Project co-financed by the European Regional Development Fund

GRASPINNO

Transnational model, strategies and decision support for innovative clusters and business networks towards green growth, focusing on green e-procurement in EE/RES for energy refurbishment of public buildings.

Deliverable: 3.10.6. Overall Evaluation Report on the pilots

Prepared by

Veneto Region

Date: (19/06/2018)

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1. INTRODUCTION

To ensure transnational relevance, GRASPINNO implemented its pilot activity based on a common strategy that was replicated across pilot sites. This enabled transnational learning and joint development options.

Benefiting from the pilots, the public building stakeholders who were involved in WP Testing, and target groups such as public procurers, SMEs and professionals directly involved in green tenders.

In addition, all partners became familiar with the sectors of optimal green refurbishment solutions, considering local legal framework and local-geography energy potential.

Test results affected the capacity of public building owners to manage energy efficiency (EE) towards nearly-zero-energy building. Moreover the results virtually affected also the change in the stance of civil society towards green/smart growth, and tackled problems of ecological consciousness and environmental footprint for the benefit of the programme area.

Of course, the methodology of the pilots varied according to national legislation and eGPP of each partner, but generally the steps were the following:

1) audits of initial condition of pilot sites and identification of their needs,

2) definition of optimum refurbishment green solutions,

3) preparation of a green tender using the eGPP platform and publication/execution of the real tender,

4) installation/application of suggested solutions,

5) Reporting activities.

The WP Testing of GRASPINNO project, supported energy refurbishment of public buildings to reduce energy consumption and cost using green procurement methodologies. Energy audits have been applied by each partner in public buildings to be refurbished. The best green refurbishment solutions have been defined for each pilot site, taking into account the local legal framework and local-geography energy potential.

This has led to a variety of pilot methodologies per partner, respecting common key elements. The identified Contracting Authorities prepared a green tender based on green e-procurement specs and criteria, also using (where possible) the unified eGPP platform. In fact, it must be taken into account that the buildings green refurbishment process is still bound to national regulations and national procurement platforms.

The main goal of WP Testing is the refurbishment of public buildings, following green specs and criteria for tenders. GRASPINNO offered to interested PAs the chance to prepare such tenders, via the TIP/TDT docs that derive from eGPP tool, which is part of the GRASPINNO Unified platform..

At the end of the process, the innovative green solutions acquired through public procurement procedures were implemented in public buildings, except in cases where the pilot activities could not be concluded in time.

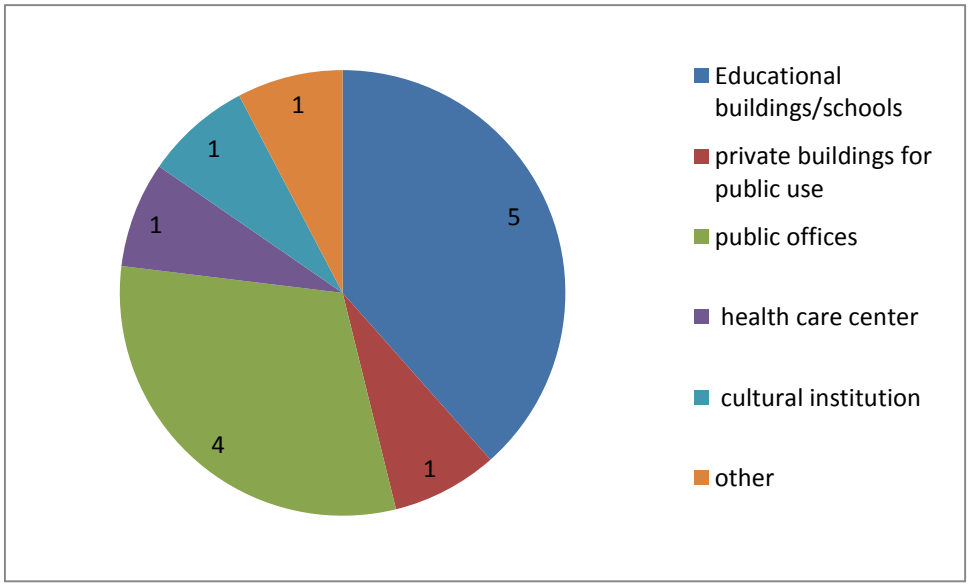
The GRASPINNO Application form provides that at the end of the WP Testing all partners who implemented a pilot will record in a specific report all the steps followed and the results of the whole pilot process (Del. 3.9.1). Moreover, a second Deliverable (Del. 3.10.5. "Evaluation of pilots site EE after the refurbishment") have to be accomplished.

