

Interreg
CENTRAL EUROPE



ENERGY@SCHOOL

European Union
European Regional
Development Fund

GENERAL PROJECT PRESENTATION

ENERGY@SCHOOL

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Project title

ENERGY@SCHOOL: ENERGY OPTIMIZATION AND BEHAVIUR CHANGE INTO SCHOOLS OF CENTRAL EUROPE - CE744

Programme priority and specific objective

2. Cooperating on low-carbon strategies in CENTRAL EUROPE - 2.1 To develop and implement solutions for increasing energy efficiency and renewable energy usage in public infrastructures

Partnership

- 1 - UNIONE DEI COMUNI DELLA BASSA ROMAGNA - LP -IT WP M RESP
- 2 - CertiMaC s.c.r.l. -IT - WP T1 RESP
- 3 - Miasto Bydgoszcz - PL -WP TC RESP
- 4 - ZAVOD ENERGETSKA AGENCIJA ZA SAVINJSKO, ŠALEŠKO IN KOROŠKO - ZAVOD KSENA - SI - WPT3 RESP
- 5 - Grad Karlovac - HR
- 6 - Università Degli Studi di Bologna - Dipartimento di Chimica Industriale “Toso Montanari” - IT - WPT4 RESP
- 7 - Szolnok Megyei Jogú Város Önkormányzata - HU
- 8 - Újszilvás Község Önkormányzata -HU
- 9 - Landeshauptstadt Stuttgart - D - WP T2 RESP
- 10 - Klagenfurt am Wörthersee -AT
- 11 - Grazer Energieagentur Ges.m.b.H. -AT
- 12 - Mestna občina Celje -SI

Project summary

The building sector has a high potential for energy optimisation. In terms of public buildings heritage, energy consumption in schools is the second highest expenditure of municipalities' total running costs. This sector offers potentially remarkable achievements in terms of energy efficiency and the application of renewable energy sources (RES) and carbon footprint reduction.

At the same time, disparities exist in central European regions regarding planning and implementing performances of proper sector-based strategies, action plans and managerial capacities.

ENERGY@SCHOOL aims to increase the capacity of the public sector for implementing energy smart schools. The project will achieve this by applying an integrated approach that educates and trains schools staff and pupils to become Senior and Junior Energy Guardians (EGs).



Main objective

Main ENERGY@SCHOOL objective is to increase the capacity of public sector to implement Energy Smart Schools, by application of an integrated approach that educate and train schools staff and pupils to become Senior and Junior Energy Guardians

Specific objectives

- > Favour cultural change on energy matters
- > Boosting progressive change towards energy smart schools
- > To strengthen competences and skills in the field of energy saving

Main Outputs

- n.1 Common/Transferrable and 8 customized Strategies for Smart Schools
- 1 joint and 7 customized Energy Smart-school Management Plans
- n. 3 smart phones APPs for EGs
- n. 8 tested pilot solutions of EE&RES application in schools under direct contribution of EGs, in the form of Guidelines, Toolbox, Best Practices as reference documents and experiences to be capitalized far beyond project end.
- 24- training & education programmes will be provided as adaptable & replicable models for capacity raising and Energy Culture rooting.

The project will be realized by the following **workpackages**

- WP 0 Preparation
- WPM Management
- WP C communication
- WP T1 Analysis phase and definition of Energy Guardians Smart-school Management Plans
- WP T2 Definition of Smart School Strategies and pilot applications
- WP T 3 Senior Energy Guardians: capacity building, operational interventions and Guidelines, job creation
- WP T4 Set up of Junior Energy Guardians schools Team and training delivery: creating "energy culture"

Other than the activities related to Management, the WPs foreseen:

WP T1 Analysis phase and definition of Energy Guardians Smart-school Management Plans

WP objective is to carry out a customized analysis and develop several Tools that will be part of the Common Strategy For Smart Schools CSSS and sustain Energy Guardians EGs and schools to implement and manage EE/RES interventions.

