to the kids as eco-leader, other) to be organized in agreement with the manager and owner of the buildings. The animation activities can be inspired by what is present in the numerous literature concerned and introduce elements of "guerilla marketing" and "living lab" approaches. In agreement with the owner and manager body, the animation activities can be summarized also in the launch of a dedicated building competition, with allocation of a final prize and consolation prizes. The eventual competition could be inspired by the VI Greenschools Competition model where the element of savings is strongly valued;*
- ***Production of ad-hoc signage to be affixed in the corridors**, in the common parts of the buildings concerned, in order to guarantee convergence and recognition - also of a visual nature - to the buildings involved.*
- ***Implementation of a multi-channel campaign** (at least 2 different channels) aimed at the general public, which reinforces the "social potential" with respect to the goal of containing consumption. The multi-channel campaign must be annual and may require the activation of collaborations with other territorial subjects (eg consumer association, environmental NGOs, telephone companies, professional associations, others).*

19. Expected impact and benefits of the pilot action for the concerned territory and target groups and leverage of additional funds (relevant for INDICATORS)

In terms of benefit, testing the new technical equipment installed, combined with behaviour-based energy efficiency programmes, gave a concrete opportunity to improve the current energy monitoring system that is chiefly based on a “passive” payment of monthly bills, without a critical verification of the real consumption and the reasons leading to a specific energy consumption. The leverage effect generated by the project in terms of investments in technological improvement is about 100.000 euros.

At the beginning of the Pilot Action development process, a preliminary questionnaire has been administered to the Municipalities involved to have an idea of the starting point of these Public Administrations and their willingness to experiment new and innovative financial tools for the improvement of energy efficiency in their own buildings. The high quality training programmes, combined with the set of tools provided during the project life (e.g. smart meters, energy audit certificates, etc.), have encouraged some of the Associated municipalities involved to invest in and add further resources to improve pilot buildings from an energy point of view.

The **main expected impact** of the pilot action was to register energy savings, but that was not achieved due to the presence of several variables that have to be deeply investigated.
In terms of benefit, testing the new technical equipment installed, combined with behaviour-based energy efficiency programmes, gave a concrete opportunity to improve the current energy monitoring system that is essentially based on a “passive” payment of the monthly bills, without a critical verification of the real consumption and the reasons leading to a specific energy consumption.

20. Describe if any of the involved administrations have invested own resources (e.g. for retrofitting the pilot buildings and or for extending the smart meters system in the involved buildings or in other buildings) already during the pilots implementation . Indicate if any of the involved administrations have taken a commitment to invest own resources . Please give numbers, dates and describe shortly the type of levered investment

The leverage effect generated by the project in terms of investments in technological improvement is about 100.000 euros:
- 3 Municipalities (i.e. Casale sul Sile, Paese and Quinto di Treviso) out of 10 have invested own resources to improve the energy efficiency (EE) of their pilot buildings, for a total amount of about 60.000 euros. 5 Municipalities out of 10 (i.e. Silea, Mogliano, Paese, Conegliano and Casier) had to invest own resources for adjusting the heating system of pilot buildings for total leveraged funds of 18.000 euros Ponte di Piave invested 5.325,30 for integrating the new monitoring system with another sensor monitoring the water. The two most common types of interventions covered by them are: substitution of the existing lamps with new LEDs and installation of thermostatic valves. The Municipality of Ponte di Piave implemented stronger interventions: roof insulation and window refurbishment thanks to regional funds and own funds for a total investment of 200.000 euros. The Municipality of Quinto di Treviso launched a financing project for street lights (not strictly linked to Project TOGETHER, but, more generally, to the Priority 2 objective of the program). The technical decision was partly achieved by the interest aroused by the project in more daring contractual formulas

21. Full time employee (relevant for INDICATORS). Indicate if you have hired new staff for the implementation of the pilot actions and if the contract will be renovated after the end of the project

In relation to this question, we have to say that the Province of Treviso has not hired any new staff member for covering the project issue. The activities were implemented by the internal staff supported by some external companies that reinforced the human resources and work for specific activities.
We have to say that the Municipality of Casier hired for a short term period a technical expert to support the staff members involved in the project implementation and act as link between the administration and the school. The contract covers for the moment 6 months and could be extended but not transformed into a long-term contract, since in public administrations contracts cannot be transformed without a public competition.