The GRASPINNO Application form specifies that "overall report on the pilots, their results and overall evaluation will be developed, by the WP coordinator." In the Bastia meeting the Lead partner presented a report template that the partners with pilots had to develop.

The partners had to develop 1) an internal (interim) report by the end of November 2017 and then they had to deliver their 2) final report by the end of January 2018.

Pilot's activities were therefore implemented from April 2017 to January 2018 and involved all partners except PP1 - Atlantis Consulting SA and PP4-University of Maribor.

The pilot sites have been defined in the beginning of the project during the development of the pilot action plans. The pilot sites were public buildings located in the PPs regions. The public buildings chosen were: Educational buildings/schools (5), civil buildings for public use (1), public offices (4) health care centrer (1), cultural institution (1) other (1).



In total 13 pilots have been tested:

Greece

A - Public buildings Municipality of Kozani

B - Central Government air conditioning

C - Central Government LED lamp

Italy

D - Staggia Senese Gymnasium

E - Middle school "Leonardo da Vinci"

F - Palabasento/swimming pool/iMCAB's headquarter/Nursery school

G - Angelo Codello School

H - Ancilotto Palace

Cyprus

I - New office premises in Paralimni

Spain

L - UPC: Polytechnic University of Catalonia

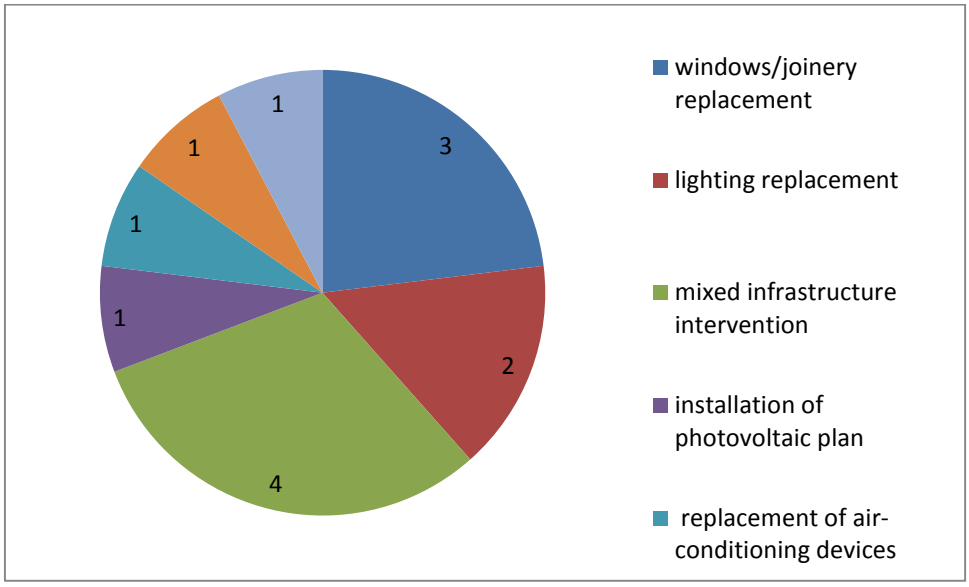
M - CCIT Headquarter

Bosnia and Herzegovina

N - Health care Centre Tešanj

O - Public Institution Culture Centre Maglaj.

Regarding the type of action that became necessary as a result of the energy audits, in terms of green solution undertaken: windows/joinery replacement (3), lighting replacement (2), some pilots focused on a general infrastructure intervention (4), installation of photovoltaic plan (1), replacement of air-conditioning devices (1), installation of net metering contracted PV roofs (1) and finally a zero cost intervention for the PA with the so colled "cooperating lease".



The Key Performance indicators (KPIs), if properly chosen may define the achievement of the goal. In other words the KPIs are tools which can measure several parameters, in order to determine the level of effectivenes of the intervention. The table shows the KPIs used in the GRASPINNO pilots:

Energy consumption in KWh (current /future) per square meter // or per yr
Energy consumption/Occupation Index
Energy productions in kWh
Emitted pollutants through energy consumption
U value to be in line with the national legislation
Reduction of energy consumption - KWh/m2 yr
Electricity saving - euro/year
Energy saving - KWh
Reducing of CO2 emissions – kgCO2/m2 yr //or in Tons
Thermal comfort conditions – C° and humidity %
Intensity of Natural Lighting - lux
Energy class before the refurbishment
Energy class after the refurbishment
Current energy costs – euro yr
future energy costs – euro yr
Improvement of health conditions
Evaluation of the improvement health conditioning under annual system revision

The current overall evaluation report of the pilots has been performed after the implementation process and having the possibility to consult both Del. 3.9.1 and Del. 3.10.5.