1.1 PPs will first carry out an inventory of school facilities, based on jointly defined homogeneous criteria and existing quality-quantitative available data. A common methodology for evaluating results will be developed to detect energy consumption categories the majority of energy consumption can be imputed to. Assessment of priority of possible interventions.

1.2 Best Practices BPs at a European level will be examined for possible replication of successful interventions and will provide insights regarding retrofit technologies for the building envelope, successful RES integration, building-system optimization and smart regulation.



1.3 Inventory of applicable technologies for Energy Saving and RES application in school will be made. Interventions will be screened and prioritized to detect which measure meets schools performance/financial requirements. The most efficient ones in terms of cost/benefit can be preferred for a first-stage application. Zero-cost or nearly-zero-cost interventions could be steadily applied.

1.4 Sources of funding and support instruments will be investigated as well and a Business Model BM developed.

1.5 Decision-support tools for EGs to facilitate the decisions on actions to be undertaken for school Energy Efficiency EE improvement will be analysed/upgraded

1.6 Energy Guardians Smart-school Management Plan EGSMP as final output of this WP T1, indicating virtuous actions to be undertaken to progressively achieve higher energy savings taking into account passive building envelope, technical systems and renewable energy sources (RES) integration. Foreseen 1 joint general EGSMP transferrable outside consortium and 8 customized EGSMPs for each pilot. A Memorandum of Understanding for institutional take-up of EGSMPs will be signed.

OUTPUT WP T.1

- N. 1 Common Strategy and n. 8 Energy Guardians Smart-school Management Plans indicating actions necessary to achieve higher energy savings
- Upgraded Decision-support Toolbox for School Energy Guardians as Set of Tools to orientate Energy Guardians within schools on decisions and actions they can or have to undertake for the optimization of energy consumption and saving in their school and general EE improvement.

Duration:

October 2016 - June 2017

WP T2 Definition of Smart School Strategies and pilot applications

WP goals are to carry out pilot demonstrative actions on EE&RES in schools and develop a connected common strategy for smart schools (CSSS)

In details are foreseen the following actions:

2.1 Based on wp T1, energy audits will be carried out on a sample of selected schools. Pre-investment projects will be carried out taking advantage of results of activities of WP1.

2.2 Smart technologies & smart tools for energy savings will be developed in the form of an app for PCs and smartphones. Smart metering systems installed in each pilot will serve to control and to real-time-monitor energy consumption in schools after a refurbishment intervention. A joint method will be developed to compare achievements in different schools.

2.3 n. 8 Pilot actions to test application of smart technologies and a set of smart tools for energy saving & RES application in a predefined sample of 41 schools.

The pilots will foresee also installation of devices to monitor qualitative and quantitative results and EGs will be involved. Results will be monitored according to a jointly defined methodology; data will be used for the definition of the CSSS. Pilots will have the function of "didactic & training tools" and enclosed in the training and education "paths".

2.4 Definition of a common strategy for smart schools (CSSS) based on WPT1 results and tools, WPT2 and issues related to legal framework, sustainability, etc. Strategy will be greatly devoted to communication & education on energy matters to raise awareness and capacity on behavioural change. The "fil rouge" will be to save money to reinvest in smart school building and education.

OUTPUTS WP T.2

- 3 APPs



- 8 pilot actions
- 1 CSSS

Duration:

May 2017 - January 2019

WP T 3 Senior Energy Guardians: capacity building, operational interventions and Guidelines, job creation

WP aim is to develop guidelines for the constitution, management and the operation of the senior energy guardians in order to activate energy teams of public buildings and create new job opportunities through specific trainings addressed to public&private experts & post-graduated. Trainings will tackle energy related issues for minimizing costs to maximize savings to be reinvested into energy education, to drive behavior change. They will be aimed at boosting interest and dedication to energy management program from all employees (schools&Municipalities) to "embed senior energy guardians" in public buildings.