PHOTO GALLERY

(please make sure that people included in the pictures have given you their informed consent giving you consent to publish the pictures)





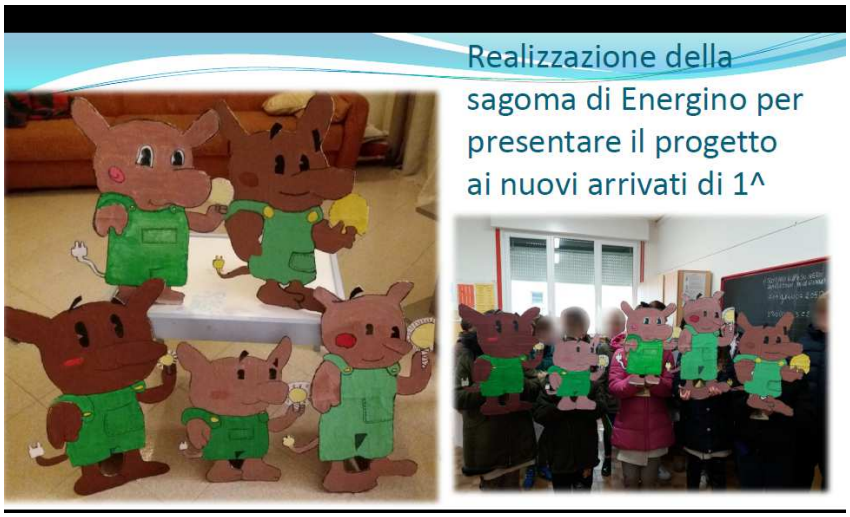





SPEGNIAMO lo SPRECO
GENNAIO


SPEGNI LA LUCE


CENTRAL EUROPE
TOGETHER
JUNIOR COMPETITION
A CHI SI RIVOLGE


Realizzazione della sagoma di Energino per presentare il progetto ai nuovi arrivati di 1^


TOGETHER
INSIEME


PROGETTO-TOGETHER
RODARI COMPETITION
SPORCHERESTI CASA TUA? ALLORA PERCHÈ SPORCHI LA TUA CITTÀ?
QUESTO PAESE È ANCHE TUO. VIVILO.
RODARI COMPETITION
STAI PARTECIPANDO A UNA GARA DI RISPARMIO ENERGETICO. COLLEZIONA IL MAGGIOR NUMERO POSSIBILE DI ✓ PER AIUTARE LA TUA SCUOLA A RISPARMIARE ENERGIA!!!
VINCERAI UN ✓ OGNI VOLTA CHE:
LA PORTA È CHIUSA
LE LUCI SONO SPENTE
LE FINESTRE SONO CHIUSE
LA LIM E IL PC SONO SPENTI
MA ATTENZIONE ALLE
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CASALE sul sile
IN_FORMA

AMBIENTE

Assessore **Massimo Da Ros**
Consigliere **Ferdinando Baldessin**

Il problema smog: parliamone!

La Pianura Padana è ormai da anni una delle zone dove maggiore è l'incidenza delle malattie dipendenti dallo smog. A riguardo di questo tema, l'Amministrazione Comunale e in particolare l'assessore di reparto **Massimo Da Ros** evidenziano il grande impegno messo in atto dalla comunità locale per combattere questa piaga dei nostri territori. Il programma di serate dedicate alla sensibilizzazione ambientale della cittadinanza è iniziato lo scorso 04 dicembre con il convegno **"Smog. Il pericolo invisibile"** presso l'Auditorium delle Scuole Medie, con la presenza della dott.ssa Maria Rosa di **ARPAV** e del dott. Gallo dell'ULSS 2 come relatori. Tra le altre iniziative promosse dal **Comune di Casale**:
- L'adozione di **un'ordinanza per il contenimento e la prevenzione dei fattori locali di inquinamento** (dai fuochi all'aperto alle limitazioni del traffico, dal riscaldamento nelle abitazioni alle attività agricole). A tal proposito, è da segnalare anche l'impegno dei vigili, occupati in azioni di controllo sul nostro territorio.
- Lo svolgimento di **una prima campagna di rilevazione dell'inquinamento atmosferico** lo scorso gennaio; una seconda campagna verrà avviata nel periodo estivo al fine di poter avere dei dati stagionali completi entro la fine dell'anno corrente.

Progetto Together

L'Amministrazione casalese continua il suo percorso accanto alla Scuola Primaria Rodari nel progetto **"TOGETHER-TOwards a Goal of Efficiency THrough Energy Reduction"**. Dopo aver "fotografato" lo stato di salute dell'edificio con una **diagnosi energetica** redatta nei mesi scorsi, è seguito il primo intervento di efficientamento, legato alla sostituzione di tutte le lampadine con corpi illuminanti a LED a basso consumo energetico (27.100€). L'Amministrazione vuole evidenziare l'entusiasmo con cui gli studenti della classe quarta, il corpo docente e il personale ATA stanno portando avanti questa iniziativa di livello europeo. Prosegue all'interno del complesso scolastico, dunque, il lavoro di educazione alle cosiddette "good practises", quelle "buone maniere", o meglio, quelle azioni **comportamentali** volte al **risparmio energetico** e ad una convivenza nella scuola caratterizzata da un'**etica sostenibile**. Obiettivo è quello di creare una cultura dell'efficienza energetica tra i nostri ragazzi che possa essere estesa anche nella vita quotidiana, oltre all'orario didattico e ai confini della scuola.

Annex

- Text of the Building Alliance – standard template used for the Upper Secondary Schools
- Decree of Approval of the Building Alliances related to the upper secondary schools
- Translation of some documents/parts related to the public procurement launched by the Province of Treviso as EPIC.