This report is structured in chapters. After the introductory part, in the second chapter the initial conditions of the pilots are summarized following the audits carried out.

The second chapter consists of two paragraphs which refer to the results of the audits carried out and the needs identified, and the consequent green solutions undertaken to improve the initial conditions.

The third chapter deals with the tenders which are analysed from the point of view of the use of the tools made available by the project (Unified Platform) and from the point of view of the publication of the real tenders, taking into consideration both the evaluation systems and the results in terms of participation and selection.

In chapter 4 there are information on the progress and implementation of the chosen activities.

The report ends with some useful considerations that emerged from the work done.

Finally, the "Inter-District Association of electrification and Lighting of Haute-Corse", has been excluded by this overall evaluation because PP5 encountered serious administrative issues that prevent them to stick with GRASPINNO schedule.

2. PILOT SITES INITIAL CONDITION

2.1 Audits of pilot sites

2.1.1 PP1 UPATRAS (GREECE)

2.1.1.1 Public buildings Municipality of Kozani

Need of energy refurbishment of 13 public schools of the Municipality of Kozani in order to facilitate the use of the electric power using the grid to store the auto generated energy.

2.1.2 PP2 TSL (ITALY)

2.1.2.1 Staggia Senese Gymnasium

The covering of the Gymnasium building - due to the existing state of degradation, caused by the age of the building and temperature changes that affected the roof especially during the summer period - has lost the characteristic of water impermeability.

2.1.2.2 Middle school "Leonardo da Vinci"

The building identified is old and lacking in seismic resistance (the construction is characterized by a high seismic risk indicator). The need to intervene on the structural grid by completely removing the vertical part of the building envelope has suggested the opportunity to also proceed with an energy efficiency improvement of the school by significantly improving the performance characteristics of the façade and also modifying the mechanical plant engineering part of the building, albeit in a minimal way.

2.1.3 PP3 CMAB (ITALY)

2.1.3.1 Palabasento/swimming pool/iMCAB's headquarter/ Nursery school

The 4 selected public buildings are carachterized by high energy consumptions and high public interest and district valeance: Palabasento, sport building in Potenza; Swimming pool of Municipality of Campomaggiore; MCAB's headquarter in Potenza; Nursery School in

Potenza. A feasibility study on the abovementioned public buildings has been conducted on possible actions to be implemented.

2.1.4 PP6 UNIONCAMERE DEL VENETO (ITALY)

2.1.4.1 Angelo Codello School

Need of a seismic adaptation of the structure because the risk level of the building is beyond the values foreseen by the seismic classification of the area and at the same time take the occasion to make improvements to the thermal performance of the building.

2.1.5 PP7 VENETO REGION (ITALY)

2.1.5.1 Ancilotto Palace

Roof without insulation, wooden frame with single glazed windows. The building is equipped with two (old) methane boilers. Presence of obsolete electrical system.

2.1.6 PP8 PWD (CYPRUS)

2.1.6.1 New office premises in Paralimni

Very low energy efficiency condition and non-compliance with the regulations for thermal comfort of the employees due to the whole façade of the building that was made of single glass without thermal insulations in the frames.

2.1.7 PP9 GSCCP (GREECE)

2.1.7.1 Central Government air conditioning

Inefficient wall mounted, split-type, high consuming, air-conditioning equipment.

2.1.7.2 Central Government LED lamp

Inefficient, high consuming internal lighting.

2.1.8 PP10 CCIT TERRASSA (SPAIN)

2.1.8.1 UPC: Polytechnic University of Catalonia

Inefficient energy management which led to high energy consumption from Grid. UPC did a preliminary study on Pilot sites.

2.1.8.2 CCIT Headquarter

Inefficient lighting system. Audit showed the improvement of on electric consumption since 2010 which led to the necessity of replacing the traditional lighting system.

2.1.9 PP11 DDIP ZDC (BOSNIA AND HERZEGOVINA)

2.1.9.1 Health care Centre Tešanj

Heat losses detected in health care Centre due to inefficient deteriorated wooden joinery.

2.1.9.2 Public Institution Culture Centre Maglaj

Heat losses detected in health care Centre due to inefficient deteriorated wooden joinery.

