Name of Project: **Use of IoT-enabled and Smart Grid-ready Building Management Systems for Efficient Energy Saving in Public Buildings, (TARGET)**



**Project Summary**

TARGET project is implemented under the thematic priority (b) and is in accordance with the overall programme’s objective: “to find the balance between sustainable regional development and enhancement of cross-border cooperation among local population & regional institutions, in accordance with EU & national policies, in order to address common challenges through joint interventions”, because it clearly addresses the potential of RES and energy efficiency in facilities through joint interventions (small-scale investments and innovative tools), enhancing the cross-border trans-sectoral cooperation among local businesses, residents and institutions having as final scope the sustainable regional development.

The area targeted by the project concerns the implementation of energy efficiency interventions in public building in the area of Thesprotia (GR) as well as in Gjirokastër (AL) in order to reduce the energy consumption of the public buildings, to inform and aware the wider public about the importance of RES and adopt this concept in their daily life. The locations of activities were selected based on the existence on the fact that the Albanian Law on RES was recently adopted but implementing legislation is still lacking, as well as legislation for Energy Efficiency. In addition, implementation of the national EE action plan is delayed and there is no satisfied progress in the field of RES/EE in buildings. On the other hand, even though Greece has been funded with some initiatives as well as energy-saving actions for public building, businesses and private housing, still the situation is not better as definitely far away from the EU standards regarding the use of RES. Specifically, Epirus-where the Greek Municipalities are located and the pilot activities will be implemented, is of the most isolated Regions in Europe and energy consumption accounts for a big portion of the budgeted expenses, mainly for Public use buildings and resources. For this purpose, the interventions in the Municipal Halls of Igoumenitsa and Filiates and at the public school of "Koto Hoxhi” at Gjirokastër will enable this areas to make a good start on transforming public buildings in Zero Energy Buildings with the help of RES in the area. The results of the project, the educational tool, the awareness raising events, engagement of key policy players and the establishment of the Greek-Albanian Smart Energy Transition Initiative the will promote the energy efficiency culture in local and cross border level. The stakeholders & project partners will disseminate the project in the wider public through their participation in local, national and European conferences, exhibitions and workshops.

INFORMATION

Call

INTERREG IPA II CROSS-BORDER COOPERATION PROGRAMME - FIRST CALL FOR PROPOSALS

Project Acronym

TARGET

Project Number

A4-1.3-11

Programme Priority

1) Promoting sustainable transport, information and communications networks & services and investing in cross-border water, waste & energy systems and facilities

Specific objective

Taking into account the existing RES potential, as well as the need for increasing Energy Efficiency, TARGET project aims at the implementation of mature demonstrative small-scale investments at public facilities and the substantial activation of residents and businesses through joint public awareness initiatives for sustainable development in the area

Start – End Date

**2019-11-01 – 2021-10-30**

**Leader Partner**

****

**MUNICIPALITY OF IGOUMENITSA**

Address:

3, Souliou str, Igoumenitsa – 46100, Greece

Contact Person:

Mr. Telis Karapiperis, <teliskar@gmail.com>

### PROJECT PARTNERS



**Municipality of Filiates**

Address:

Filiates, Grece

Contact Person:

Stela Papadimitriou, info@filiates.gr



**National Agency of Natural Resources**

Address:

Blloku Vasil Shanto, Tirane Albania

Contact Person:

Artan Leskoviku, aleskoviku@gmail.com

## **Small-scale Investment Public School “Koto Hoxhi” in Gjirokaster**

## **Objectives of Albanian Small-Scale Investments of “TARGET”.**

The pilot investments in two chosen buildings and the joint public awareness initiatives of the project should effectively familiarize the citizens of these areas with all the advantages of Zero Energy Buildings (e.g. economical, thermal comfort, environmental). The project will implement several actions in order to develop, test and demonstrate project approach, best practices and solutions, including and giving great emphasis on innovative pilot-scale applications, to environmental challenges.

**“TARGET”** will focus on the promotion of innovative investments in municipal / public buildings and increase use of energy efficiency in smart buildings for optimizing energy consumption with smart load management and BMS for efficient energy saving in public buildings in energy communities in the cross-border area.

The gradual conversion of buildings into Zero Energy Buildings is a current "common political priority" in the two countries. The project builds on shared cross-border assets and the experience from successful project G.AL.E.T. (Greece - Albania 2007-13) and Alterenergy (IPA Adriatic Project) in order to further enhance the cross-border cooperation in the sustainable energy field, in accordance with EU & national policies towards 2050.

The Project **“TARGET”** will focus on the demonstrative use of RES and Energy Efficiency in a public building with high-traffic in emblematic - central point of the cross - border area, in order to raise public awareness. Albania has chosen United Middle School “Koto Hoxhi” in Gjirokaster Municipality. The main objective is to apply significant EE measures on the building in order to initiate the procedure for the final total conversion to a Zero Energy Buildings. By achieving the objective, of the refurbished buildings shall benefit from reduced energy costs and the users from more comfort due to TARGET living and working conditions.

## **Short General Description of the “TARGET” Small-Scale Investments**

The most feasible EE and RES measures, which need to be taken in this public building of municipality Gjirokaster (Public School Koto Hoxhi), is a complete refurbishment of the outside walls and roof, by installing external thermal insulation, new electricity system, Equipment with Smart Grid-ready BMS, illumination and changing all windows and doors with new energy efficient ones. This will increase comfort and in the same time will reduce heat transmission and ventilation losses of the whole building.