The following actions will be realized:

- 3.1 Preparation of a network operation center and the provision of all the necessary tools for achieving the aim of the energy saving plan
- 3.2 Training programs, connected with the results and output of WP T1 and WP T2, for senior energy guardians to be organised into thematic sessions and jointly defined by the partners as result of thematic working groups, targeted with reference to Municipalities' employees, local stakeholders/experts and post-graduates. They will be locally implemented and will foresee a joint transnational training session on-line.
- 3.3 Organisation of study visits in PP areas
- 3.4 Updating the EGSMP energy saving plan to reduce the energy consumption in public buildings
- 3.5 Joint definition of a monitoring results method with the purpose of defining a standard training methodology for senior energy guardians, easily transferrable and applicable in other areas.

OUTPUTS WP T.3

-n. 16 training programmes : n. 8 Vocational Energy Guardian Training Program (VEGTP) & n. 8 Continuing Energy Guardians Education (CEGE)

Duration:

May 2017 - January 2019

WP T4 Set up of Junior Energy Guardians schools Team and training delivery: creating "energy culture"

WP objective is to form teams of junior energy guardians in order to make students aware of the role energy plays in their own lives, in their everyday needs and activities and to engage students but also families in creatively developing energy efficient and environmentally friendly solutions that each of them can follow in their everyday lives, at school or at home.

The following activities are foreseen:

- 4.1 in each school involved, it will be created a team of "Junior EGs" in which the senior EGs, (WP3), defines the goals and tasks required to be completed by the end of the project and a clear set of objectives to achieve.
- 4.2 A Team building approach for a integrated awareness campaign based on creative and innovative approaches to teaching and learning topics of energy and climate:



4.3 joint definition of training for "Junior EGs" using an education programme based on simulation games and workshops, to explore children's capacity to engage in debate, and help them developing citizenship skills.

4.4 Joint definition of a monitoring method to assess the performance of the WP, to define a standard training methodology for "junior energy guardians" easily replicable. We will reach a network based on two different but integrated levels: one is the senior energy guardians level that will cross throughout the project on the Energy Saving Strategy (WP3) and the second is the junior energy guardians for the development of the Action Energy Saving Strategy.

4.5 from school to community: students from different schools will exchange their experience concerning the Energy Culture Action Plan of Junior Energy Guardians and will draw up an Energy Manual for school. The educational methodology would be representative of the Europe Energy strategy based on the European Directives from the European Parliament to the Member States

OUTPUTS WP T.4

- 8 trainings for junior Energy Guardians
- 1 Manual for smart energy school

Duration:

May 2017 - January 2019

WP communication

WP aim is to achieve a set of communication objectives to support project general objectives: change behaviour of public local and regional authorities, school and sectorial agencies; increase knowledge developed tools, actions and activities for EE and RES that maximize energy savings and minimize costs in public buildings (schools); raise awareness of students, teachers and their families to boost deep taking roots of the "energy culture".

In particular, communication actions will be devoted to capitalization of project results in the view of multiplying its effects far beyond PPs countries and project end.

Most important actions foreseen :

- Definition of a communication strategy, small kick-off conference, project website and posters.
- Realization of a newsletter "ENERGY@SCHOOL ON AIR"
- Activation of social media and multimedia channels
- Realization of a Video storytelling "ENERGY GUARDIANS ESTABLISHED IN MY SCHOOL"
- Educational video on training activities "HOW TO BECOME AN ENERGY GUARDIAN"
- Media relations: media releases, PPs networking
- Publications as pdf leaflets, project brochures, MANUAL FOR ENERGY SMART SCHOOLS,
- Targeted events: ENERGY@SCHOOL BARCAMPs in participating country areas and 1 INTERNATIONAL SMART-ENERGY SCHOOLS COMPETITION
- Public events: final public conference ENER.GUARD.DAY
- Gadgets: t-shirts

Project duration

36 months : Start date 01.07.2016 - End date 30.06.2019

Total budget for the ENERGY@SCHOOL project

Total project budget € 2.581.379,75
Total ERDF founding € 2.127.776,08