2.2 Green solutions undertaken

2.2.1 PP1 UPATRAS (GREECE)

2.2.1.1 Public buildings Municipality of Kozani

Installation of net metering contracted PV roofs. The net metering allows consumers who generate some or all of their own electricity to use that electricity anytime. In the pilot case, the generated power will come from the solar photovoltaic system. The net metering system will facilitate the use of the generated power, since the summer period power could be used during the winter (heating period). The final offsetting take place in a three-year period of time and the photovoltaic system will be designed based on the annual consumption of the buildings. In the net-metering, the auto producer does not need batteries because it uses the grid to store the generated energy.

2.2.2 PP2 TSL (ITALY)

2.2.2.1 Staggia Senese Gymnasium

The extraordinary maintenance intervention planned proposes the resolution of the problems of water impermeability of the roof of the Gymnasium with a covering made of insulated aluminium slabs.

2.2.2.2 Middle school "Leonardo da Vinci"

Implementation of an integrated project for seismic upgrading and energy efficiency with the adoption of suitable construction systems.

2.2.3 PP3 CMAB (ITALY)

2.2.3.1 Palabasento/swimming pool/iMCAB's headquarter/ Nursery school

Save electricity through interventions that will be covered entirely by the energy savings, and therefore it will be at zero cost to the property. This procedure is called "cooperating lease" and allows the contractor to redeem the asset at the end of the amortization.

2.2.4 PP6 UNIONCAMERE DEL VENETO (ITALY)

2.2.4.1 Angelo Codello School

Refurbishment with energetic and seismic adjustment with the followinginterventions on the school building specifically for energy improvement: Substrate ceiling insulation; external building coat; thermal power plant efficiency; application of thermo-static valves to radiators; lighting system replacement and windows replacement.

2.2.5 PP7 VENETO REGION (ITALY)

2.2.5.1 Ancilotto Palace

Conservative restauration and upgrading of the Palace with the following interventions: upgrading of the heating system by installing as heat generator an electric heat pump; the replacement of glazing with transparent surfaces with "low emissive" double glazing for windows and doors, while maintaining the original frames with the addition of specific seals; thermal insulation of the roof; waterproofing of the roof; replacement of the electrical and lighting system with luminaires with LED sources.

2.2.6 PP8 PWD (CYPRUS)

2.2.6.1 New office premises in Paralimni

Construction, transport and placement of windows and curtain walls in aluminium with the following interventions: Replacing the glass in the facade with thermal curtain walls and the windows with thermal ones in order to reduce cooling needs; natural Lighting and fresh and clean air (ventilation) for all employees.

2.2.7 PP9 GSCCP (GREECE)

2.2.7.1 Central Government air conditioning

Replacement of the existing air-conditioning machines with new energy efficient ones in terms of the general scope of green public procurement policy and energy efficient air-conditioning machines and participation in

an approved alternative waste management of electrical and electronic equipment.

2.2.7.2 Central Government LED lamp

Replacement of the existing internal lighting with new energy efficient ones in terms of the general scope of green public procurement policy (all waste lamps shall be separated and sent for recycling).

2.2.8 PP10 CCIT TERRASSA (SPAIN)

2.2.8.1 UPC: Polytechnic University of Catalonia

Installation of Photovoltaic plant in two university buildings reducing the consumption of electric power coming from the grid and publishing the result.

2.2.8.2 CCIT Headquarter

Replacement of the existing internal lighting with new energy efficient different size of Tubolar LED lamps reducing the consumption of power around 10% and improving the health conditions for workers increasing the light lumens and quality at each workstation.

2.2.9 PP11 DDIP ZDC (BOSNIA AND HERZEGOVINA)

2.2.9.1 Health care Centre Tešanj

Replacement of the existing 25 external windows of the Facade walls pilot building to boost the energy performance of the building, assuming that the measures taken can lead to a reduction in energy consumption.

2.2.9.2 Public Institution Culture Centre Maglaj

Replacement of deteriorated wooden joinery (7 external windows and 4 doors) by new Al profile joinery without a broken thermal bridge.

3. TENDERS

3.1 Preparation of a green tender using the eGPP platform and publication of the real tender.

3.1.1 PP1 UPATRAS (GREECE)

3.1.1.1 Public buildings Municipality of Kozani

eGPP platform

The Contracting Authority – Municipality of Kozani has used the GRASPINNO Unified Platfrom, through the eGPP tool and has published the tender in it. GRASPINNO Platfrom was used also for the TIPs.

Tender type: open electronic procedure.

An overall procurement extended tender was published on 22/8/2017. In the open procedures, any interested economic operator may submit a tender in response to a call for competition. Thus, the invitation to bidders is addressed to an unknown number of participants which have to meet objectively described admissibility criteria. In greek national tenders, the Invitation to bidders is published in 'Prometheus' platform; in international tenders, the Invitation is publicized in the European Union Official Gazette.