## **Justification of the of the “TARGET” Small-Scale Investments**

The target is the implementation of mature investments at two emblematic public buildings using state-of-the-art cost-optimal technical solutions to transform them into Zero Energy Buildings. After the exchange of good practices, all of the applicable renovation measures that can be conducted in existing public pilot buildings will be taken into account. Furthermore, studies for the appropriate cost-optimal renovation measures for the specific pilot buildings will be implemented and in such a way that they will be a model for other studies for **“TARGET”** in the eligible area. The chosen buildings which will be transformed in Zero Energy Buildings with Smart Grid-ready BMS, will comply with the necessary energy performance according to Greek and Albanian Legislation, which means that the pilot buildings should have less than 75% of the energy consumption of the reference building based on the European Standard ΕΝ ISO 13790.

## **Short Description of Place**

**Gjirokastër** (known also by several [alternative names](http://en.wikipedia.org/wiki/Gjirokast%C3%ABr#Etymology)) is a city in southern [Albania](http://en.wikipedia.org/wiki/Albania) with a population of 43,000. Lying in the historical region of [Epirus](http://en.wikipedia.org/wiki/Epirus), it is the capital of both the [Gjirokastër District](http://en.wikipedia.org/wiki/Gjirokast%C3%ABr_District) and the larger [Gjirokastër County](http://en.wikipedia.org/wiki/Gjirokast%C3%ABr_County). The public school “Koto Hoxhi” is situated in Gjirokastra City, inside of urban area.

|  |  |
| --- | --- |
| E:\2018\IPA\ENERJ\Objektet\gjirokastra\kotohoxhi\IMG_3975.JPG | E:\2018\IPA\ENERJ\Objektet\foto-koto-hoxhi-gjirokaster\IMG_4370.JPG |

## **Significance of Place**

Public School Koto Hoxhi is a building under the administration of the municipality of Gjirokaster. The choice of this building is in accordance with the Albanian Strategy of Energy for the improvement of public schools area of Municipality of Gjirokaster. The building has important values which present the development area of the Gjirokaster city.

The object is placed at the entrance of the city and the investment on it, has demonstrative value not only for the city but also for Gjirokaster region. The renovation of will serve the city of Gjirokaster for well demonstrate building and efficiency building.

In specific, Public School Koto Hoxhi will elaborate an appropriate jointly develop approach to mobilize local businesses and residents for their effective involvement into the sustainable energy development n and evaluation of small investments, dedicated tools for supporting the RES and Energy Efficiency in the area.

## **Current Situation**

Public School Koto Hoxhi is constructed in 1963 and serves as a primary school. It was partially reconstructed in 2007 (new single glass windows & doors). This building has 3 floors, with 50 cm stone walls and stone foundations. The walls are without outdoor plaster. The slabs are prefabricated concrete. Building has a flat roof, concrete slab. The windows are simple with duralumin frame, single glass. Due to the missing of insulation, ventilation system we found air with abnormal parameters and creating of humidity on the walls. Sanitary nodes are in poor conditions. Hot water sanitary missing and the toilets are damaged. The electro-energetic system is relatively old and out-worn. The installations are in poor condition. Cable installations are out of standard and out-worn. There is no back-up system installed. It is obvious that the electrical installations are dangerous with respect to direct injuries (electric shock) and indirectly as a potential source of fire.

## **Short Technical Description**

Public School Koto Hoxhi has three floors. During its operation of 55 years this building has been renovated with small intervention on 2007 but there has never been done any work in improving the energy efficiency. The building has an area of 2743 m2 consisting of 46 Doors, 70 windows. The first floor of the building has an area of ​​941 m2. The building has a roof with surface 971 m2 and. Building has a yard with capacity 23705 m3.

The building have a central heating not efficient, the lighting and electrical system is not efficient, and neither the walls nor the roof are not insulated.

The building has also an individual heating which in operation, the lighting and electrical system is not efficient, and neither the walls nor the roof are not insulated.

|  |  |
| --- | --- |
| E:\2018\IPA\ENERJ\Objektet\foto-koto-hoxhi-gjirokaster\IMG_4374.JPG | E:\2018\IPA\ENERJ\Objektet\foto-koto-hoxhi-gjirokaster\IMG_4367.JPG |
| E:\2018\IPA\ENERJ\Objektet\gjirokastra\kotohoxhi\IMG_3951.JPG | E:\2018\IPA\ENERJ\Objektet\gjirokastra\kotohoxhi\IMG_3950.JPG |
| E:\2018\IPA\ENERJ\Objektet\gjirokastra\kotohoxhi\IMG_3956.JPG | E:\2018\IPA\ENERJ\Objektet\foto-koto-hoxhi-gjirokaster\IMG_4373.JPG |
|  |  |

**Action of intervention for integration of EE measures**

* Introduction of Energy Efficient Measures in the Building
* Introduction of external thermal insulation in the wall/terrace
* Introduction of double-glazed windows and one new door
* Installation the individual heating system
* Introduction of electricity system and Efficient Lighting and New electrical system (wiring, main switches, fuses, lighting, plugs, smoke detectors).
* Installation solar hot water

## **Expected Results**

The specific energy consumption for Albania case is more than 188 kWh / m2 year - which indicates on the basis of the European Certificate can be classified as a G building as it is consumed higher than 156 kWh / m2 per year. Our target will be class E 101-125 kWh / m2 year.

## **Maturity of Albanian Small-Scale Investments**

Public School Koto Hoxhi is public institution. In order to obtain a works permission, the interested contracting party must submit a formal request to the Urban Planning Department of the Gjirokaster Municipality with:

* the full details of the applicant,
* the details of the building,
* a topographical drawing
* the full description of the works to be implemented

P.S: For existing public buildings all the available documents (licenses, property certifications, etc..). belongs to Gjirokaster Municipality, the process of licenses will be very short.