3.1.2 PP2 TSL (ITALY)

3.1.2.1 Staggia Senese Gymnasium

eGPP platform

The Contracting Authority did not published the tender in Graspinno platform because regional and national legislation imposes the use of a national or local e-procurement platform.

Tender type: open electronic procedure.

3.1.2.2 Middle school "Leonardo da Vinci"

eGPP platform

The Contracting Authority will not published the tender in Graspinno platform because regional and national legislation imposes the use of a national or local e-procurement platform.

Tender type: tender in publication.

3.1.3 PP3 CMAB (ITALY)

3.1.3.1 Palabasento/swimming pool/iMCAB's headquarter/ Nursery school

eGPP platform

The Contracting Authority did not published the tender in Graspinno platform because regional and national legislation imposes the use of a national or local e-procurement platform. Anyway, the platform was useful in the assessment phase, through the use of the LCC tool.

Tender type: negotiated procedure.

On 11/9/2017 a Call for expression of interest which was addressed to the ESCOs qualified under the Long List of the Central Purchasing Body of the Area Programma Basento Bradano Camastra. The fourth building / pilot project (Nursery School) was included in the call for the expression of interests but it will not be implemented because of the lack of financial resources.

3.1.4 PP6 UNIONCAMERE DEL VENETO (ITALY)

3.1.4.1 Angelo Codello School

eGPP platform

The Contracting Authority did not published the tender in Graspinno platform. For the preparation of the tender there has been a fruitful collaboration with Unioncamere del Veneto, which has started to transfer to the municipal administration what has been developed in terms of tools and eGPP platform.

Tender type: negotiated procedure through an unofficial bid.

The administrative act by the responsible for the procedure - so called "RUP"- of public works in the municipality of Valdobbiadene, took place on 15/11/2017.

3.1.5 PP7 Veneto Region (Italy)

3.1.5.1 Ancilotto Palace

eGPP platform

The Contracting Authority did not published the tender in Graspinno platform. During the preparation of the tender of the first excerpt, the eGPP platform was taken into consideration by the professionals responsible for drawing up the project of the building refurbishment. Even if the platform contents was judged interesting, no specific products and components were used in the design specifications and requirements.

Tender type: Negotiated procedure through an unofficial bid. A letter of invitation has been sent on 15/1/2018.

3.1.6 PP8 PWD (Cyprus)

3.1.6.1 New office premises in Paralimni

eGPP platform

The Contracting Authority has used the GRASPINNO Unified Platform, through the eGPP tool and has published the tender in it. GRASPINNO Platform was used also for the TIPs.

Tender type: open electronic procedure.

The same Green Public Procurement published through the e-procurement (the national procurement platform). According to the national legislation in Cyprus, all public procurements should be published online through the aforementioned platform. The real tender was published in 18/09/2017 through e-procurement platform.

3.1.7 PP9 GSCCP (GREECE)

3.1.7.1 Central Government air conditioning

eGPP platform

The available documentation suggests that no use was made of Graspinno platform therefore the Contracting Authority did not published the tender in Graspinno platform.

Tender type: Framework Agreement (FA).

Real tender published in EU Official Journal on 29.3.2017.

3.1.7.2 Central Government LED lamp

eGPP platform

The available documentation suggests that no use was made of Graspinno platform therefore the Contracting Authority did not published the tender in Graspinno platform.

Tender type: Framework Agreement (FA).

Real tender published in EU Official Journal on 29.3.2017.

3.1.8 PP10 CCIT TERRASSA (SPAIN)

3.1.8.1 *UPC: Polytechnic University of Catalonia*

eGPP platform

The Contracting Authority has used the GRASPINNO Unified Platform (Informations have been uploaded on GRASPINNO database).

Tender type: open procedure.

Real tender publication not mandatory.

3.1.8.2 CCIT Headquarter

eGPP platform

The Contracting Authority has used the GRASPINNO Unified Platform (Information have been uploaded on GRASPINNO database).

Tender type: negotiated procedure.

Real tender publication not mandatory.

3.1.9 PP11 DDIP ZDC (BOSNIA AND HERZEGOVINA)

3.1.9.1 Health care Centre Tešanj

eGPP platform

The tender of the pilot site of Public Institution Health Care Centre Tešanj was published on the e-GPP platform. Two types of TIP/TDT documents were required for the tender titled „Replacement of Wooden Joinery on the Facade Walls" and were created and published on the GRASPINNO e-GPP platform.

Tender type: competitive request for quotation.

Real tender published on 27/12/2016.

3.1.9.2 Public Institution Culture Centre Maglaj

eGPP platform

The tender of the pilot site of Public Institution Health Care Centre Tešanj was published on the e-GPP platform. Two types of TIP/TDT documents were required for the tender titled „Removal of existing Joinery with Al profile Joinery" and were created and published on the GRASPINNO e-GPP platform.

Tender type: competitive request for quotation.

Real tender published on 25/1/2017.

3.2 Tenders evaluation system and results

3.2.1 PP1 UPATRAS (GREECE)

3.2.1.1 Public buildings Municipality of Kozani

Tender evaluation system

The contract award criterion in order to decide the bid winner will be the best economic advantageous tender, according to the Article 67 – Directive 2014/24/EU.

Tender Results

Number of participants in the bid 8; Number of valid participants 3.

The next step is the evaluation of the economic offers. However some rejected bidders lodged appeals which caused delay in the procedure. Contracting Authority is therefore waiting for the appeals to be resolved.

3.2.2 PP2 TSL (Italy)

3.2.2.1 Staggia Senese Gymnasium

Tender evaluation system

Most economically advantageous tender.

Presence of basic condition identifying minimum energy performance and Green Public Procurement (GRASP characteristics). Tender is based on the new procurement code (2016-17) but the notice doesn't contains specific references to the Italian CAM (Minimum Environmental Criteria). Call closed and provisional assignment done.

Tender results

Number of participants in the tenders: 106; Number of valid participants: 39. Tender winner: AFEP SRL.

3.2.2.2 Middle school "Leonardo da Vinci"

Tender evaluation system

Tender in publication.

Tender results

n.a.

3.2.3 PP3 CMAB (ITALY)

3.2.3.1 Palabasento/swimming pool/iMCAB's headquarter/ Nursery school

Tenders evaluation system

The selected criteria to award the contract is "tender offering best value for money".

Tender results.

Number of participants in the call for expression for interest: 3; Number of participants in the negotiated procedure: 1; Expression of interest's winner: ECOCLIMA SAS DI VINCENZO MATTIACE & CO.

3.2.4 PP6 UNIONCAMERE DEL VENETO (ITALY)

3.2.4.1 Angelo Codello School

Tenders evaluation system

The award is made at the lowest price with the modalities, established by the letter of invitation, for the definition of the reference parameters for the calculation of the anomaly threshold.

Results of the tenders

The assignment of the renovation activities took place through the contracting authority of the Feltrina Mountain Union in the presence of the RUP on 12-12-2017. 20 companies were invited to participate in the call for tenders. The company CO.FA.M srl of Rome-Italy has been awarded with the contract.

3.2.5 PP7 VENETO REGION (ITALY)

3.2.5.1 Ancilotto Palace

Tender evaluation system

The award criterios is the lowest price.

Tender results

The tender was splitted into two functional excerpts. The first excerpt (made of two lots worth 1.295 million euro) was awarded at the beginning of March and works will start in May 2018. The first lot was attended by 11 companies and the award went to the company TERNA COSTRUZIONI srl. Fifteen companies participated in the second lot and the contract was awarded to ARTE E RESTAURO. The second excerpt will be placed on tender in the course of 2018.

3.2.6 PP8 PWD (CYPRUS)

3.2.6.1 New office premises in Paralimni

Tender evaluation system

Since the Green Criteria were described and used as requirements in the tenders, the evaluation system used was the one which refer to the lowest price.

Tender results

In total, 4 participants showed interest; 3 submitted their offer. The winner was Artemis Pittis and the agreement between him and the Department of Public Works was signed on 17/11/2017.

3.2.7 PP9 GSCCP (GREECE)

3.2.7.1 Central Government air conditioning

Tender evaluation system

The award criterion is the most economically advantageous tender criterion.

Tender results

4 tenders, three of them were rejected. One appeal has been submitted against the approval decision. The appeal was accepted and the procedure was cancelled. It will be repeated till the end of April 2018.

3.2.7.2 Central Government LED lamp

Tender evaluation system

The award criterion is the lowest price.

Tender results

8 tenders, 6 of them were rejected. Results after the assessment of the economic part of the tenders: both tenders were accepted. Appeals: No appeals have been submitted against the approval decision.

3.2.8 PP10 CCIT TERRASSA (SPAIN)

3.2.8.1 UPC: Polytechnic University of Catalonia

Tender evaluation system

The award criterion is the lowest price.The technical criteria were fixed on preliminary study: to present the same material (brand) or equivalent with better economic conditions.

Tender results

The winner is "Provider_2": low price offering exactly the product recommended on study.

3.2.8.2 CCIT Headquarter

Tender evaluation system

The evaluation system is defined on the Internal Contracting document and is communicated with the specification document. Methodology: assesment using ponderation with pre-fixed criteria.

Tender Results

4 tenders submitted, 2 submitted a complete offer. The winner is "Provider_1"

3.2.9 PP11 DDIP ZDC (BOSNIA AND HERZEGOVINA)

3.2.9.1 Health care Centre Tešanj

Tender evaluation system

Competitive request for quotations. A commission of 5 members was formed in order for the tender offers to be revised and evaluated.

Tender Results

Number of participants in the tender: 3; number of valid participants: 2; tender winner: The company "INTER" from Tešanj.

3.2.9.2 Public Institution Culture Centre Maglaj

Tender evaluation system

Competitive request for quotations. A commission of 5 members was formed in order for the tender offers to be revised and evaluated.

Tender Results

Number of participants in the tender: 8; number of valid participants: 8; Tender winner: The company "GTR d.o.o." from Mostar.

4. INSTALLATION/APPLICATION OF SUGGESTED SOLUTIONS

4.1.1 PP1 UPATRAS (GREECE)

4.1.1.1 Public buildings Municipality of Kozani

Pilot not yet concluded, due to unexpected delays in the procurement procedure caused by bidders' appeals.

4.1.2 PP2 TSL (ITALY)

4.1.2.1 Staggia Senese Gymnasium

Tender is closed and also the refurbishment is completed.

4.1.2.2 Middle school "Leonardo da Vinci"

The Municipality of Poggibonsi has decided to change the financial tool, using the National Plan for the School Building instead of the lifting of restrictions on the Stability Pact (the tool used for Staggia Senese Gymnasium) and the tender will have a slight delay; it allows the Municipality to refurbish other buildings beyond those individuated as pilots. The plan will be published by the end of February 2018; The project documents are already prompt and they don't have anything different from those prepared for the the National Plan for the School Building.

4.1.3 PP3 CMAB (ITALY)

4.1.3.1 Palabasento/swimming pool/iMCAB's headquarter/ Nursery school

The installation of the products has still to be done, despite it was expected in April. More time than expected was needed to set-up the softwares in compliance with the building's features. Anyway, the installation will be performed no later than the end of June and probably before of the 10 th of June. Therefore, there are no energy consumption data collected for the pilot sites after the refurbishment although estimations on energy savings have been done.

4.1.4 PP6 UNIONCAMERE DEL VENETO (ITALY)

4.1.4.1 Angelo Codello School

Pilot not yet concluded. In fact the works stopped temporarily, due to the discovery inside the false ceilings of old rock wool, now considered dangerous. In any case, the end of the work is scheduled for December 2018.

4.1.5 PP7 VENETO REGION (ITALY)

4.1.5.1 Ancilotto Palace

Pilot not yet concluded. Tenders have already been made and the works have been awarded but "the handover" of the works has been delayed because the Municipality is awaiting clarification on possible future regional/European funding.

4.1.6 PP8 PWD (CYPRUS)

4.1.6.1 New office premises in Paralimni

The energy refurbishment activities have been completed, but the energy savings were calculated before completing the activities through a specific tool. The same tool was also used to show the initial energy conditions of the building and to compare the energy class of the building before and after the refurbishment. It was calculated that with replacing the existing openings with the proposed ones a reduction of approximately 75% will occur in annual primary energy consumption (from 865 kWh/m 2 /yr to 218 kWh/m 2 /yr), which will lead to an equal reduction of 75% to CO 2 emissions (from 252.75 kgCO 2 /m 2 /yr to 63.2 kgCO 2 /m 2 /yr). This means that a total amount of approximately 630 MWh/year of primary energy will be saved, which translated to 184.5 tnCO 2 /yr savings. Additionally, if the cost of primary kWh will be counted to € 0.16, an annual reduction of € 100.000,00 will occur.

4.1.7 PP9 GSCCP (GREECE)

4.1.7.1 Central Government air conditioning

Unfortunately, the initially estimated time period for the completion of the procurement process was enough only for the completion of one of the pilot framework agreements, because of legislation issues in the case of the tender for air-conditioning machines. Since the installation of the energy efficient products has not yet taken place, consumption data collected from the pilot sites after the refurbishment cannot yet be registered.

4.1.7.2 Central Government LED lamp

The procurement procedure of the framework agreement is completed. The substitution process has slowly begun and it will be valid till the end of 2019. The estimated electricity consumption decrease is 65.8 kW /h. Considering that LED lamps will be in use during the working days and hours of the year, which are 260 days for 10 hours a day, the annual electrical power, which is needed for the internal lighting of the building of the Ministry of Economy and Development on Kaniggos Square in Athens, will decrease by 171080 kW.

4.1.8 PP10 CCIT TERRASSA (SPAIN)

4.1.8.1 UPC: Polytechnic University of Catalonia

The students have begun the works on both buildings and the prevision is to finish on the first semester of 2018.The achieved until now (with the works done) is little less than the initial objective, but the economical result is a 2.396 €/year by Building. With this kind of material and considering the climatological situation is possible to estimate: Objective 18400 kWh/Achieved 17118.09 kWh.

4.1.8.2 CCIT Headquarter

As of 27 March, work had not yet been completed.Concerning the electrical energy consumption, we can estimate a % of saving considering the use of the different places (offices, classrooms and meeting rooms). It is not possible to have this data at this moment. Globally, for the building, with all work done, the estimation is a 10% of reduction of annual energy consumption.

4.1.9 PP11 DDIP ZDC (BOSNIA AND HERZEGOVINA)

4.1.9.1 Health care Centre Tešanj

The improving the energy efficiency by replacing the outer windows was done on the building of the Health Care Centre. The technical report is based on heat energy consumption data after replacement. According to the energy consumption data from the calorimeter of the heat substation, the average energy consumption for the reference 2016 is 174.996 kWh/year. Heat energy consumption data after the replacement of windows is 187.400 kWh/year. The reason for the "seemingly"; increase in the consumption of heat energy can be referred to the connection of the Physical therapy building to the complex of Health Care Center (large transmission heat losses, an increase in usable surface area of 2.727 m 2 to 3.056 m 2 , etc.) and the absence of calorimeters in the separate adjacent buildings.

4.1.9.2 Public Institution Culture Centre Maglaj

Available data show an increase in energy efficiency in the General Library as a part of the Cultural Centre building after improving the thermal characteristics of the outer envelope. Replacing the wooden windows with bad heat characteristics with better aluminum windows brought savings of 3 t of biomass a year or 14.400 kWh/year.

5. CONCLUSION

1) In some cases the decision to take financially demanding action on public buildings is rarely taken in the presence of motivations linked exclusively to energy efficiency. There are other reasons for a public administration to renovate public buildings (e.g. seismic upgrading).

2) The procedures to improve the energy efficiency of public buildings take a long time but after an initial big effort, the process of refurbishment can be implemented with a systematic methodology.

3) Renovations of public buildings must be guided by a strategy that maximizes their impact on the territory by acting on the variable costs and implementation times.

4) Unpredicted factors, such as bidders' appeals can cause delays and change suddenly the time plan, not only of the whole procurement procedure, but also of the activities that involve the installation of the procured products/services. Thus, the time planning of a procurement procedure has to be done taking into consideration unexpected parameters. The people in charge should not plan based only on the time period of each phase of the procurement procedure, as these periods are described by the national legislation. On the contrary, extended time periods should be taken into account, so as to ensure the successful results of the procurement procedure.

5) The framework agreement procedure facilitates stimulation of public officers and enterprises to EE and GPP policies, though the initially estimated time period for the completion of the procurement process sometimes is not enough, because of long-lasting legislation issues.

6) The attempt to change the attitude on energy efficient products needs time and effort. The first successful results, though, of these attempts will strongly facilitate the next ones.

7) Emergence of a strong awareness about the importance to set up an innovative joint management of the EE / RES energy policies and interventions, in favor of small and rural villages which can't

plan and manage mid and long term EE / RES strategies (because of the lack of funds and the lack of specific competences).

8) Decision to identify and to establish a permanent Energy Manager with district valence. The energy manager will take care of:- Energy consumptions monitoring on behalf of the associated municipalities - Feasibility studies - EE / RES strategies - Financial incentives.

9) Experience with pilot projects can also have a leverage effect in other areas, since although the GRASPINNO project is limited to public buildings, the results of energy efficiency can also be spread over time to private buildings where the energy consumption is a relevant part of the budget.

10) As far as green public procurement concern, pilot experiences facilitate the process promoting the knowledge on green technology, green criteria, good practices.

11) Incremental results of increasing the energy efficiency of public buildings should also stimulate to continue the work of improving the conditions of public buildings in the Mediterranean area.

12) The experience of the pilots was useful for the staff of the local authorities concerned because it allowed them to compare with good practices existing in other contexts, both national and international.

13) The use of the GRASPINNO unified platform has been hampered by the presence of national regulations that require the use of specific e- procurement platform.